Fostering Implementation of the Roaring Fork Watershed Plan

Amanda Barker, Bethany Hellmann, Anne Kohl,
Kathleen McIntyre & Angela Michalek

UNIVERSITY OF MICHIGAN
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FOSTERING IMPLEMENTATION OF THE ROARING FORK WATERSHED PLAN

by

Amanda J. Barker, Angela M. Michalek, Anne L. Kohl,
Bethany S. Hellmann, and Kathleen B. McIntrye

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Facility advisor:

Associate Professor Julia M. Wondolleck

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ABSTRACT

Regional planning efforts for natural resource management are often complicated by the sheer number and range of partners involved. Collaboration among these stakeholders has become of increasing importance over the past few decades. The Roaring Fork Watershed Collaborative (RFWC) evolved as a regional planning effort across three counties and five municipalities on the Western Slope of Colorado. The RFWC – Water Committee is a diverse set of stakeholders working to integrate the environmental, social and economic values of the region into a Watershed Plan. An increasing amount of water-intensive energy extraction, population growth and uncertainties surrounding climate change will likely place additional strain on already overallocated water resources in the Roaring Fork Watershed. The purpose of this report is to inform the RFWC – Water Committee about how other collaborative watershed partnerships have formed and organized. This research explores the history, organizational structure, challenges, activities and facilitating factors of twenty ecosystem management partnerships throughout the American West. The cases studied highlight the importance of initial activities such as joint fact finding and information sharing. These twenty partnerships also point to the benefits and challenges associated with involving a wide range of partners. Organizations tend to formalize their commitments to provide a sense of legitimacy, instill confidence in the collaborative process, and guide their actions. The RFWC – Water Committee was also interested in learning more about public awareness campaigns and other education initiatives. Interestingly, most of the twenty partnerships emphasized the integral role of public education and awareness in protecting, enhancing and restoring the watershed. In addition, the report also provides ten case studies of public awareness initiatives. Many of these initiatives underscore ways research can be used to design effective public awareness campaigns. Finally, the lessons from these twenty partnerships and ten public awareness initiatives are used to provide a set of recommendations that the RFWC – Water Committee might consider. While the report has been customized to the RFWC – Water Committee, many of the lessons and themes should be of interest to other nascent watershed partnerships.

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PART I: INTRODUCTION, ANALYSIS & RECOMMENDATIONS

CHAPTER ONE: INTRODUCTION

The purpose of this report is to educate the Roaring Fork Watershed Collaborative – Water Committee (RFWC/WC) about how other watershed groups with similar characteristics to RFWC/WC have formed and organized. The research group examined 20 initiatives across the American West and analyzed their differing organizational approaches, activities, and educational programs. Based on this comparative analysis, this report concludes with a set of observations and recommendations for RFWC/WC's consideration as it proceeds with implementation of its Roaring Fork Watershed Plan.

Roaring Fork Watershed Collaborative – Water Committee

The Roaring Fork Watershed Collaborative (RFWC) is an ad-hoc group of agencies and non-profits in Eagle, Garfield, Gunnison and Pitkin Counties in Colorado. RFWC formed in 2002 to have a regional discourse on planning issues like transportation, affordable housing, open space and trails, and water. USDA Forest Service hydrologist, Andrea Holland-Sears, described the evolution of the Roaring Fork Watershed Collaborative:

> "The collaborative started several years ago to bring municipalities and counties together to try to think as a watershed. All decisions were being made with local communities here and counties over there. We made an effort to start thinking as a watershed instead of our own unique municipality or county."

RFWC's overarching goal is to maintain the quality of life in the watershed. As Rachel Richards, Pitkin County Commissioner, commented, "Maintaining our quality of life is paramount, and that encompasses so many things - stewardship, natural resource conservation, protection of the natural environment."

Many people were particularly interested in discussing the myriad of water resource issues and concerns, which led to the formation of the Roaring Fork Watershed Collaborative – Water Committee. The Water Committee coalesced in 2005 to gain a greater scientific understanding of the health of the watershed and as a forum for information sharing about water issues. RFWC/WC has been developing a Watershed Plan with two phases, the first completed in December of 2008 with the State of the Watershed Report (SOWR), a detailed scientific analysis of the health of watershed streams, rivers, and riparian areas. Phase II of the plan began in early 2009 by drafting goals, specific objectives and recommended actions to implement specific projects/programs, studies and legislative/regulatory initiatives.

RFWC/WC hopes this watershed plan will act as a catalyst to bring groups together. Rose Ann Sullivan, Kootenay Resources, LLC, Roaring Fork Conservancy consultant, notes, "I hope with the plan implementation that somehow we can actually have real regional planning and implementation in the valley. I hope we find a way where all these different jurisdictions, all these different agencies… find a common purpose, find a way to work together."

The RFWC/WC has strong participation from different sectors, including federal, state, county and local government, business, and nonprofits. Ultimately, collaboration with multiple counties

could prove challenging; Pitkin, Eagle, Garfield, and Gunnison Counties each have different land use codes and regulations. Tresi Houpt, Garfield County Commissioner and board member at Ruedi Water & Power Authority, embraces the challenge, asking, "Do we want to identify a solution that forces the decision back to the State level? Or do we want to become an example of how counties and municipalities can work regionally to address a regional issue?"

Colorado is entering a new era of water management, and actions taken over the next few years will be crucial for future generations. As Colorado develops a framework for the long-term management of the state's water resources, both public and private interests are taking steps to secure additional water supplies. Colorado could be entering an era of significant water development given the unprecedented demands for new structural solutions. The Roaring Fork Watershed Plan provides local interests with the opportunity to play a role in deciding how the State administers the watershed's water resources in the future. As public and private interests around the state prepare for future water demand, RWFC/WC hopes to establish a realistic framework within this complex context. The Roaring Fork Watershed Plan constitutes a means for interested stakeholders to have a say in the future management of their water resources.

Roaring Fork Watershed Collaborative – Water Committee Goals

In order gain a better understanding of RFWC – Water Committee, the project team traveled to the Roaring Fork Watershed in June 2010. The objective of the trip was to gather information directly from participants who will ultimately be responsible for the Watershed Plan's implementation. RFWC/WC stakeholders discussed past planning efforts and their ideas for the future, identifying a number of needs and goals.

Elevate importance of water

One of the primary goals of the Roaring Fork Watershed Plan is to elevate the importance of water in watershed discussions. Many in RFWC – Water Committee believe that if the public understood decision-making at different governmental levels, and how these decisions affect industry, agriculture, and quality of life on the Western Slope, water would become a salient issue. Potential additional transmountain diversions add an extra challenge, but underscore the importance of elevating water issues. Transmountain diversions take water from the water-rich, rural Western Slope and divert it through tunnels to the dry, densely populated Front Range. With an abundance of water in their rivers, many people in the Roaring Fork Watershed do not understand or know that over a third of their water resources are diverted to the Front Range. RFWC – Water Committee members believe that elevating the importance of water issues within communities in the watershed will facilitate implementation of the Watershed Plan.

Coordinating body

Stakeholders believe a watershed scale governing/advisory body is best to coordinate the implementation of the Watershed Plan. Implementation of projects will require coordinated, cost efficient action. RFWC – Water Committee is cognizant that messages and projects should be carefully planned, as well as funded and staffed in order to provide continuity. Lack of coordination can lead to project duplication, a time and financial waste. Rose Ann Sullivan,

Kootenay Resources, LLC, Roaring Fork Conservancy consultant, points out funding incentives for collaboration: "The way people get money is when they can work together, and when they can show collaborative effort. They have thought about the most cost efficient way of getting to a result." RFWC – Water Committee intends to remain a bottom-up coordinated effort to address future policy decisions. Mark Fuller, Ruedi Water and Power Authority, notes, "Colorado is very much a bottom up state when it comes to dealing with things like land use and natural resource management."

Develop common goals and mission

A major objective of the Watershed Plan is to create a common perception of water issues between counties, municipalities, other stakeholders, and the general public. Politicians have begun to grasp the importance of water, but the public has yet to fully understand the effect water management practices will have on their lives. Jurisdictions sharing a common vision of water management and planning might find collaboration to be particularly challenging, as each county and municipality is bound by different land use regulations.

RFWC – Water Committee desires to have stakeholders identify common goals and visions for future land use, water diversions, wastewater, and stormwater systems. Information sharing will prove critical as RFWC – Water Committee moves forward and continues working with land use authorities and municipal planners. An (admittedly unlikely) aspiration identified by RFWC/WC members is adoption of consistent land use practices. Common land use regulation sends a unified message, creates meaningful standards, and regionalizes policy. As Bill Boineau, Snowmass Village Mayor, commented, "common goals create a common vision for the watershed. We can all agree to it. It doesn't take a whole lot. I think most of us in the political side enjoy a regional discussion." A common vision will also aid in addressing the challenge of building trust within RFWC – Water Committee and the watershed by giving the community a venue to address mutual problems, focusing on similar interests and motives.

Reach out to the community

Broad involvement will be an important component to identifying a common vision as the group builds a watershed-scale initiative. Mark Lacy, Fish Biologist with the USDA Forest Service, White River National Forest, says, "It's the responsibility of everyone involved in working on this to reach out to those individual groups, whether that be Rotary or Realtors or construction industry. To me, that's the most positive way to get the collaboration going. They're not going to go to a public meeting unless they have a vested interest in it." Building trust includes finding ways to incorporate different interests and motivations that will help in development of a common vision and eventually trust within the initiative.

Strengthen education programming

Education will be an important component of plan implementation. In order to put the plan into effect, RFWC – Water Committee members identify two broad educational themes. First, empower public knowledge through programming and specific project selection. This includes ongoing public involvement and advocacy concerning watershed issues. As Stephen Ellsperman,

Director of Parks and Open Space, City of Aspen, commented, "Awareness is always the number one solution; part of the solution is to be aware of the problem." Secondly, RFWC – Water Committee must have an ongoing commitment to reduce knowledge gaps within the Collaborative and with the general public. Creative solutions must be found for disseminating complicated information. Education about the threats to the river system within the watershed will prove important. Forty percent of water is being moved to the Front Range, and the public is unaware. As Bill Jochems, Pitkin County Healthy Rivers and Streams Board member and Past-President of the Crystal Valley Environmental Protection Association, commented, "The major challenge is that 80% of the people in this state live on the other side of the Divide and 80% of the water is here. They want it."

Review of Literature on Collaboration

The Roaring Fork Watershed Collaborative – Water Committee is a group of people that came together out of concern for the region's water resources and a desire to address these concerns at the watershed scale. Seeking an alternative to traditional siloed approaches, the Water Committee is following in the footsteps of other ecosystem management groups and collaborative watershed partnerships (Yaffee et al. 1996; Kenney 1999; Sabatier et al. 2005; Wondolleck and Yaffee 2000).

The efforts of a collaborative watershed partnership cut across political jurisdictions, using the watershed as a regional planning unit (Sabatier et al. 2005; Kenney 1999). The number of collaborative watershed partnerships has continuously grown over the past few decades. Their general purpose is to improve the state of the watershed. Watershed partnerships evolved to replace narrow agency-driven management (Kenney 1999; Leach and Pelkey 2001). To a degree, agencies also now recognize the value of local planning and collaborative management; state and federal agencies try to empower local watershed planning and management by providing financial resources and emphasizing a holistic approach (Yaffee et al. 1996; Leach and Pelkey 2001; Kenney 1999; Wondolleck and Yaffee 2000). The Environmental Protection Agency's Total Maximum Daily Load regulations have spurred the development of a substantial number of community-based watershed partnerships (Sabatier et al. 2005). The partnerships evolve at the local level and while they can be agency-supported, they are often grassroots efforts characterized by some sort of local leadership (Kenney 2000; Wondolleck and Yaffee 2000). Several factors contribute to the development, sustainability and longevity of collaborative partnerships; many of which are highlighted in the discussion below.

Representation

Partnerships are not a group of similar, like-minded people; instead, the people involved come from a variety of backgrounds (Sabatier et al. 2005). Their members are considered stakeholders, a term used for those that could be affected by water resource management decisions (Karl, Susskind and Wallace 2007). While all stakeholders do not have to be involved in the partnership, the values and interests of each stakeholder group must be represented, whether they are farmers or fishermen (Leach 2006). An agency's role within a partnership is different from its traditional role (Wondolleck and Yaffee 2000; Kenney 1999). Agency representatives will downplay their level of authority to empower other members. The idea is

that watershed residents should have input on the decisions that will impact them (Kenney 2000). Nonetheless, partnerships generally evolve over time and differ in their sphere of influence (Leach 2006). While partnerships will actively try to involve all stakeholder groups, the process must be considered fair (Leach 2006; Kenney 2000). Since participation is voluntary, it is influenced by the perceived legitimacy of the group. A partnership with too many environmentalists or farmers could lose its credibility with other stakeholder groups. Similarly, some stakeholders might have a strong distrust of agency involvement (Focht and Trachtenberg 2005). Notably, the number of stakeholders generally increases with factors like population density and geographic area, making it more difficult to agree on the issues (Gray 1985; Wondolleck and Yaffee 2000; Hardy and Koontz 2010).

Interdependence

The objective of collaboration is to address a set of issues or a complex problem that parties cannot solve alone (Gray 1985). The benefits that an individual or organization stands to gain must be greater than the costs of participation in a partnership. A crisis situation often spurs a group of people to form a partnership in response to the scale and complexity of the problem at hand (Kenney 1999). The interdependent nature of the issues involved provides an opportunity for interaction (Daniels and Walker 2001). This interaction enables partnerships to draw funding, technical expertise and local knowledge from a variety of sources (Wondolleck and Yaffee 2000). Collaborative partnerships also rely upon public support and political buy-in to effectively achieve their objectives.

Identity

Environmental conflict develops when resources are scarce and the values and interests involved differ (Daniels and Walker 2001). However, collaboration often comes out of conflict. While collaboration can be time-consuming, litigation can be both time-consuming and resource-intensive (Gray 1985). Many times, litigation increases the level of uncertainty in the conflict and produces less-than favorable outcomes for all parties involved. Adversarial parties recognize that they have more to gain by working out their differences and finding solutions that work for everyone involved. The process usually begins by developing a shared understanding of the problem and a discussion of people's interests as they relate to the watershed (Wondolleck and Yaffee 2000). Sometimes parties involved will have a position on a particular issue, like a water project, but their interest explains the values behind their position. Parties usually enter these discussions as individuals with unique interests (Wondolleck, Gray and Bryan 2003). As people share their perspectives, they develop a greater appreciation of the problem's complexity and a shared identity (Gray 1985; Wondolleck, Gray and Bryan 2003). Participants will then create a mission or vision statement using their shared purpose; the vision statement acts as guide and gives the group something to refer back to when disagreements arise (Wondolleck and Yaffee 2000). Once they have a relationship upon which to base their interactions, members can begin to tackle the issues at hand.

A "sense of place" also helps to unite people within a particular geographic area (Wondolleck and Yaffee 2000). In collaborative watershed partnerships, the watershed serves as the physical

boundaries around which an identity can be constructed. Many partnerships will take tours of the watershed to learn more about its characteristics, which helps sew a common thread through the group. However, the "sense of place" is also a function of scale (Gray 1985; Wondolleck and Yaffee 2000). The closer stakeholders live to one another, the easier it can be to have face-to-face interactions.

Consensus

After identifying the problem, partnerships generally develop a set of rules to structure their interactions (Innes 1999). Many collaborative partnerships use these rules to emphasize respect and consensus as means for making decisions. Consensus decision-making refers to a decision rule that requires unanimous agreement among all parties (Kenney 2000). While achieving consensus can take time, some argue the process results in more durable agreements. Each person's opinion holds a substantial weight (Wondolleck and Yaffee 2000). Discussions in these forums are generally deliberative, face-to-face interactions (Kenney 2000; Innes 1999). Their meetings are also often open to the public, emphasizing transparency and encouraging involvement (Leach, Pelkey Sabatier 2002; Leach 2006). Consensus-building is also viewed as a way to increase effective communication and cooperation within the group (Innes 1999).

Uncertainty & Joint fact-finding

Environmental problem-solving takes into account the economic, social and environmental context in an effort to create sustainable solutions (Wondolleck and Yaffee 2000). The set of knowledge used as a basis for decision-making should include technical information about the watershed, but also local values and knowledge (Karl, Susskind and Wallace 2007). Sometimes this information is readily available and all parties can agree upon its validity. However, many times partnerships must acquire information that is credible and relevant. Collaborative learning helps to build the trust and relationships needed to sustain the partnership (Wondolleck and Yaffee 2000). This process of "joint fact-finding" encourages people to challenge existing knowledge and think creatively about solutions that could benefit all parties (Karl, Susskind and Wallace 2007). Watershed partnerships deal with information that is quite technical on a regular basis (Leach, Pelkey and Sabatier 2002). At times, communication between experts familiar with this technical data and laypeople can be a challenge.

Many of the same factors that facilitate progress can also be challenges for these initiatives. Leach, Pelkey and Sabatier (2002) emphasize that collaborative watershed partnerships should not be regarded as failures prematurely. To build trust, strengthen relationships and develop a shared understanding of the ecosystem, it takes time and requires many lengthy, face-to-face interactions. Wondolleck and Yaffee (2000) also note that addressing more manageable issues in the partnership's nascent stages will set the stage for future success.

Implementation

Collaborative watershed partnerships take the information they have learned and use it to develop a plan (Leach and Sabatier 2005). The plan incorporates the goals and objectives of the

partnerships and outlines a plan of action. Collaborative partnerships are generally action-oriented objectives (Kenney 1999). Planning is a necessary part of the process, but the partnerships' objectives are on-the-ground successes. These partnerships are often not mandated processes and thus rely upon factors like trust and relationships to implement any sort of agreement (Potapchuk and Crocker 1999). Restoration projects are the primary activities of watershed partnerships (Leach, Pelkey and Sabatier 2002). Nonetheless, watershed partnerships often recognize the importance of public education and outreach in addressing environmental problems. For watershed partnerships, monitoring is the main indicator of success. People want to know their actions are having a positive impact on the watershed.

While this discussion has outlined the main characteristics of collaborative watershed partnerships, an extensive amount of literature and resources are available on these topics. Collaborative partnerships generally begin with an internal process of development before moving on to actively protect, enhance and restore the ecosystem. The extent to which a partnership can manage these factors will be a strong indicator of their future success.

Research Objectives and Questions

As RFWC – Water Committee moves forward with their plan, the Collaborative would like to know how other watershed groups have organized themselves and implemented their planning objectives. Those involved in the Roaring Fork Watershed planning process recognize they are not the first to struggle with issues of participation, organizational structure, and legitimacy.

The American West characteristically has large tracts of public lands and rural populations. Over the past decades, a growing group of resource management collaborations have emerged to address regional and local issues. Contributing factors to formation of many resource management partnerships developing across the West are politics, land ownership patterns, and cultural values. Partnerships are used as a way to meet different interests and needs at regional, local, and watershed scales. Consequently, the project team explored a wide range of watershed partnerships in the Western United States and identified common themes and recommendations for the RFWC – Water Committee. Additionally, the project identified key components of successful public awareness campaigns to guide future education and outreach activities in the watershed.

To help RFWC – Water Committee address future project and planning efforts, the team developed a series of research questions to guide the project:

- *What are the lessons to RFWC – Water Committee from the array of experiences of others?*

More specifically, the group synthesized information from the following questions to understand the spectrum of experiences with collaborative resource management in the West:

- *How have other watershed groups organized themselves to deal with issues such as water quality, water quantity, and riparian land use?*
- *What types of projects and activities do they do?*

- *What is facilitating their ability to achieve their objectives?*
- *What challenges have they encountered?*
- *What educational strategies do they use?*

Overview of the Report

This report is divided into four major sections. Part I covers the content, methods, analysis, and recommendations. Chapter One introduces the study and highlights the study team's goals and needs. The Roaring Fork Watershed Collaborative – Water Committee is interested in learning more about how other collaborative resource management groups have organized themselves, with what activities, and how these efforts in the American West can inform RFWC – Water Committee's efforts. Chapter Two describes the current context in the Roaring Fork Watershed, in particular organizations within the watershed, environmental characteristics, and socioeconomic context.

Chapter Three describes the methodology used in this study, including an explanation of how the team chose the twenty watershed initiative case studies and the ten public awareness campaigns and educational resources to be analyzed. The chapter provides further explanation of the research and decision-making process. Appendix LL follows this chapter with the list of questions used to guide the interviews for the case studies.

Chapter Four contains the cross-case analysis, which synthesizes different approaches to organizational structure, the types of activities groups engage in, educational strategies they use, factors that facilitated success, and the challenges encountered. This chapter examines the case studies as a whole, discussing the similarities and differences.

Chapter Five brings the focus back to the Roaring Fork Watershed. This chapter applies the findings from the cross-case analysis to the specific context in Western Colorado, and then proceeds to examine the implications of these results for the Roaring Fork Watershed Collaborative – Water Committee. The team provides recommendations for RFWC – Water Committee as they move forward and begin to implement the Roaring Fork Watershed Plan.

Part II of this report contains the case studies. Chapter Six provides a more in depth look at twenty cases selected to shed light on variations between different governance structures. The case studies include a general description of the initiative, a survey of the history and evolution of the group, an explanation of the current organizational structure, activities, accomplishments, and challenges of the group, as well as lessons from each specific case.

Part III of this report includes Chapter 7 and examines public awareness campaigns and additional educational resources through ten short reports. These write-ups are intended to highlight educational efforts and strategies that could be particularly illuminating for RFWC/WC as they contemplate campaigns and programs to encourage behavior change in the watershed.

Part IV is appendices at the end of the report to provide useful documents and additional information about the case studies. In particular, the Appendix contains bylaws, Charters, Memorandum of Understandings, a collection of educational resources that might be helpful to RFWC – Water Committee, sample management plans, protocols, forms, contracts, and agreements.

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CHAPTER TWO: PEOPLE, RESOURCES AND ORGANIZATIONS IN THE ROARING FORK WATERSHED

The Roaring Fork Watershed Collaborative evolved as a regional planning effort across three counties and five municipalities on the Western Slope of Colorado. This chapter reviews the Roaring Fork Watershed Collaborative and Water Committee's history and provides a background on the environmental and socioeconomic characteristics of the watershed. Western Colorado plays an integral role in the region, providing scarce water supplies to a large segment of Colorado's population and other states. However, the Roaring Fork Watershed relies upon its water supplies to sustain ecological functioning and its vibrant recreation and tourism industries. The increasing amount of water-intensive energy extraction, population growth and uncertainties surrounding climate change will likely place additional strain on already overallocated water resources. The chapter outlines pertinent regulatory and planning issues because Colorado's prior appropriation water rights system and statewide water quality planning initiative could limit the viability of certain water management solutions. Finally, the chapter concludes by highlighting collaborative efforts at the state, regional and local levels in Colorado. These collaborative efforts offer insights into challenges the RFWC could face and contextual factors that could facilitate their progress.

ROARING FORK WATERSHED COLLABORATIVE

This research explores the history, organizational structure, challenges, activities and facilitating factors of watershed partnerships throughout the American West. To draw useful lessons from these partnerships, it is important to understand how the RFWC developed.

Eagle and Garfield Counties, the City of Glenwood Springs, the White River National Forest, the Roaring Fork Conservancy and Healthy Mountain Communities, a regional nonprofit, from the Roaring Fork Watershed attended the National Association of Counties (NACo) Stewardship Workshop in 2002 (Russell 2005). These representatives came back committed to taking a regional approach to economic and planning issues in the watershed. The workshop also provided them with $5000 to put towards regional planning issues. The Roaring Fork/Colorado Watershed Collaborative was established as an ad-hoc organization with the seed money from this workshop. The idea has been to move beyond the siloed approach taken by each jurisdiction. They have questioned in the past whether to institutionalize their ad-hoc organization, but decided against it. Randy Russell, Senior Long Range Planner for Garfield County notes, "Institutions, by their nature, try to be self-sustaining and limit themselves to a membership that has to commit over time, mostly to maintenance tasks. And, because they tend to carve out turf, they tend to be exclusionary in defining themselves" (Russell 2005).

The Water Committee is a subcommittee of the Roaring Fork Watershed Collaborative and has been the home of watershed planning efforts (Russell 2005). The RFWC – Water Committee holds meetings twice a year and maintains an email list of more than 150 people. The Roaring

Fork Conservancy, a local nonprofit, Pitkin County and the US Forest Service led the formation and development of the Water Committee.

The Water Committee started to hold regular meetings in 2005, two to four times annually. The Committee invited people to give presentations on local water resource issues at each meeting and fostered a general group discussion. Attendance was around 30 to 40 people at each of these meetings. Sharon Clarke from the Roaring Fork Conservancy (RFC), a local nonprofit organization, Rose Ann Sullivan, formerly with the Pitkin County Environmental Health & Natural Resources Department, and Andrea Holland Sears, White River National Forest, helped coordinate these meetings. Sullivan commented, "One of the things we always did was have all the different counties and municipalities just give updates on what they were doing. One of the problems I still think [exists] today is nobody knows what anyone else is doing."

The Water Committee boasts an email list of 144 people and has reached out to a number of people to actively encourage local participation. The Water Committee developed its Mission Statement in late 2005 (Water Committee 2005):

> "To assist individuals, and local, state and federal agencies and organizations in the effective planning and management of land and water uses within the Roaring Fork Watershed."

While a few people are spearheading this process, many are involved. Membership of the Water Committee includes representatives from groups listed below and examples of each group are provided.

- **5 Local** – Aspen Consolidated Sanitation District
- **20 Municipal** - City planners and City Council members
- **17 County** - County Commissioners, Pitkin County Open Space and Trails
- **7 Regional** – Northwest Colorado Council of Governments, Colorado River Water Conservation District
- **11 State** - Colorado Division of Wildlife, Colorado Division of Water Resources, Colorado Water Conservation Board
- **20 Federal agencies** - USFS, Bureau of Reclamation, Bureau of Land Management, Environmental Protection Agency, US Geological Survey, Natural Resource Conservation Service
- **43 Private sector** - Consulting firms, Blazing Paddles, ski companies
- **20 Nonprofit representatives** - Roaring Fork Conservancy, Aspen Valley Land Trust, Audubon Club, Trout Unlimited
- **1 Academic** - Colorado State University

144 Total participants

In recent years, the Water Committee transitioned from solely discussing and sharing information about water issues to thinking about how they can address these issues. The Water Committee applied for a large EPA grant in 2005, using a watershed plan completed by the regional water quality management agency, the Northwest Colorado Council of Governments (NWCCOG). Though they did not receive funding, they were inspired to better position themselves for future funding opportunities.

Partly in response to this, the Water Committee began discussing a Watershed Plan in 2006 and eventually established a Watershed Plan subcommittee. This subcommittee had the following working groups: 1) Education, 2) Watershed Plan Implementation, 3) Technical Advisory Group. They identified the following benefits of a Watershed Plan:

- A structure for continued input from and dialogue between all stakeholders
- Improved community understanding, interest, and leadership in watershed issues
- Encouragement of partnerships to identify and fund mutually beneficial projects
- Efficient use of financial resources and effective use of agency and organizational personnel
- Protection of riparian and aquatic resources
- Provides available watershed information and data to all stakeholders
- Collaboration on applications for major grants
- Collaboration on public outreach and education efforts
- Provides a mechanism to transfer information

The Water Committee established a timeline for the Watershed Plan, dividing it into two phases. They realized that they needed a base of technical data about the watershed and decided to gather and synthesize this information in Phase I of the planning process. From 2006 to 2008, the Water Committee developed the *State of the Roaring Fork Watershed Report* (SOWR).

Notably, all the municipalities and counties agreed to contribute money to compile the data needed and write the report. Each of the five municipalities contributed $5,000 and each of the four counties gave $10,000 to the effort. The SOWR summarizes existing data and studies, providing a comprehensive understanding of the watershed. The Ruedi Water & Power Authority (RWAPA) was strategically selected as the sponsor of the Watershed Plan because it is a consortium of the counties and municipalities already involved in water resource planning.

In 2005, the Colorado General Assembly passed "The Colorado Water for the 21st Century Act," Colorado's first step towards long-term water supply planning (CWCB 2010). The Act established the Interbasin Compact Committee (IBCC) and 9 Basin Roundtables, representing each of the eight river basins and the Denver metropolitan area. The IBCC is a committee with representatives from each basin and has the authority to resolve water supply disputes between them. The Colorado Water Conservation Board (CWCB) manages this statewide planning process. Generally, the CWCB is responsible for administering treaties and compacts, water supply and flood protection, conservation and drought planning as well as education. The CWCB helps finance water resource projects by providing low-interest loans for water development projects. Colorado law also requires the CWCB to protect instream flow and natural lake levels, which at times conflicts with its other responsibilities.

Each Basin Roundtable is developing a needs assessment to identify their 1) consumptive water needs, 2) non-consumptive water needs, 3) available water supplies, and 4) any proposed water projects that could help fulfill water supply needs in the future. Optimistically, Colorado will be able to meet 80% of its municipal and industrial supply needs in 2030 (CWCB 2007). In March 2007, the Colorado Water Conservation Board (CWCB) approved a grant of $40,000 for Phase I

of the Roaring Fork Watershed Plan. When complete, the Roaring Fork Watershed Plan will be integrated into the Colorado Basin Roundtable's assessment of the consumptive and non-consumptive water supply needs for the Colorado River Basin.

RWAPA contracted with the Roaring Fork Conservancy to complete the document. RFC is the lead consultant for the watershed planning process, but sub-contracted local consultants and experts to help with the effort. RFC is also the lead consultant for the *State of the Roaring Fork Watershed Report*.

The *State of the Roaring Fork Watershed Report* was published in December 2008. The Water Committee stopped its regular meetings when the SOWR was released and began to focus its efforts on Phase II of the Plan. A new Technical Advisory Group (TAG) was formed and is using the information gathered in the SOWR to compile objectives and recommendations for the Watershed Plan. The TAG is a 33-person multi-disciplinary group representing the various entities and agencies involved in water resource management in the watershed.

The objective of Phase II is to specify project/program areas and propose potential policy and planning solutions so that County and City planners (and other stakeholders) can use the documents to justify expenditures or incorporate these specifics into master planning efforts. For example, planners are not always intimately aware of water issues and could benefit from these resources. In 2009, the CWCB approved another $40,000 for Phase II of the Watershed Plan. Bob Schultz, a facilitator, was hired by RFC to lead a series of public meetings in five Valley locations during the fall of 2009. At these meetings, the Roaring Fork Conservancy and others presented the key findings from the *State of the Watershed Report* and Schultz and members of the Technical Advisory Group helped solicit public input on a series of key water resource issues. The public's responses is being integrated into the Watershed Plan.

The TAG is currently drafting objectives and recommended actions for the Watershed Plan. The draft recommended actions outline a set of broader goals and identify a series of objectives to address each of the goals. These objectives are broken down into specific actions and assign

Figure 2.1: Draft Recommended Action Example (Water Committee 2010)

Goal: To ensure that solutions to water management issues meet both our consumptive needs for water and the need to keep water in our rivers and streams for instream uses.

Objective: Ensure that Roaring Fork Valley decision makers pursue strategic opportunities to secure beneficial stream flows in the Roaring Fork Watershed whenever possible, striving to achieve a unified & cooperative watershed - wide approach within the framework of Colorado Water Law.

Summary of Action Required: Investigate the potential impacts of the perfection of conditional water rights on stream flows.

- *Priority*: High
- *Lead Entity(ies)*: RWAPA
- *Responsible Party(ies)*: Colorado State University, local jurisdictions

responsibility for their implementation to a set of entities (for example, see Figure 2.1). Once the TAG is finished reviewing the draft recommendations, they will be available for public comment and weaved into a broader Watershed Plan. Two guidance documents were also produced, *Why the Roaring Fork Watershed Plan Matters* in 2008 and *Illuminating the Way Ahead* in 2010. The first one tries to galvanize interest in the Watershed Plan while the last one outlines a suite of regional planning and policy tools.

Leading the Watershed Planning Process

Both the Roaring Fork Conservancy and the Ruedi Water & Power Authority are leading the Roaring Fork Watershed planning process. RWAPA is the Watershed Plan's sponsor and RFC is the lead consultant. These organizations and their staff have been instrumental in the plan's progress and could have some role in its future. Consequently, a brief description of each of these organizations is provided below.

Roaring Fork Conservancy

RFC has been involved in education, environmental assessment and planning efforts for the Roaring Fork Watershed Plan. Not only is RFC the lead consultant for the Watershed Plan, but RFC is also identified as the lead entity in many of the recommended actions pertaining to education. RFC has already integrated many of the Phase II objectives into its current initiatives. Since RFC has an extensive education program and will likely spearhead any Watershed Plan implementation efforts with regards to education, a brief summary of their education program and needs is also provided.

Organization

The Roaring Fork Conservancy was founded in 1996, as a 501(c)3 nonprofit organization. Their mission is "to inspire people to explore, value and protect the Roaring Fork Watershed" (RFC 2010). RFC is an active land trust and member of the Land Trust Alliance. They conserve riparian habitat in critically affected areas of the watershed through property acquisition and conservation easements. RFC also conducts research, stream flow surveys, stormwater assessment and water quality monitoring. Every five years, the Conservancy publishes a *Water Quality Report*. As previously mentioned, RFC was the lead consultant for the *State of the Roaring Fork Watershed Report*. RFC also organizes stewardship volunteer opportunities for restoration projects and river clean-ups.

Education

The Roaring Fork Conservancy has a robust educational program. Their programs typically include a field-based component and are designed to be fun, age-appropriate and innovative. They initially focused their outreach on educating children in local schools, but have recently expanded their focus to include adult education programs. RFC put together a voter's guide for water issues in the Roaring Fork Watershed that was distributed in November 2010 before the elections and is available on their website (RFC 2010).

The Roaring Fork Conservancy has embraced many of the Watershed Plan's priority issues (water quantity, riparian and instream areas, water quality) and uses these to focus its education and outreach efforts in the watershed. The RFC uses several techniques to educate its targeted audience and general public:

	Targeted	General Public
Direct	Presentations Float Trips Targeted Presentations School Programs Trainings	Explorations Watershed Exploration calendar, River Days Fryingpan River Cleanup
Indirect	Newsletter River Notes Window Displays RFC brochure with inserts	Website articles Videos (YouTube)

Roaring Fork Conservancy plans to continue their school programs and adult programming. However, they would like to acquire additional staff and resources to launch public awareness campaigns. RFC envisions a series of campaigns over several years with multiple partners. They plan on prioritizing these campaigns based on the recommended actions in the Roaring Fork Watershed Plan. Each campaign will take on a different structure depending on the water issue and intended audience.

RFC has never collected baseline data about their target audience or monitored the success of their education efforts because it has limited staff and resources to do so. RFC has struggled to decide which behavior changes and actions they should promote to protect the region's waterways. While they have identified goals, objectives, and target audiences, they now need to work on developing a communication action plan, specific messages, funding as well as a monitoring and evaluation plan. They are considering hiring an advertising agency to develop successful slogans and taglines that stay in the minds of watershed residents.

Ruedi Water and Power Authority

As previously mentioned, Ruedi Water and Power Authority (RWAPA) is the lead sponsor of the Watershed Plan and holds a unique role in the watershed. RWAPA provides local input on the regional Water Quality Plan, prepared by the Northwest Colorado Council of Governments (RWAPA 2010).

Ruedi Water and Power Authority was founded in 1981 by Pitkin County and the City of Aspen to develop hydropower at Ruedi Reservoir (RWAPA 2010). RWAPA now brings together elected officials from three counties and five municipalities to provide a voice that speaks on behalf of the entire valley on a broad range of water issues. RWAPA is recognized regionally, statewide and nationally as representing the water-related interests of the Roaring Fork, Crystal and Fryingpan Valleys. Its members include Pitkin, Eagle and Garfield Counties as well as the cities of Basalt, Aspen, Snowmass Village, Carbondale and Glenwood Springs. RWAPA has one employee, its Director, Mark Fuller. RWAPA is a forum for local communication and

coordination; its represents the Valley's interests to other agencies, and sponsors watershed-level projects and programs.

Given its responsibilities, RWAPA regularly consults with decision-makers and Colorado water policy-makers, including Colorado River Water Conservation District and the Bureau of Reclamation. The operation of Ruedi Reservoir is one focus area for RWAPA.
Ruedi Reservoir holds over 100,000 acre-feet of water and this water can supplement Western Slope water supplies (for example for future development needs), replace diverted water, as well as manage water for recreational interests and endangered aquatic species.
Notably, Ruedi Reservoir has 16,700 acre-feet of uncontracted water (Clarke et al. 2008). Consequently, RWAPA is an integral part of most water project discussions on the Western Slope. RWAPA is also in tentative talks to use Ruedi Water for part of another transmountain diversion called Homestake II, which would divert additional water from the Roaring Fork Watershed to Front Range cities, specifically Aurora and Colorado Springs (RWAPA 2010).

Given the large role both RWAPA and RFC have had in the watershed planning process, many members identified them as logical organizations to implement the Watershed Plan. While RFC and RWAPA have worked well together and have a great partnership, neither have the current capacity to fulfill this role. RWAPA also has political affiliations and does not currently require anything of its members. When approached with this idea, Mark Fuller responded,

> "I think if the Water & Power Authority acted a little more formally as a forum for addressing specific aspects of the plan that involved coordination between local governments, if you drew its sphere fairly narrowly, that could be effective. It would really be doing what it is doing now, except on a more predictable formal basis… that could work."

NATURAL RESOURCE CONTEXT

The next section will describe the natural setting and socioeconomic characteristics of the watershed. This context should provide an understanding of the resources the Water Committee is trying to protect and the complexities of planning.

The Rocky Mountains cut through the state of Colorado, dividing it in half. The Western Slope has the majority of the state's water resources while much of the political and economic power lies to the East (Nichols, Murphy, and Kenney 2001). Eighty-two percent of the population resides on the Front Range, compared to 11% on the Western Slope (Summit and Adams 2009). The Front Range refers to population centers, like Colorado Springs, Pueblo and Denver, located just east of the Continental Divide, but does not include the entire eastern half of the state. The Roaring Fork Watershed is 1,453 square miles and located on the Western Slope of Colorado (Clarke et al. 2008). Both the Fryingpan and Crystal River flow into the main stem of the Roaring Fork River, which later joins the Colorado River. The Roaring Fork River is the second largest tributary of the Colorado River in the state, contributing nearly 1 million acre-feet per year to it. Colorado is a "headwaters" state and while it is party to nine interstate water compacts, the most significant ones for the Roaring Fork Watershed are the 1922 and 1948

Colorado River Compacts (Nichols, Murphy, and Kenney 2001). Seven states rely upon the Colorado River to meet their water supply needs and these Compacts determine the allotments for each state. Pre-1922 water rights are extremely valuable in the region because under the prior appropriation water law system, they cannot be "called" by the Colorado River Compact. The Colorado River Compact is a senior water right that must be satisfied before any junior rights.

Transmountain diversions move water from one river basin to another often through a series of tunnels and storage reservoirs from the Western Slope to the eastern side of the state. They are a large concern for residents of the Western Slope as the state's population continues to grow. The Roaring Fork Watershed currently has three transmountain diversions, the Fryingpan-Arkansas Project, the Twin Lakes Independence Pass Transmountain Diversion System and the Busk-Ivanhoe Project (Clarke et al. 2008). The Fryingpan-Arkansas Project is the largest of the three diversions, moving an average of 51,000 acre-feet each year to the Front Range. The water transfers are part of a large complex system that the *State of the Roaring Fork Watershed Report* explains in detail. However, it is important to note that these systems are allowed to divert more water than they actually do. It is unclear whether these diversions are constrained by storage on the east side or water supplies at the headwaters. To complicate matters, several interests own "conditional" water rights that have not yet been developed, some of which were obtained with future water projects in mind. Should the owner of these rights perfect and begin to use them, it will further complicate water resource management in the watershed.

Currently, the state's population is slightly less than 5 million and is expected to double by 2050 (Driscoll 2010). Municipal and industrial demand will fuel the state's need for new water supplies. While there are concerns about increasing water demand on the Front Range, the Roaring Fork Watershed is also expecting a 24% increase in population from 2000 to 2010 (Clarke et al. 2008). Ninety-two percent of the water withdrawn in the state from surface and groundwater supplies agriculture (Summit and Adams 2009). While historically agriculture has played a large role in the Western Slope economy, it currently relies more on recreation and tourism (Nichols, Murphy, and Kenney 2001). Only 2.4% of the Roaring Fork Watershed is agricultural land, but this land is largely concentrated along rivers (Clarke et al. 2008).

Climate change introduces another complexity into Colorado's water supply future. While precipitation projections vary, decision-makers and planners should prudently anticipate reductions in water supply (Ray et al. 2008). These potential decreases range from 6% to 20% by 2050. Temperature increases will likely change the seasonal availability of water as well, which could have significant ramifications for the economy.

Riparian habitat degradation also deserves the attention of watershed planners and land managers in the Roaring Fork Watershed. While 76% of the watershed is federal land, 68% of land within 150 feet of all streams within the Roaring Fork Watershed is privately owned (Clarke et al. 2008). About 85% of all wildlife in Colorado spends part of their life within the riparian zone, yet only 1% of the land in Colorado is riparian. Healthy riparian areas reduce pollution, reduce flooding, reduce stream bank erosion, protect fish and wildlife habitat, provide economic benefits, and increase property values. People visit and move to the area to catch a glimpse of the area's unique and abundant wildlife.

An examination of setback distance in each of the four counties provides a telling example of the regional planning difficulties in the Roaring Fork Watershed. A setback is how far from the river a landowner is allowed to alter the natural habitat (e.g. cut trees, build a house). Setback distances are different for each of the four counties within the Roaring Fork Watershed. In Pitkin County the setbacks are 100 feet for streams and 25 feet for isolated wetlands and riparian areas. The setback is 30 feet in Garfield County. In Eagle County, the setback is 75 feet or the area of the entire 100-year flood-plain, whichever is greater. In Gunnison County, a riparian buffer is voluntary and up to the property owner (Clarke et al. 2008). Unfortunately, setbacks also require an element of enforcement that most local governments lack. Homeowners rarely distinguish between the vegetative buffer and their own property. These issues add layers of complexity to riparian habitat protection and management.

The *State of the Roaring Fork Watershed Report* recognizes that little data exist regarding groundwater quality and quantity in the watershed (Clarke et al. 2008). Nonetheless, a significant portion of the population in the four counties depends upon onsite wastewater treatment systems (a/k/a septic systems), common in rural areas. The state does not account for these groundwater withdrawals, instead any regulation of these systems occurs at the County level, as highlighted in the Guidance Document, *Illuminating the Way Ahead* (Driscoll 2010). Failing septic systems also jeopardize groundwater water quality. The sheer number of septic systems increases the likelihood of this occurrence. While the state issues minimum standards for location, construction and performance of these systems (CDPHE 2006), a responsibility exists at the local level to encourage maintenance and prevent contamination.

The energy industry is notably eyeing the Western Slope's water supplies for future oil shale development. Exxon has the largest single contract for water in the Ruedi Reservoir (Clarke et al. 2008). Studies have estimated that 1.5 to 1.8 trillion barrels of oil could be recovered from oil shale in the area (URS 2008). Oil shale extraction is expensive and interest in its development fluctuates with the price of oil (Andrews 2006). Hydraulic fracturing is used to allow oil and gas to move freely within the rock and be pumped to wells (USEPA 2010). Water and fluid chemicals are also injected into the rock during this process and referred to as "flowback." The flowback must either be treated before being released to surface waters or it is injected back underground. To promote domestic energy development, the 2005 Energy Policy Act included a hydraulic fracturing exemption from the Safe Drinking Water Act. While public concerns over the environmental and public health impacts of natural resource extraction could change Garfield County's stance on regulation in the future, Garfield County did form the Energy Advisory Board in 2004 to address any conflict between citizens, landowners, local government and the oil and gas industry (Garfield County 2010).

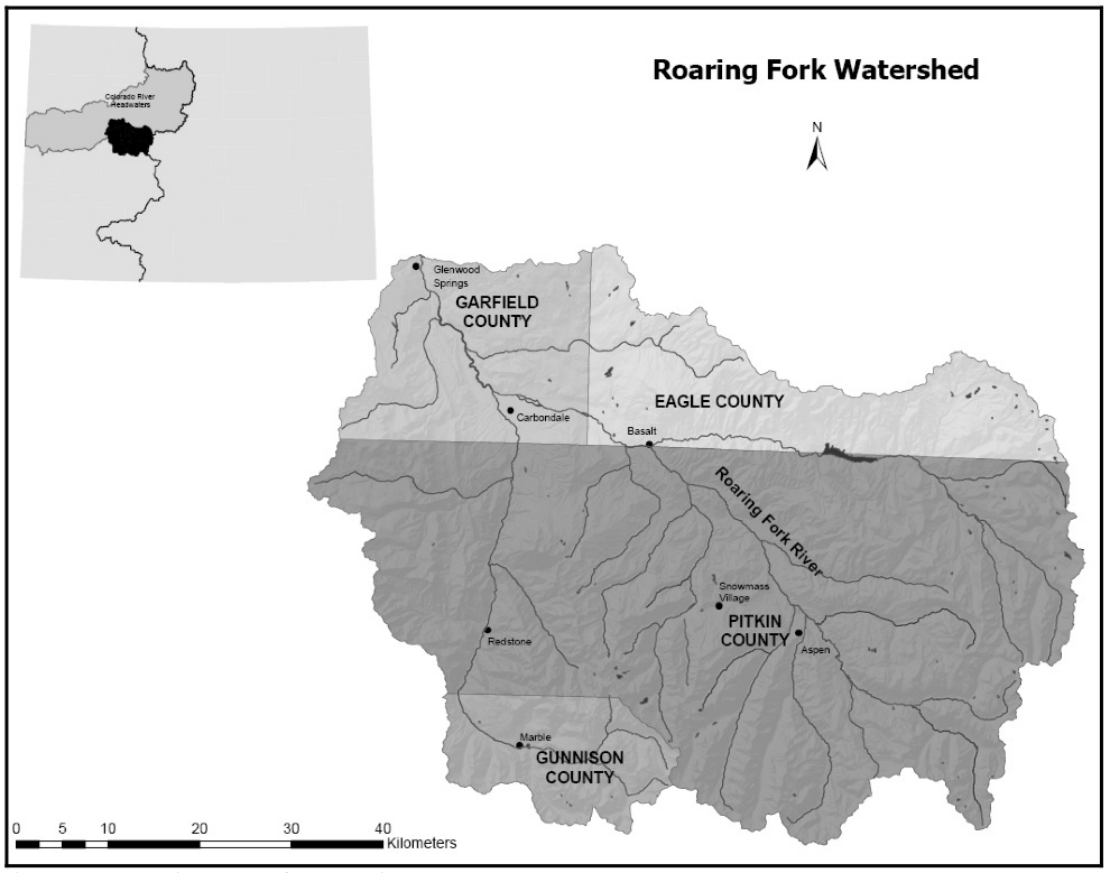
SOCIOECONOMIC BACKGROUND

Four counties make up the Roaring Fork Watershed: Garfield, Pitkin, Gunnison and Eagle. Pitkin County is located entirely within the Roaring Fork basin and has an estimated population of over 16,000 people (US Census Bureau 2010). Eighty-eight percent of the population is Caucasian, 9% are Latino, and 57% of the population over 25 years of age has a Bachelors

degree. Garfield County's estimated population is around 56,000 people, 70% of the population is Caucasian, 26% are Latino and 24% of the population over 25 years old has received a University degree. Garfield County recognizes that it has a substantial immigrant population with limited English skills that is probably underrepresented in official statistics (BBC Research & Consulting 2007). Garfield is a large, rural county that extends beyond the boundaries of the watershed. Eagle and Garfield County both occupy between 10% and 15% of the watershed (Clarke et al. 2008). Gunnison is also a large county, but has a relatively small isolated portion of land within the watershed. Major municipalities in the Roaring Fork Valley include Glenwood Springs, Carbondale, Basalt, Snowmass Village and Aspen.

People flock to Pitkin and Eagle County for their recreational opportunities. A 2006 NWCCOG study found that 51% of Pitkin County and 46% of Eagle County homes belong to second homeowners (Clarke et al. 2008). The Roaring Fork Watershed also has the longest stretch of Colorado's Gold Medal trout fishing waters in the state. Tourists also come to the area to fish, kayak, raft, ski, hike and camp.

In contrast, Garfield County's economy is much more diverse and draws an increasing amount of revenue and jobs from natural gas development. Overall, Garfield County takes a more noninterfering approach to local government regulation. The County does not regulate the oil and gas industry, but is one of 48 counties, along with Pitkin and Gunnison, that serve on the Colorado Oil & Gas Conservation Commission (COGCC); the Commission issues drilling permits across the state (COGCC n.d.).



ECOSYSTEM THREATS

From the natural resource and socioeconomic context, the following major threats can be identified. The Watershed Plan categorizes these threats into three main water resource topics, water quantity, riparian and instream areas, as well as water quality.

- **Water Quantity –** Instream flow threatened by population growth, future inbasin and transmountain diversions, natural resource extraction and climate change
- **Riparian and instream areas –** Habitat degradation from activities such as development, land use impacts, and impacts to wildlife from such things as habitat loss, aquatic nuisance species, sediment issues, hybridization and climate change.
- **Water Quality** – Point and non-point source pollutions such as wastewater treatment plants, onsite wastewater treatment systems and oil and gas development, and decreased water supply for dilution.

These ecosystem threats are the reason many people in the Roaring Fork Valley have supported the watershed planning process. People want to maintain their quality life and these issues threaten economic livelihoods, social fabric, recreational values and ecological function in the Roaring Fork Watershed. The Water Committee is a way to address these issues in a coordinated manner that will have a larger overall impact than similar individual efforts.

WATER QUANTITY & WATER QUALITY REGULATION

The Water Committee's watershed planning process seeks to improve water resource management within the context of state water laws and rights. Regulation at the state level may limit the viability of certain solutions. A brief background on water law is provided, followed by a discussion of regional water quality management issues.

Water Law

Watershed organizations are often required to navigate state water laws to accomplish their objectives. Consequently, a brief water law summary is provided. Water law varies by state, but can be lumped into three general categories, *riparian, prior appropriation,* and *hybrid*. *Riparian* water rights come with land adjacent to the water resource and are indefinite. Colorado operates under the *prior appropriation* doctrine; surface waters and hydrologically connected groundwater aquifers are private property, a commodity that can be bought or sold independent of the adjacent land (Johnson 2009). Prior appropriation has a system of seniority where a senior right bought "first in time" can "call" the river to satisfy their demands before any junior rights. The water must also be put to "beneficial use" which changes from state to state, but is generally a list of what the water can be used for and any additional protections it might have. For example, the Colorado Constitution lists domestic, agricultural and manufacturing use in order of importance. In 1973, instream flow was added as a beneficial use. Unfortunately, prior appropriation water law does not encourage efficiency (Nichols, Murphy, Kenney 2001). Abandonment is one of the ways a water right holder can lose their water right. If the water right

has not been used, "non-use" is proven, or if the water is not being put to beneficial use, the water right holder can be charged with intent to abandon (Johnson 2009). Notably, only the Colorado Water Conservation Board can currently hold instream flow rights for the purposes of environmental protection (Nichols, Murphy, Kenney 2001). A *hybrid* system includes aspects of both riparian and prior appropriation. States have this amalgamation because they generally began with riparian and later adopted the prior appropriation system (Johnson 2009).

Water Quality Planning

Nationwide, water quality and quantity planning is moving towards a more holistic approach. The US Environmental Protection Agency (EPA) recognizes the limitations of point-source focused programs and actively supports watershed assessment and planning. The Colorado Water Quality Control Commission is the state agency charged with developing Colorado's water quality policy (CDPHE 2006). Section 208 of the Federal Clean Water Act also requires state Governors identify areas of the state that have significant water quality problems (Clayshulte 2010). The Governor has the option of designating regional planning agencies to meet the requirements of Section 208 (CDPHE 2006). Colorado is carved into 14 geopolitical planning units and has designated five regional water quality-planning (Section 208) agencies. For Pitkin and Eagle County, the Northwest Colorado Council of Governments (NWCCOG) acts as the regional water quality management agency. NWCCOG is a voluntary association of municipal and county governments that includes Jackson, Summit, Grand, Eagle and Pitkin Counties and 23 municipalities (NWCCOG 2010). NWCCOG uses membership dues to leverage public and private grants for a number of programs including weatherization, emergency relief, economic development, and water quality management. All other counties that do not fall under these regional planning jurisdictions, like Garfield and Gunnison, are managed directly by the state's Water Quality Control Division, working with local governments.

Colorado is required by the Clean Water Act to provide a state wastewater management plan (Clayshulte 2010). Acknowledging its limited capacity to meet this demand, the state delegated this responsibility to the section 208 management agencies charged with producing area-wide wastewater management plans. These area plans are approved by both the state and the EPA and alleviate the need for state planning in these areas to comply with Section 208. However, local governments have been shouldering the cost for wastewater management and planning, creating tension between state and local government. The Denver Regional Council of Governments is the largest section 208 planning agency in the state and recently approached the Colorado Water Quality Division about financial resources for future planning.

Some of these planning agencies could be redefined in terms of watershed boundaries instead of geopolitical boundaries. While Colorado has voiced its support for a watershed approach, the state's standards and classifications are still issued for stream segments in a piecemeal fashion (Clayshulte 2010). While a more local integrated approach would be ideal, it puts significant demands on the state. Having many smaller watershed units to work with taxes the state's human resources. The Water Quality Control Division does not have the capacity to plan at the local level. Instead, the state prefers to aggregate smaller watersheds into larger basins.

In 2010, the Water Quality Control Division announced that, for the first time, it will adopt a state wastewater management plan and hold hearings on it (Clayshulte 2010). The state plan will become the umbrella framework that takes precedence over all other watershed plans that have been adopted. The state plan will be re-examined every 5 years, which assumes a much more static environment than actually exists. They have not yet indicated how this plan will recognize other watershed management plans and entities. The state's new top-down approach towards planning and management also undermines local opinions and expertise on land use planning. While the state is trying to simplify the process, it may find that local governments push back and ask for a return to a bottom-up approach. Russell Clayshulte, the Bear Creek Watershed Association Manager and former DRCOG Principal Water Resources Planner noted, "We have had work groups in place, but in the end, the Water Quality Control Division makes the decision. Staff and the local workgroups have in the past worked really hard to resolve issues, but we're not really seeing that going on in the current political climate."

COLLABORATIVE EFFORTS

The Water Committee's efforts are not occurring within a vacuum. Organizations are pursuing collaborative solutions as a means of dealing with limited resources and an alternative to conflict. This section explores collaborative efforts at the state, regional and local level and highlights existing and emerging resources.

State-level

While the state is ultimately the regulatory agency, the growing number of watershed organizations attests to the local interest in managing this scarce resource. The Colorado Watershed Assembly (CWA) was formed to exchange resources and open the lines of communication between the increasing numbers of watershed groups in the state (Colorado Watershed Assembly 2010). The Assembly is a 501(c)3 nonprofit that advocates for participatory planning on behalf of more than 70 watershed groups across the state. The CWA also provides small grants to these watershed groups. The CWA provides this money on behalf of the Colorado Healthy Rivers Fund, a state program that accepts donations from residents' tax returns. Notably, many of the Colorado partnerships studied in this report have received support from the CWA. Given its 501(c)3 status, the Roaring Fork Conservancy received grants from the CWA on behalf of the Water Committee in four out of the past six years.

Regional

While the counties all have different philosophies, Eagle, Garfield and Pitkin have all been willing to contribute and participate in the water planning process (Fuller 2010). In the past, the region has been able to successfully resolve a regional transportation problem. Eagle, Pitkin and Garfield counties developed a regional transportation network to help Garfield County residents commute to service industry jobs in Pitkin and Eagle Counties. The network is also a viable means of mass transit, a rarity in such rural contexts.

Roaring Fork Transportation Authority

Garfield County provides a large amount of affordable housing for those that work in more expensive Eagle and Pitkin Counties' service industry, but the region lacked a transportation network for workers to reach the employment located in the ski towns. The Roaring Fork Transportation Authority (RFTA) is one of the largest, intergovernmental efforts undertaken on the Western Slope of Colorado. The project grew organically in the 1970s and 1980s, from separate in-town bus services in Aspen and Pitkin County (Richards 2010). The City of Aspen and Pitkin County passed a countywide one-cent sales tax ballot initiative in 2000 to fund transportation services. RFTA was able to bring additional jurisdictions on board with their transportation initiative, after publishing a detailed study and analysis. The study found that over 50% of the riders never went all the way to Aspen. The study also indicated that people were commuting more between each of the valleys than anyone had previously suspected. People living in Glenwood Springs and Carbondale were taking the bus up to work in Aspen and Snowmass Village. Having this empirical data prompted greater buy-in from Garfield County (Richards 2010). RFTA demonstrates the watershed's ability to successfully collaborate on regional issues over the long term. The RFTA process is the foundation for the Roaring Fork Valley to rally behind a common vision and work through their regional challenges.

Local

Several local initiatives indicate the desire and utility of a regional watershed plan. Pitkin County became the first entity to attempt to temporarily lease water rights with the State of Colorado in 2009. Pitkin County also recently established the Healthy Rivers and Streams Fund, a sales tax to improve water quality and quantity in the Watershed.

Instream Flow Rights

The Colorado Water Trust was formed in 2001 to help the Colorado Water Conservation Board acquire and manage both permanent and voluntary contributions to instream flow (Colorado Water Trust 2010). As previously mentioned, the CWCB is the only body in the state allowed to hold instream flow rights. In November 2009, Pitkin County was the first entity in Colorado to put its water in trust with the CWCB. Pitkin County worked with the Colorado Water Trust and the CWCB to transfer water rights from Pitkin County Open Space & Trails to instream flow.

The Stapleton Brothers Ditch water right owned by Pitkin County pre-dates the 1922 Colorado River Water Compact, which means that states downstream of Colorado, including Arizona, California and Nevada, could not demand that Colorado send the 4.3 cubic feet per second (cfs) of water to them in a drought situation (Gardner-Smith 2009). Rachel Richards, Pitkin County Commissioner, said the trust agreement with CWCB would create a "safe place to park" the county's water rights. The water is no longer being used by the County to irrigate its open space lands; those lands are now being managed as natural areas (Richards 2010). The trust agreement requires that Pitkin County leave its water rights with CWCB for a minimum of 10 years (Gardner-Smith 2009). Afterwards, the agreement preserves the County's right to pull out its water rights if needed. The trust also has a provision for Pitkin County to transfer an additional 34 different water rights, equal to about 20 cfs. The County can also add water rights to the trust

acquired through the Healthy Rivers and Streams Fund.

Healthy Rivers & Streams Fund

Pitkin County voters passed a ballot initiative in November 2008 to establish the Healthy Rivers and Streams Fund using a 0.1% sales tax. The sales tax provided the Fund with close to $700,000 in revenue for the 2010 fiscal year (Healthy Rivers and Streams Fund 2010). The Healthy Rivers and Streams 7-member Board was established to help the Board of County Commissioners to make informed decisions regarding the Fund's budget (Healthy Rivers and Streams Fund 2010). The Healthy Rivers & Streams Fund will undoubtedly be a valuable resource for the Roaring Fork Valley.

Goals of the Healthy Rivers & Streams Fund (Healthy Rivers & Streams Fund 2010):

1. Maintaining and improving water quality and quantity within the Roaring Fork Watershed
2. Purchasing, adjudicating changes of, leasing, using, banking, selling, and protecting water rights for the benefit of the Roaring Fork watershed
3. Working to secure, create and augment minimum stream flows in conjunction with non-profits, grant agencies, and appropriate State and Federal agencies to ensure ecological health, recreational opportunities, and wildlife and riparian habitat; promoting water conservation
4. Improving and constructing capital facilities that contribute to the objectives listed above.

Eagle County

The Roaring Fork Watershed Plan has been modeled on the Eagle River's planning process. The two watersheds share many characteristics and Eagle County is an active participant in the Roaring Fork Watershed planning process. Although the Eagle River Watershed is located entirely within one county, Eagle, the Eagle River Watershed's history below describes a set of challenges with which the Roaring Fork Watershed might have to contend.

Since the late 1960s, Eagle River had been working to clean up a heavy metals mine that eventually became a Superfund site (Merry 2010). The Superfund Act makes funds available to local, community-based groups for technical assistance and local education initiatives. The Eagle River Environmental Business Alliance (EREBA) formed to monitor mine clean-up and applied for this money. During the mid-1990s, development pressure and sediment loads from winter sand applications were also having an impact on water quality in the Eagle River basin. Eagle County applied for a National Park Service grant made available to improve recreational opportunities, hoping to use the funds for watershed planning. They invited all interested parties to the initial scoping meetings. At these meetings, the participants included local planners, developers, water and sewer providers, and Colorado Division of Wildlife experts among others. Together they were able to identify a set of local values they wanted to protect in their watershed plan: water quantity, water quality, recreation, wildlife and land use. Ray Merry, Environmental

Health Director for Eagle County remarked, "the Eagle River is seen as the lifeblood by everyone that lives in this Valley. There's a heartfelt love for it, no matter if you are a developer or a rancher." Merry has been very involved in the Eagle River Watershed Plan and also sits on the Roaring Fork Water Committee's Technical Advisory Group. After three years of facilitation and planning, the Eagle River Watershed Plan was adopted in 1996 by Eagle County. However, the Watershed Plan is not a set of mandatory rules and regulations for local jurisdictions, instead they provide guidance. Implementation of the Watershed Plan has been difficult for the municipalities and Eagle County. Land is also sold at a premium in the riverside areas of towns like Vail, much like Aspen. Unincorporated portions of Eagle County have had a much easier time integrating guidance.

By the 1990s, clean-up efforts had substantially improved the mine site and the EREBA was looking for an identity. A group of concerned citizens, from EREBA and other local groups, agreed to change their mission and take on implementation of the watershed plan. Ray Merry applied for a US EPA Nonpoint Source 319 grant from the state's Nonpoint Source Council to hire a part-time Coordinator and help them get started. In 2004, they became the Eagle River Watershed Council and received 501(c)3 tax-exempt status. The Watershed Council worked with Colorado State University to conduct an assessment and inventory of the Eagle River. The Council's activities include streambank restoration, invasive plant control, and sediment reduction. The Eagle River Watershed Plan is currently undergoing an update.

CONCLUSIONS

The Watershed Plan's goals, objectives, and recommended actions stem from a comprehensive understanding of the Roaring Fork's natural resource and socioeconomic characteristics. However, the sheer number of involved entities and resource and jurisdictional boundaries of these entities complicates meeting these objectives and accomplishing the actions. Education and outreach activities lay the foundation for the public and involved entities to understand existing conditions (including the relationship between land use activities and water quantity and quality issues), threats, and motivating them to take action. Regional water resource management comes with a set of challenges requiring knowledge of the complicated issues and collaboration. This report will illuminate the lessons of other watershed partnerships in the Western U.S. These lessons will help inform the Water Committee's implementation of the Roaring Fork Watershed Plan.

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CHAPTER THREE: METHODOLOGY

I. SELECTION OF CASE STUDIES: ORGANIZATIONAL STRUCTURES OF WATERSHED SCALE COLLABORATIVE INITIATIVES

Watershed partnerships form, evolve, and sustain themselves in a variety of ways. To adequately explore the unique decision-making structures and circumstances of these partnerships, the research group developed a case study approach that examined: how and why they formed, who participated in formation and continues to participate, how they are organized and make decisions, what facilitates accomplishments, and what challenges were encountered. Case studies allowed for an in-depth analysis of each partnership, their similarities, differences and relevance to the Roaring Fork Watershed Collaborative – Water Committee (RFWC/WC).

The study's ultimate objective is to develop recommendations for RFWC/WC about how they might organize their efforts to advance their long-term goals of watershed protection, conservation, and restoration. Discussions with RFWC/WC and research on existing watershed organizations and partnerships helped to generate a list of potential partnerships that might be studied. The study's selection criteria were used to assess each partnership's relevance to RFWC/WC. This criteria helped narrow the list to the selected case studies. These cases reflect an array of governance models with an emphasis on western natural resource management issues and western water law.

The case study approach highlighted a number of successful frameworks. A cross-case analysis of these examples allowed the group to make tailored recommendations to the Roaring Fork Watershed Collaborative – Water Committee.

The following steps were followed in developing a broad list of potential collaborative governance cases and identifying twenty organizations that warranted in-depth analysis through case studies:

1. Identify research questions based on the interests and needs of the Roaring Fork Watershed Collaborative – Water Committee
2. Preliminary case exploration
3. Establish case study selection criteria
4. Selection of case studies
5. Develop Interview Questions
6. Develop Roundtable Discussion questions
7. Develop Case Study Outline and Individual case study research
8. Conduct comparative analysis of case studies

1. Identify research questions based on the interests and needs of the Roaring Fork Watershed Collaborative – Water Committee

RFWC/WC desires a comprehensive overview of existing watershed partnerships and their governance structures in order to understand what approaches might best fit their needs and objectives. The specific questions guiding this research are:

- How did these partnerships form? How have they evolved over time?
- What are their overarching goals? What is their mission?
- What organizations or individuals are involved in them? What are the varied roles of the participants? Who are the key decision-makers?
- What authority or influence does the partnership have?
- What issues have they sought to address? What activities are they involved in?
- How do these watershed partnerships sustain themselves over time?
- How do they acquire funding and through what sources?
- What are the various ways in which watershed scale management processes are structured?
- What has been the experience with different governance models?
- What are the major similarities and differences between these models?
- What has been challenging for these organizations? How have they addressed these challenges?
- How have they used public engagement strategies to increase their effectiveness?
- What framework could be applied in the Roaring Fork Watershed, given its participants and challenges?

In order to address RFWC/WC's concerns, the research questions focused on development, evolution, and project implementation for watershed groups and partnerships.

2. Preliminary case exploration

The team began their exploration of watershed collaborative case studies through examination of existing studies[1], reports[2], scholarly articles[3], and books[4,5] that describe and assess collaborative partnerships. The Red Lodge Clearinghouse, an online database that offers collaboration

[1] Coughlin, C., Hoben, M., Manskopf, D., Quesada, S. (1999). A Systematic Assessment of Collaborative Resource Management Partnerships. *University of Michigan, Department of Natural Resources and Environment, Ecosystem Management Initiative*. Retrieved from snre.umich.edu/ecomgt

[2] National Policy Consensus Center. (2002). Watershed Solutions: Collaborative Problem Solving for States and Communities. Retrieved from policyconsensus.org/publications/reports/docs/Watershed.pdf

[3] Bommert, B. (2010). Collaborative Innovation in the Public Sector. *International Public Management Review*, 11, 15-33.

[4] Koontz, T. M., et al. (2004). Collaborative Environmental Management: What Roles for Government? Washington D.C.: Resources for the Future.

[5] Wondolleck, J. and Yaffee, S. 2000. *Making Collaboration Work: Lessons from Innovation in Natural Resource Management*. Washington, DC: Island Press.

resources, was also particularly helpful. Each team member was charged with producing an individual list of potential organizations that would then be compiled into a larger group list.

The study team conducted a wide search focusing on organizations that involved a diverse array of partners and worked on the following issues:

- Protecting water quality
- Protecting water quantity
- Ecosystem management
- Land management

The team adopted a multi-pronged approach in order to ensure that they covered all research bases. Some team members researched organizations similar to the RFC (i.e. non-profits, government agencies, and other organizations that worked to protect water quality and quantity as well as riparian land use). Other team members searched for collaborative organizations that were working to implement management plans similar to those of the RFWC/WC. Once researched and compiled, the initial list included 60 case studies.

The team indentified the following for each organization:

- Geographic location
- Mission statement
- Status (i.e. non-profit, ad-hoc, advisory, etc.)
- Partner organizations
- Evolution
- Activities
- Challenges

These attributes would provide a snap-shot of each organization, to aid in the case study selection.

3. Establish case study selection criteria

Team members met with Professor Julia Wondolleck[6] and Professor Ray De Young[7] in order to discuss potential criteria to use in sorting their 60 case studies and narrow the list to twenty. Professor Wondolleck offered advice on criteria to sort the watersheds, while Professor De Young offered feedback on sorting the educational components and techniques. The following criteria were used to select the initial pool of cases to be considered:

West of the Mississippi River – The geographic location of the case should be similar to the Roaring Fork Watershed, located west of the Mississippi River.

[6] Professor Wondolleck's research focuses on environmental decision making and the structure of policy and administrative processes that promote the sustainability of ecological and human systems. Research looks at both conflict and collaboration in the management of public natural resources, and in particular the factors that promote and sustain community based collaborative resource management processes.

[7] Professor De Young specializes in planning in foundational sustainability, motivating environmental stewardship, and maintaining human wellness.

Similar water law - The watershed of concern to the organization should be under prior appropriation, not riparian, water law similar to RFWC/WC.

> Riparian water rights are associated with land ownership. A landowner has equal right to the use if his/her land touches the body of water. Water cannot be unreasonably detained or diverted and must be returned from the body of water from which it came.[8]
>
> Prior appropriation is the doctrine of "first in time, first in right." Water right holders with earlier priority dates have the right to use water before others with later priority dates. Essentially, those who were there first using water have senior rights to those who came after or later.[9]

Similar mission and objectives - The organization's mission is similar to that of Roaring Fork Watershed Collaborative – Water Committee, with a particular focus on water quality, water quantity, or riparian land use.

Similar in scale and composition to the Roaring Fork Watershed - The scale of the watershed of concern to the collaborative and the type and number of municipalities within the watershed, were comparable to the Roaring Fork Watershed.

Contains an educational component - The organization conducts public outreach in their local schools and communities, including public awareness campaigns, stewardship initiatives, and other modes of conveying information.

At least 5 years in existence - The organization has been in place for at least five years, giving it sufficient experience to lend insight to RFWC/WC.

After the creation of the original list of 60 organizations, criteria were identified to narrow the pool to a more manageable number.

The following criteria were used to further narrow case studies:

- Advocacy organizations - Advocacy groups were defined as organizations that did not propose a management or governance structure for natural resources. These were eliminated since RFWC/WC is not an advocacy organization.
- Have long-term goals - Organizations were eliminated if formed to only work on a one-time project and then would dissolve.
- Collaboration across diverse sectors with a minimum of three - (i.e. business, industry, state/federal agencies, environmental interests). It was important to concentrate on multi-party organizations and collaboratives that provide governance and/or management structure for a natural resource.

[8] Hutchins, W.A. (1977). Water Rights Laws in the Nineteen Western States. (Vol. 3). Washington, D.C.: United States Department of Agriculture.
[9] Ibid.

- Does not cross national boundaries - the Roaring Fork Watershed does not cross into another country.

The team constructed a matrix to help compare and contrast the large pool of cases with the objective of narrowing it to a more manageable number. The following case attributes were examined in order to ensure that the twenty cases selected for indepth analysis would be relevant to the Roaring Fork Watershed Collaborative – Water Committee.

Longevity - When the initial participants first came together around an identified issue. This might be before they gained 501(c)3 status or any formal identification of the group.

- 10 yrs or less, 11-15 yrs, greater than 16 years.

Context - The geography, landscape, and water law within which these organizations occur.

- *Western* - As defined by the U.S. census bureau: the western U.S.A. includes 13 states; Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.
- *Rural* - overall watershed includes agriculture, ranching, sparse populations, large landholdings, and large tracts of wilderness area.
- *Water law* - Prior Appropriation (defined above), hybrid, riparian (defined above).
    - Hybrid- Includes the states: California, Oregon, Washington, Nebraska, North and South Dakota, Oklahoma, Kansas, and Texas. States that originally had riparian rights and transferred them into appropriative.

Formation - How the initial participants first came together under a common mission.

- *Top-Down* - State mandated or federally mandated or convened.
- *Bottom-Up* - Initiated by local community concern and efforts. Community defined as citizen, local organization, local agency, etc.

Scope - All encompassing purpose and goals of an organization to address the array of issues they face.

- *Issues* - as defined by issues facing RFWC/WC.
    - *Water Quantity*
    - *Water Quality*
    - *Riparian Land Use*
- *Purpose and Goals* - as defined as: planning and management of water resources and land within their watershed as well as balancing economic, social, and recreational needs.

Activities - Programs and projects an organization conducts as a way to meet their purpose and goals.

- *Education* - the presence of an educational program/component of the organization that deals with educating target audiences.
- *Fee Titles/Conservation Easements* - Purchase of property rights/ a legally binding agreement that limits or prevents development on property.
- *Watershed Plan* - Includes voluntary Best Management Practices (BMP) watershed plans (such as RFWC/WC's), mandatory watershed plans that have been submitted and approved by the state and/or federal EPA, non-binding watershed agreements between water users, a visioning document for future goals/uses of the water resource.

- *Restoration* - Projects and programs for stream, habitat, riparian land, and general land rehabilitation.
- *Assessment/Monitoring* - Surveys/inventories of ecosystem health
- *Lobbying* - Petitioning state or federal legislators for an organization's cause
- *Info-sharing* - Sharing of knowledge, resources, and scientific data between collaborative partners, outside organizations, communities, and universities.

The team grouped each organization by their current governance structure in order to ensure selection of set of cases that represented different organizational forms that RFWC/WC might consider. They were first classified as either government-based or community-based. Under government-based, organizations were divided into those that had authority or did not have authority. Under community-based, organizations were divided into 501(c)3s or Ad-hoc. Explanations of each type are as follows:

Government-based - Organization recognized through legislation or work within a government framework.

> **Authority -** The organization has the capacity to enforce recommendations, enforce land use codes, or assist in federal natural resource management.
>
> **No Authority -** The organization serves in an advisory role to give recommendations to one or more government agencies but does not have the ability to enforce recommendations.

Community-based – The organization was formed by local community members to address environmental degradation and/or natural resource management within a watershed or land area. These organizations are self-governed and/or non-profit.

> **501(c)3 -** Defined by the IRS as a charitable organization whose net earnings may not benefit any private shareholder or individual, eligible to receive tax-deductible contributions, however may not participate in actions that influence legislation or political candidates.
>
> **Ad-hoc -** The organization is lacking 501(c)3 status but considered a formal partnership operating under a Memorandum of Understanding (MOU) or Cooperative Management Agreement.

4. Selection of case studies

A matrix comparing each case study by current governance type and attributes (see Figure 3.1) helped illuminate which cases shared the most similar characteristics with the Roaring Fork Watershed Collaborative – Water Committee. Twenty organizations were chosen for further development. Throughout the research period the matrix was refined and edited several times as a better understanding of the organizations, the matrix definitions, and RFWC/WC's needs was developed.

CURRENT GOVERNANCE TYPE		I. Government-based							II. Community-based												
		a) Authority				b) Advisory			a) 501(c)3											b) Ad-hoc	
ATTRIBUTE (below)	NAME OF GROUP	Henry's Fork Watershed Council	Walla Walla Watershed Partnership	Fountain Creek Watershed Flood Control & Greenway District	Niobrara Council	Water Forum	Animas River Stakeholders Group	Owl Mountain Partnership	Blackfoot Challenge	Siuslaw Watershed Council	Coos Watershed Association	The Deschutes River Conservancy	Applegate Partnership & Watershed Council	Cimarron Watershed Alliance, Inc.	North Fork River Improvement Association	The Diablo Trust	Belle Fourche River Watershed Partnership	Clear Creek Watershed Foundation	Coalition of the Upper South Platte	Feather River Coordinated Resource Management Group	Cosumnes River Project and Preserve
Scale- Size of Watershed																					
Larger than RFW		X			X	X			X		X	X	X				X		X	X	
Comparable to RFW (1,200-1,700 sq mi)			X					X													
Smaller than RFW				X			X			X				X	X	X		X			X
Scope																					
Purpose and Goals																					
Economic			X	X		X		X		X	X	X	X	X		X	X	X	X	X	X
Social/Cultural		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Recreation		X		X	X	X			X	X		X	X	X	X			X			X
Environmental Issues																					
Water Quantity		X	X			X			X			X		X			X	X		X	X
Water Quality		X	X	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X
Protection of Riparian Land		X	X	X	X			X	X	X	X	X	X	X	X		X	X	X	X	X
Formation																					
Top-Down			X			X	X	X						X							
Bottom-Up		X		X	X				X	X	X	X	X		X	X	X	X	X	X	X
Context																					
Water Law																					
Prior Appropriation		X		X			X	X	X					X	X	X		X	X		
Riparian																					
Hybrid			X		X	X				X	X	X	X				X			X	X
Rural		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Western		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Longevity																					
10 years or less			X											X							
11-15 years				X	X	X				X		X			X		X	X	X		
greater than 16 years		X					X	X	X		X		X			X				X	X
Activities																					
Education		X	X	X	X			X	X	X	X		X	X	X	X	X	X	X	X	X
Info-sharing		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fee Title/Conservation Easement					X				X							X					X
Watershed Plan		X	X	X		X		X	X		X		X		X		X	X		X	X
Restoration		X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Assessment/Monitoring		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lobbying																					

Figure 3.1: Watershed Scale Collaborative Initiatives selected case studies.

5. Develop Interview Questions

The team adapted a standardized interview framework from the *Ecosystem Management Initiative Questionnaire* created by Dr. Steven Yaffee and Dr. Julia Wondolleck from the University of Michigan. It was used to conduct thorough interviews of participants in each watershed case study. Research questions listed in Part 1of the Methodology served as a basis for the interview protocol. Each interview generally lasted one-hour and was recorded for transcription or hand typed. See Appendix LL for complete interview framework. An abridged version is in Figure 3.2.

Figure 3.2: Abridged Interview Framework

Description: What was the motivation for the organization to participate in the collaborative process? What other organizations are involved? What are the major issues the partnership is focusing on?
Evolution: What programs/tasks/activities does the partnership engage in to achieve its mission? How is the partnership structured? How are the partnership and its projects funded?
Accomplishments and Challenges: What have been the partnership's major accomplishments? What are the major factors that have enabled the partnership to make progress? What have been the major challenges?
Education and Outreach: What types of education and outreach programs are used? What types of behavior changes are promoted? What types of media is used to convey educational messages?
Lessons Learned: What are the one or two most important lessons from your experience? Is there anything else you would have done differently?

6. Develop Roundtable Discussion Questions

Interview questions were prepared for the field visit to the Roaring Fork Watershed in June 2010. Three round-table discussions involving RFWC/WC participants were held for the team to gather information from those who will be ultimately responsible for the watershed plan's implementation. Nine open-ended questions were developed to facilitate a conversation about RFWC/WC. The discussions generally lasted an hour.

Roundtable Discussion Questions

1) How are you involved in the Watershed Planning Process? Do you want to be involved more?
2) Why did you become involved in the watershed planning process?
3) What do you hope is achieved in plan implementation? What would be the best thing that could come out of the planning process?
4) What are your ideas about next steps towards plan implementation? In particular, who or what do you think should take the lead in guiding implementation (i.e. An existing organization? A new organization? If new, what type of organization?)
5) What role do you see yourself or your organization playing in the next steps?
6) What do you foresee to be the major challenges associated with plan implementation?
7) To what extent do you think residents in the watershed are aware of critical issues facing the watershed, or the RFW plan? What are your thoughts on ways to build public awareness and support for plan implementation?
8) What individuals/groups should be targeted for outreach and education campaigns?
9) Is there anything else you would like to say about the watershed and/or the plan implementation process?

7. Develop Case Study Outline and individual case study research

Each team member conducted research through various methods including interviews with individuals associated with the organization, reviewing previous case studies, academic papers, publications, materials available on an organization's website. Once developed, case studies were peer reviewed by the team and finalized. Figure 3.3 contains the case study outline.

Figure 3.3: Case Study Outline

Introduction: Brief introduction to the case and its history, and what is particularly interesting or unique about it that will be showcased in the story that follows.
Background: Natural resource context and stressors.
Partnership's Beginning: Who, what, where, why, and when of the partnership's conception.
Partnership's Evolution: How the partnership has changed over time.
Organizational Structure: Key characteristics of the partnership.
Funding: What are the sources of funding?
Challenges: Issues the partnership has faced and how they have addressed them.
Accomplishments: Past and present successes.
Education and Public Outreach: Discussion of a partnership's educational component, if present.
Conclusions: Lessons learned and takeaway messages.

8. Conduct comparative analysis of case studies

In order to distill lessons and recommendations for RFWC/WC and to highlight common themes throughout the twenty cases a systematic cross case analysis was conducted. The team chose five broad topics for analysis reflecting RFWC/WC's main interests:

- **Governance Structure:** why initiatives form, composition, how they are structured, and how decisions are made?
- **Activities:** what are the predominant categories of activities the initiatives engage in?
- **Education:** what education and outreach strategies have the initiatives used?
- **Facilitating Factors:** what enables progress and accomplishments by the group and what sustains an initiative over time?
- **Challenges:** what challenges have the initiatives faced?

II. SELECTION AND ANALYSIS OF PUBLIC AWARENESS CAMPAIGNS AND EDUCATIONAL RESOURCES

Introduction

Similar to the process used to identify and analyze the organizational structures of the watershed initiatives, the study team examined public awareness campaigns to help inform the Roaring Fork Watershed Collaborative – Water Committee (RFWC/WC) education and outreach activities. The team's objective was to describe cases that promote active participation as well as short-term and long-term support for their respective issues. Case studies for the public awareness component of the project differ from the governance model analysis. Outreach strategies typically have a target audience and can change in emphasis over time. The team hoped to capture and highlight different strategies and diverse target audiences.

Methods

The team followed the steps listed below to complete research on public awareness campaigns:

1. Identify research questions based on interests of the Roaring Fork Watershed Collaborative – Water Committee in public awareness campaigns
2. Preliminary case exploration and establish case study selection criteria
3. Development of interview questions and case study format
4. Individual case study research

1. Identify research questions based on interests of the Roaring Fork Watershed Collaborative – Water Committee

The following questions were used to evaluate each campaign for relevance of RFWC/WC's educational needs.

- Objective of the campaign? Was the campaign addressing water quality, water quantity, and/or riparian land use?
- What is the geographic location of the organization running the campaign?
- Who was the target audience of the campaign?
- What was the regional scale of the campaign? National? City? County?
- What elements and tools did the campaign utilize to educate and disseminate information? (i.e. Pamphlets, website, printable materials, kid-specific materials, online store, billboards, TV/radio/newspaper ads?)
- Does the campaign offer bilingual materials or outreach to underserved communities?

2. Preliminary Case Exploration and establish case study selection criteria

A broad investigation of public awareness campaigns was conducted through consultation with faculty and peers and extensive online research. After developing a list of potential campaigns, the team felt it was important to also include research on additional educational resources,

spotlighting their successful elements to provide insight for RFWC/WC as it expands its education efforts. These were chosen for a variety of reasons including their innovative approaches to outreach, relevance to RFWC/WC, location, and past success. The additional educational materials are described in Part III.

a. Selection Process for Public Awareness Campaign Case Studies

Similar to the watershed initiative selection process, a matrix was created for the public awareness campaigns to help with case study selection. The team felt the public awareness case studies should center predominantly on characteristics shared with the RFWC/WC to provide a list of campaigns that were directly applicable. However, it was important to consider cases that offered examples of campaigns with differing messages, locations, or scales than the RFWC/WC. These educational and public awareness techniques are generic templates that can be applied universally.

The following criteria were used to select the public awareness campaign case studies:

- **Context:** The geographic location within which these public awareness campaigns occur
- **Objective:** What is being addressed by the public awareness campaign; as defined by issues facing RFWC/WC
- **Scale:** Has a comparable geographical scale as RFWC/WC (Watershed, Town/City, County)
- **Target Underserved Population:** Provide materials and outreach for the following: Black/African American, American Indian, Asian, Pacific Islander, Hispanic/Latino, low income populations
- **Issues:** Addresses as many of the RFWC/WC issues (water quality, water quantity, riparian land use)

Case Studies- Public Awareness Campaigns								
	Water Use It Wisely	Use Only What You Need (Denver Water)	Partners for Clean Water	Bert the Salmon & Natural Yard Care Campaign	Clark Fork Coalition	The Chesapeake Club	River Network	Feather River CRM
Context								
West		X	X	X	X			X
East						X		
National	X						X	
Issue								
Water Quality			X	X	X	X	X	X
Water Quantity	X	X		X	X		X	X
Riparian Land Use				X		X	X	X
Scale								
Watershed			X		X	X		X
Town/City		X						
County				X				
State	X							
Country							X	
Target Underserved Populations								
Yes	X	X	X	X			X	

Figure 3.4: Public Awareness Campaign selected case studies.

3. Development of Interview Questions and Case Study Format

The same interview questions used for the watershed initiatives case studies were used for the public awareness case studies, with an emphasis on the education section. Additional interview questions were included at team member's discretion. Similarly, the case study format was adapted from the watershed initiative format.

4. Individual case study research

Each team member conducted research through various methods including interviews with individuals associated with the campaigns or educational resource, publications, and materials available on the campaign's website.

CHAPTER FOUR: CROSS-CASE ANALYSIS

To provide the Roaring Fork Watershed Collaborative – Water Committee with observations and recommendations, the study examined twenty cases of watershed and landscape management partnerships in the Western United States. The research questions were distilled into five broad themes and used to structure the study's findings. Organizational structure, activities, facilitating factors, challenges, and educational strategies were the five themes, each serving as a lens for the cross-case analysis. The following analysis highlights both the trends and unique aspects of these partnerships. The study then makes a set of observations about the Roaring Fork Watershed Collaborative – Water Committee and provides them with recommendations. These observations and recommendations are based upon the study's findings and review of existing literature.

I. ORGANIZATIONAL STRUCTURE

A variety of initiatives were researched in order to provide recommendations and observations to the Roaring Fork Watershed Collaborative – Water Committee (RFWC/WC) on organizational structure. RFWC/WC was interested in learning about the experiences of similar groups in other watersheds, in particular:

- Why do initiatives form?
- Who is involved in the initiatives?
- In what ways are watershed groups organized?
- What is the organizational structure and how has it changed over time?
- What has been successful?
- How do the organizations make decisions?
- How do the organizations engage the general public?

The spectrum of answers to these questions will help inform RFWC/WC on the factors they might consider as they organize their efforts to implement the Roaring Fork Watershed Plan.

Why do initiatives form?

Western natural resource management collaboratives form for a number of different reasons. One common reason is the threat of federal regulation such as a Superfund designation, Wild and Scenic Area/River designation, or Clean Water Act 319(d) impaired water body listing. Some felt federal regulation could result in the loss of a local voice in resource management or working with a new entity. An example is the formation of the Animas River Stakeholders Group (ARSG). It was after the State of Colorado made it clear that new water quality standards for the Animas River would be determined with or without local involvement and the EPA threatened designating the area a Superfund Site did participants came together. The stakeholders saw it in their best interest to undertake a collaborative process, as it would more directly involve those who would be most affected by new regulations.

Another reason collaboratives form is to rectify past and/or current mismanagement of an area's resources (i.e. water, land, forests). Decades of large scale timber harvests in Oregon resulted in the population decline of many species dependent on old-growth forests. The Applegate Partnership and Watershed Council came together with a goal of cooperation among the U.S. Forest Service, Bureau of Land Management, the timber industry, environmental groups, farmers, ranchers, and community members to promote sustainable forest management and to restore ecological conditions.

Organizations can form in response to the lack of comprehensive, cohesive regional planning. Often this is due to more than one municipality, county, or state being involved in management of an area. The Roaring Fork Watershed Collaborative- Water Committee was formed with the commitment to take a regional approach versus a jurisdictional approach to a variety of issues in the watershed, including health, economic vitality, and planning. Their intent has been to move beyond the individual approach taken by each of the four jurisdictions within the watershed.

Lastly, some organizations form to provide a forum for community members, stakeholders, and participants to voice concerns and opinions. This structure also allows for information sharing of scientific studies, data, and expertise among participants. For example, in the Water Forum Agreement, participants who had only functioned in an adversarial relationship with one another in the past came together to solve Sacramento's regional water problems. By establishing a forum for communication, participants were able to share with each other their respective interests and concerns. They quickly learned they were highly interdependent and each had something the other wanted or needed. Furthermore, during the process there was time for learning facts and information about relevant water policy and technical topics.

Who is involved?

All of the initiatives researched contained a broad spectrum of participants, with a combination of the following: ranchers, farmers, private land owners, businesses, universities, local/state/federal agencies, recreationalists, and environmental organizations. A variety of participants is important when an initiative is forming and should be maintained throughout an organization's existence. This range of participants ensures input from all of those affected by a problem and to further educate them about water-related issues within the communities.

The Deschutes River Conservancy (DRC) collaborates across many different sectors including, the Bureau of Reclamation, Deschutes National Forest, Oregon Water Resources District, Central Oregon Irrigation District, Portland General Electric, The Confederated Tribes of the Warm Springs Reservation, Ochoco Lumber Company, the four counties within the watershed, William Smith Properties, Inc., recreation and tourism companies, and at-large members. By having all these groups at the table, the DRC has been able to successfully increase instream flows within the watershed which in turn has benefited all the different users of the River.

The Coos Watershed Association is unique because of the evolution of the group's composition. The original Board of Directors began as a stakeholder board with stringent representation requirements, otherwise known as the "Noah's Ark Model." Under this model, two of each stakeholder sector (i.e. rancher, farmer, recreationalists, environmental group) was required to sit

on the board. The structure of the Coos Watershed Association has changed over time. No longer do they follow the "Noah's Ark Model" because they found it to be ineffective after the initial formation of the organization. The first reason for the change was the organization progressed from a stakeholder- driven Board to one where the Board represents the interests of the organization. Secondly, due to the growth and stabilization of the Association the Board required different skill sets as opposed to requiring the Board to represent certain interests which limits the skills available. To accommodate the evolution, the Association removed the "stakeholder" part of their bylaws so there are no longer required classifications for representation.

In what ways are watershed groups organized?

Several factors contribute to a group's organization including, presence of federal or state government agencies, location (rural vs. urban), legal context, and historical trends. Four types of organizational structures examined were: Government-based with authority, Government-based as advisory, 501(c)3, and Ad Hoc.

The four groups that were government-based with authority received authority from their respective state legislature. The legislature either passed legislation to officially form the organization, or to give an already existing organization the power to enforce recommendations, enforce land use codes, or to assist in federal natural resource management. However, it is unclear what sparked the legislature to grant authority to these organizations.

The three groups that were government-based but advisory saw a greater role of local and state government agencies in shaping their formation as opposed to legislation. Even though they do not have the power to enforce their recommendations for land use, water quality standards, and water resource management, they do have significant influence on those agencies that will ultimately carry out those recommendations. More often than not, the authoritative body incorporated or followed the group's suggestions.

A common way for an organization that formed bottom-up to move forward and carry out their mission is as a 501(c)3 non-profit. Typically, group's incorporate as a 501(c)3 anywhere from two to six years after their formation. Although they are not tied to a government agency, state and federal agencies often participate in the collaborative process. A 501(c)3 status often enables additional funding sources such as private donations and membership or partner dues/fees.

The structure of the two Ad Hoc organizations differ from each other in that the Feather River Coordinated Resource Management Group developed a Memorandum of Understanding (see Appendix G) and the Cosumnes River Project and Preserve developed a Cooperative Management Agreement. However, both of these agreements lay out the organization's goals and objectives, roles and responsibilities for partners, and define the administrative process. Ad Hoc organizations are very similar to 501(c)3s except they lack the formal tax classification. These two groups felt that it was unnecessary to take the step towards 501(c)3 classification because they were having success in accomplishing goals and objectives without it.

What is the organizational structure and how has it changed over time? What has been successful?

The majority of the initiatives contained the following organizational structure:

- Board of Directors
- Staff
- Committee

Depending on an organization's financial resources, some had paid staff while others relied on volunteers. If an organization does not have program staff, they hire consultants and/or contractors to carry out the organization's projects. This route is less costly since it is usually a one-time expenditure rather than having to pay for a year-round staffer. During formation, organizations tend to have several committees and eventually reduce the number of committees to one to four. The most common committees are Technical Advisory Committees, Executive Committees, Education Committees, and Steering Committees. These seem to be the committees that are necessary to run the organization, carry out the mission, and implement projects.

Through the years, the Blackfoot Challenge has witnessed the creation and dissolution of many committees. At the beginning, broad focused, general programming committees were helpful in establishing goals and a vision. However, these committees were eventually disbanded in favor of issue-specific committees. By allowing flexibility and the evolution of committees, these organizations were able to maintain strong participation.

Many of the older organizations have had success by maintaining a simple organizational structure. The Feather River Coordinated Resource Management Group (FRCRM) has been in existence for 25 years and has been successful by maintaining a simple, streamlined organizational structure. They have three committees: Executive, Management, and Steering. The Executive Committee provides policy guidance, dispute resolution, establishes the budget, finances, and project ranking procedures. The Management Committee administers the program, policy and budget decisions, approves new projects, and identifies financial support opportunities. Lastly, the Steering Committee provides continuity for the FRCRM and approves conceptual plans for each project. The FRCRM also forms subcommittees on an as needed basis. Another example of the advantages of a simple structure is the Belle Fourche River Watershed Partnership, which has only four members on the board of directors, all locally-elected officials and members of the agricultural community. This simple structure allows the group to respond quickly to project opportunities and needs within the watershed.

Another common theme throughout the initiatives was how the frequency of meetings evolved through time. Groups generally met more often during the initial formation stages and then less frequently over time. Typically in the beginning stages, the organization engages in information sharing, environmental assessments, and the formation of their goals and mission, which can require weekly meetings. For example, the Animas River Stakeholders Group met several times a month during the initial stages of developing water quality standards for the Animas River. Those standards were adopted in 2001, and the participants now only meet once a month.

Once past formation stages, groups then decide on how frequently to meet, usually monthly or quarterly. There are some groups that may stipulate additional meetings if there are pressing issues within the watershed that arise. The Niobrara Council is required to meet six times per year according to their bylaws, but they usually meet close to ten times per year in order to tackle all of their objectives for a given year.

How do the organizations make decisions?

The majority of organizations have bylaws or a memorandum of understanding that establishes their decision making process. The most common decision rules are a simple majority (i.e. voting), or consensus which is defined as getting all participants to a point where they feel comfortable moving forward with a decision. Many initiatives use a combination of both voting and consensus when making decisions. For example, committees will make decisions by consensus and the Board of Directors by majority vote. An example of combining these two approaches to decision making is seen in the Walla Walla Watershed Partnership. Their bylaws state that consensus should be reached whenever possible, but it also provides their Board of Directors, Policy Advisory Group, and Water Resource Panel the flexibility to establish procedures for majority decision making (see Appendix F).

Depending on the size of the decision making body, consensus can be hard to reach. The Blackfoot Challenge Board of Directors is composed of ten to sixteen members and projects are implemented with approximately 80% agreement from the Board. Voting can be seen as a more formal and/or stringent way to make decisions. If this route is taken, organizations tend to require a quorum (i.e. 51%) of participants be present at a meeting in order for a vote to be taken. The Board of Directors for Fountain Creek Watershed Flood Control and Greenway District is unique when it comes to making financial decisions. They require a supermajority; seven out of nine must be present to vote.

How do the organizations incorporate the general public?

Most of the organizations in this study incorporated the general public either through open public meetings or by having a "citizen at-large" position on their Board of Directors. Additionally, during organizational meetings, groups often provide time for public comment from community members. The Board of Directors for the Coalition of the Upper South Platte includes a maximum of seven representatives from the community. Including the public can help an organization to build trust with community members, which is important during the formation of an initiative. Groups do not want to be seen as going behind the back of a community on issues of importance. Opening the process to the public also serves as a way to educate and learn from the public on watershed issues of concern to all.

II. ACTIVITIES

The Roaring Fork Watershed Collaborative – Water Committee is a young, informal group, trying to determine how it can address its issues of concern: water quantity, water quality and riparian areas. In order to provide recommendations to the Collaborative, this analysis explores the different activities in which partnerships engage. The activities that a watershed partnership chooses to pursue are determined by its goals and objectives. Nonetheless, the initial activities of the organization differ from those it will do later. The initial phase is an important, internal process of group development, decision-making and planning. Once the group moves beyond this phase, their activities more actively protect, monitor and restore the watershed. Since an organization's resources are linked to its projects and programs, funding was also included in the analysis. The following research questions guided the discussion below:

- What are the types of activities that partnerships engage in?
- What are the partnerships' primary sources of funding?

Initial Activities

Watershed groups generally bring people together that represent a variety of interdependent interests. Often, these people come together under strained, adversarial circumstances, but recognize that they might have something to gain by working with others to address a problem. At some point, all groups have a discussion of their individual interests and values. This discussion helps the group understand why a person might have a particular position on a natural resource management issue. For example, several people on the Fountain Creek Vision Task Force were strongly advocating for the construction of a dam. Their interest was to reduce flooding in the lower section of Fountain Creek. Once they realized that flooding could be reduced in other ways, the Task Force began to explore those alternatives and the dam was no longer a source of tension.

People do not participate in watershed groups for the sake of "collaboration," instead they recognize the benefits of working together and that incentivizes their involvement. Regional watershed planning often brings people together because it can reduce the costs of independent, duplicative efforts. Significant amounts of time and money can also be wasted in conflict. Groups tend to use ground rules to structure these initial discussions and maintain an air of respect amongst participants. In particularly tense situations, like the Water Forum and Fountain Creek, the group will hire an outside facilitator to help guide them through this initial phase. Groups will also carefully construct a vision statement to unite members around what they have in common. While many vision statements in the partnerships look the same, time and thought went into each of them to reflect their local environmental, social and economic values.

During this initial phase, groups tend to meet frequently, often on a weekly or biweekly basis. Spending time together helps build trust and personal relationships between participants, solidifying their commitment to the group and its objectives. All of the cases studied share information both internally and externally, keeping members and outside entities informed of

their objectives and staying abreast of local, state and federal watershed planning issues and funding opportunities.

In the beginning, interested parties try to establish a base of technical knowledge. While the technical knowledge often includes water quality parameters, hydrologic data, terrestrial and aquatic species inventories and abundance data, it can also pertain to the region's economy and pertinent environmental regulations. Some organizations benefit from studies performed by outside agencies or experts while others have to procure funding for a watershed assessment. For example, both the Cimarron Watershed Alliance and the Fountain Creek Vision Task Force benefited from recently completed studies. The Fountain Creek Vision Task Force brought experts in to clarify issues of contention and commissioned other studies when expert opinion was insufficient. In contrast, organizations like the North Fork River Improvement Association and the Belle Fourche River Watershed Partnership applied for grants to conduct a watershed assessment. Unfortunately, nascent groups have little credibility and capacity to manage large grants and often need to partner with other institutions, like universities or agencies, to acquire this initial funding and conduct the assessment.

This technical knowledge is required to identify ecosystem stressors and build a common understanding of the watershed. Once they have a more complete understanding of the issues involved, the group will decide on a set of goals and establish an organizational structure. Typically, the group will use the goals to guide some sort of planning process. The objective of the planning process can be to develop a strategic plan for the organization and its staff, or a watershed plan that incorporates the strengths of partner organizations. Over half of the cases studied have developed a watershed plan. Organizations revisit and update both strategic and watershed plans after a significant period of time (e.g. 10 years).

Moving into the implementation phase of the watershed plan, partnerships like the Feather River Coordinated Resource Management Group and the Blackfoot Challenge also cited the importance of having an initial success, a project that would build its credibility and instill confidence in the group to achieve its objectives. While the group may have more grandiose objectives, members of these organizations recommend starting with a simple restoration project that has a set of willing partners. Any perceived failure or negative association could jeopardize the progress of the nascent watershed group.

A few organizations stayed in the "initial" phase for a substantial period of time. In particular, more urban watersheds like Fountain Creek and the Lower American and Sacramento River confluence (Water Forum) have more people and interests. Members of the Water Forum took six years to reach an agreement on their goals and objectives. Similarly, the Fountain Creek process began in 1995 and while it was recently given the authority to make decisions in a section of the floodplain, it has yet to complete a project. Consequently, the success of these organizations cannot simply be measured by their longevity, although it serves as one telling indicator.

Mature Organizations

"Mature" organizations generally engage in a different set of activities than newer organizations. Members have already made a commitment to the organization and have moved beyond the initial planning process. As previously mentioned, their activities actively seek to protect, monitor and restore the ecosystem on both public and private lands.

Watershed partnerships try to address complex issues like nonpoint source pollution. Nonpoint source pollution is often one reason the partnership formed or an issue it decides to address later. According to the Environmental Protection Agency, nonpoint source water pollution (NPS) is the leading cause of water pollution.[1] Its cumulative effects can be devastating, but its diffuse nature makes nonpoint source pollution difficult to address. While the Clean Water Act regulates point source pollution through the National Pollutant Discharge Elimination System (NPDES) permit program, NPS regulation is comparatively weak. The EPA uses Total Maximum Daily Loads (TMDLs) to set pollutant limits on impaired waterbodies. Well over half of the cases studied have helped develop TMDLs or received EPA Section 319 Nonpoint Source grant funding to address heavy nutrient loads, mining contamination and excessive sediment. Some, like the Animas River Stakeholders Group, have received a large portion of their budget from this program.

Environmental degradation on private land can also be difficult to address. Regulators do not have the authority to tell landowners how to manage their private property. Moreover, agencies are unable to adequately monitor and enforce regulations that do exist. Incentive programs are an effective way to engage private landowners. Organizations like the Henry's Fork Watershed Council, the Belle Fourche River Watershed Partnership and Feather River Coordinated Resource Management incentivize participation through grants or cost-share programs to improve the efficiency of irrigation systems, develop rotational grazing plans, and fence off sensitive riparian areas. Often local Conservation Districts and the Natural Resource Conservation Service offer similar programs and these can be mixed and matched to further encourage conservation practices.

With the exception of the Fountain Creek Flood Control & Greenway District,[2] all of the organizations conduct restoration projects with the hopes of repairing the degraded landscape. These restoration projects include stream stabilization, fish ladders, riparian re-vegetation, erosion control, native plantings, noxious weed control and mine remediation, among others. However, depending on the organization's goals, activities can also include protection and prevention measures like wildfire fuel reduction and fencing to avoid human-wildlife conflicts.

Volunteers are heavily relied upon for labor-intensive activities like fuel reduction, water quality monitoring, species inventories, river clean-ups, invasive removal and native seed collection. All the cases studied are involved in some sort of water quality monitoring. Water quality monitoring is one way that organizations measure the impacts their projects have on the

[1] US EPA. 2010. Polluted Runoff – US EPA. Retrieved from http://water.epa.gov/polwaste/nps/whatis.cfm

[2] The Fountain Creek Flood Control & Greenway District is the sole exception because it is a young organization that lacks the funding to accomplish its present objectives.

watershed. Monitoring also communicates any changes in water quality and unforeseen environmental stressors.

Watershed protection and management requires the participation of residents. Almost all watershed groups have some sort of education program, except the Animas River Stakeholders Group (ARSG), the Deschutes River Conservancy and the Water Forum. Since the majority of groups highlighted the importance of education programs, these three cases seem to be anomalies. The ARSG once had an education program that helped build local support and interest in the organization. Having been around for over 16 years and located in rural Colorado, the group now relies upon its reputation. The Deschutes River Conservancy works closely with another organization that conducts public education and outreach in the watershed, the Upper Deschutes Watershed Council. In contrast, the Water Forum has no education program beyond its website and newsletter. This particular initiative has had mixed success. While a lack of education is not the sole reason, it is probably a contributing factor. Public education initiatives try to help people understand why they should care about their watershed and actively restore and protect it. For a more elaborate examination of education across the case studies, please see Section V.

As the groups age, some like the Coos Watershed Association (CoosWA), the Cosumnes River Preserve and the Coalition for the Upper South Platte (CUSP) expanded the geographic area in which they work. These organizations saw ecosystem health and/or water quality concerns that they could help address outside of their perceived boundaries. As these organizations also grew in size, they were able to expand their scope. Both CUSP and the CoosWA started with only one staff member; CUSP now has 22 staff members and the CoosWa has 10 employees. These groups also cited the importance of addressing ecosystem stressors higher in the watershed. Contamination and erosion upstream can limit the effectiveness of restoration work lower in the watershed. For example, channelized flow off of steep, erodeable slopes in the upper part of the watershed will gather sediment and velocity. As the water moves downhill, its power can cut into streambanks in the lower reaches.

Innovative Activities

All of these partnerships have used a variety of activities to achieve their goals and objectives. Some of the more unique and innovative activities include *market-based mechanisms like water banking* and *eco-labeling, dispute resolution* and *fee titles/conservation easements*. The following gives a brief description of each, lists organizations that engage in them, and highlights their importance.

Market-based mechanisms are receiving an increasing amount of attention as alternatives to regulatory approaches. Market-based mechanisms are an appropriate response in states where the prior appropriation doctrine treats water as a commodity. *Water banking* is one way to circumvent "use it or lose it" policies that incentivize consumption as opposed to conservation. Both the Deschutes River Conservancy (DRC) and the Walla Walla Watershed Management Partnership are local initiatives that bank water rights. While the Walla Walla program is relatively new, the DRC's is 14 years old. The DRC purchases water rights, temporarily leases them and transfers them as needed. Since groundwater withdrawals also have a substantial

impact on surface waters and could impact junior water right holders, the Groundwater Mitigation Bank provides requisite credits to those seeking a permit to withdraw water through a well. State agencies often partner with a non-profit organization to manage banked water rights.

The Applegate Partnership & Watershed Council promotes *eco-labels*, specifically the Salmon-safe and Forest Stewardship Council (FSC) certified brands. The Applegate Partnership helps offset the costs of certification and provides technical assistance to interested farmers and loggers. Eco-labels are used to add value to products and pass on some of the additional costs of sustainable practices to the consumer. The Applegate Partnership is the only organization out of the twenty case studies to use these voluntary eco-labels.

The Feather River Coordinated Resource Management Group, the Walla Walla Watershed Management Partnership (WWWMP) and the Water Forum all actively resolve disputes within the watershed. *Dispute resolution* requires organizations to have a substantial amount of respect, credibility and legitimacy. Each of these qualities develops in a community over time. As one might expect, all three organizations are over ten years old. The WWWMP was specifically asked by the Washington Department of Ecology to resolve disputes that pertain to water banking and local water planning. The Department of Ecology had the confidence that the WWWMP would make fair and unbiased decisions and recognized that a local body would benefit from more respect and credibility than a state agency. Washington's statewide water banking program lacked participation because few water right holders trusted the state agency to manage their water rights.

The Cosumnes River Preserve, the Blackfoot Challenge, the Diablo Trust and the Niobrara Council all use *conservation easements* and *fee titles* as a way to protect and manage land. Land ownership also confers a degree of respect in rural areas. As these organizations amass larger parcels of land, they wield more influence in the region. While environmental and economic values do not have to compete, farmers and ranchers often fear these initiatives threaten their livelihoods. The Cosumnes River Preserve leases its land for sustainable farming and ranching. The leases are sources of revenue that demonstrate environmental and economic values can be compatible.

Voluntary Initiatives

All organizations use voluntary programs and tools to protect the watershed and encourage conservation. Many of these programs go a step further and incentivize participation by providing full or partial funding, recognition and/or regulatory assurances, particularly for private landowners. These voluntary tools include: grants for conservation or restoration projects, cost-share programs, market mechanisms, technical knowledge and training as well as land management programs using fee titles or conservation easements. Community-based organizations rely solely upon these voluntary tools because they do not have any regulatory authority.

In contrast, organizations connected to government recognize a voluntary approach is more effective than regulation in many instances. For example, while the Niobrara Council has the power to veto county development proposals within the Niobrara Scenic River Corridor, they

have not had to use it. Similarly, before the WWWMP made the decision to close gravel groundwater aquifers and establish minimum instream flows on certain river stretches, they held many public hearing and workshops. These organizations evolved out of a collaborative effort, seeking an alternative to command-control policies. Whenever possible, they try to find solutions that will satisfy all parties involved.

Neutrality

While the cases were specifically selected because they did not engage in lobbying or advocacy, several stated that their choice to refrain from this activity contributed to their success. Partnerships like CUSP, the Deschutes River Conservancy and the Cimarron Watershed Alliance felt lobbying or advocacy would alienate some partners and leave them vulnerable to changes in the political climate. Nevertheless, most government-based organizations are particularly vulnerable to these changes because elected officials sit on their Executive Boards.

Funding

Watershed partnerships receive funding from the following sources: state, federal and local grants, private foundations, nonprofits, utilities, donations, membership dues and revenue from profit-generating activities. Interestingly, as mentioned earlier, the Cosumnes River Preserve receives revenue from leasing its lands to farmers and ranchers. Many also receive in-kind support and use volunteers. Across all the partnerships, donations make up a small part of the budget. Most organizations receive the bulk of their funding from state and federal agencies.

Government-based organizations with authority are more likely to have a permanent source of funding. For example, the Henry's Fork Watershed Council receives money through the Henry's Fork Watershed Fund, created by the Idaho state legislature. Provided there is sufficient local political and public support, government-based organizations also have the option of using a mill levy to finance their activities. Fountain Creek hope to secure a permanent funding source through a ballot initiative in 2012. Since these organizations are connected to government in some way, they are also legitimate recipients for mitigation funding. For example, Fountain Creek will receive $25 million over six years from Colorado Springs Utilities as mitigation for the construction of a water pipeline. Nonetheless, the DRC, a 501(c)3 partnership, also receives mitigation funds from Portland General Electric for hydroelectric dams impacts on the Deschutes River.

Cases like the Cimarron Watershed Alliance and CUSP struggle to find enough flexible funding for administrative needs. Watershed groups in Washington and Oregon receive state support for administrative needs and sometimes projects. One of the oldest organizations, the Blackfoot Challenge noted that procuring administrative funds became easier as the partnership aged. Over time, agency representatives, local governments and others understood that financial contributions to the Blackfoot Challenge are both possible and a sound investment.

Partnering with other organizations can also increase what a watershed group is able to accomplish and provide greater access to funding. For example, the Blackfoot Challenge has an extensive list of activities and can claim over 60 major partners. Watershed groups

acknowledged that they would not have had access to certain grants if agencies like the EPA or the USFS were not partners/members of the organization. Conversely, foundations and agencies consider these partnerships between organizations a good investment, giving them more "bang for their buck."

Evaluation

In general, organizations are under pressure to measure their success, particularly to justify funding. Many organizations struggle to measure the overall impact of their activities on the watershed's health. Natural disasters like fire or flooding can have deleterious impacts that "undo" previous efforts and restoration can take years before producing desired effects. Nonetheless, organizations fall back on their aggregate statistics to evaluate their work. For example, the FRCRM quantifies its accomplishments using the number of projects implemented, total funds raised, the total length of streams and/or acres of wetland restored. However, the FRCRM recognizes the limitations of these statistics and is actively looking for alternative indicators.

III. FACILITATING FACTORS

Facilitating Factors are what enable progress and help sustain an organization over time. Once Roaring Fork Watershed Collaborative – Water Committee begins to implement their watershed plan and undertake specific projects it will be important for them to understand what facilitated the efforts of other organizations. Interviewees were asked the questions "what was helpful in getting the partnership started?" and "what has enabled progress?" Their responses to these questions were compiled and clustered into categories (see Table 4.1). Two main subgroups of facilitating factors were apparent: first, factors that aided in bringing groups together, and second, factors that aided in their achieving goals and objectives.

Table 4.1

Facilitating Factor	Number of interviewees who Cited Each
Collaborate amongst participants and partners/Partnerships	17
Strong leadership/champion	14
Funding	14
Initial successful project/ successful projects	13
People/presence who can relate to those in the community/good relationships	12
Local representation/buy-in/participation and local leadership	10
Trust	10
Technical work and analysis	7
Communication/information sharing	8
Identified clear issues/goals	6
Threat/Disaster	6
Ensure all stakeholders are invited to process	5
Personalities/relationships	5
Role of agency	5
Do not engage in political activity	5
Innovative/engaged staff and participants that work hard	5
Facilitator	4
Outreach and education	3
Voluntary Projects	3
Organizational structure/strategic plan	3
Nobody cares who gets the credit	2
Land ownership pattern	2
Consensus based	2
Charismatic Landscape	2

Monetary/incentive programs	2
Variety of services/flexible	1
Investment of time	1
Tours/site visits	1
Legislation	1
A process that reflects ecological, economic, social aspects of life	1
Land Acquisition	1

Factors that aided in bringing groups together

Organizations form and come together for a variety of reasons. The following facilitating factors represent many of the common reasons the researched cases formed.

Champion

Several organizations pointed to a champion as one of the main reasons they came together and stayed together through the years. A champion is a dynamic individual who gives their time and resources for the cause, often working without pay. It is a person who devotes themselves to the organization, orchestrating meetings, and often taking on the bulk of initial responsibility. It is often helpful for the individual to be a long time resident of the region, as they are seen as trustworthy and knowledgeable. These champions facilitate formation of the group and make it easier for all parties to join together.

The Feather River Coordinated Resource Management Group (FRCRM), an ad hoc organization, was created in 1985 with 24 partners. Co-founder, Leah Wills, generated the original idea that formed the basis for the FRCRM. She suggested that Pacific Gas and Electric invest in upstream restoration instead of dredging sediment from the Rock Creek Dam. She was a resident of the watershed, and for years watched others profit at the detriment of the watershed. Many participants point to her as a reason the organization came together; she kept people on track and focused throughout the process.

Ed Rapp acted as the champion of the Clear Creek Watershed Foundation, a 501(c)3. He has been involved with the organization for thirteen years. He is a resident of the watershed and had a personal interest in restoring water quality. Rapp has served in many community positions including county commissioner, facilitating his ability to be an effective champion for the Clear Creek Watershed Foundation. Having personal ties and presence within the community allows him to be viewed as a trusted figure with honest intentions.

Sense of Place

Sense of place means people care deeply about their particular place. It is their home, history, culture, and identity. A sense of place instills a sense of ownership within a watershed among people who care about where they are and what they are doing to their environment.

Recognition of Interconnected Issues

Recognition of the interconnected nature of watershed issues is helpful in bringing partners together as well as facilitating their future progress. It is the understanding of ties between economic, social, cultural, and environmental realms. This broader understanding of issues allows normally adversarial participants to bridge conflicts and work together. If a community has a strong sense of its environmental, social, and economic values it will facilitate successful projects much more readily than a community lacking watershed ownership and understanding.

The Blackfoot Challenge, a 501(c)3 located in Montana, formed in 1993 because of a growing concern for the environment and quality of rural life. During formation there was a strong awareness of the negative industrial practices that had damaged the watershed, and the desire to see ranching, rural character, and watershed quality maintained and improved. It was the understanding of these interconnected issues that facilitated formation of the Challenge, allowing them to promote a balanced mission and goals. During formation, both land managers and ranchers operated with this interconnected reality in mind.

The Diablo Trust, a 501(c)3 located in Arizona, partially attributes their longevity to the large number of ranch owner participants that understood the interconnected economic and environmental landscape. They were able to use this understanding to develop clear long-term visions and goals to protect land while maintaining ranching. Similarly, it was two ranch families that had lived in the area for generations who sparked the initial formation of the Trust. They were tied to the land economically, socially, and culturally and had deep, personal understandings of what the landscape meant to all parties.

Threat

One of the most frequently cited reasons for an organization's formation was a threat. Threats include events that lead to a loss or redistribution of power over landscape/watershed decisions. Examples of threats that facilitated formation include:

- Designation of a Superfund Site
- The Endangered Species Act and the listing of a new species
- Designation of Wild and Scenic Lands
- Population growth

Partners come together in an attempt to bypass or stop these threats with the understanding that in the future there could be substantial change to the watershed with little hope of local input and considerations. Threats not only facilitate formation, but often act as motivators to push progress forward. Once organizations form, threats do not disappear, but continually act as a driving force to "do better" and achieve new goals.

The Coos Watershed Association, a 501(c)3 in Oregon, formed in 1993 because land managers of the upper watershed were concerned that Coho Salmon would be listed under the Endangered Species Act. This area of the United States witnessed negative economic impacts from the Endangered Species Act (ESA) when the Northern Spotted Owl was listed. The Association

formed because landowners felt they could create a conservation plan for Coho that would preclude the need for ESA listing in the basin. However, Coho eventually did receive Endangered Species listing, but because the organization had taken proactive steps for Coho protection they were better prepared to implement ESA regulations.

The Animas River Stakeholder Group (ARSG), a Colorado advisory group tied to government, formed in 1994 when the EPA threatened to designate part of the watershed as a Superfund site. The participants recognized that standards and regulations would be set without their input, and in order to participate in the process it was necessary to form an organization that would enable them to do so. The threat convinced participants to work together and come to joint understandings on management practices.

Base Technical Knowledge

An organization's formation is often facilitated by either the presence of a pre-existing assessment/study or the creation of an assessment/study. This technical scientific knowledge is often generated through EPA or university work, however, it can also be created by the forming organization. This knowledge base allows for concrete justification for the creation of a partnership and often makes it easier for an infant group to receive financial support. It is easier to request resources when there is a scientific base for an organization's creation.

The North Fork River Improvement Association, a 501(c)3 located in Colorado, came together in the mid- 1990's to discuss alternatives for watershed management. The initiative is a mix of local landowners, businesses, and environmental groups. Their first goal was to conduct a collaborative scientific analysis of the watershed to give the new group a base upon which to build relationships and future successes as well as learn about the issues. They recognized the importance joint-fact finding would play in their formation as well as future longevity. A common data set allows a diverse array of parties to share a common understanding and form common goals/visions.

The first activity of the Belle Fourche River Watershed Partnership, a 501(c)3 in South Dakota, was a watershed assessment. The assessment was conducted in conjunction with the South Dakota School of Mines & Technology and provided a scientific base for the organization to move forward. This assessment allowed the organization to target efforts and prioritize projects, facilitating formation work as well as their future work.

Factors that enable organizations to make progress towards goals/objectives

The second subgroup of facilitating factors observed through the cross case analysis were factors that facilitate progress and help an organization achieve goals and objectives. There is a broad spectrum of factors including:

- Voluntary Nature of Projects
- Initial Successful Project
- Open Discussion Forum
- Simple Structure

- Avoidance of Political Activity
- Education and Outreach Activities
- Funding

Voluntary Nature of Projects

Many of the cases cited the voluntary nature of projects as a facilitating factor that allowed them to continuously achieve objectives and success as well as promote trust and a sense of community amongst residents. When projects are voluntary, landowners are more likely to approach the organization with issues on their land, inviting the organization to assess the situation. The organization does not act in a regulatory manner on these private lands. The voluntary nature of projects facilitates a comfortable relationship between landowners and an organization.

Feather River Coordinated Resource Management Group (FRCRM), an ad hoc organization in California, attributes their 25 years of success to voluntary projects. They operate in a rural watershed where trust and credibility are essential to continued work. By allowing landowners to approach the organization with issues, the FRCRM offers landowners responsibility and ownership of projects.

The Coalition for the Upper South Platte (CUSP), a 501(c)3 in Colorado, only pursues voluntary projects that have a broad base of support. CUSP does not advocate for regulatory solutions to watershed management, and believes their voluntary projects encourage larger participation from landowners, agencies, and partner organizations.

Initial Successful Project

Organizations often point to their first successful project as one of the most important factors in achieving progress and meeting future goals/objectives. The first project is generally a small, targeted project, which when successful acts as a model for the organization to show funders, potential partners, and landowners. The initial project builds credibility and trust for an organization and their community, breeding future success. Many of the organizations that attribute continued progress to an initial project emphasize on-the-ground projects and tangible results.

The Clear Creek Watershed Foundation, a Colorado 501(c)3, attributes their success and progress to the trust built by their first successful project. Once the Clear Creek community witnessed successful collaboration between a landowner and the EPA, they began to trust the process. This trust enabled the Clear Creek Watershed Foundation to continue with successful projects and partnerships.

Likewise, the Feather River Coordinated Resource Management Group (FRCRM), a California ad-hoc organization, believes their initial project was crucial for facilitating landowner buy-in. This success was imperative as the FRCRM participates in voluntary projects where the landowner solicits work from the organization. Without success, the organization would not have

been able to show community members that their projects were cost-efficient, practical, and beneficial for all.

Open Discussion Forum

An open discussion forum can both facilitate the formation of an organization as well as facilitate progress and achievement of goals and objectives. These discussion forums can be between organizational partners, landowners and organizational partners, or open to the public. They offer a safe place for people to comfortably voice concerns, ideas, and issues. This sense of comfort acts as a building block for communication and relationships between participants.

The Water Forum Agreement, an agreement that led to the creation of the Water Forum Successor Effort, provided an extensive period of open conversation in the initial formative stages. This open discussion forum afforded the typically adversarial stakeholders a comfortable place to build relationships and discuss interests. It enabled the participants to negotiate the Water Forum Agreement, from which was born the Water Forum Successor Effort (WFSE). The WFSE acts as a forum for participants to discuss/negotiate conflicts as an alternative to litigation. This alternative to litigation solidifies participants' professional relationships and emphasizes communication between members.

Simple Structure

An uncomplicated organizational structure or a straightforward landowner pattern and management matrix facilitated progress in some cases. With a simple organizational structure (which is discussed in further detail in the organizational structure analysis), fewer committees enables decisions to be made efficiently and quickly. Similarly, in a watershed with a simple landowner pattern and management matrix an organization will need to comply with fewer jurisdictions, regulations, and laws. It is easier to encourage community buy-in with fewer landowners or landowners with similar interests and concerns.

The Belle Fourche River Watershed Partnership, a 501(c)3 in South Dakota, attributes their composition of local officials and agricultural interests and simple structure to their continued success and ability to meet objectives. They only have four board members, one part time staff, and the simple structure allows them to respond quickly to needs and opportunities.

The Coos Watershed Association, a 501(c)3 in Oregon, has an interesting watershed ownership pattern that has been both challenging and facilitating for their progress. The Upper Coos Bay Watershed is comprised of primarily large tracts of land with only a few landowners, while the lower watershed contains many smaller land holdings with diverse ownership. It is much easier to get participation in the upper watershed because there are fewer entities that need to agree.

Steered Away from Political Activity

Several organizations attributed their progress to their decision not to engage in political activity. They feel that taking a political stance would anger partners or other organizations within the

watershed, creating enemies. Similarly, they do not want to irritate legislators or land managers who might control funding through grants.

The Deschutes River Conservancy, a 501(c)3 in Oregon, believes it is important to stay out of the political arena. They cannot afford to be at odds politically with partners and would rather remain neutral and on good terms with groups on both sides of issues. Similarly the Coalition for the Upper South Platte, a 501(c)3 in Colorado, abstains from political activity to maintain relationships with partners and other organizations. It allows them to remain flexible and build functional relationships with legislators.

Education and Outreach Activities

Education and outreach activities are always necessary to drive an organization's objectives and goals forward. They create awareness and a sense of community ownership. (For further discussion of education and outreach activities please see Section V. Education of this chapter).

Funding

Funding is crucial for formation as well as achieving goals and objectives. A majority of organizations cited funding as a facilitating factor in achieving success. Funding enables organizations to participate in projects and plan for future work. Especially in a process that takes several years, identifying and securing funds is critical to ensuring success.

The Fountain Creek Vision Task Force, a Colorado organization tied to government with authority, believes money facilitated their ability to effectively organize, bring participants to the table, and engage in a productive discussion.

Trust

Trust was a commonly cited and important facilitating factor that builds success, longevity, and credibility for organizations. Building trust is important between organizational partners as well as community members and an organization. Without trust in the process, it is impossible to have the necessary conversations and relationships for group formation and progress. Many of the methods for creating trust are also facilitating factors for achieving success, goals, and objectives. Throughout cases trust was built in a variety of ways including:

- *Communication* - Open discussion forums facilitating communication among groups, allowing concerns and ideas to be voiced.
- *Role of an Agency* - Several organizations believe the role of agencies within the organization helped build and maintain trust. Generally, when agencies play a strictly participatory, not regulatory, role it allows partners and landowners to trust the organization, not fearing regulatory sanctions.
- *Organizational Presence within the watershed* - It is important for an organization to have a face within the community. This can often be the staff members, but also the organization as a whole. This allows the organization to be seen as a community member,

a trusted entity, and group that has a personal stake in the sustainability and longevity of the community.

- *Diverse and Equal Representation* - Organizations that have diverse representation within their partnerships and boards signal to landowners that they are attempting to remain fair and representative of the community. Diverse representation allows community members and stakeholders to feel comfortable knowing their interests and concerns are represented.
- *Joint Fact Finding* - Building a common dataset with partners allows all to be in agreement from the beginning on their understanding of the watershed. It also allows them to act as a credible source of information for the community, facilitating trust between partners as well as the community.
- *Small Initial Successes* - An initial success acts as a model for an organization to point back to and show landowners. It builds trust between the landowners and organization as it shows that projects can be successful and cost-effective.
- *Voluntary Nature of Projects* - The voluntary nature of projects builds trust between landowners and an organization as the landowners are involved in every choice and can opt-out should they feel unfairly treated. Voluntary participation builds trust and confidence within the projects and organizational activities.

IV. CHALLENGES

In comparing natural resource collaboratives across the West, an important question posed by RFWC/WC is what challenges have other initiatives encountered? Challenges can be persistent and not easily overcome. Challenges are experienced no matter how a group chooses to organize, and include issues of adequate funding, trust amongst the group, or buy-in from the general public. By looking at the wide array of challenges that watershed groups face, the Roaring Fork Watershed Collaborative – Water Committee can be aware of the types of challenges commonly experienced in the process.

As part of the interviews for each of the case studies in this report, participants were asked what challenges their organization faces presently or in the past. Their responses were evaluated to determine the frequency of types of challenges encountered by initiatives in this report, compiled and clustered into categories (see Table 4.2). Identified challenges in descending order of frequency, with the number indicating how many of the twenty cases indicated a particular challenge in their present or in the past:

Table 4.2

Challenge	**Number of the 20 cases that cited each**
Funding for project implementation	13
Capacity of staff	10
Issue complexity	9
Trust between participants	8
Issues of legitimacy	7
Buy-in to the process	7
Ongoing participation	6
Public education	5
Sufficient representation of key groups in process	4
Working with conflicting interests	4
Lack of scientific knowledge or needed technologies for project implementation	3
Slow results	2
Leadership roles poorly defined	2
Common understanding of information and agreements	1

Over half of the initiatives examined in this report identify challenges associated with funding. Other frequently mentioned challenges to the process include trust, issues of legitimacy, buy-in to the process, ongoing participation, and educating the public on issues and projects.

The eight most frequently identified challenges within the project's case studies are described below.

Funding for project implementation

Challenges acquiring resources are most notably identified as a primary concern for collaborative resource management groups, both in securing grants to implement programs and for paying salaries of full and part-time staff. The vast majority of funding for staff salaries in the Coalition for the Upper South Platte in Colorado comes from grants. They are unable to guarantee future salaries and continuation of projects. They do, however, partner with other environmental organizations, contracting out the projects to ensure the stability of their work over the long term. Likewise, funding for the Applegate Partnership and Watershed Council in Oregon faces budget cuts and limited staff resources. With only the Executive Director on staff full time, the group contracts projects out to individuals in the watershed. Other groups echo these concerns as they work to secure Federal grants. Gary Barber, with the Fountain Creek Watershed Flood Control & Greenway District in Colorado, exclaims, "It's a pretty tough time to put your hand out to taxpayers, saying 'give me some more tax dollars'."

There are difficulties intrinsic to the Federal grant process, including deadline completions and requirements of the organizations. "The grants are limited to certain time frames and budgeting can be off. There are new requirements, times have changed, and you don't always have the money," reports Gia Martynn with the Feather River Coordinated Resource Management Group. "Stringent grant requirements can be a big hardship because we don't have the administrative manpower; it's not in our budget," says Chris Crouse of the Clear Creek Watershed Foundation. It is necessary to convince agencies that the organization deserves money for all the time, effort and resources spent implementing projects. CCWF identifies the importance of cooperation with the grant administrators.

An additional challenge to funding is measuring the efficacy and the overall impact of projects. The Coalition for the Upper South Platte struggles to find funding for monitoring and evaluation of their projects. They have acquired funding for on-the-ground implementation of projects more easily than grant money for monitoring. With natural disasters, increased development, and other human impacts potentially counteracting restoration activities, the group is finding it difficult to ascertain the overall impact of their projects on such a large watershed.

Liz Vollmer-Buhl with the Suislaw Watershed Council recommends facing the challenge of grant writing head-on.

> "A mistake that watersheds can make is trying to find funding that fits them rather than fitting themselves to the funding source. It's not that you have to remake yourself or lie or anything. You shouldn't do that. But if they don't want to hear about my education program then I am not going to tell them about my education program. I'm going to tell them about my monitoring program or whatever it is they are interested in."

Capacity of staff

On the other end of the spectrum, Dave Stiller, Executive Director of the North Fork River Improvement Association, testifies there are dangers associated with one person taking on too much of the responsibility for securing grants and funding for an organization:

> "The board must be involved, especially in fund-raising, for any long-term success. Otherwise, the ED/staff spend an inordinate amount of time raising money to keep the doors open for another month, so they can raise more money to keep the doors open another month again. It's extremely difficult to develop or sustain momentum under such a scenario. I believe this is a constant, recurring problem throughout the non-profit universe. In a related way, it's very important for the ED to cultivate good relationships with individual directors and donors and not be timid about asking difficult questions."

When asked if she feels stretched thin some of the time, Jeannell Wyntergreen, Executive Director of the Applegate Partnership and Watershed Council, answers, "not some of the time, all of the time!" She goes on to say that it is difficult to get grant funding to pay for employees and for office space.

For some of the cases, the challenge of staff capacity and funding precluded the ability to monitor and evaluate implemented projects. A Coalition of the Upper South Platte board member questions if their grassroots efforts lead to positive, measurable changes at the watershed scale, "Are we able to affect enough acres, enough miles of stream to really make a difference?"

Issue complexity

Challenges inherent to the context of a place and a community were discussed by a significant number of groups. Almost half of the case studies identified some sort of an external challenge affecting their work simply because of the Western rural context this project focused on, including the challenge of maintaining the rural character of the area, working within Prior Appropriation water law, and the burden of water scarcity in the future.

Ranch owners participating in the Diablo Trust continue to struggle financially, despite the Trust's mission to ensure long-term economic stability of Trust participants. Ranchers seeking reimbursement for maintaining open space were unsuccessful, although the rural planning initiatives offer some hope. "No matter how you cut that economic cake, the cost of production continues to go up. We're trying to pay more with less," Bob Prosser, Bar T Bar Ranch, says. "My nature is to be pessimistic, but I do think we've made enough progress in all this that the outcome will be good."

The Water Forum Agreement continues to face the challenge of adopting the improved Lower American River (LAR) flow standard. The Bureau of Reclamation regulates the American River, and they are not a signatory to the Water Forum Agreement. The Bureau of Reclamation has not permanently adopted the new LAR flow standard, and at any point can change the standard as they see fit, leaving the initiative in a vulnerable position.

Trust between participants

Evident as one of the most significant challenges for these cases are issues of trust between participants. Ed Rapp of the Clear Creek Watershed Foundation commented, "If there is no level of trust between people who live along the river, projects can be easily destroyed." Rapp goes on to acknowledge that participants' egos can be bruised and part of the responsibility of the partnership is to work through mistrust and disagreements. Some groups have not been able to overcome trust issues between participants, ultimately hindering the effectiveness of the organization.

The Blackfoot Challenge in Montana continues to grapple with issues of trust through their long history. With a recent project establishing the Blackfoot Challenge Conservation Area (BCCA), Blackfoot Challenge leadership pushed for the creation of an Advisory Council specific to the project in order to solicit ideas, build trust in the process, and offer recommendations on how best to proceed. Council membership was open to volunteers from across the valley. The council meets once a month to identify key issues and work toward developing a "community-driven" plan for owning and governing BCCA. Among challenges facing the BCCA Advisory Council is deciding what exactly it means for the community forest to be managed for the protection of the "rural lifestyle." The ongoing challenge facing the BCCA management plan is to accommodate different interest groups. Involving different interests in a process is necessary but has the potential to create mistrust and tension within the partnership. This Advisory Council acknowledges they must use mechanisms to demonstrate transparency in their process, and information sharing between agencies, non-government organizations, and landowners in this case helps foster trust.

Issues of legitimacy

The Animas River Stakeholders Group worked through concerns from their community. The general public felt disconnected from ARSG, which had poor connections to other organizations and citizens. Some felt too many government agencies were dominating the process. Attempting to overcome the challenge, the ARSG worked on multiple levels to build trust and confidence in their planning process. General group meetings were not filled with technical information, but limited to general concepts of watershed interactions and public implications of policy. Informal discussions, use of the media, and field trips were also used prominently to increase the transparency of the group's process.

Ron Stork, representative for Friends of the River, believes a large drawback to the Water Forum Agreement is its lack of legal standing. The Water Forum Agreement is a Memorandum of Understanding. It is voluntary and any member can withdraw with a thirty-day notice. Susan Sherry, facilitator of the Agreement, also suggests this MOU is a "gentleman's agreement." She comments, "The water purveyors have gotten everything they need. It begs the question, how long will they continue to pay to fund the Water Forum Successor Effort?" Stork and Sherry's criticisms reveal the fragility and vulnerability of the Successor Effort. At any point, the entire agreement and organization could dissolve.

Clark Seeley, Oregon Department of Forestry representative and partner in the Coos Watershed Association, suggests part of the challenge for their organization is due to a lack of law to mandate action. "The Association relies on people's willingness to come together. You may have people who simply don't want to play the game. And if there are enough of them who don't want to then the ultimate success of the organization can be stressed pretty hard." The lack of regulation is a good thing because it helps get people on board, however success is contingent on willingness of key players. Seeley states "Part of the downside of that is it takes time. It takes time from people who think they don't have time to give."

Buy-in to the process

Buy-in to the process was identified as a challenge in a number of cases. Mike Eaton of the Cosumnes River Project and Preserve remembers "a lot of hostility from the neighbors and local farm community. They saw [the Preserve] as interfering with their ability to farm." Working in a conservative, rural neighborhood proved challenging in some other cases. "All the technical reports in the world aren't going to merit spending extremely constrained dollars, unless you get enough public interest and enough elected official interest" explained Graham Thompson, consultant to the Fountain Creek Watershed Flood Control & Greenway District.

The Walla Walla Watershed Partnership in Washington State, an initiative connected to the government with the capacity to enforce their recommendations, developed incentive programs to encourage water right holders to conserve instream flows. These incentives to bolster public buy-in for the initiative's program proved successful. A 2003 report documented a lack of public trust in the Department of Ecology's intentions to return temporarily banked water rights. The fear was that the banked water could then be designated critical habitat under the Endangered Species Act (ESA) or their historical use reviewed during the process, resulting in a determination the farmer did not put their water to beneficial use. The Walla Walla Watershed Partnership ultimately wanted voluntary participation to produce a more successful program showed through public buy-in. The partnership utilized local leadership to head the program instead of the Department of Ecology. The agency relinquished oversight into a more informal effort ultimately resulting in higher participation in the water-banking program, with the public trusting that their temporarily trusted water rights would be returned and not lost to newly developed regulations.

The Consumes River Preserve in California, as a community-based ad hoc watershed initiative, faced the challenge of positive public perception. To change this, they worked with neighbors and farmers one at a time. Programs including field trips and voluntary tree planting projects were used to develop individual relationships with the landowners and farmers in the area. A priority of the group is to have the staff be perceived as part of the community, not as visitors from an outside organization. Putting in effort to work with individual landowners helped the Consumes River Preserve overcome their challenge of public buy-in.

Ongoing participation

Jeff Crane, North Fork River Improvement Association, describes the challenge inherent in keeping citizen participants at the table over the long term: "Even with individuals who identify

with the goals of our organization, who know the work we're doing should be a priority for the community, these people still have full-time jobs and full-time lives. Adding our priorities and projects on top of their already full plates is a challenge. Instilling enduring passion is no small feat."

Public education

Education was observed to be a key activity and facilitating factor to the process of many of the case studies, but it is also a challenge many of the groups face. Kally Kieborz, Executive Director of the Niobrara Council in Nebraska, says a challenge the group faced over the past few years has been, "getting the message to the people who really need to hear it." The Council uses their website, newsletters, the four local newspapers, email, radio, TV, and other educational activities to get their message out to their constituents. Dennis Maroney, with the Fountain Creek Watershed Flood Control & Greenway District of Colorado, notes the District plans to use public education to build support for an upcoming mill levy. "People need to realize that Fountain Creek can be a great asset for all its communities."

Summary

Though some groups offer solutions and strategies for overcoming or working on their challenges, more often than not they provide few answers on how to overcome challenges. Challenges are intertwined with the other factors analyzed in this chapter. Some activities and facilitating factors are the complements to addressing challenges connected to the group process. A positive activity outcome or a strong facilitating factor like a dynamic individual connecting with the people in the watershed have helped initiatives address these challenges.

V. EDUCATION

The Roaring Fork Watershed Collaborative – Water Committee (RFWC/WC) proposes several recommended actions in their Roaring Fork Watershed Plan. The plan requires community involvement and participation in watershed activities. The team researched public outreach and education efforts of other natural resource partnerships to identify useful strategies that RFWC/WC might consider adopting.

The Roaring Fork Conservancy (RFC) leads the Roaring Fork Valley's current education and public outreach campaigns. RFC identifies their 2010 target audiences as landowners, realtors, county officials and the general public of their watershed. They are developing specific messages to guide their campaigns and are especially interested in measuring success of their public outreach. Currently, Roaring Fork Conservancy is raising money to build a River Center to increase watershed awareness.

In constructing future education and outreach campaigns, RFWC/WC would like to know the following information:

- What public outreach programs and strategies do other partnerships use and why?
- How do other partnerships measure success of their public outreach?

Three of the researched partnerships conduct little or no educational outreach. The three government advisory organizations, Animas River Stakeholders Group, Owl Mountain Partnership and The Water Forum currently conduct very little education; they focus their resources on project implementation. However, the vast majority of the partnerships studied use a variety of education and outreach strategies to engage stakeholders and watershed residents. In general, the community-based organizations have more robust and varied education programs than government-based collaboratives. However, community-based organizations list more challenges in funding, staffing and obtaining participation.

Structure

The education staff's structure varies widely between organizations based on their mission, budget and interest. Some organizations devote one or two people to education, namely an Education Director or Education Coordinator. Several partnerships, such as the Blackfoot Challenge and Feather River Coordinated Resource Management Group, developed Education Committees or Education Working Groups that include many people from their partnering organizations. The Niobrara Council integrated their education into a larger entity called the Niobrara Valley Outdoor Education Partnership (NVOEP). Some groups incorporate education in all their meetings and staff member's role. Groups with more people involved in education tend to have more extensive outreach programs.

Partners

Most collaboratives, such as the Walla Walla Watershed Management Partnership, work with

their partners to conduct educational programming. The partners supply educational resources like funding, staffing and written materials, which increase the extent of the educational outreach. Partnering with other organizations reduces the burden and cost for the organization and engages more people actively in watershed activities.

Target audiences

All partnerships choose target audiences for their education programs based on their mission, goals and scope. The partnership may target landowners, land managers, government officials, school children and/or the general public. The majority of the partnerships studied target the general adult population of their watershed. A number of partnerships also target students. Community-based partnerships target landowners and land managers more than government-based organizations.

The partnership chooses its target audience after it establishes its specific goals and messages for each program. For instance, the Clear Creek Watershed Foundation wants to encourage the next generation of decision makers to learn and care about their watershed. Therefore, they conduct extensive student programming. Partnerships that are actively trying to engage rural landowners in the decision making process, like Feather River Coordinated Resource Management Group (FRCRM), gear their programs and messages toward the needs of these landowners. FRCRM advises landowners about more efficient irrigation techniques and improved grazing strategies.

Educational Toolbox

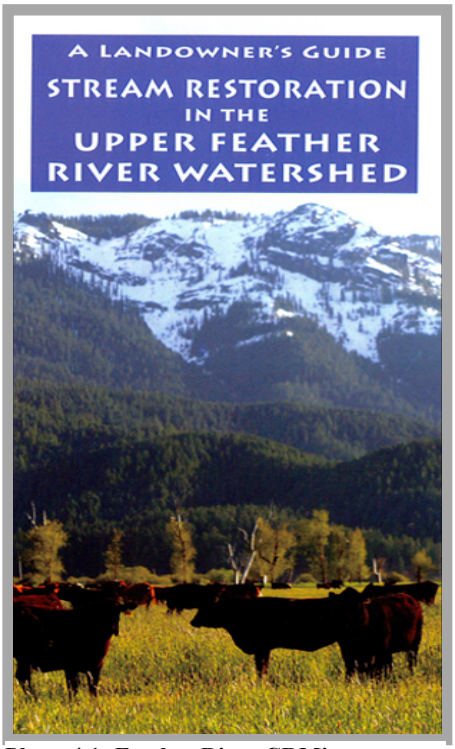

Photo 4.1: Feather River CRM's *Landowner's Guide to Stream Restoration*, Courtesy of FRCRM.

The team divided educational programs into two categories: less resource intensive and more resource intensive educational strategies.

Less Resource Intensive Strategies

Less resource intensive strategies are those which can be easily administered and require minimal funding, staffing and time. An active website is used by all the partnerships researched. Most also publish a newspaper or newsletter. Merchandise such as t-shirts, stickers, hats, magnets and water bottles embossed with their logo or tagline are also widely used.

Written Materials

All educational programs researched use written materials in their outreach. The Applegate Partnership and Watershed Council, a 501(c)3 non-profit, publishes a print and online version of their bi-monthly *Applegater Newspaper.* The newspaper drives community participation in the watershed, keeps residents aware of current events

and community news and informs residents of how they can work together to make a difference in their watershed.

Photo 4.2: Map of the Upper Feather River Watershed, Courtesy of FRCRM.

The Feather River Coordinated Resource Management Group (FRCRM) produces a brightly colored, clearly marked map of the watershed to teach residents about their watershed. The map helps the residents to envision themselves as part of the watershed and how everyone is connected through the flow of water, rather than individual entities divided by county or city lines. FRCRM also publishes "A Landowner's Guide: Stream Restoration in the Upper Feather River Watershed" which helps to involve ranchers and other landowners in the partnership. Landowners and ranchers in rural communities are difficult to engage in watershed partnerships. Landowners in the western United States tend to be independent, individually minded people who often fear government involvement on their property. They are afraid of big government agencies taking away their land or water rights and regulating what they can do on their land. Watershed guides targeted to landowners make these rural property owners feel like their needs are being addressed by the partnership. Voluntary recommendations for watershed-friendly practices are better received than mandatory regulations instituted by a governmental entity.

Photo 4.3: Natural Yard Care brochure. Courtesy of King County.

Brochures and fact sheets are also used by many partnerships. Some brochures and fact sheets include general information about water quantity, water quality and riparian habitat and are dispersed to the general public. Other brochures and fact sheets contain information geared toward specific audiences like lawn care for landowners. These low cost documents can be dispersed widely and cheaply to the general public. The documents help increase interest in watershed issues among the target audience.

Tours

Many partnerships, including the Belle Fourche River Watershed Partnership, conduct tours of conservation practices in the watershed for funders, local decision-makers and other interested parties. A member of the partnership transports participants to remediation or restoration project sites. This tour guide then explains the purpose of the project, how the project is being conducted, and how participants can get involved in watershed projects. One-on-one discussions and site visits make the partnership's projects a tangible reality for the participants. The tours help garner support for current and future projects.

Public Informational Meetings

The outreach of many watershed partnerships during the nascent stages of their development relies heavily on public information meetings to garner public support for their organization. Meetings are held throughout the watershed in community centers, rotary clubs, or local schools. For instance, Belle Fourche River Watershed Partnership held public information meetings to talk about their organization, introduce assessment findings, and discuss sources of pollution in the watershed to the residents. These public meetings are important to introduce the partnership to the general public. Participants meet the partnership's members and staff and address any questions or concerns they have about their watershed. Public informational meetings are an essential first step in building trust between watershed residents and the watershed partnership. Many partnerships, including the Cimarron Watershed Alliance, continue to hold public information meetings and/or open their monthly Board of Directors meetings to the public. Fountain Creek Watershed Flood Control and Greenway District continues to hold Citizen Open Houses where they invite people to review progress and take comments.

Video

Videos are another useful tool for education used by several of the partnerships examined in this study. For instance, Fountain Creek Watershed Flood Control and Greenway District is currently putting together a series of documentaries on Fountain Creek's history in partnership with Rocky Mountain PBS. These videos can be linked to the organization's website and/or placed on YouTube. These videos can be broad or address specific watershed needs. In today's era of multimedia availability, partnerships realize they need to use materials that grab and hold the attention of their audiences. Interesting videos can supply considerable information in a short amount of time.

Advertising

Advertising the partnerships goals, messages, upcoming events and project successes is another popular outreach method among the partnerships researched. The most common modes of advertising are through the local newspaper, local radio stations and television. Upper Deschutes Watershed Council (UDWC) uses a wide variety of media to convey their messages such as press releases, editorials, television spots, public radio interviews, paid advertising, event posters, and organization newsletters and journals. They also use giveaways such as posters, hats, stickers, and water bottles to reinforce their message. In this way, they are able to saturate the market with their messages and taglines. Repeated exposure to messages increases the chance that the audience will remember these messages. Saturating the market helps ensure that all audiences will come into contact with the partnership's messages. Maintaining working relationships with radio stations and newspapers helps the partnership to assure that their events and activities will be advertised prominently in these media.

Word of mouth

Several groups that work in rural communities commented that word of mouth is still the best way to engage their community. They strive to remain in constant contact with their community members and talk about watershed events with community organizations such as rotary clubs. Clear Creek Watershed Foundation primarily uses word of mouth and their website as their communication venues. They have found that "word of mouth, being involved in the community and their website are their best marketing tools" according to Chris Crouse, Outreach Coordinator for the Clear Creek Watershed Foundation. Word of mouth is especially useful in rural areas or small towns where people are used to talking with one another and getting their news "through the grapevine." The partnership's active community involvement helps to develop trust between residents and the partnership.

Social media

Social media like Facebook and Twitter are also used by several organizations, such as the Clear Creek Watershed Foundation, which helps the partnerships reach younger audiences and tech-savvy residents. Many people rely on their computer for all of their news about current events, and social media is the best way to reach them. In the same vein, all partnerships have a website that includes updates about current events and activities, accomplishments and their members.

Resource Intensive Strategies

More resource intensive programs require more time, funding and staffing to implement. Only some of the partnerships studied were able to implement these strategies.

Landowner Programs

Partnerships, particularly the 501(c)3 non-profits, try to engage rural landowners with their programs. These programs include tree plantings, face-to-face education, workshops and small community meetings termed Coffee Klatches.

The Coalition for the Upper South Platte (CUSP) helps landowners identify noxious weeds on their property and explains how CUSP can help eradicate the weeds without herbicides. A personal approach to noxious weed removal helps engage the landowners and gives them concrete ways to remediate the problem. This method requires an extensive volunteer network to reach landowners. Another personal approach to landowner education is the small community meetings called Coffee Klatches conducted by the Coos Watershed Association. These Coffee Klatches are more personal than town hall meetings and create a relaxed atmosphere in which participants can think about projects that the partnership could conduct on their property. Again, these are time intensive, but help to develop trust between the landowners and partnership and solidify personal relationships among the participants.

Some partnerships conduct workshops on sustainable forest management, riparian restoration, irrigation management, soil conservation, pasture management, residential construction and road rehabilitation and construction. These workshops are developed from best management practices outlined in watershed plans and promote land management and practices that landowners can adopt to improve the health of their watershed.

Student Education Programs

Programs targeting students are prominent in both government-based and community-based partnerships. Watershed groups target middle and high school students because they believe that by reaching the students, their messages will also reach the students' parents. Groups want to specifically educate the future decision makers in their watershed encouraging them to care about their watershed and water issues. The Clear Creek Watershed Foundation targets fourth and seventh grade students to "have the next generation of watershed decision makers have a balanced perspective of natural resource management and sustainability in the areas of ecology, the economy and social values of the watershed" according to Chris Crouse, the CCWF Outreach Coordinator.

Some collaboratives, like the Niobrara Council, take school children on field visits to view watershed-friendly land management or sustainable forest management on private lands. These field visits have the same benefits as adult tours of the watershed. They show first-hand the accomplishments of the partnership and garner support for the children's participation in future projects.

Many student-based programs tie specifically into their schools' curriculum; therefore, teachers can more easily integrate watershed education into their state-mandated educational benchmarks. For instance, the Cosumnes River Preserve offers environmental curricula for K-3rd, 4th-6th, and 7th-12th grades, which have been developed with local and state requirements in mind. Similarly, the Upper Deschutes Watershed Council's Education Director, Kolleen Yake, states that their K-12 education program has been very successful since "it is regionally-based, free, fun, and aligns with Oregon state benchmarks for education." Tying watershed education into students' curriculum assures that the students will be exposed to watershed issues in a variety of their classes throughout their educational career. Constant exposure to watershed education promotes a life-long love for protecting their watershed and developing into adults who will further the mission of the partnership. Most organizations use existing education materials and polish them for the specific needs of teachers. A plethora of education materials currently exists and there is no need to create new materials, which both cuts costs and promotes collaboration between watershed educators.

One of Feather River CRM's most successful programs is called "Plumas to Pacific" which traces a drop of water from Plumas County to the Pacific Ocean. This program promotes awareness and understanding of issues such as watershed management, where water originates and ends, and the state water project amongst the 6th grade population. This program is a creative way to spark the interest and imagination of the students. It allows them to understand where their water originates, how it gets to their tap and where it goes after it leaves through the drain. It promotes water conservation and connects the students to the rest of their watershed, much like the watershed map that Feather River CRM created.

Hands-on activities are very important in programs for students. The Niobrara Valley Outdoor Education Partnership conducts a "Resource Day" in which students look at casting of tracks for wildlife identification and make fish print art. Summer day camps, like the Niobrara Council's free K-8 camps, offer many hands-on activities to raise awareness about the importance of their river. These activities may center on a theme like water conservation or riparian ecology to cement these ideas in the children's minds. The Upper Deschutes Watershed Council conducts similar outdoor education activities and their Education Director Kolleen Yake states, "Students, parents, and teachers love our programs because they are educational and they get students out of the classroom and into the field."

The Blackfoot Challenge hosts an Adopt-a-Swan program for middle school children to teach about the reintroduction of swans from Wyoming into the Blackfoot Watershed of Montana. The swan adoption program uses GPS tracking and fosters a sense of ownership by the children; the children want to take care of their swan and protect its watershed home.

Teacher Education Programs

To complement the student-targeted education, some organizations have education specifically for teachers to help them feel more comfortable teaching watershed issues.

Blackfoot Challenge participates in Project WET (Water Education for Teachers) to show teachers how to incorporate water resource education into their curriculum. For the Cosumnes River Preserve educational program, teachers are required to attend a teacher's workshop before scheduling a field trip. Within these workshops teachers learn about the Preserve, aspects to point out and focus on, and ways to tailor their trip for their classroom's needs. The Niobrara Council encourages teachers to utilize their library, which includes lesson plans and activities for all ages, outdoor exploration tools (i.e. magnifying glasses, compasses, nets, binoculars, and GPS devices), and ideas and supplies for nature-based art projects.

These teacher resources aid the student programs by allowing the teachers to feel knowledgeable about watershed issues. If the teachers are interested and informed about their watershed, this enthusiasm will spread to their students, making the partnership's student programs even more successful.

Volunteer/Stewardship Programs

Stewardship-minded education activities are another great way to involve watershed residents. The Coalition for the Upper South Platte engages the staff corporations like Hewlett Packard and IBM in volunteer workdays, thereby involving adult residents who might not otherwise be active with the partnership.

The Siuslaw Watershed Council and Walla Walla Watershed Partnership have Stream Teams, comprised of any individual from the watershed who wants a hands-on monitoring experience. The Stream Team actively learns about their watershed through participation in research and restoration projects. They perform water quality monitoring, measure stream flows, conduct biological assessments, and participate in restoration projects and river clean up days. Participation in the Stream Team fosters a sense of ownership of the watershed and a desire to protect its waters. Participants become active stewards of their lands and become more likely to engage in other watershed activities and donate to the partnership.

Event or Festival

Many partnerships host an event or festival to rally the community around watershed issues. For example, the Belle Fourche River Watershed Partnership and the Fountain Creek Watershed Partnership host a booth at their local agricultural show or state fair in which they hand out brochures and encourage people to visit their website. The Blackfoot Challenge hosts an annual community barbeque. The Clear Creek Watershed Festival held by Clear Creek Watershed Foundation is an annual festival held in September, which has been notably successful in attracting students and families to this one-day outdoor education event. Partnering organizations including the Audubon Society, Division of Wildlife, EPA, Project Wet, local rafting and skiing companies, among other partners, set up information booths. At each booth

participants learn about conservation of water, water activities and the beauty of their watershed. As Chris Crouse, the Clear Creek Watershed's Outreach Coordinator explains,

> "The goal of the festival is to get the people excited about the fact they live in a watershed, defining what a watershed is and give them a better understanding of non-point source water pollution. They discuss that which residents dump down the drain, flush down the toilet, what goes into the storm gutter from out of their driveways affects the water quality of their river. They discuss the correlation between water quality and the quality and quantity of the drinking water."

Diablo Trust hosts an annual "Campout under the Stars", during which members and prospective members enjoy history and music as well as conversation and good food. The Niobrara Council hosts a free one-day festival directed towards families to "get families outdoors and excited about the Niobrara River and other natural resources that we treasure in this area" according to Michelle Garwood, the Programs Assistant for the Niobrara Council.

Creating fun, family-oriented events allows residents to enjoy caring for and protecting their watershed. Participants associate protecting their natural resources with fun and family bonding, which increases their sense of ownership for their special watershed. Participants make the connections between clean water and the health and wellness of their families, and they promote that sense of stewardship in their children. Parents feel they are doing something good for both their water and their children.

River Centers

Educational Centers, like the RFC's River Center, are a great way to permanently house knowledgeable staff, exhibits and information about a watershed. Centers provide a meeting place for residents to discuss watershed issues. The Cosumnes River Preserve hosts a center with hands-on exhibits, educational and recreational opportunities, and picnic facilities for schools and classes to visit. Walla Walla Watershed Partnership boasts the William A. Grant Water & Environmental Center, which is part of the Walla Walla Community College, which houses the Watershed Ecology and Water Management degree programs. The Center also provides free community workshops and K-12 experiential education programs. Henry's Fork Watershed Council established the Henry's Fork Watershed Center in Ashton, Idaho, to provide a central library, database repository, and working place for those participating in the collaborative watershed program. The Center also supports the public's need for watershed information and serves as a focal point for council business.

The Belle Fourche River Watershed Partnership customized a stock trailer to demonstrate best resource management practices. The trailer simulates rainfall, wind erosion, tillage, cover crops, diversions, terraces and their effects on soil types. This hands-on demonstration generates discussion and interest in non-conventional agricultural systems, and is loaned to partners upon request. The unusually high number of farmers using minimum-till or no-till practices in the watershed is at least partly due to demonstrations at the partnership's soil quality trailer.

Education centers or trailers can be aimed at the general public or specific audiences like landowners in the case of Belle Fourche. This permanent housing communicates the fact that the rivers and watershed issues are important to the community. Once a home for watershed education is constructed, residents will feel that it has become a permanent and integral part of their community.

Photo 4.4: Belle Fourche River Partnership soil quality trailer, Courtesy of Belle Fourche River Partnership.

Measuring Success of Educational Programs

Measuring success of educational programs is challenging, but many of the community-based organizations regularly evaluate to help improve upon their programs.

Partnerships like the Coalition for the Upper South Platte conduct tests before and after school programming to evaluate how much students learned. They found that the more children are in the field, the more they retain for end of the school year testing. Upper Deschutes Watershed Council measures the success of their outreach programs by "student and teacher surveys, pre and post tests, and a range of reflective writing activities to measure changes in knowledge and/or changes in participants attitudes or behavior" according to Kolleen Yake. Diablo Trust measures success through discussion and Q & A during a subsequent in-school class period after a field trip. Pre- and post-content tests along with student and teacher comments are used in evaluation.

Several partnerships hold formal meetings to discuss staff observations of how well residents are participating and personal observations of the effectiveness of the programs. Partnerships use these meetings to evaluate the success of their programs. The Cimarron Watershed Alliance monitors the success of their public outreach through monthly discussions on the amount of active participation in projects and whether they end up with a finished project. Clear Creek Watershed Foundation gauges the success of its public outreach by the positive feedback they receive from teachers, students and parents when they go to classrooms or give tours. Some groups measure specific outcomes of their education programs. For instance, a group may measure their success by how many residents have become members of their organization or donate through monetary contributions or volunteer time.

Although challenging to quantify, measuring program success is crucial for many of the community-based partnerships that were researched. Partnerships decide to continue their successful programs and re-evaluate or discontinue unsuccessful outreach programs.

Challenges

Partnerships have identified many challenges faced when implementing their educational programs. The top challenge is usually not enough funding for staffing and resources and has been identified as a major challenge by all the partnerships that were researched. Many organizations have ideas for new and innovative projects, but they do not have the funding to implement them. To manage funding challenges, the Diablo Trust received a grant from the Arizona Advisory Council on Environmental Education. Theresa Springer from The Coalition for the Upper South Platte asks affluent schools to donate money in exchange for her to travel from 20-200 miles to work with that school. She creatively maximizes her time in towns far from home by presenting for Boy Scouts, Girl Scouts or 4-H clubs. Clear Creek Watershed Foundation (CCWF) has overcome the funding and staffing challenges by partnering with other organizations such as the Colorado Department of Health and Environment, Division of Reclamation, Mining and Safety, their local museum and other education and outreach groups. CCWF uses brochures and other educational materials from other bigger budget organizations for distribution.

Another challenge mentioned by several partnerships is the logistics behind a program. Watershed tours and volunteer restoration projects require travel to and from the site location. The Coalition for the Upper South Platte (CUSP) has faced challenges securing transportation for volunteers, staff and school groups. Because their watershed encompasses 2600 square miles, CUSP has "the need for wheels to the field…it's our biggest hurdle" says CUSP's Education Coordinator, Theresa Springer. Another challenge is time. The process of education and outreach can take years and success is not immediate. This long time scale and delayed results can discourage participation and excitement among landowners.

Obtaining involvement from rural communities is another challenge. Partnerships face this challenge by aiming specific outreach to ranchers and landowners like the FRCRM's landowner's guide, and through frequent contact and communication with rural landowners, which builds trust. Additionally, during a natural disaster people are more willing to get involved. For instance, the Coalition for the Upper South Platte had 3,100 volunteers in 45 days

after the Hayman Fire, and an entire 9th grade class from Denver, Colorado came to help out. To increase community participation, partnerships can capitalize on people willing to get involved during a natural disaster by increasing education and outreach during these times.

School-based education programs have challenges of their own. Many teachers feel uncomfortable or unprepared to teach about water issues in their region. Partnerships that construct specific materials that coincide with the teacher's curriculum and provide more student resources help teachers to overcome their initial hesitation to teach watershed issues to their students. Theresa Springer, Education Coordinator for The Coalition for the Upper South Platte, identifies establishing a relationship with a new school as a challenge. It requires finding the right teacher. While some teachers proactively build watershed education that directly fits into a school's curriculum and state-mandated benchmarks, other teachers require repeated visits and annual support from the partnership. Diablo Trust identified three limitations: teachers needed more preparation if they were not comfortable with the course content, students needed additional educational materials, and the logistics and time commitment from trust members was a problem.

CHAPTER FIVE: OBSERVATIONS AND RECOMMENDATIONS

After conversations with the Roaring Fork Watershed Collaborative (RFWC) – Water Committee members during the research group's trip to the watershed and subsequent interviews, the research team concluded that the Roaring Fork Watershed Collaborative (RFWC) – Water Committee understands the major elements necessary for effective regional collaboration. The RFWC-Water Committee recognizes the need for a unified vision and common purpose to ensure the partnership's success and longevity. Rose Ann Sullivan, consultant for Kootenay Resources LLC, said, "I hope with plan implementation that somehow we can actually have real regional planning and implementation in the valley. I hope we find a way where all these different jurisdictions, all these different agencies… find a common purpose, find a way to work together." Many members of the RFWC-Water Committee acknowledge the importance of connecting people to the watershed and building trust for an effective partnership. They appreciate both the benefits and inherent challenges of working with their diverse group of stakeholders. The RFWC-Water Committee's understanding of the subtle and often over-looked characteristics of effective collaboration will continue to benefit the partnership as they move towards implementation of the Roaring Fork Watershed Plan.

The team researched twenty collaborative watershed partnerships and relevant literature, and, subsequently, determined that the RFWC–Water Committee has taken the appropriate initial steps to develop a cohesive and effective partnership. RFWC-Water Committee engages in activities that have proven success in facilitating progress as illustrated in the twenty researched cases. The RFWC-Water Committee has engaged in:

- Diverse representation
- Information sharing
- Joint fact finding
- Building initial relationships
- Buy-in from watershed and participants
- Educational component of Watershed Plan
- Tailored roles for partners

Diverse Representation

A partnership's diverse membership ensures that the interests of all relevant stakeholders are included in discussions and decision-making (Carlson 1999, Wondolleck and Yaffee 2000). A partnership can increase its regional influence, authority, knowledge base, and skill set by engaging a wide range of members and partners. The partnership is less likely to experience opposition from dissenting parties when all interests are included. The partnership's efforts are further legitimized when all the stakeholders' perspectives are considered in the decision-making process. While a few entities are driving the Water Committee's efforts, many organizations are involved. Water Committee members represent local, regional, state, and federal government, non-profits, the private sector, and academia.

Information Sharing

Information sharing involves the distribution of knowledge and expertise among partners, the community, and other organizations (Wondolleck and Yaffee 2000). Information sharing allows partners to learn from everyone's experiences and expand the partnership's knowledge base. It also establishes relationships and facilitates communication among individuals. Regular information sharing enables the partnership to function efficiently and quickly clarify any confusion or misunderstandings among the members. Notably, the Water Committee began from a desire to share information among the stakeholders in the Roaring Fork Watershed. The Water Committee initially hosted presentations, which were followed by a group discussion. These initial efforts opened the doors for further communication and led to the discussions of a Watershed Plan. Additionally, Water Committee members convened public meetings to share the findings of the *State of the Roaring Fork Watershed Report* and solicit public input on water resource issues.

Joint Fact-Finding

Joint fact-finding is the process of learning about the watershed and developing a common understanding of the environmental, social and economic issues surrounding it (Karl, Susskind, and Wallace 2007). Joint-fact finding enables participants to understand and support the validity of common facts and concepts. When participants build knowledge collectively, they are less likely to dispute the information. The joint-fact finding experience also solidifies relationships and trust among the partnership's members. In 2008, the Water Committee produced the *State of the Roaring Fork Watershed Report* through a joint-fact finding effort. The comprehensive Watershed Report serves as a sound technical basis from which the Water Committee can establish goals, objectives and priorities.

Building Initial Relationships

Strong, honest relationships are integral to the success and longevity of an organization (Wondolleck and Yaffee 2000). Relationships built on trust and collaborative effort allow previously adversarial members to identify with each other (Wondolleck, Gray, and Bryan 2003). The relationships foster a safe, comfortable environment for people to share their ideas. Similarly, positive relationships with partners build trust and credibility for the partnership. The Water Committee has collaborated diligently for five years in order to produce the *State of the Roaring Fork Watershed Report*. The working relationships that developed through collaboration by the Water Committee made this report possible. Many of the partners are residents of the watershed and act as ambassadors for the Water Committee's work.

Buy-in from community members, organizations and institutions

A partnership requires support from the communities and organizations within the watershed to achieve success (Gray 1985, USEPA 2001). This community buy-in can include financial support, in-kind donations, influence and/or time. This support likely increases the visibility of the partnership's mission and goals. The Water Committee received considerable financial contributions for the *State of the Roaring Fork Watershed Report* from state, county and

municipal governments; this level of financial support is unusual for young, ad-hoc organizations, and is very beneficial for the continued support of the Water Committee's mission.

Education component of watershed plan

Watershed partnerships implement education and public outreach programs to garner public support and community buy-in for the organization's mission and goals (Leach, Pelkey, and Sabatier 2002). The outreach efforts provide a venue for community participation and increase the organization's engagement of the community. Effective education and outreach builds public awareness for watershed issues and fosters positive behavior changes that benefit the healthy functioning of the watershed's ecosystems. The Water Committee includes education goals and objectives for its recommendations actions as written in the Roaring Fork Watershed Plan. The Water Committee's members understand the importance of education in reducing knowledge gaps and empowering communities to actively protect and restore their watershed.

Tailored roles for partners

Creating unique roles for stakeholders reduces confusion and conflict within the collaborative partnerships (USEPA 2001). Each member contributes their expertise and knowledge to the partnership; this reaffirms that their values and opinions are important. In each of the Water Committee's recommended actions, specific entities are identified as leading or contributing organizations. The Water Committee assigns organizations to initiatives that are best suited to their capabilities.

ORGANIZATIONAL STRUCTURE RECOMMENDATION

The project team identified initiatives in two broad categories, classified either as government-based or community-based. Government-based means the organization is recognized through legislation or works within a government framework; whereas community-based indicates the organization is self-governed. Government-based organizations either serve in authority or advisory roles. Groups with authority have the legal capacity to enforce recommendations; whereas groups in advisory roles provide recommendations to one or more government agencies, but are not in a position to ensure these recommendations are implemented. Community-based organizations are either classified as a 501(c)3 or ad-hoc group. A group organized as a 501(c)3 has this distinct IRS tax classification. An ad-hoc organization, as defined in this report, is a formal partnership that has codified commitments and a decision-making process, but lacks 501(c)3 tax status.

The Roaring Fork Watershed Collaborative - Water Committee is leading watershed planning efforts in the Roaring Fork Valley as an informal ad-hoc organization.

Recommendation #1: Establish a Memorandum of Understanding between partner organizations

The team's observed that the current organizational structure of the RFWC – Water Committee falls into the study's Ad-Hoc category. However, the Water Committee lacks any formal organizational commitment by its members or partners. Therefore, the team is recommending that RFWC consider establishing a Memorandum of Understanding (MOU) to develop more formalized commitments among its partners. An MOU provides a sense of legitimacy, confidence in the process, and can serve as a guide when disagreements arise (Wondolleck and Yaffee 2000). A more formalized organizational structure may also help the group achieve its objectives and enable RFWC to secure funding from federal agencies like the EPA.

This recommendation does not preclude the Water Committee from evolving into other organizational structures in the future. The team simply feels the development of an MOU could be a helpful first step. Many of the partnerships studied evolved from a loose collaboration of members, much like the Water Committee, to one that has commitments from members and partners, clearly defined roles and responsibilities, goals, and objectives. Based upon the MOUs received from some of the partnerships studied, the Water Committee's MOU should include ground rules for coordination, the organization's purpose and goals, and the partnership's organizational structure in terms of its Board of Directors, committees, and staff.

ACTIVITIES RECOMMENDATIONS

The Roaring Fork Watershed Collaborative-Water Committee is sharing information, building a base of common knowledge and developing a watershed plan. The *State of the Roaring Watershed Report* serves as the group's environmental assessment, the base of technical data from which they can develop goals and objectives. The Water Committee is now formulating Recommended Actions for the Watershed Plan, specifically assigning roles to partner organizations. All of these actions fall under the "initial activities" discussed earlier; these are part of their internal development process that precedes the direct actions that will likely follow to protect, enhance and restore the watershed. The following outlines a list of recommendations that the Water Committee could consider.

Recommendation #2: Trust and relationship-building

Many of the partnerships met more often to solidify their relationships and build trust. The Water Committee should consider scheduling regular meetings. Partnerships have alluded to the importance of face-to-face interaction and how these help build consensus on partnership's objectives and goals (Innes 1999). Regular meetings can also include watershed tours or presentations. These regular meetings demonstrate an informal commitment to the group's mission. The Water Committee should also ensure that the interests of those with a stake in the watershed are represented.

Recommendation #3: Pursue an initial voluntary project

Looking ahead into the implementation phase of the Watershed Plan, the Water Committee might consider moving forward with a simple, initial project that many support. The success of this initial project will help instill confidence within the group and set the stage for future endeavors.

Recommendation #4: Think creatively about solutions

Once the group has had some initial success, it can draw upon the partners' experience and insight to develop creative solutions for the specific issues facing the watershed. While prior appropriation water law can be restrictive, many watershed partnerships have developed unique, successful ways of addressing their goals without advocating for change at the state or national level. Market-based mechanisms are receiving an increased amount of attention worldwide. The Water Committee can work with its partners to determine what solutions will fit the Roaring Fork Valley.

Recommendation #5: Pursue varied funding opportunities

Once the Water Committee has gained a greater commitment from its members, it will need to increase its capacity to act. The partnerships examined in this study primarily used state, federal and local grants. However, portions of their budgets also came from membership dues, donations, revenue from property leases, utilities and large non-profit organizations. The Water Committee should seek support from a multiple sources because funding will be needed to implement the actions set forth in the Watershed Plan. Depending on the objectives of the Water Committee, it may also consider offering incentives to encourage voluntary conservation measures on private land. Notably, the US EPA's Section 319 nonpoint source pollution grant program has contributed substantially to many of the partnerships studied.

EDUCATION AND PUBLIC OUTREACH RECOMMENDATIONS

The Water Committee recognizes that education has a prominent role in its goals and objectives. The Roaring Fork Conservancy (RFC) has been involved in the watershed planning process and plans to continue to play a key role in education and outreach initiatives during implementation of the Roaring Fork Watershed Plan. RFC has begun outreach on the Water Committee's priority issues of water quantity and riparian habitat. Nonetheless, a range of actors are identified in the recommended actions as education partners for the implementation of the Watershed Plan. These include: the Colorado River District, Aspen Center for Environmental Studies, Western Rivers Institute, NRCS, CDOW, USFS, BLM, Division of Water Resources, local agencies, Roaring Fork Environmental Network, Northwest Colorado Council of Governments, and Colorado Department of Public Health and Environment.

The following education recommendations are suggestions for the Water Committee to successfully continue with Phase II of the Watershed Plan.

Recommendation #6: Continue and expand upon existing programs

The Water Committee might consider expanding upon current educational initiatives in the watershed and encouraging partnerships between organizations. The team recommends continuing with existing student outreach initiatives and expanding upon adult education and awareness programs. Many of the Watershed Plan's goals seek to engage community members, raise awareness, and encourage behavior change. The Water Committee might also think about a more comprehensive approach, like targeting an entire community; these initiatives would include both adult and child programming in a specific geographic area. The Water Committee might also consider including media and programming for Spanish-speaking minority populations to increase their extent.

Recommendation #7: Research and evaluate education efforts

The Water Committee could also consider a social marketing campaign, a research-driven approach to education as outlined by the River Network and several other campaigns included in this study. Depending on the goals and objectives of the Watershed Plan's education initiatives, the project team recommends identifying and researching target audiences to increase the effectiveness of limited funds (Kotler and Lee 2008). While research can be resource-intensive, the scale of this research could also be adjusted to the funding available. The financial burden of such a large-scale initiative could also be shared among organizations and partners. Monitoring and evaluation will provide feedback and enable education organizations to adjust their techniques when response to their efforts lags. Measuring success improves education programs and provides justification for further financial support.

Recommendation #8: Consider a broad spectrum of education techniques

Raising public awareness is different from encouraging behavior change; the techniques employed by education organizations need to reflect their objectives (Kotler and Lee 2008). Mass media techniques and one-on-one, face-to-face education initiatives are both important. Mass media techniques that can be considered are public radio, television, local newspapers, advertisements, print ads and posters on public transportation, website, videos on YouTube and billboards. One-on-one opportunities for education include workshops, design classes and demonstrations.

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PART II: CASE STUDIES

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CASE 1. FOUNTAIN CREEK WATERSHED FLOOD CONTROL & GREENWAY DISTRICT

Location: Central Colorado
Prepared by: Angela Michalek

Photo 1.1: Fountain Creek, Courtesy of the Fountain Creek Master Planning effort.

The Fountain Creek watershed is located on the Front Range of Colorado and is home to the cities of Colorado Springs and Pueblo. A dramatic increase in urban development has caused severe flooding, sedimentation, and erosion in the lower watershed. The Fountain Creek Vision Task Force formed in 2007 to put together legislation to establish the Fountain Creek Watershed Flood Control and Greenway District. In 2009, the legislation passed through Colorado's General Assembly. The Governor signed it into law as a Colorado Title 32 District, which has land use authority in the 100-year floodplain between the Cities of Fountain and Pueblo. Since the mid-1990s, similar efforts have been made to manage nonpoint source and water quality concerns on Fountain Creek, but they were unable to complete any projects and lacked the support the District currently enjoys. The District is governed by a 9-member Board of elected officials and supported by both a Citizens Advisory Group and a Technical Advisory Committee. The District has not yet secured permanent funding, but is currently partnering with other watershed efforts and plans to put a mill levy on the ballot in 2012. The Fountain Creek process demonstrates how long it can take to build trust and interest in watershed planning and management. Urban watersheds also tend to have additional jurisdictions and regulations that complicate the planning process. While the Roaring Fork Watershed is more rural, both watersheds need to unite several counties and municipalities around a common goal. In the Fountain Creek Watershed, Pueblo and El Paso counties have moved past their differences and are now working together. Garfield and Pitkin counties would need to follow in their footsteps to develop a watershed plan in the Roaring Fork Valley.

Mission Statement

The members of the Fountain Creek Vision Task Force have come together to turn the Fountain Creek watershed into a regional asset that adds value to our communities. We are working to create a healthy waterway with appropriate erosion, sedimentation and flooding that supports diverse economic, environmental and recreational interests. We will cooperate to enhance and protect Fountain Creek, promoting sustainable use by members of our watershed community and by the visitors we know this natural amenity will attract.

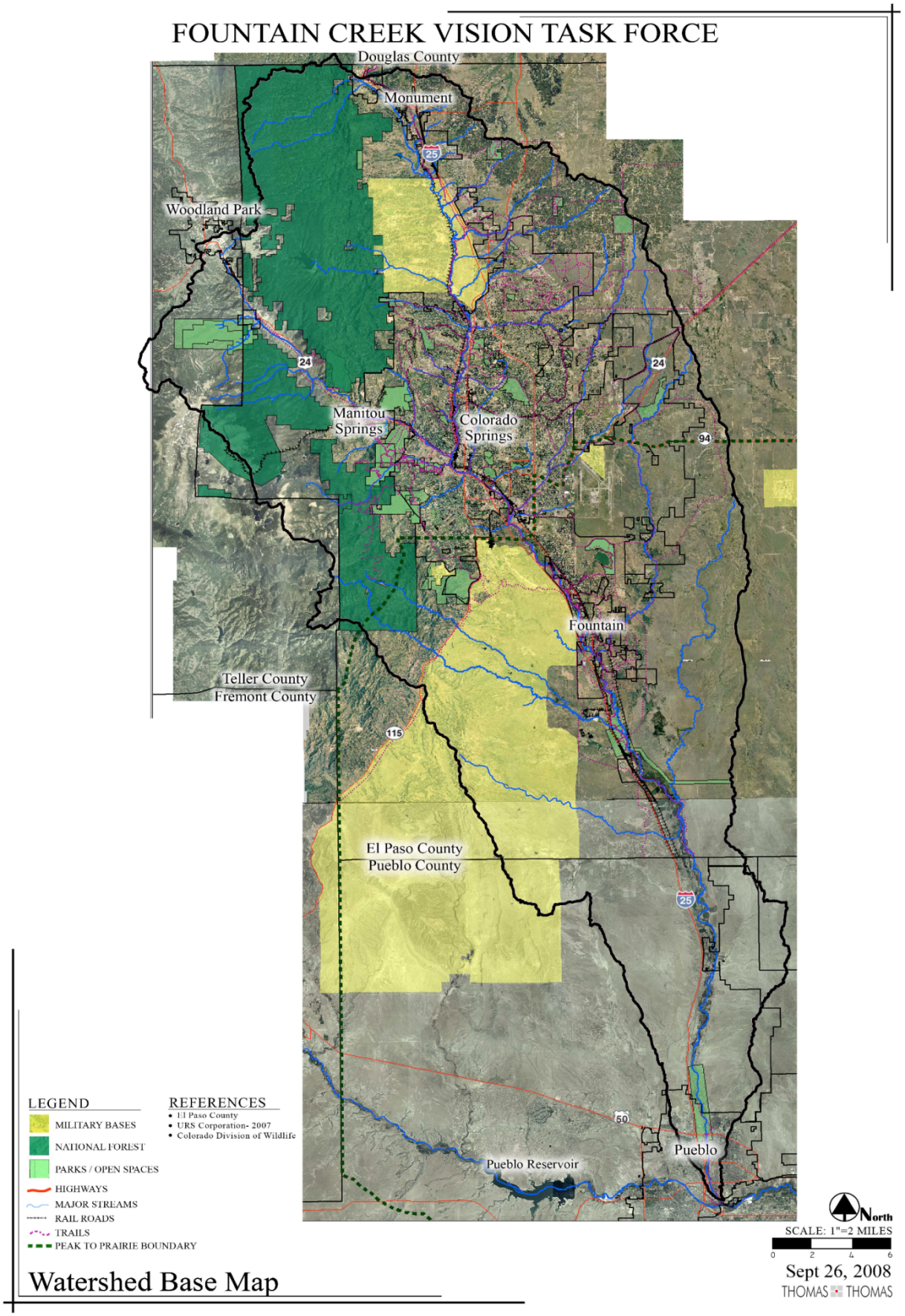
NATURAL RESOURCE & SOCIOECONOMIC CONTEXT

Fountain Creek flows from the slopes of Pikes Peak, one of Colorado's most famous 14,000-foot peaks, down through Colorado Springs and Pueblo before entering the Lower Arkansas River. The Fountain Creek watershed lies in three counties, El Paso, Pueblo and Teller, and covers 927 square miles. Population growth in the area has led to an increase in impervious surface, a greater need for water, and plans to manage existing supplies (Maroney 2010). El Paso County is home to Colorado Springs, the state's second largest city and rated as Money magazine's "Best Place to Live" in 2006 (CNN 2006). The Census Bureau estimates that 394,951 people live in Colorado Springs (US Census Bureau 2006-2008). The city is predominantly Caucasian and has a median household income of $53,992. Located in Pueblo County, Pueblo has a population of 106,130 people (US Census Bureau b 2006-2008). While most of Pueblo is also Caucasian, slightly less than half are Latino. Pueblo's median household income is $34,814. The other six municipalities are Fountain, Manitou Springs, Monument, Woodland Park, Palmer Lake and Green Mountain Falls (PPACG 2003). Only Woodland Park and Green Mountain Falls are found in Teller, a rural county that contains a small portion of the watershed.

Military installations like Fort Carson, the Air Force Academy, and Peterson Air Force Base contribute significantly to the area's economy (Maroney 2010). Technology companies, such as Hewlett-Packard and Intel, and defense contractors, like Northrup Grumman and Lockheed Martin, all have nearby offices to serve these military facilities.

The watershed contains some agriculture along the main stem between Pueblo and Fountain, in the fertile floodplain (Maroney 2010). Like most fluvial ecosystems, Fountain Creek is dynamic and its meander changes from year-to-year. Consequently, the floodplain contains rich soils from past sedimentation. Farmers lose significant acreage when the creek reclaims part of the floodplain or when floods wash entire sections out. Floods also cause irrigation structures to fill with sediment. Nevertheless, ranchers far outnumber the amount of farmers in the watershed; most of the rangeland is east of Fountain Creek (Maroney 2010). Other land uses include: residential, industrial, commercial and office, schools and institutions, parks and recreational, national forest and undeveloped land (PPACG 2003).

Photo 1.2: Flows cut banks on Fountain Creek, Courtesy of the Fountain Creek Master Planning effort.


FOUNTAIN CREEK VISION TASK FORCE
Douglas County
Monument
Woodland Park
Manitou Springs
Colorado Springs
Fountain
Teller County
Fremont County
El Paso County
Pueblo County
Pueblo Reservoir
Pueblo
LEGEND
MILITARY BASES
NATIONAL FOREST
PARKS / OPEN SPACES
HIGHWAYS
MAJOR STREAMS
RAIL ROADS
TRAILS
PEAK TO PRAIRIE BOUNDARY
REFERENCES
El Paso County
URS Corporation- 2007
Colorado Division of Wildlife
North
SCALE: 1"=2 MILES
0 2 4 6
Sept 26, 2008
THOMAS THOMAS
Watershed Base Map

PARTNERSHIP'S BEGINNING

The Fountain Creek Watershed Project began in 1995 to address water quality, flooding and erosion issues within the watershed (PPACG 2010). The Project's first grant, an EPA Regional Geographic Initiatives grant obtained through the Pikes Peak Area Council of Governments (PPACG), was used to hire a coordinator and fund public outreach efforts. The project distributed newsletters, Best Management Practices pamphlets, produced videos, conducted watershed tours, and developed a 350-person mailing list (PPACG 2003). However, the initial project did not include the City and County of Pueblo, where most flooding and damage was occurring (Muzzy 2010). The Project members wrestled with the idea of becoming a 501(c)3 or incorporating the organization into the PPACG. After much discussion, they felt becoming a non-profit would not directly involve elected officials and the PPACG title would make them eligible for larger pots of funding.

In 1998, the Project became incorporated into the PPACG, as the Fountain Creek Watershed Forum (PPACG 2003). Unlike the Fountain Creek Watershed Project, the Forum brought together all the counties and municipalities in the watershed. Its funding came from state and federal agencies, such as the Colorado Department of Public Health & Environment (CDPHE), the US Environmental Protection Agency (EPA), and Soil Conservation Districts, for planning and public education activities. The Forum had a 3-tiered structure; a Technical Advisory Committee (TAC), Policy Development Subcommittee, and a Board of Directors. The Forum later eliminated the Policy Development Subcommittee because its discussions and presentations were redundant, mirroring that of the Board. In 1999, Fountain Creek experienced a huge flood, causing millions of dollars in damage. While destructive, the flood event spurred interest in the watershed planning effort (Muzzy 2010, Maroney 2010).

In 2000, the Forum received a grant from the Colorado State Soil Conservation Board, matched by the US EPA and the Colorado Water Conservation Board (CWCB), to develop a watershed plan (PPACG 2003). The original plan was published in 2002. The Forum then added some supplemental analyses and was re-published in 2003. The watershed plan was a collaborative effort between all the counties and cities, the military installations and agencies in the watershed. Unfortunately, the Forum lost its momentum and ran out of funding (Muzzy 2010). Underlying resentment also plagued the earlier watershed efforts.

In the past, tension and discord between El Paso and Pueblo counties ran deep, stemming primarily from Fountain Creek's flooding and water quality issues (Muzzy 2010, Maroney 2010, Barber 2010). Colorado Springs' rapid development increased the amount of impervious surface in the watershed, leaving few areas for water to percolate back into the ground. During a thunderstorm, voluminous stormwater flows gush down Fountain Creek into Pueblo. Fountain Creek used to dry up over the summer. Persistent sanitary sewer overflows from Colorado Springs have also aggravated the situation (Woodka 2007).

"Interstate 25, which runs between Pueblo and El Paso Counties, in Pueblo is known as the Ronald Reagan Memorial Highway and in El Paso is known as the John F. Kennedy Memorial Highway, so that gives you kind of the salt and pepper relationship that we have," described

Gary Barber, former Director of the El Paso County Water Authority and current Executive Director of the Fountain Creek Watershed Flood Control & Greenway District.

Nevertheless, the Forum's Watershed Plan helped lay the groundwork for a $3 million US Army Corps of Engineers (USACOE) study (Muzzy 2010). All 8 municipalities and 3 counties in the watershed recognized the need for more comprehensive, reliable data on the hydraulics and hydrology of Fountain Creek; each helped to fund the USACOE study (Maroney 2010). While the Forum stopped meeting after completing the Watershed Plan, the original TAC remained involved with the USACOE study (USACOE 2009). The USACOE hired a consulting firm called URS to conduct the technical analyses, but the TAC helped by advising the study team. The federal government paid for half of the study, the local governments contributed $900,000, $300,000 was paid for by the Colorado Water Conservation Board and $300,000 by Colorado's Department of Local Affairs.

The current Secretary of the Interior, Ken Salazar took a keen interest in the Fountain Creek watershed, calling it the "crown jewel" project and producing a paper in 2006 on the initiative (Woodka 2008). Salazar is a native Coloradoan who served one term as Senator before receiving his current appointment. His support has helped rally watershed interests and residents around Fountain Creek. "If we can say, 'you know, Ken Salazar told us to do this,' it helps provide a little ammunition" said Graham Thompson, an engineer and consultant for the USACOE study.

PARTNERSHIP'S EVOLUTION

Given Colorado's semi-arid climate and rate of population growth, water projects are often a subject of debate and influence. In the late 1990s, the Colorado Springs Utilities Department developed a plan for a water project called the Southern Delivery System (SDS), recently estimated to cost $2.3 billion in construction and financing (Welsome 2010). Colorado Springs Utilities is a municipally-owned utility, meaning the Colorado Springs City Council is also the Utility Board (Barber 2010). The SDS project would take more water out of the Lower Arkansas River and construct a 62-mile pipeline to move water from Pueblo Reservoir up to Colorado Springs (Welsome 2010). The pipeline would have the ability to carry 78 million gallons per day up to El Paso County and the return flows would come down Fountain Creek (Woodka

Colorado Land Use Planning Statute:
The Areas and Activities of State Interest Act (AASIA)

Passed in 1974, the AASIA allows local governments to designate "areas and activities" of state interest (Dischinger 2005). Afterwards, the local government must develop what are known as 1041 regulations, referring to House Bill 1041 that established the legislation. The areas eligible for designation include: historical, natural, or mineral resources, and hazard zones (e.g. floodplains, wildfire prone regions). In addition, water projects, solid waste disposal, wastewater treatment facilities, new development, as well as transportation and utility infrastructure are all examples of "activities of state interest" that local governments can promulgate 1041 land use code for. The local governments must consider Colorado's Land Use Commission guidelines, use due process, and allow state input when developing its 1041 code.

2010c). Colorado Springs Utilities wanted to acquire 42,000 acre-feet of storage in Pueblo Reservoir for the water they hope to remove. To comply with the National Environmental Policy Act (NEPA), they developed an Environmental Impact Statement (EIS). However, the local land use code required a 1041 permit from Pueblo County before Colorado Springs Utilities could move forward with the project. The SDS pipeline added to the existing friction between Colorado Springs and Pueblo. Many people saw the pipeline feeding the continued growth of Colorado Springs and amplifying Pueblo's flooding and sedimentation problems. While Colorado Springs Utilities experienced few complications with the federal permits for SDS, Pueblo's 1041 permit was not forthcoming.

The Lower Arkansas Valley Water Conservancy District and Colorado Springs Utilities have had different opinions on watershed management and water resource legislation in the past. The Lower Arkansas Valley Water Conservancy District (referred to as the Lower Ark.) worked with its local Congressional representatives to block legislation that was supported by Colorado Springs Utilities. The Lower Ark. represents the interests of all the counties on the Arkansas River, from Pueblo down to the Colorado border with Kansas. Water Conservancy Districts have the ability to tax in order to develop and manage water projects. After the legislation was defeated, Colorado Springs Utilities and the Lower Ark. came together to discuss future water development and found that the only issue they could agree on was the restoration of Fountain Creek. Out of those discussions came an Intergovernmental Agreement (IGA) between Colorado Springs Utilities and the Lower Ark. to put together a Master Plan for Fountain Creek. The Master Plan seeks to improve watershed health and water quality on Fountain Creek, from Monument Creek to the Arkansas River. Both Colorado Springs Utilities and the Lower Ark. began by contributing $300,000 over 2 years to the Master Planning effort. The Master Plan is independent of any other Fountain Creek initiatives and maintains its own Board.

To break the impasse that Colorado Springs and Pueblo had reached, Sallie Clarke, El Paso County Commissioner, and Loretta Kennedy, Pueblo County Commissioner, proposed the Fountain Creek Vision Task Force in the summer of 2006 (Barber 2010). Sallie Clarke had been involved in the initial development of SDS (Barber 2010) and Loretta Kennedy sat on the Lower Arkansas Valley Water Conservancy District (Winner 2010). The first meeting drew 250 people, an unmanageable size for their proposed endeavor (Winner 2010). A facilitator for the Keystone Center at the time, Heather Bergman, went to one of the initial meetings for the Task Force and offered to help structure the planning process by working with a subset of people (Bergman 2010). After several meetings, the group unanimously agreed to hire Bergman. They met twice a month for 2 years. The group worked hard to learn about the issues facing Fountain Creek and understand each other's viewpoints. Bergman noted, "I don't know if I've ever seen a group look at their individual interests and say 'Oh, we all kind of want the same thing. We just have to figure out how to get it.'" Notably, the SDS project was not on the Vision Task Force's table for discussion. However, its concurrent negotiations likely impacted the Task Force's progress. For the first year, the money for the facilitator came from "passing the hat". Every major entity, cities, counties, utilities contributed and several individuals from the ranching community chipped in small amounts from their own pockets (Bergman 2010). For the second year, the Arkansas Basin Roundtable approved a grant for $75,000 and the Task Force found $58,000 in matching funds (Barber 2010). Given the nature of Bergman's funding, participants could not intentionally influence the process. Jay Winner, General Manager for the Lower Ark.,

also described the benefits of the facilitator's autonomy, "she could tell a County Commissioner to shut up and she's not going to lose her job. She had the leadership and the guts to call balls and strikes. So, we learned that you had to get a skilled, outside facilitator."

While the Vision Task Force was meeting, the Master Planning process was moving forward (Winner 2010). Initially, the Task Force looked to Colorado Springs Utilities and the Lower Ark. for financing and assistance. At the time, Colorado Spring Utilities and the Lower Ark. were not convinced that the Vision Task Force's efforts would be fruitful and feared any financial contribution would be wasted. However, both entities participated in the Vision Task Force and hoped that its efforts would be successful. They even went a step further and incorporated the ideas and strategies from the Vision Task Force into the Master Plan.

The Consensus committee became the decision-making body of the Vision Task Force and included the following representatives (Fountain Creek Vision Task Force 2009):

- **Counties:** Teller, El Paso, Pueblo
- **Municipalities:** Fountain, Palmer Lake, Colorado Springs, Pueblo
- **Councils of Government:** PPACG, PACG
- **Advocacy Groups:** Colorado Open Lands, Colorado Progressive Coalition, Sierra Club
- **Ranching Community:** Arkansas River basin ranchers, Pueblo County ranchers, El Paso County ranchers
- **Water Management Agencies:** Colorado Springs Utilities, El Paso County Water Authority, Fountain Utilities, Pueblo Board of Waterworks, Lower Arkansas Valley Water Conservancy District
- **Colorado's Congressional Delegation:** Senator Salazar's office, Senator Allard's office, Congressman Lamborn's office, Congressman Salazar's office
- **Other entities:** Colorado State Parks, US Department of Defense, Fountain Creek Technical Advisory Committee

Bergman commented on the Task Force's meaning of consensus, "I consider consensus as both a process and an endpoint. The way I described consensus to them was that by the end of the day we need an agreement that everyone can live with and not oppose." In addition to the Consensus Committee, the Task Force had three other working groups: 1) Water quantity 2) Water quality 3) Land use & Environment. These working groups were further divided into sub-committees. Through these working groups, the Task Force began to define goals, objectives and eventually implementation strategies. Having all stakeholders involved in each meeting, helped to educate everyone on the spectrum of issues at hand. Aside from the Consensus Committee, over 60 people were regularly involved in the working sessions (Fountain Creek Vision Task Force 2009). The process was open to the public and consequently, the group never held a meeting without a reporter in the room (Bergman 2010). While not a subject of debate, the 1041 negotiations helped create a sense of urgency and willingness to cooperate (Barber 2010). The negotiations indicated that Colorado Springs Utilities was willing to compromise, commit to restoration and put financial resources into Fountain Creek and the master planning efforts.

The Task Force held approximately 8 public meetings over the course of two years (Bergman 2010). They presented the Vision Task Force's progress and solicited feedback from the public.

At a few meetings, they electronically polled participants on their grasp of Fountain Creek's problems, to help them identify knowledge gaps and generate ideas for future public outreach efforts. The Task Force also benefited from the USACOE study's data and the USGS stream gauge water quality data (Bergman 2010). They were able to bring in experts to give presentations on the technical aspects and answer questions their questions. The Vision Task Force then wrote white papers on the objectives and strategies for Fountain Creek (Winner 2010).

The Vision Task Force examined the water quality issues facing Fountain Creek. High concentrations of E. coli, selenium, and sediment have all lead to impairments in the watershed (Maroney 2010). Selenium naturally occurs in the area's soils and its concentrations fluctuate with water flow. The 2006 and 2008 EPA 303(d) lists included the upper reaches of Fountain Creek, impaired for E. coli (EPA 2010). Many people blamed Colorado Springs Utilities for the high E. coli counts in Fountain Creek, attributing it to sanitary sewer leakages (Zubeck 2006). Pueblo's District Attorney and the Sierra Club went so far as to file lawsuits against Colorado Springs Utilities. Consequently, a two-year E. coli study was conducted from late 2007 until the fall of 2009 (USGS 2010). After the Vision Task Force process ended, the study was able to rule out wastewater discharges and concluded from genetic markers that the excessive E. coli came from an avian source.

In 2008, the Vision Task Force developed state legislation for the Fountain Creek Floodway and Urban Greenway District, patterned after the Denver Urban Drainage District (Barber 2010). "Because of the very disparate politics between El Paso County and Pueblo County, the thought was that if the two counties were cooperating with each other, that would send a strong message to the legislature that this was something the local folks really wanted to do," said Gary Barber. The Vision Task Force thought it would take 2 years before the legislation was approved by the state legislature. As an interim step, they put together another IGA between the counties, the municipal entities, and the Lower Ark. (Winner 2010). The working groups were disbanded and the IGA established the Citizens Advisory Group and the Technical Advisory Committee. The IGA also defined the District's governance structure. Despite the difference in population, 4 members of the 9-member Board were from El Paso County and 4 members were from Pueblo County (Frost 2010, Barber 2010). The IGA stated that both counties would pursue legislation to establish the Fountain Creek Watershed Flood Control and Greenway District. To permanently fund the District, they envisioned a mill levy in both counties. As a result, the IGA required both counties to put the same measure on the ballot at the same time (Barber 2010). The IGA was necessary to ensure that none of the jurisdictions involved would try to kill the bill in the state legislature (Winner 2010). Manitou Springs, a municipality in the upper reaches, refused to be part of the IGA and did come out against the legislation.

In January 2009, Senator Abel Tapia, a Democrat from Pueblo County, introduced Colorado Senate bill 141 (Ashby 2009). In the House, Representative Marshall Looper, a Republican from El Paso County, and Representative Sal Pace, a Democrat from Pueblo County, introduced the same legislation. As the bill was moving through the legislature, the final 1041 permit negotiations were occurring (Winner 2010). In the 1041 permit, the two counties chose to specifically name the District as the entity that would eventually manage the restoration and mitigation of Fountain Creek. In early 2009, everything came together. The Vision Task Force

had finalized the interim IGA and the Strategic Plan. The 10-year USACOE study was at last completed and the 1041 negotiations ended with the issuance of a permit on March 18, 2009 (Barber 2010). The legislation flew through the General Assembly and Governor Bill Ritter signed the Fountain Creek Watershed Flood Control and Greenway District Act, SB 141, into law on April 20, 2009 (Clark 2009).

During the process, they realized, politicians also need to be educated on the issues before they act as spokespeople for the initiative (Winner 2010). Jay Winner explained,

"The Fountain Creek Vision Task Force did get $75,000 in funding from a Colorado Water Conservation Board grant. Well, the politicians, they had no idea where that money came from. When they were in front of the legislature, the legislature was trying to explain to them where the money came from and they disagreed with them!"

Fortunately, the District was able to save face by having more knowledgeable members on hand and learned from the experience.

To adjust for the potential impacts of putting more water into Fountain Creek, the 1041 permit requires Colorado Springs Utilities to contribute $50 million towards Fountain Creek's mitigation and restoration (Woodka 2009). Since the permit identified the District as responsible for these activities, the District will receive $10 million per year over 5 years, beginning in 2016, the tentative date of completion for the Southern Delivery System.

Notably, the District immediately adopted the Vision Task Force's Strategic Plan as well as the USACOE study (Barber 2010, Winner 2010). The Lower Arkansas Valley Conservancy District, Colorado Springs Utilities and the Fountain Creek District have also entered into another IGA to finish the Master Plan (Winner 2010). Both Colorado Springs Utilities and the Lower Ark. agreed to fund the District's Executive Director position for two years, since the District has no revenue source, enabling it to work on the Master Plan (Woodka 2010a). This IGA included 30-day opt outs; both Colorado Springs Utilities and the Lower Ark. can exit the agreement within 30 days, as insurance on the newly established Fountain Creek District (Winnner 2010).

The District now works in tandem with the Master Planning effort (Barber 2010, Winner 2010). A team of consultants from two different firms is helping them review and develop the USACOE study's policy recommendations and proposed projects. The group has determined that 450 acres in the watershed could host stormwater detention ponds, which would slow the release of water down the creek (Woodka 2010e). The Master Planning effort has begun to implement pilot projects on Fountain Creek, providing examples of similar Best Management Practices, like constructed wetlands. Meanwhile, the District is also developing a permanent funding strategy (Barber 2010).

ORGANIZATIONAL STRUCTURE

Fountain Creek District Board Members

Jeff Chostner – Pueblo County Representative
Pueblo County Commissioner

Dennis Hisey – El Paso County Representative
El Paso County Commissioner

Larry Atencio – City of Pueblo Representative
Pueblo City Councilmember

Larry Small – City of Colorado Springs Representative
Colorado Springs City Councilmember

Gabe Ortega – City of Fountain Representative
Fountain City Councilmember

Leroy Mauch – Lower Arkansas Valley Water Conservancy District

Max Stafford – El Paso County Small Municipalities

Jane Rhodes - Pueblo County Citizen at Large

Richard Skorman - Citizens Advisory Group

While the mechanism has changed over time, the communities' goals have remained the same, to improve conditions on Fountain Creek (Maroney 2010). The District has a 9-member Governing Board of publicly elected officials, with equal representation from both Pueblo and El Paso Counties (Frost 2010, Barber 2010). The Vision Task Force chose this format to ensure the Board is accountable to the citizenry, if by no other means than re-election (Barber 2010). The District's current and only staff member is its interim Executive Director, Gary Barber. Barber began his position on January 1, 2010 and his title is referred to as "interim" until the District secures a permanent funding source. Barber is also on the Board of the Colorado Watershed Assembly and Chairman of Colorado's Lower Arkansas Basin Roundtable. In order to make financial decisions, the Board must have a supermajority, seven out of nine votes. The Board takes up items based on the recommendations of the Citizens Advisory Group (CAG) and the Technical Advisory Group (TAC). The District has land use authority in the 100-year floodplain on the segment of Fountain Creek between the cities of Fountain and Pueblo.

The Citizens Advisory Group (CAG) currently has 17 members, appointed by the Governing Board, who meet on a monthly basis (Frost 2010). Ferris Frost chairs the CAG, representing agricultural interests in the watershed. Frost compiles the CAG's agenda 2 weeks prior to the meeting and distributes it to the members. The agenda is finalized one week in advance and approved at the meeting. The CAG's purpose is to develop interest in the watershed and establish a dialogue between the District and the public. The CAG makes its decisions by a majority vote and shares a representative with both the Governing Board and the TAC.

Dennis Maroney, the City of Pueblo's Stormwater Director, is the Chairman of the TAC that also sits on the CAG (Maroney 2010). The Technical Advisory Committee also meets once a month and is primarily composed of all the stormwater managers from the different jurisdictions. They are working to develop a unified stormwater criteria manual for Pueblo and El Paso County, incorporating Best Management Practices and Low Impact Development techniques (Maroney 2010).

The District has regulatory land use control and authority in the floodplain between the cities of Fountain and Pueblo, in both El Paso and Pueblo counties (Muzzy 2010). As a Colorado Title

Denver Urban Drainage District

The Fountain Creek Watershed Flood Control and Greenway District was based on the Denver Urban Drainage & Flood Control District's (DUDD) model. Herein lies a brief explanation of the DUDD's structure, function and goals.

"The Urban Drainage District works with local governments to address multi-jurisdictional drainage and flood control challenges in order to protect people, property and the environment."

In 1969, the Colorado state legislature created the Denver Urban Drainage and Flood Control District, a pioneer of its time (Urban Drainage & Flood Control District 2009). This District was formed to help local governments manage and coordinate drainage and flood control efforts amongst 38 jurisdictions, 6 counties as well as 32 town and cities. Consequently, the DUDD's management requires a lot of coordination with local governments. The population within the District is 2.3 million people.

Unlike the Fountain Creek District, the DUDD is not based on the boundaries of a watershed; instead, it develops and maintains 1600 miles of drainage in the Denver Metro area. The DUDD is funded by four different mill levies and administers the following programs: 1) Master Planning, 2) Floodplain Management, 3) Design & Construction, and 4) Maintenance & Preservation. Over the years, the levies have increased to 0.9 mill total (1 mill is equivalent to $1 for every $1000 of property). As a result, the DUDD has an annual operating budget of $22 million. The District maintains a small 23-person staff, contracting most of its work out to consulting firms.

32 District, they have the power to levy taxes and incur debt. During the Vision Task Force process, the Consensus Committee discussed several different urban watershed partnership models, before settling on one (Barber 2010). In the end, they modeled the Fountain Creek Watershed Flood Control and Greenway District after the Denver Urban Drainage District (DUDD). The DUDD formed in response to a major flood in 1965 on the Platte River and was the first holistic approach in Colorado towards managing stormwater.

The Fountain Creek Foundation and the Greenway Foundation were established in the fall of 2008, as the Vision Task Force's work was coming to an end (Barber 2010). Both foundations were formed independently of the Task Force process and receive their funding through grants and private donors (Maroney 2010). The Greenway Foundation was formed with the intent of improving and creating recreation opportunities along Fountain Creek. They have procured easements for trail corridors along Fountain Creek. As non-profit partners, these entities can help the District capture other grant funding opportunities that they would otherwise be ineligible for.

The Federal Emergency Management Agency (FEMA) is the federal authority that establishes the floodplain and regulates construction and insurance purchases within it (National Academy of Sciences 2009). Currently, FEMA is digitally mapping the floodplain in the stretch of Fountain Creek where the District has land use authority (Maroney 2010). However, a discrepancy exists between the flow estimates that FEMA generated using a gauge analysis and those published in the USACOE study. FEMA's numbers for the 100-year flood were lower

than those in the USACOE study. The District is currently trying to work with FEMA to adopt the USACOE estimates, thereby preserving a larger floodplain and ensuring the data's consistency. By defining the 100-year floodplain, FEMA's numbers will also establish where the Fountain Creek District's land use authority exists (Woodka 2010b).

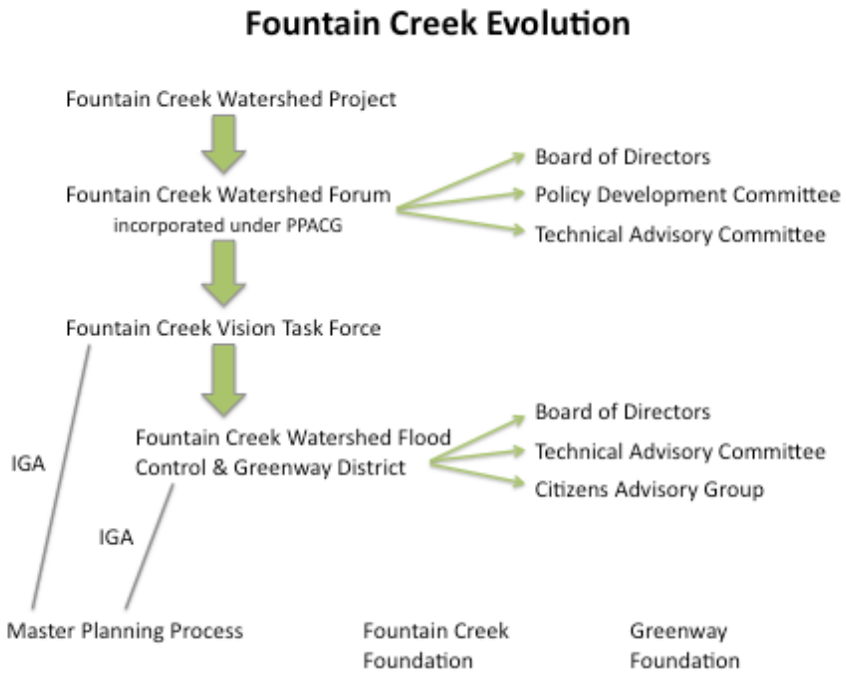


Figure 1.1: Fountain Creek Watershed Flood Control & Greenway District's Evolution.

CHALLENGES

Funding

The Fountain Creek District has not yet secured a permanent funding source. Beginning in 2016, the District will receive a large influx of mitigation funds, as mandated by the 1041 permit for the SDS project. However, the challenge will be to sustain involvement and interest in Fountain Creek and the District over time (Winner 2010). While the cities and counties are willing to contribute to the effort, their financing changes year-to-year. The District is looking forward to the 2012 elections when they hope to put a mill levy on the ballot in Pueblo and El Paso Counties. Given the current economic strain, the proposed tax will undoubtedly be met with resistance. Colorado Springs' budget crisis has made national headlines for turning off one-third of its streetlights (Booth 2010). "It's a pretty tough time to put your hand out to taxpayers, saying 'give me some more tax dollars' so that's probably our greatest challenge" said Gary Barber. While the Vision Task Force was happy to see the District established so quickly, they were not fully prepared administratively or financially for its responsibilities (Barber 2010). A permanent funding source will help the District hire a full-time staff and guarantee its future.

Number of Interests

Urban watershed partnerships inevitably deal with more jurisdictions, interests and complications when compared to rural initiatives. The Fountain Creek Watershed Flood Control and Greenway District has served as a testament. Water drains off of Pikes Peak at 14,110 ft to the confluence of the Arkansas River at 4,000ft (Thompson 2010). "We have 10,000 ft of vertical relief, highly erodible soils, massive overdevelopment, 600,000 people, and lots of parking lots. Technically speaking, the watershed is coming unzipped," said Graham Thompson, engineer and consultant for the USACOE study and the Master Plan. However, many planning efforts and meetings have gone into Fountain Creek with few projects to show for it. The PPACG/PACG watershed plan was the precursor to the USACOE study, which lasted 10 years. The Vision Task Force was needed to galvanize political interest in the planning effort and develop regional implementation strategies. "All the technical reports in the world aren't going to merit spending extremely constrained dollars, unless you get enough public interest and enough elected official interest" reiterated Thompson. While the Vision Task Force members recognize they have to implement new strategies to try to control future development, they must convince the public of its value (Maroney 2010). The District plans on using public education to build support for the mill levy (Barber 2010). "People need to realize that Fountain Creek can be a great asset for all its communities," said Dennis Maroney.

ACCOMPLISHMENTS

Building trust & relationships

"The biggest challenge and the biggest accomplishment is that Pueblo and Colorado Springs are talking. We've changed history in this region because the animosity was deep and long-lasting," said Ferris Frost, Chairperson for the CAG. Both, the SDS negotiation and the Vision Task Force process helped to mend the relationship between Pueblo and Colorado Springs. "I think the time we spent together allowed us to know each other as human beings, not us versus them, which then allowed us to forge an entity that was in the best interest of everyone in the watershed," said Gary Barber. Pueblo largely felt like Colorado Springs did not care about the impact it was having on the lower watershed. The Vision Task Force process helped them to understand what the issues actually were as well as the abilities and limitations of each stakeholder. "The watershed concept has allowed us to look at things a little differently. We're not just concerned about what's happening in our backyard but what happens upstream and downstream," commented Dennis Maroney.

Policy Analysis

The ACOE study, not only recommended and prioritized technical actions, but it examined the land use regulations contributing to erosion and sedimentation (Muzzy 2010). The USACOE was very careful not to target or blame any particular jurisdiction, which led to its general acceptance. The USACOE study made 17 general recommendations and proposed 46 potential projects (USACOE 2009). "It was a turning point, we started to realize that it wasn't just technical strategies that was going to bring about a good solution, but policy strategies too. It's

the policy strategies that bring about solutions at the source of the problem," said Rich Muzzy. The District's Technical Advisory Committee is now revising the land use code and writing a regional criteria manual.

Master Plan

By virtue of the IGA, the District is a partner in the Master Planning effort and can also lay claim to the Master Plan's recent achievements. (Woodka 2010a). A $1 million demonstration project recently broke ground in Pueblo to install a stormwater detention pond and a sediment removal system. Work on the Midland Greenway Trail project has also begun, linking Fountain Creek to other existing trails. Overall, the partners are trying to increase Fountain Creek's visibility within the communities. The Master Planning effort has another $6 million in projects waiting to be implemented over the next 2 years.

PUBLIC OUTREACH & EDUCATION

The District lacks funding to launch any large, costly public awareness initiatives. However, the CAG will be responsible for future public outreach and education efforts. The CAG wants to use recreation to interest people in the watershed and develop support for the 2012 mill levy (Frost 2010). The CAG Chairperson, Ferris Frost, explained, "That's the appeal, because people aren't going to vote for flood control, they don't care about that. You need something that someone will say 'oh I could use a bike trail' and I'll vote for a 1/10 of one cent tax in order to have that.'

The Master Planning effort has held Citizen Open Houses where they invite people to review progress and take comments (Maroney 2010). For example, the public's input has been used to determine what sort of amenities to place in future parks and where they belong.

Over the years, the website has been a consistent form of outreach and communication. One of the Fountain Creek Watershed Project's initiatives posted signs marking the watershed's boundaries (USACOE 2009). Members of both the former Fountain Creek Watershed Project and the District have also spoken to elementary schools, high schools and colleges (Muzzy 2010). For the past two years, the District has set up an informational booth at the Colorado state fair in Pueblo (Maroney 2010). In 2009, people at the fair were able to take helicopter flights down Fountain Creek.

As previously mentioned, the Fountain Creek Foundation is a recently established non-profit, fostering stewardship on Fountain Creek. The organization is currently putting together a series of documentaries on Fountain Creek's history in partnership with Rocky Mountain PBS and raising money for the construction of an environmental stewardship center on the creek (Woodka 2010d).

Photo 1.3: Healthy reach of Fountain Creek, Courtesy of Fountain Creek Master Planning effort.

LESSONS LEARNED

"One of the interesting things that I learned personally going through that process, as a geeky engineer, you want to go through a linear progression. You want to walk them through the history, then the hydrology, then the hydraulics, then the sedimentation. You want to walk them through the same process that you followed, but the general public does not want to hear it that way. They want to hear why this is important to them first and then they want to hear how you got there. If you start walking them through the process, they get lost and they are already zoned out because they want to hear the answer."

– Graham Thompson, Director of Water Resources, Matrix Design Group

Graham Thompson, an engineer involved in the watershed plan and the USACOE study, translated much of the technical information into laymen's terms throughout the Vision Task Force process. His and others' comments explained the technical complexity in a way that landowners, politicians, and businessmen could understand. "Graham [Thompson] and [Pat Ettleman] had the ability to explain to a landowner, here's how you take what you know already and add the technical complexity to get to a smarter place and I think that someone else who wasn't Graham or Pat, might not have been able to do that and we might not have ended up with the shared higher level of basic knowledge that we had," described Heather Bergman.

"The political will had a lot to do with the Master Plan. The bus was leaving the station. With politicians, when the bus starts to leave, they tend to hop on. I had a City Councilmember come up to me, asking, 'why aren't we involved in this?' and I said 'you can be, you can buy in if you want to. Here is the cost to play,' and they got engaged. Did we manipulate or motivate?"

- Jay Winner, General Manager, Lower Arkansas Valley Water Conservancy District

Local government buy-in for the Master Plan will help ensure the plan's implementation. The Southern Delivery System and Ken Salazar's support also helped to draw a lot of attention to Fountain Creek and build both public and political support. Since local government officials sit on the Fountain Creek District's Board, the District has a significant amount of power moving forward. The officials made a commitment to the Vision Task Force process early on, sending their staff to subcommittee meetings and conference calls. Fountain Creek's governance model depends upon these elected officials, who have taken on an additional unpaid responsibility. Previous efforts lacked this buy-in. However, the challenge will be to sustain the effort and dedication over time. Many watershed residents have been frustrated by the lack of projects and the large amount of watershed planning that has occurred over the years.

"Our crown jewel city park is called America the Beautiful Park, its right down at the confluence of Fountain Creek and Monument Creek. It was designed by a Landscape Architect and constructed in such a manner that you don't even see the creek. You don't even know the creek is there. We use that as an example to reflect the public perception of the creek. Here we have our premier city park and it's built in a manner where you don't even know the creek exists adjacent to it."

– Graham Thompson, Director of Water Resources, Matrix Design Group

Many of the District's future projects attempt to draw attention to Fountain Creek because they recognize it will lead to public support and ultimately future restoration of Fountain Creek. Outreach initiatives often use charismatic endangered species, like the Chinook salmon, to raise public concern about environmental degradation. Recreation is also not allowed on the waterway; so few people have developed an interest in protecting the creek. The District sees creekside biking, hiking and interpretative trails as a way to appeal to the public and improve the watershed's health.

Conclusions

Similar to the Vision Task Force, the Roaring Fork Water Committee could consider a facilitated process in the future to build trust, commitment and open the lines of communication between seemingly divergent interests in the watershed. This part of Fountain Creek's process helped repair the relationship between Pueblo and El Paso County. While Pitkin and Garfield County have a more amicable relationship than Pueblo and El Paso did, the two counties are very different and it would help to reach a common understanding of their strengths, weaknesses and constituencies. The Vision Task Force was conveniently able to use the USACOE study to learn about the Fountain Creek watershed, but they also discussed each stakeholder's interests and constraints with regard to restoration. The goal should be to find creative solutions that improve ecological functioning, while making sure everyone can benefit from it. Jay Winner noted that all interested parties within the watershed need to be invited to the table, but a much smaller

(Winner 2010). Many watershed groups make their meetings public to ensure that those who have an opinion on something can express it.

As previously mentioned, the Fountain Creek Watershed Flood Control & Greenway District will receive a considerable amount of restoration and mitigation funding for a future water project. The Roaring Fork Valley may find itself in a similar situation one day since Front Range water providers own a considerable amount of water rights in the Roaring Fork Watershed. Having a credible organization to receive mitigation funding with the knowledge and capacity to put those potential funds to good use could benefit the watershed in the future.

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APPENDIX

Legislation
Strategic Plan

CASE 2. HENRY'S FORK WATERSHED COUNCIL

Location: Eastern Idaho and western Wyoming
Prepared by: Amanda Barker

The Henry's Fork Watershed Council (HFWC) highlights a unique approach to watershed management. The Council is co-facilitated by two seemingly opposing interests groups, the Henry Forks Foundation and the Fremont-Madison Irrigation District. The uncommon leadership, combined with top-down governance approach by chartering the Council through the Idaho legislature in 1994, brings together a spectrum of stakeholders for active discussion and participatory planning in the watershed. The institutional structure and management processes of the Henry's Fork Watershed Council have strengthened the sense of community in the watershed, with a network of motivated individuals able to communicate and take action to protect and improve the integrity of their ecological systems (Weber 1999).

Mission: The Henry's Fork Watershed Council is a grassroots, community forum, which uses a non-adversarial, consensus-based approach to problem solving and conflict resolution among citizens, scientists, and agencies with varied perspectives. The Council is taking the initiative to better appreciate the complex watershed relationships in the Henry's Fork Basin, to restore and enhance watershed resources where needed, and to maintain a sustainable watershed resource base for future generations. In addressing social, economic, and environmental concerns in the basin, Council members will respectfully cooperate and coordinate with one another and abide by federal, state, and local laws and regulations.

BACKGROUND

The Henry's Fork Basin is located where the North and South forks of the Snake River join on the Snake River Plain, encompassing 1.7 million acres of land, rivers, streams and irrigation canals. The watershed serves 40,000 people in three Idaho Counties and one Wyoming County (Nowak 2004). The Snake River irrigates much of its 235,000 acres of farmland with various dams, canals and reservoirs within the watershed. The watershed is well known for excellent trout fishing. However, rainbow trout is nonnative, endangering the native Yellowstone cutthroat trout. In the latter half of the twentieth century, tensions rose between out-of-state anglers and local farmers, loggers, and ranchers (Van Kirk 1997). Anglers, many out of state users of the watershed, became vocal advocates for wild trout management, riparian protection, and considering fish in water management practices, while third and fourth-generation farmers, loggers and ranchers advocated for business-as-usual natural resource management. Government agencies were caught in the center of the opposing interests, trying to accommodate both commodity and recreational interests at the local level (Van Kirk 1997). Different factions

utilized the area for their own purposes, without an overarching interest in the integrity of the ecological system. The quality of fisheries and land within the watershed began to degrade.

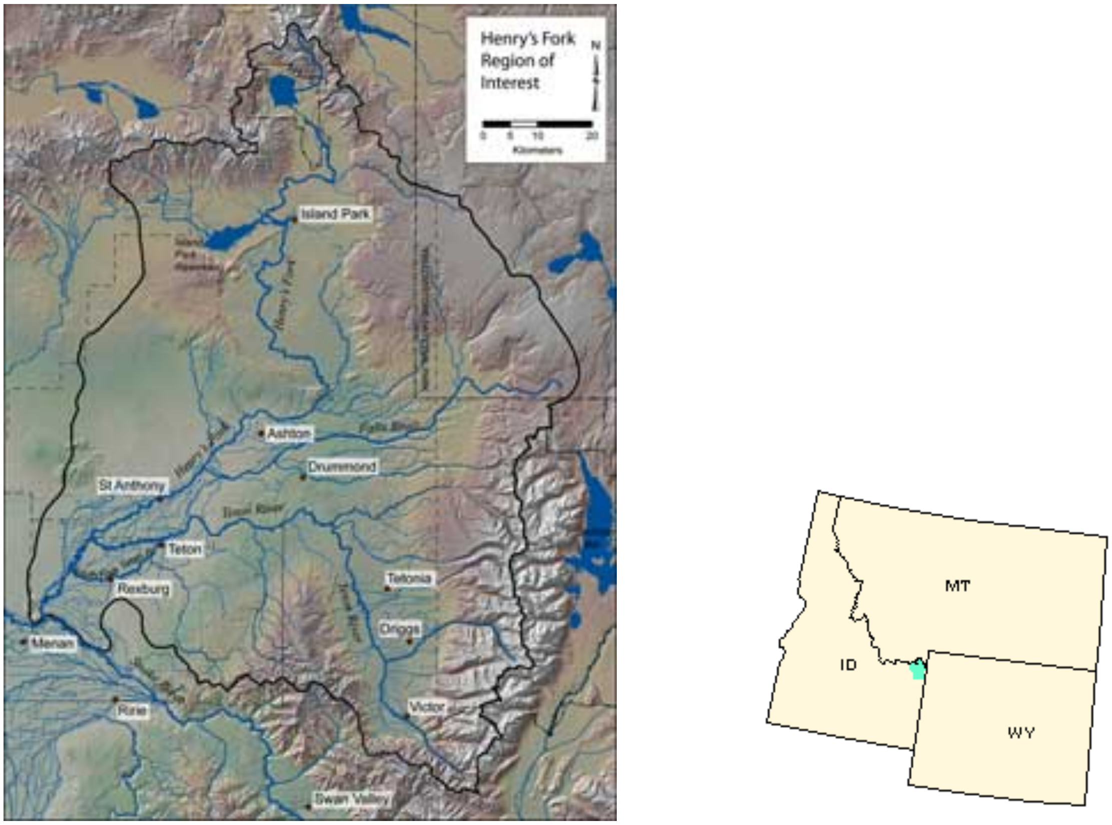

Photo 2.1: Map of Upper Henry's Fork Watershed, Courtesy of HFF 2010, EPA 2010.

In the 1990s, a nationwide concern for the environment was increasing at the local level. At the same time, the population of the watershed rapidly increased, as did disputes over traditional land use and land management methods in the region. The chief issues facing the Henry's Fork basin included irrigation demand, hydropower development, and stream flow needs for fisheries and recreation (Weiland 2002).

The Federal Energy Regulatory Commission approved a hydroelectric plant and expansion of an irrigation canal on Falls River by Marysville Hydro Partners in 1989. Local citizens voiced concern as the construction began about the process to obtain a license from the Federal Energy Regulatory Commission, as well as inaccuracies in the Environmental Impact Assessment. During construction, an accident damaged the canal, resulting in 17,000 tons of sediment released into Falls River. Compounding this accident, poor management practices at a nearby reservoir resulted in an additional 50,000 tons of sediment to be released into the Henry's Fork (Hill and Mebane 1998) from Island Park Dam.

PARTNERSHIP'S BEGINNING

Concurrent to the environmental accidents, a group of local citizens from a spectrum of stakeholder groups, including recreationists, hydroelectric developers, county commissioners, and irrigators, met regularly from 1990-1993 to make recommendations to the Idaho Water Resource Board for the Henry's Fork Basin Plan (IWRD 1992). The purpose of the plan was to prevent further irrigation and hydroelectric development in 195 miles of streams within the Henry's Fork Watershed. In 1993, the state legislature unanimously adopted the plan.

With the controversies surrounding the Marysville hydroelectric project and the creation of the Henry's Fork Basin Plan, people were growing weary of confrontations over natural resource management issues in the watershed. The 1992 sediment spill angered and frustrated many watershed users and organizations, who believed that it could have been avoided by better communication among government agencies. Amid the mistrust and skepticism, some proposed that a cooperative, watershed-based approach was needed to develop constructive solutions to natural resource management problems in the Henry's Fork Watershed.

Throughout the spring and summer of 1993, citizens, scientists, and government agency officials met to discuss possible cooperative approaches to watershed management. The general consensus was that a single organization was needed to coordinate management activities among dozens of government agencies and interest groups in the watershed. In 1994, the Idaho Legislature chartered the Henry's Fork Watershed Council (HRWC) as a "grassroots community forum which uses a non-adversarial, consensus based approach to problem solving and conflict resolution among citizens, scientists, and agencies with varied perspectives." (see Appendix I). The Idaho Division of Environmental Quality established the HRWC's Watershed Fund from mitigation money collected from Marysville Hydro Partners after the Marysville canal accident (HFWC 2010).

Agency representatives agreed that citizen leadership might be most effective for the developing council. The working group decided to appoint two co-facilitators from groups with opposing interests and opinions towards the Henry's Fork Basin Plan. HFWC's joint facilitators are the primary advocates for rainbow trout and seed potatoes: the Henry's Fork Foundation and the Fremont-Madison Irrigation District.

In 1993, the Henry's Fork Foundation (HFF) entered into a co-facilitating arrangement with the farmers of the Fremont- Madison Irrigation District to launch the Henry's Fork Watershed Council. Henry's Fork Foundation is a member-based nonprofit comprised primarily of local anglers who work to preserve and protect rivers within the watershed. The Irrigation District represents 1,700 farmers who use water in the Island Park Reservoir and other reservoirs in the watershed. As part of Idaho Water District #1, it represents the oldest irrigation interests in Idaho (Brown 2010).

PARTNERSHIP'S EVOLUTION

HFWC is an important venue for local, state, and federal agencies to present proposals and obtain feedback from the public. The organization emphasizes shared learning in a non-confrontational manner. Collaborative decision-making was a new approach to managing conflict for the HFWC participants. They had reached a stalemate between interest groups, made no progress with other management strategies, and were open to trying new innovative and untested techniques within the initiative (Mullner 2001).

This facilitated process was new to the participants and was a learned process. The selected co-facilitators had no formal training in facilitation and the collaborative process. Over time, Henry's Fork Foundation and the Fremont-Madison Irrigation District sponsored trainings on facilitating multi-party collaboration (Walker 1999). These trainings were instrumental in providing the participants with the tools to make collective decisions for the good of all participating interests.

ORGANIZATIONAL STRUCTURE

The council's mission statement reached through discussion and consensus:

> "The Henry's Fork Watershed Council is a grassroots, community forum, which uses a non-adversarial, consensus-based approach to problem solving and conflict resolution among citizens, scientists, and agencies with varied perspectives. The Council is taking the initiative to better appreciate the complex watershed relationships in the Henry's Fork Basin, to restore and enhance watershed resources where needed, and to maintain a sustainable watershed resource base for future generations. In addressing social, economic, and environmental concerns in the basin, Council members will respectfully cooperate and coordinate with one another and abide by federal, state, and local laws and regulations."

The HFWC charter adopted by the Idaho Legislature identifies major duties and long-term goals for the Council (adapted from Weber 1999):

Duties

- Cooperate in resource studies and planning that transcend jurisdictional boundaries, still respecting the mission, roles, and water and other rights of each entity;
- Review and critique proposed watershed projects and Basin Plan recommendations, suggesting priorities for their implementation by appropriate agencies;
- Identify and coordinate funding sources for research, planning, and implementation, and long-term monitoring programs, with financing derived from both public and private sectors;
- Serve as an educational resource to the state legislature and the general public, communicating the council's progress through regular reports, media forums, and other presentations.

Long-term Goals

- Serve as a grassroots, community forum, which uses a non-adversarial, consensus-based approach to problem solving;
- Better appreciate the complex watershed relationships in the basin, to restore and enhance watershed resources where needed, and to maintain a sustainable watershed resource base for future generations;
- Respectfully cooperate and coordinate with one another and abide by federal, state, and local laws and regulations.

Two citizen organizations from the watershed co-facilitate council meetings: the Fremont-Madison Irrigation District and the Henry's Fork Foundation. The Legislative charter indicates the Facilitation Team meets the administrative and logistical needs of the council, coordinate its public information activities, and submit an annual report of its progress to the legislature.

The Council is comprised of citizens, scientists, and agency representatives, who reside, recreate, make a living, and/or have legal responsibilities in the basin, thus ensuring a collaborative approach to resource decision making. Each meeting has three parts. At the beginning and end, the Council meets as a whole to discuss and review meeting objectives and the overall Council mission. In between, three component groups meet concurrently. The number of participants in the council is not limited, though an average of 50 people usually attends each meeting. Participating members are organized into three component groups (EMI 1995):

Technical Team

- Composed of scientists and technicians from government, academia, and the private sector
- Serves as resource specialists for the council, coordinating and monitoring research projects, ensuring good science is made available to participating agencies
- Reduces duplication of research
- Integrates research results into Council discussions

Agency Roundtable

- Representation from all local, state, and federal entities with rights or responsibilities in the basin
- Helps align policies to watershed resource realities and current public needs
- Gives federal agencies that advocate a "bottom-up" local approach to resource issues an opportunity to demonstrate it

Citizen's Advisory Group

- Represents 30-plus commodity, community and conservation interests
- Reviews agency proposals and plans to determine their relevancy to local needs and equitability with all interests
- Provides a venue to establish and develop trust between watershed residents, while building a stronger community

- Improves credibility for the agreed-upon course for the watershed with more buy-in from more constituents within the watershed

WIRE Process

A valuable tool developed by HFWC is the Watershed Integrity and Review and Evaluation (WIRE) process, utilized to focus attention on the specifics of a proposal instead of a blanket endorsement or rejection. Although many participants have a preconceived notion that a given proposal should be endorsed or rejected, the WIRE criteria urge the council to fairly evaluate proposals. The WIRE process allows clear feedback and ways to improve the proposal to the sponsor (HFF 2010).

The WIRE criteria were created by participants early in HFWC's history in 1994. Since that time the council has reviewed 41 projects proposed by 80 different sponsors. Twenty-five of these projects have been funded. The projects involved restoration, research and monitoring and education programs (State of Idaho Legislature 2004). The criteria have been altered slightly over time, but the basic criteria remain unaltered. The process underscores collaboration and inclusion of all perspectives (EMI 1995).

Part of what has made the Henry's Fork Watershed Council a success is the Watershed Integrity Review and Evaluation (WIRE) process for evaluating projects under consideration for the Council's endorsement or financial support. Project proponents are required to fill out a questionnaire and complete an explanatory cover memo prior to having his or her project considered by the Council. Both documents are mailed to the Council's mailing list prior to each meeting so participants can prepare to ask questions about the project at the meeting.

The WIRE criteria are (HFWC 2010):

1. **Watershed Perspective**: Does the project employ or reflect a total watershed perspective?
2. **Credibility**: Is the project based upon credible research or scientific data?
3. **Problem and Solution**: Does the project clearly identify the resource problems and propose workable solutions that consider the relevant resources?
4. **Water Supply**: Does the project demonstrate an understanding of water supply?
5. **Project Management**: Does project management employ accepted or innovative practices, set realistic time frames for their implementation and employ an effective monitoring plan?
6. **Sustainability**: Does the project emphasize sustainable ecosystems?
7. **Social and Cultural**: Does the project sufficiently address the watershed's social and cultural concerns?
8. **Economy**: Does the project promote economic diversity within the watershed and help sustain a healthy economic base?
9. **Cooperation and Coordination**: Does the project maximize cooperation among all parties and demonstrate sufficient coordination among appropriate groups or agencies?
10. **Legality**: Is the project lawful and respectful of agencies' legal responsibilities?

Through its role as a watershed advisory group several programs of note are the upper Henry's Fork sub-basin assessment, review of TMDL for scientific basis regarding Henry's Lake and the Henry's Fork from Island Park to Riverside. They have also provided the scientific basis for adding Sheridan Creek to the list of water quality limited stream segments in Idaho. The council/advisory group provided formal public comments on the state's 1998 draft list of water quality limited streams and proposed changes to state water quality standards. Another benefit from the establishment of the council and watershed advisory group is the establishment of a cohesive community with common goals and an understanding of individual concerns.

FUNDING

A Henry's Fork Watershed Fund has been established by the State of Idaho to help fund projects in the basin and to defray administrative expenses of the council. In 1994, the HFWC received $20,000 initial funding, provided through the Bureau of Reclamation, with an additional $150,000 from a settlement in regard to the sediment spill from Island Park Dam. The council has used these funds for project funding with a current balance of approximately $30,000 in 2004 (State of Idaho Legislature 2004).

HFWC uses monetary incentives to encourage private landowners to improve natural resource management. In the past, HFWC approved proposals for improving irrigation delivery, implementing rotational grazing management, constructing fences, and improving irrigation management near Henry's Lake in the northern region of the watershed, and for preventing shoreline erosion and protecting riparian areas on private rangeland around Henry's Lake (HFWC 2010).

HFWC is subject to annual evaluations by outside organizations, including philanthropic foundations providing temporary funding to support Council objectives. These foundations require annual audits outside reviews of Council activities by professional evaluators to ensure correspondence between stated goals and activities. Unlike traditional public bureaucracy, there is no guarantee of future funding without demonstrable success in completion of projects. As part of the outside review process, the HFWC annually reports its activities and progress to the Idaho State legislature (Weber 1999).

CHALLENGES

Conflict is embedded in the history of the Henry's Fork Watershed, between environmentalists, agricultural interests, and agencies. Participants in the Council do not necessarily see eye-to-eye. As opposed to a formal planning body, proactive efforts made by the council foster a place for discussion and advising (EMI 1995). HFWC continues to cultivate comfort with the process. The monthly meeting begins with a moment of silence, and then participants have the opportunity to speak on any issue without argument. Some participants and observers of the Council are uncomfortable with this process as an element of the regular meeting agenda. However, each meeting draws a large number of participants, and the coordinators

believe that this agenda item has served to strengthen personal relationships in the watershed (EMI 1995).

With such an emphasis on collaboration and consensus building, some Council members suggest one inaccuracy of the Council's frequently cited achievements is an inclination towards avoiding conflict (RLCH 2008). The structure of the initiative does not allow for difficult and potentially volatile topics. The accomplishments HFWC currently enjoys, including national recognition for successful collaborative management, could indicate the structure.

ACCOMPLISHMENTS

Success is also seen as a long period of regular meetings for the Council. The Council holds nine open meetings each year. Research and monitoring results are presented during the regular meetings (RLCH 2008). An annual "State of the Watershed" Conference is held each fall in the Watershed, during which progress of Council-endorsed projects is discussed and evaluated (HFWC 2010).

The Henry's Fork Watershed Council has been largely successful in meeting its mandate to provide a community-based forum for watershed management and conflict resolution. Most importantly, the Council has been able to facilitate effective water management, addressing the needs of both local farmers and ranchers while protecting native fisheries -- even during recent drought -- and has successfully negotiated agreement among irrigators and environmentalists on closure of several dams for needed repairs. In 2003, recognizing the value of the Council's involvement as an advisory council, the Idaho legislature transferred the titles of two dams to the Fremont Madison-Irrigation District (RLCH 2008).

These outcomes indicate that the Council has increased the commitment of the watershed community to achieving collective goals through collaborative decision-making, and has also successfully integrated state and national interests into the process.

EDUCATION AND OUTREACH

Information sharing is key to the work of the Council. The Henry’s Fork Watershed Center was established in Ashton, Idaho, in May 1995, to provide a central library, database repository, and working place for all those participating in the collaborative watershed program. The Center also supports the public’s need for watershed information and serves as a focal point for Council business (Brown 2010). Scientific literature about the watershed and its resources is provided to university and agency scientists through the Center. The Center incorporates Geographic Information System (GIS) into its research in the Henry’s Fork Watershed. The Watershed Center’s library includes technical and popular books, periodicals, reports and maps related to the Henry’s Fork (HFF 2010).

The Center houses the administrative operations of the Henry's Fork Watershed Council. This central location provides the public with increased accessibility to the Council. The Henry's Fork Foundation and the Fremont-Madison Irrigation District run the Center jointly (HFWC 2010).

This multi-interest forum has attempted to build policy consensus among roughly 24 government agencies and all types of water users. The Council provides the means for improved self-education, encourages voluntary efforts to protect the resource, and supports well-coordinated resource stewardship projects. Citizen leadership has emerged from HFWC, developing into mutual respect between conservation and agricultural leaders, thus providing unprecedented opportunities to work toward a healthier, more sustainable watershed.

Implicit in the Council's commitment to collaboration is the belief that scientific information, public education and improved communication will go further in achieving long-term management goals than will application of adversarial methods. This "investment in building trust is likely to yield greater dividends" (Brown 1996).

Scientific research conducted through the Watershed Center includes a complete habitat assessment of the entire Henry's Fork and its tributaries above Island Park Reservoir. On file with the Watershed Center are hydrologic analyses, study of trout population dynamics, and research of the historic Henry's Fork fishery (HFF 2010). HFWC participated in several scientific studies of the watershed and collaborates with federal, academic and conservation organizations to maintain and restore native trout populations and protect critical wetland habitat for trumpeter swans.

The HFWC is likewise involved in active community outreach. Meetings and their agendas are advertised in local papers and with mailed and e-mailed notices to watershed citizens. A quarterly newspaper describing HFWC activities and issues is distributed to interested parties, many of who come from outside the watershed. A brochure for newcomers, co-sponsored with the Teton County Economic Development Council, emphasizes "everything that makes up our lifestyle has a consequence to the natural world" (Rogers and Weber 2010). Meetings rotate between various locations throughout the 1.7 million acre watershed to make it easier for more citizens to get involved.

Furthermore, the HFWC has practiced considerable outreach through local schools. They have developed an educational program that communicates the value of environmental conservation and restoration to 5th and 6th graders several times each year. Finally, they have worked to insert themselves into general community-based activities as a way to nurture new trust-based neighborly relationships and to increase the chance that others will understand that "we are interested in the economy . . . and the community, . . . [and] the whole of the watershed," not just environmental protection (Rogers and Weber 2010).

LESSONS LEARNED

HFWC invested a great deal of time at the beginning of the collaboration on discussions and information sharing. The parties recognized that without trust, any decisions made by the organization were likely to fail (EMI 1995). The WIRE criteria for project selection further established and nurtured trust, since the criteria take into account cross-section of interests in the watershed.

Creating a new process for a watershed includes the introduction of new ideas and techniques. Part of Henry's Fork Watershed Council's success is due to taking advantage of outside resources. They brought in trainers and speakers to help familiarize participants with how to engage in the collaborative process. The co-facilitators received training in how to engage the participants in helpful discussion.

The Council has multiple ways for citizens to participate. The Citizen's Group, a subcommittee of the Council, allows interested citizens without formal connections to organizations and decision-making roles within the group to actively participate in the ongoing discussion. Concerned citizens now have a forum where their opinion will be taken into consideration with any project or advisory planning the Council undertakes.

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APPENDIX

Appendix I. Henry's Fork Watershed Council Charter

CASE 3. THE NIOBRARA COUNCIL

Location: North Central Nebraska
Prepared by: Anne Kohl

Mission: *The mission of the Niobrara Council is to assist in all aspects of the management of the Niobrara National Scenic River corridor since a portion of the Niobrara River has been designated as a national scenic river under 16 U.S.C. 1274(a)(117), as such section existed on May 24, 1991.*

Figure 3.1: Niobrara Council is located in Valentine, NE, The Lincoln Journal Star.

The Niobrara Council is located in Valentine, Nebraska, near the border of South Dakota. The Council was formed in 1997 as an ad-hoc entity of four counties once the Niobrara River received the National Scenic River designation. In 2000, they were strengthened when the state of Nebraska passed legislation to reconstitute the Council as a "State-Recognized" organization. Through this legislation the Council has the authority and responsibility to manage the scenic river in conjunction with the National Park Service. This case demonstrates the uniqueness of the creation of the Niobrara Council for natural resource management.

BACKGROUND

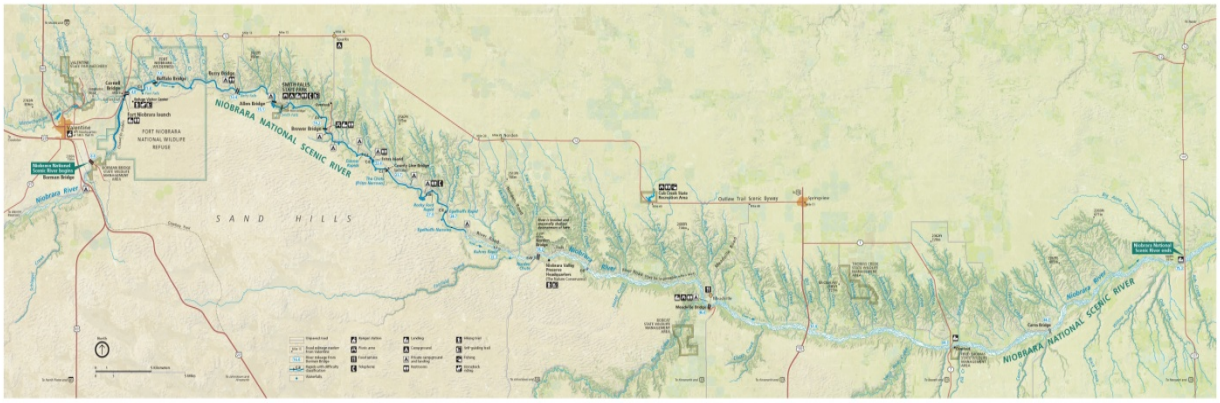

Figure 3.2: Niobrara National Scenic River, National Park Service.

The Niobrara River is an excellent example of a free-flowing Great Plains river. Due to its exceptional and diverse features, a portion of the Niobrara River was designated by Congress as a National Scenic River in 1991. This scenic river stretches 76 miles across Nebraska from the town of Valentine to north of the town of Newport. The corridor contains over 20,000 acres of private and public lands, including portions of Fort Niobrara National Wildlife Refuge, Smith Falls State Park, and The Nature Conservancy's Niobrara Valley Preserve. Ninety-seven percent of the land within the corridor is privately owned (Niobrara Website 2010, Kieborz 2010). Recently, there has been increasing competition in the area between recreationalists, irrigators, and ranchers for the use of the water in the River. There is also a very small timber industry in the area. Within the scenic portion of the river, are the counties of Brown, Rock, Cherry, and Keya Peha. The town of Valentine, in Cherry County, only has a population of 2,600, and is the largest town within the corridor (Kieborz 2010, Garwood 2010).

Photo 3.1. Fort Fall, National Park Service.

The River flows through a valley that contains a large concentration of scenic cliffs and waterfalls, rare in the Great Plains. Along the river, high bluffs provide scenic vistas of the valley. Because the 100th Meridian divides the valley, visitors can find elements of at least six different ecosystems that exist in close proximity and intermix in the river corridor. These systems include Rocky Mountain pine forest, northern (boreal) forest, eastern deciduous forest, tall grass prairie, mixed grass prairie, and Sand Hills prairie (Niobrara Website 2010). A multitude of species call the Niobrara River home. The endangered interior least tern and the threatened piping plover use the braided lower river for nesting. Also, it is a migratory habitat for

the whooping crane, bald eagle, and peregrine falcon. The lower river has rich and scientifically important fossil beds, some of which are world renowned (Niobrara Website 2010).
The upper portion of the river draws recreation enthusiasts from all skill levels. The summer months allow for people to float the river in varying ways. The Niobrara River ranks as one of the top ten canoeing rivers in the nation (Niobrara Website 2010). It is during this time that thousands of people flood the area to occupy every room in the numerous hotels in the corridor. The NPS has been tracking visitor use of the national scenic river from May to September since 2001. There has been fluctuations from year to year, but since 2007, there has been a steady increase in visitors with over 48,000 people in 2010 (Kieborz 2010, Scheider 2010).

Photo 3.2: Berry to Smith Falls, National Park Service.

PARTNERSHIP'S BEGINNING

When the Niobrara River was designated as a National Scenic River, there was a growing desire within the counties to maintain a local voice in river management issues (Kieborz 2010). This was due to the strong desire to protect and preserve the rural characteristics, scenic qualities, and private ownership of the land in the area (Niobrara Website 2010). The Niobrara Council was formed in 1997 to assist the National Park Service (NPS) in managing and protecting Niobrara National Scenic River resources. The Council originally was formed by an inter-local agreement between Brown, Cherry, Keya Paha, and Rock Counties. Members of the Council included representatives from local, state, and federal government, local landowners, county commissioners, the timber industry, farmers, and the environmental community (Niobrara Website 2010).

PARTNERSHIP'S EVOLUTION

In 2000, the Council was strengthened when the State of Nebraska passed legislation, the *Niobrara Scenic River Act*, which reconstituted the Council as a "State-Recognized" organization. This legislation also delegated Niobrara River management responsibility, including the ability to develop conservation easements and hold title to land, to the Council. They were also given authority to manage the Niobrara National Scenic River in conjunction with the NPS through the legislation (Niobrara Website 2010). The purpose of the legislation was to,

"effectuate changes in the council necessary to ensure the continuation of the cooperative management relationship between the Niobrara Council and the National Park Service so that local participation and control over this valuable natural resource can be maintained" (Niobrara Statutes 2002).

The Council was now able to provide recommendations, proposals, and assistance to any entity involved in the management of the river (Niobrara Bylaws 2006).

When asked what most enabled the partnership to get started, the Executive Director, Kalli Kieborz, said that it was the local landowner participation. She explains that these landowners have been in possession of their land for over 100 years, having been passed down through family. They wanted to make sure they would be able to have a voice if and when any changes were going to be made to their property (Kieborz 2010).

ORGANIZATIONAL STRUCTURE

The Niobrara River is managed by the National Park Service, the Niobrara Council, the U.S. Fish and Wildlife Service, Nebraska Game and Parks Commission, The Nature Conservancy, local governments, and citizens (NPS Website 2010). Initially, the Council had 15 members as follows:

- One representative of each of the county boards from Rock, Brown, Keya Paha, and Cherry County;
- One representative from the Middle and Lower Niobrara National Resources District;
- One representative from the Nebraska Game and Parks Commission;
- One representative from the U.S. Fish and Wildlife Service;
- One representative from the NPS;
- One landowner from Rock, Brown, Keya Paha, and Cherry County;
- One representative from a recreation business operating with the corridor;
- And one representative from the timber industry operating within the corridor

When the Council was state recognized in 2000, they added a 16th position to include a representative from a recognized non-profit environmental, conservation, or wildlife organization (Niobrara Bylaws 2006).

The Governor appoints all Council members, except for the Nebraska Game and Parks Commission, the representatives from the Middle and Lower Niobrara National Resources District, and the representatives from each county board. The representative from the Game and Parks Commission is either the secretary or his/her designee. For the Middle and Lower Niobrara National Resources District, the representative is chosen by the board of the respective district. Lastly, the County Board of each respective county chooses their representative. The Governor receives a list of candidates from the county board representatives on the Council to choose from for the other positions (Niobrara Bylaws 2006).

Each member holds office for three-year terms and until a successor is appointed. The Council elects a chairperson, vice-chairperson, secretary, and treasurer who serve as principal officers and as the Executive committee of the Council (Niobrara Statutes 2002). The officers serve one year terms and are elected by a simple majority of the Council members (Niobrara Bylaws 2006). Each member's responsibilities include (Niobrara Bylaws 2006):

- Chair: The Chair shall preside at all meetings of the Niobrara Council and shall provide for direction of various committees of the Niobrara Council. The Chair shall also be vested with the co-power of check issuance. The Chair shall be the chief executive officer of the Niobrara Council, shall give general charge and supervision over and responsibility of business and affairs of the Niobrara Council unless otherwise directed and determined by the Niobrara Council membership.

- Vice-Chair: When performing as acting Chair, the Vice-Chair shall perform the duties of the Chair, and when so acting shall possess all the powers and be subject to all restrictions as the Chair would have been in his or her own right. The Vice-Chair shall also be vested with the co-power of check issuance. The Vice-Chair shall perform such other duties as, from time to time, may be assigned to him or her by the Chair or the Niobrara Council membership.

- Secretary: The Secretary shall take minutes of the Niobrara Council meetings, be responsible for following the open meetings laws of the State of Nebraska and publishing notices of such meetings, and distributing minutes of the meetings as required by law. The Secretary shall also be vested with the co-power of check issuance. Additionally, the Secretary shall maintain an agenda as provided by public meeting laws of the State of Nebraska and shall furthermore direct such monthly reports as may necessarily be required for proper transaction of Niobrara Council business to the necessary entities.

- Treasurer: The Treasurer shall be responsible as the controller of revenue and expenses and shall provide monthly itemized lists of Niobrara Council expenditures and revenues to the Niobrara Council and the State of Nebraska. The Treasurer shall compile quarterly and annual financial statements and submit to the Niobrara Council and other appropriate entities for review. The Treasurer shall execute, with the concurrence of the Chair and co-execution by any other officer, all checks for the payment of financial obligations. The Treasurer shall furthermore draw and prepare an annual budget for the Niobrara Council and a biennial budget in accordance and consistent requirements of the State of Nebraska.

It is required that the Council meets a minimum of six times per year but they usually meet close to ten times per year (Kieborz 2010). A majority of the members must be present before any action may be taken by the council and all actions require a majority vote (Niobrara Bylaws 2006).

Besides the Executive Committee, there exist the following standing committees within the Council (see Appendix NN for 2010 standing committee members): *Legislative*; *Revenue and Budget*; *Road and Bridge*; *Resources*; *Development*; *Personnel*; and *Education*. Board members also serve as advisory positions on the following groups: *Fire Learning Network*; *NPS Fire Management Plan Advisory Council*; *Middle Niobrara Weed Awareness Group*; *Instream Flow Partnership Team*; *Region 24 Emergency Management Planning Team*; and *Nebraska Land Trust* (Kieborz 2010). Currently, the Council only employs an Executive Director, Kalli Kieborz, and an Education Programs Assistant, Michelle Garwood (Garwood 2010).

The Council has veto power over each county zoning administration within the boundaries of the Niobrara River Scenic Corridor. This power can be used when a zoning administration puts forth a proposal for development within the corridor. However, they have not needed to use the veto since the Council meets with each zoning administration as project proposals are drafted (Kieborz 2010).

FUNDING

The Niobrara Council Fund was created under the National Scenic River Act. This fund is administered by the Council and is used for the acceptance of tax deductible donations, grants, and other assets (Niobrara Statutes 2002). The Niobrara Council also has a cooperative agreement with the NPS that is a mechanism for funding. In 2009, the Council received $125,000 from the NPS. The state of Nebraska also provides funding; however that amount varies year to year due to changes in the state's budget. They do not receive any funding from the four member counties of the Council. In order to carry out their conservation easement programs, the Council receives funding from grants as well as earmarked funding from Nebraska Senator Chuck Hagel. Last year, they received $250,000 in earmarked funding. Nebraska's other Senator, Ben Nelson, provided $4 million in earmarked funding for infrastructure projects within the corridor. One source of Council grant funding worth noting is the Nebraska Environmental Trust, a competitive funding source that draws upon lottery proceeds. Private donations from individuals and businesses are also given for some projects, such as highway and river clean up, day camp along the river, and in school activities. These donations provide a very small part of the Council's funding (Kieborz 2010).

CHALLENGES

As stated earlier, the key to getting the Council started has also been one of the main challenges it has faced. The Executive Director, Kalli Kieborz, states that it was hard to **initially incorporate all the views of the various stakeholders**. Also, **structuring the Council** in a way that would please the local county governments, landowners, federal partners, and conservation community was a challenge to get the Niobrara Council off the ground. As she puts it, "making sure everybody had a little piece of the pie" was important to getting the Council started. Along the same lines, she says a challenge from the past few years has been, "getting the message to the people who really need to hear it." This is complicated by the fact there are dozens of people every day that come and go from the area. Kieborz mentions that it is hard to keep up to date records of residents in the river corridor. The Council uses their website, newsletters, the four local newspapers, email, radio, TV, and every means possible to get their message out to their constituents (Kieborz 2010).

Another challenge she brings up, that still occurs today is the, **"tone of not wanting the federal government to come and take over"** (Kieborz 2010). She follows up by saying that this is the opposite of what is happening in the region but that it mostly stems from the conservative political culture of the area. Despite all of the above, funding remains the number one challenge for the Council.

ACCOMPLISHMENTS

The Niobrara Council is known for their successful conservation easement program. It was started in 2001 when the Council received a $50,000 grant from the Nebraska Environmental Trust. It was at that time that a single landowner stepped forward to be the first one to participate in the program. He hoped that his willingness would encourage other landowners and he succeeded. Since then the Council has received so many requests that they would have to apply for an $8 million grant to cover all those requests. That being said, they have had to turn down landowners due to lack of available funding.

In 2004 the Council developed and produced a "River Code of Ethics" which is essentially a set of regulations and guidelines for visitors to the scenic river to follow (see Appendix Q). The Code was created to both help protect the River and to protect the rights of the private landowners within the corridor (Kierborz 2010).

EDUCATION AND PUBLIC OUTREACH

Niobrara Valley Outdoor Education Partnership (NVOEP): This is a "group of enthusiastic and dedicated outdoor education professionals who work together to bring learning opportunities to the communities in the Niobrara River Valley" (NC Promo Flyer 2010). The partners are: the Niobrara Council, the National Park Service (NPS), Natural Resource District (NRD), Natural Resource Conservation Service (NRCS), Nebraska Forest Service, Nebraska Games and Parks, Northern Prairies Land Trust, The Nature Conservancy, U.S. Fish and Wildlife, University of Nebraska – Lincoln Extension, librarians, early childhood educators, area schools, Scout leaders, and after-school program coordinators. The NVOEP plans educational events with various partners taking the lead on planning depending on what the event is, with the rest of the partners supplying materials and support staff. They started meeting in 2001 but as the Outdoor Education Advisory Group. The name became the NVOEP in 2007 and they are always looking for new members (NC Promo Flyer 2010).

Radio: The local radio show has a daily, "Comment Program," in which people can talk about upcoming events, causes, issues, etc. Once a month, the Niobrara Council participates in this program to advertise their upcoming activities and meetings. The Council's Program Assistant, Michelle Garwood, says that the radio program serves as another reminder to people about the Council's programs and they are able to elaborate more than with print media (Garwood 2010).

Print: The Council receives a lot of coverage in the local newspapers. News correspondents cover the Council's local meetings as well as their activities. Garwood also says the Council submits articles to newspapers leading up to their events and they have no problem getting them published since small town papers are yearning for news. The newspapers publish many photos to illustrate the Council's activities and have been an easy and effective way to show people in the community what the Council is doing (Garwood 2010).

Nature Fest: Nature Fest is a one day event that was started in 2008 and is open to all area 5th graders. The NPS takes the lead for the coordination and logistics of the event, but the NVOEP partners participate by making presentations and manning different educational booths. Nature Fest is a very active and hands-on day of fun for students. The 2010 Nature Fest included presentations about, "Ecosystems of the Niobrara," "How Animals Learn What to Eat," "Waterfall Wisdom," "Fire Ecology: Weather & You," and "How & Why Leaves Change Color." Activities included a Niobrara treasure hunt using a GPS compass, an environmental jeopardy quiz, and a water cycle game (Garwood 2010, Nature Fest 2010 Agenda).

Classroom: The Council works with area schools to help bring the outdoors inside the classroom. Recently, the NVOEP put on a "Resource Day" for Springview, Nebraska (a town within the scenic corridor) grade school students. This event involved students learning hands-on about the Niobrara woodlands, wildlife identification by looking at castings of tracks, water conservation, and coming up with creative ways to balance the water needs of farmers, ranchers, nature, and recreation. Students also made fish print art and participated in activities to learn different fish parts and native Nebraska fish species (Garwood 2010, Springview Resource Day 2010, Press Release 2010).

Besides visiting area classrooms, the Council encourages teachers to utilize the resources the Council has to offer. They have a library, which includes lesson plans and activities for all ages, outdoor exploration tools (i.e. magnifying glasses, compasses, nets, binoculars, and GPS devices), and ideas and supplies for nature-based art projects. The Council also can help with organizing a nature-based service project and they provide updates on state and national training opportunities and events (NC Promo Flyer 2010).

Summer Day Camps: In 2001 the Council started their summer K-8 day camps. They are the largest and most popular educational programs for the Council. The camps are three to five days long and are open to all local students who live along the river and are free to attend. The Council divides the day camps among different age groups. For example, K-1st is one week, 2nd-3rd is the following week, 4th-5th is next, and then middle school. Each day has a theme such as animals, plants, and water. The camps have been a successful way to give kids a greater awareness of the importance of the River. It has also shown them what a treasure the River is and that it is housed in their backyard. As for challenges, Garwood says that there is a waitlist to go to the day camps due to limited physical space and resources to hold the camp. The Council is working to find ways to make sure every student can be involved and even reaching out to kids who live in the rural areas outside the Niobrara corridor (Garwood 2010).

Fall Day Camp: In Fall of 2009, the Council started a free one-day camp open to the entire public. In 2010, they are directing the camp towards families. From their flyer, the camp's goals are to, "get families outdoors and excited about the Niobrara River and other natural resources that we treasure in this area." This year's theme is outdoor cooking where campers will work with a variety of outdoor cooking methods, such as a dutch oven, campfire, and camping stove. Families also get to prepare their own lunch. After lunch, families can choose from various nature art projects. The focus on family participation is something new for the Council. They hope to encourage families to spend more time with their children in the great outdoors (Garwood 2010).

CONCLUSIONS

When asked for lessons learned, Kieborz shares that communication is the most important factor for successful outcomes. She elaborates saying, "make sure all stakeholders are involved at the same table, big or small, you do not leave anybody out." Kieborz notes that this is especially important when it comes to using a shared resource, emphasizing the need for everyone using that resource to be at the table when making decisions. The Niobrara Council has been able to successfully bring local community members and National Park Service together to work towards the protection and enjoyment of the Niobrara National Scenic River.

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APPENDIX

Appendix C. Niobrara Council Bylaws
Appendix K. Niobrara Council Statutes
Appendix Q. Niobrara Council Code of Ethics
Appendix NN. Niobrara Council Standing Committees

CASE 4. WALLA WALLA WATERSHED MANAGEMENT PARTNERSHIP

Location: Southeast Washington
Prepared by: Angela Michalek

The Walla Walla Watershed Management Partnership was recently formed by the Washington state legislature to address instream flow shortages in the rural Walla Walla River basin. The Partnership allows water rights holders to bank their water rights without risk of losing them permanently, resolves local disputes and reviews local watershed plans. These water quantity and quality solutions are of particular interest to partners in the Roaring Fork Watershed, looking for innovative solutions to augment instream flow. Like in the Roaring Fork, the Walla Walla partners must coordinate efforts across jurisdictions; their watershed includes three counties and stretches across two states. The Walla Walla has also long been the focus of many disparate efforts to improve water quality, quantity and aquatic habitat and restore the Northwest's salmon runs. Moreover, Washington's Department of Ecology has embraced local watershed planning and facilitated the partnership's evolution over time. While the state of Colorado may not currently be as supportive, the number of local watershed planning efforts has grown to more than 200 statewide, indicating substantial local interest and potential for future change.

Vision Statement

The partnership envisions the Walla Walla river basin as a place where water is managed locally as a means to achieve and sustain a healthy river system where human and natural communities can thrive and flourish.

BACKGROUND

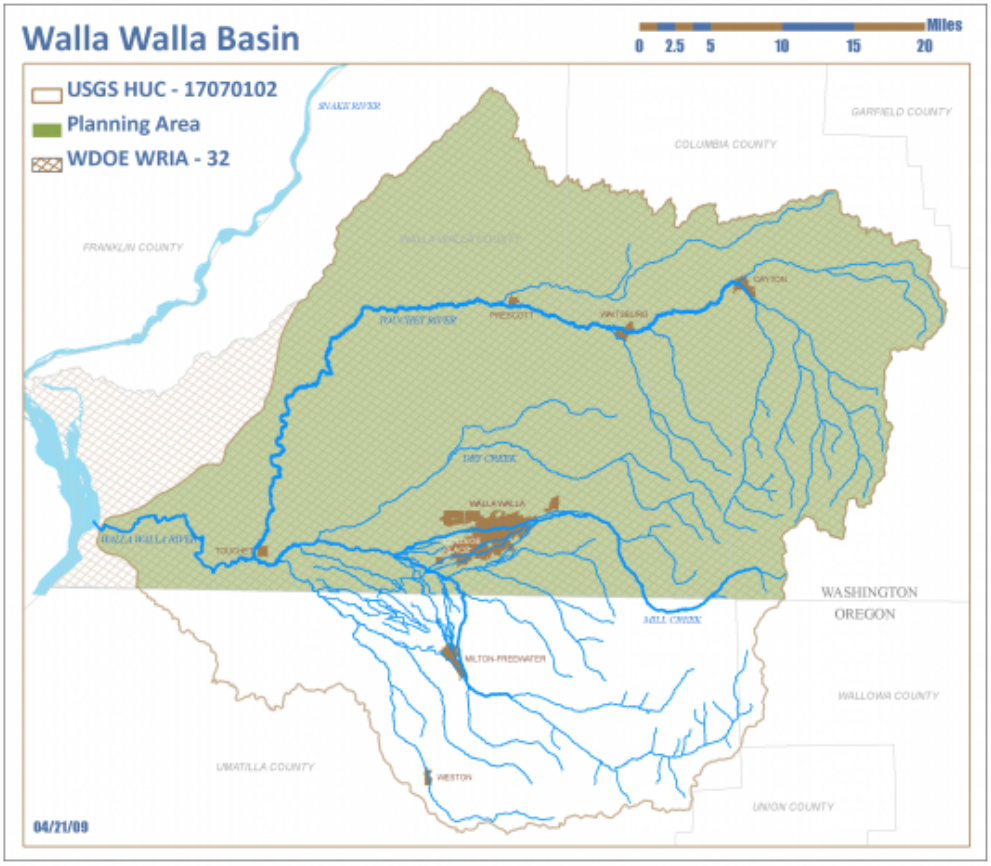

Figure 4.1: Map of the Walla Walla Watershed, Courtesy of the Walla Walla Watershed Management Partnership.

The Walla Walla watershed covers 1,751 square miles touching 3 counties, Umatilla in Oregon and Columbia and Walla Walla counties in Washington (Lorvich et al. 2003). Nearly three-quarters of the basin is located in the state of Washington and approximately one-quarter is in Oregon. The Walla Walla River has its headwaters in Oregon's Blue Mountains and flows through Washington to join the Columbia River. Major cities in the Washington part of the watershed include Dayton, Walla Walla, College Place, Waitsburg and Prescott. Milton-Freewater is the only city on the Oregon side (Pfeifer and Wolcott 2003). The watershed's total population is around 60,000 people (Lorvich et al 2003). The Cayuse Indians gave the Walla Walla its name, signifying "many small waters" (Siemann and Martin 2007). The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) represent the Cayuse, Walla Walla, and Umatilla tribes and play a large, active role in the watershed. In the Treaty of 1855, the tribes signed an agreement, giving 6.4 million acres of land to the U.S. government, in exchange for the Umatilla Indian reservation and protection of their traditional hunting and fishing rights on that forfeited land (Cronin and Ostergren 2007).

90% of the basin is privately owned and nearly 60% of the land is used for agriculture (Lorvich et al. 2003). Moreover, 99% of the surface water rights and 62% of groundwater rights belong to agricultural interests (Siemann and Martin 2007). The primary crops are alfalfa, wheat, green peas, onions, asparagus, apples and cherries, but vineyards and wineries are also abundant in the region (Siemann and Martin 2007, Pfeifer and Wolcott 2003). Eastern Washington and Oregon are notoriously dry, averaging less than 0.5 inches per month during the irrigation season (Howard 1995). However, annual rainfall varies anywhere from 40 inches in the upper part of the watershed to as low as 5 inches in lower elevations.

Since the late 19th century, the Walla Walla River had been dewatered to the point where stretches would dry up and leave fish stranded each summer (Lorvich et al. 2003). Water rights were overallocated, which spelled disaster for the Walla Walla's Chinook salmon runs. Chinook salmon disappeared from the Walla Walla in the early 1900s. In 1995, the Department of Ecology recognized that gravel aquifers were closely connected to area surface waters. Groundwater withdrawal from these shallow aquifers affected surface water flows and rights (Siemann and Martin 2007). Consequently, the Department of Ecology has not conferred any surface or groundwater rights in the Walla Walla basin since 1996.

Significantly, Bull trout (*Salvelinus confluentus*) and Steelhead (*Oncorhynchus mykiss*) were both listed as threatened under the federal Endangered Species Act in 1998 and 1999 respectively (Siemann and Martin 2007). Moreover, a 1999 state report listed the Walla Walla basin as one of 16 overappropriated, "critical" basins, lacking enough water to maintain fish populations (Governor's Salmon Recovery Office 1999). As early as 1967, legislation in Washington has tried to protect instream flows on waterways (RCW 90.22 1967). Nevertheless, the Department of Ecology has recognized its inability to resolve issues in the Walla Walla basin, given the limitations of existing water law. Any water rights that people wanted to donate to instream flow would instead go to junior water rights that are not currently being met.

In Washington, water is a public asset that is distributed in the form of water rights by the state (Pharris and McDonald 2000). Water rights are necessary in order to take any water from streams, rivers, or lakes (i.e. surface waters). They are also needed in order to take more than 5,000 gallons of groundwater or to irrigate more than half of an acre of lawn/non-commercial garden with groundwater. The state reserves the right to relinquish a water right should it go unused for 5 or more consecutive years, this condition is often referred to as "Use it or lose it". However, exceptions do occur for municipal water systems and power development (Pharris and McDonald 2000).

PARTNERSHIP'S BEGINNING

Based in Oregon, the Walla Walla Watershed Council formed in 1994 (Pfeifer and Wolcott 2003). Oregon watershed councils benefit from the support of the Oregon Watershed Enhancement Board, a state agency created to "help protect and restore healthy watersheds and natural habitats that support thriving communities and strong economies." These state dollars help the councils meet their administrative costs and leverage other sources of funding.

In response to the Bull trout and Steelhead Endangered Species Act (ESA) listings, the US Fish & Wildlife Service (USFWS) informed 3 irrigation districts, the Gardena Irrigation District, the Walla Walla River Irrigation District, and the Hudson Bay District Improvement Company, in early 2000 that they were potentially in violation of the ESA (Lorvich et al. 2003). The USFWS was going to require that a minimum of 14 cubic feet per second remain in the Walla Walla River. Concurrently, environmental groups, like the Center for Environmental Law & Policy, banded together and began to prepare a 60-day notice of their intent to sue to maintain flows in the Walla Walla River to protect ESA-listed species (Preusch 2002).

The Klamath Basin uprising was unfolding around the same time the Walla Walla was struggling to provide adequate instream flow. The Klamath River basin stretches across both California and Oregon. A court order required the Bureau of Reclamation to consult with USFWS and National Oceanic & Atmospheric Administration (NOAA) Fisheries Service to modify its 2001 water plan in the Klamath Basin to protect endangered species (Spain 2007). The Lost River sucker and the Shortnose sucker were both listed under the federal Endangered Species Act in 1988. The Coho salmon had been listed under the federal ESA as well as California's own Endangered Species Act. The USFWS and NOAA Fisheries had issued Biological Opinions specifying that instream flow reductions would 'jeopardize' conditions for listed species. In 2001, the basin experienced a severe drought and federal authorities chose to exercise their power, superseding state water laws. At the behest of the USFWS, the Bureau of Reclamation closed the Klamath irrigation project's headgates, leaving approximately 1,400 farmers without water over the summer. Protests and litigation ensued, leaving the Klamath Basin brimming with conflict (Spain 2007).

NOAA Fisheries and the USFWS met with the Walla Walla Watershed Council in 1999 to discuss the possibility of a Habitat Conservation Plan (HCP) in the Walla Walla basin (Thai et al. 2007). People in the Walla Walla saw the impact the Klamath fight was having on its communities and hoped to avoid a similar situation. The irrigators stepped forward and negotiated with the USFWS, signing a settlement agreement in 2000 that stated they would augment instream flow (Siemann and Martin 2007). Later that year, Walla Walla County and the Walla Walla Watershed Council led efforts to organize a bi-state working group with hopes of establishing an HCP (WWWMP 2010c).

Endangered Species Act

This powerful act was signed into law in 1973 by President Richard Nixon and is administered by the US Fish & Wildlife Service as well as the National Oceanic & Atmospheric Administration (NOAA) Fisheries Service (Public Law 107–136, 2002). The Secretary of Commerce determines whether a species should be listed, removed or whether changes in status should occur, after taking into consideration the "best scientific and commercial data available". The Secretary of Commerce consults with the Secretary of Interior on ESA decisions. These two agencies have 3 primary ways they protect listed species: 1) critical habitat designation 2) take prohibitions 3) consultations.

1) The Act states that the Secretary must designate the critical habitat of the threatened or endangered species when listing the species. Critical habitat "may require special management considerations or protection."

2) Under Section 7, federal and state agencies must consult with the USFWS and NOAA Fisheries when pursuing, funding or authorizing an action that could affect a listed species. During this consultation, the USFWS and NOAA must provide a formal Biological Opinion on whether actions would "jeopardize" a listed species. If they issue a "jeopardy" opinion, the Services must outline Reasonable and Prudent Alternatives (RPAs).

3) Section 9 prohibits the removal or "take" of the listed species from its habitat. "Take" is broadly interpreted to include habitat modification or destruction, which agencies refer to as the 'Harm rule'.

However, added in a 1982 amendment, Section 10 exempts take prohibitions, through a permit that can be issued upon receipt of a Habitat Conservation Plan (HCP). Habitat Conservation Plans are developed to balance the costs of species protection with the risks of extinction (Wilhere 2002). They are contracts signed between an applicant (oftentimes private landowners) and the US FWS or NOAA Fisheries for an "incidental take" permit. The HCPs seek to provide regulatory certainty to applicants while ensuring species protection.

In a separate effort to address streamflows, the state of Washington created the Water Acquisition Program in 2000 (Lovrich et al. 2004). The State legislature provided $5.5 million to aid in the acquisition of water rights. These acquisitions are primarily an effort to recover salmon populations and could occur through a purchase, long-term lease, short-term lease, split-season lease, dry-year lease or a donation. While other organizations are partners, the Program is primarily administered through the Department of Ecology, working with the non-profit organization Washington Water Trust. However, the program had trouble enrolling participants. In 2003, the program had spent less than $2 million of its budget on water rights.

Planning Efforts in the Watershed

A suite of planning efforts run parallel to the HCP process in the Walla Walla basin, exemplifying the multitude of interests and entities involved in the region's water resources. The following paragraphs describe some of these independent efforts and the complexities for regional comprehensive planning.

Salmon are a huge part of the Northwest's identity and economy and fuel state-wide concerns over instream flow. The Washington State legislature passed the Salmon Recovery Planning Act in 1998 and the Salmon Recovery Funding Act in 1999 to further facilitate local recovery efforts (Governor's Salmon Recovery Office 1999). Out of this legislation came the Salmon Recovery Funding Board, which provides grants using state and federal monies to monitor, protect and restore salmon habitat. The Board has awarded $438 million in grants across the state since its inception in 1999 (SRFB 2010). The Funding Board has supported the Lower Columbia's Regional Fisheries Enhancement Group, the Tri-State Steelheaders. Seven regional entities were also developed out of the 1998 Planning Act, one of which is the Snake River Salmon Recovery Board (SRSRB). The SRSRB is made up of local, state and federal agencies, citizens, tribes and other interested groups. The SRSRB coordinates recovery efforts across 5 counties and includes the Walla Walla watershed. In 2005, the Board submitted the Snake River Salmon Recovery Plan to NOAA Fisheries, identifying local priorities and strategies for salmon recovery, and is now in its implementation phase.

Regional Fisheries Enhancement Group

Regional fisheries enhancement groups are another attempt to harness the benefits of local leadership while trying to establish a state-wide program to address salmon recovery (WA DFW 2010). The Washington legislature formed Regional Fisheries Enhancement Groups to encourage local participation in salmon recovery in 1990. They receive some funding from fishing license fees, donations and grants. The Tri-State Steelheaders is the RFEG for the Walla Walla Basin.

The Northwest Power & Conservation Council also initiated sub-basin planning efforts using funds provided by the Bonneville Power Administration (Pfeifer and Wolcott 2003). The Council was created after passage of the federal Pacific Northwest Electric Power & Conservation Act in 1980, seeking to develop a regional energy plan and mitigate impacts on the fish and wildlife. The sub-basin plans required a technical assessment, a description of past and current projects, as well as management objectives for all US waters in the Columbia River basin to be eligible for the $140 million in annual electricity revenue it provides to its Fish & Wildlife Program (NW Council 2006). The plans will also provide valuable information to state and federal wildlife and fisheries agencies and address Clean Water Act and ESA requirements (Pfeifer and Wolcott 2003).

While the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) consumptive water rights have a priority date that coincides with the establishment of the reservation, Indian fishing rights are universally the most senior rights on a waterway, as supported by a US Supreme Court decision referred to as the Winters Doctrine (DEC 2008). Unfortunately, no current mechanism

exists for senior water right holders in Washington to "call" the water from junior water right holders at the headwaters in Oregon. While they are committed to working with the interests involved, the CTUIR and the US Army Corps of Engineers are also in the midst of a Flow Enhancement Feasibility Study. The extensive study is exploring structural projects that could increase instream flows and improve the way Walla Walla water is managed for the reintroduction of Chinook salmon to the watershed.

The Washington Department of Ecology has long recognized the significant impairments within the Walla Walla watershed and invested more than $7 million to improve water quality (Baldwin et al. 2008). Many segments have been on the EPA's 303(d) impairment list. By 2007, the EPA approved Total Maximum Daily Loads (TMDL), an estimate of the contaminant loading capacity without exceeding water quality standards, for chlorinated pesticides, fecal coliform, PCBs, dissolved oxygen, temperature and pH. A TMDL planning process was initiated in response to these impairments.

Most importantly, the Washington state legislature enacted the Watershed Planning Act, Title 90, Chapter 82, in 1998. Through this Act, the state recognizes and grants funding to Watershed Planning Units, a group of local agency and non-governmental representatives. Over 61 Watershed Planning Units exist in the state of Washington. The Walla Walla basin established itself as Water Resource Inventory Area (WRIA) 32 in 2000 (WDEC 2008). By 2005, the WRIA 32 Planning Unit had developed a watershed plan. Later that year, WA Department of Ecology Director, Jay Manning, urged the partners and the WRIA 32 Planning Unit to think creatively, pushing the boundaries of local authority if necessary, about how they could provide streamflow for aquatic habitat and resolve local disputes (WWCWPD 2009). His request has been termed the "Flow from Flexibility" offer and spurred the formation of the Walla Walla Water Management Initiative.

Meanwhile, the Planning Unit had developed specific recommendations to increase streamflow in the watershed. In response to the WRIA 32 Planning Unit's recommendations and after many public hearings and workshops, the Washington's Department of Ecology amended 173-532 WAC, the Water Resources Program Rule, setting instream flows at 4 management points in the watershed, at locations on the Touchet River, Mill Creek, and the Walla Walla River (WDEC 2007). The rule also limited groundwater withdrawals, closed shallow gravel aquifers, limited withdrawals during high-flow periods, adjusted seasonal surface water closures and limited stock watering. The amendment took effect in September 2007.

The Walla Walla Water Management Initiative evolved as the local effort to centralize water management authority and planning efforts. Responding to Jay Manning's offer, local leaders hoped to build upon the successes of the Planning Unit and pilot a new governance model. They did not want to create an additional organization since there were so many efforts already underway. The new entity would assume the role of the WRIA 32 Planning Unit, coordinate local efforts and share water management authority with the Department of Ecology (WDEC 2008). The Ruckelshaus Center published a report, sponsored by the Walla Walla Watershed Alliance and the WA Department of Ecology, investigating potential governance structures, potential challenges and opportunities for this new entity (Ruckelshaus 2007).

The legislature also provided funds through the Department of Ecology so the Walla Walla Water Management Initiative could collaboratively design a water management entity in the Walla Walla watershed (WDEC 2008). More than 34 different interests and entities helped to craft the proposal. They presented their proposal to the state legislature with the support of the Department of Ecology. In the proposal, the entities stated, "while the Partnership will coordinate with other groups in the Basin, its intent is not to control or direct the operations of other organizations. The Partnership would be established as a public-private quasi-governmental entity" (WDEC 2008). The proposal also identified the following opportunities to increase streamflow:

- Change place or time of use
- Change or switch diversion points
- Create storage
- Share or transfer water
- Switch between surface and groundwater sources
- Adjust maximum instantaneous diversion rate
- Spread water allotment over land parcels

On April 23rd 2009, Washington Governor Christine Gregoire signed House Bill 1580, which became Title 90.92 RCW (Washington State Legislature 2009). Title 90.92 RCW established the partnership's authority and roughly outlined a process by which to develop local water plans as well as a water banking system (Title 90.92 RCW 2009). The water banking system's primary function is to enhance instream flow. Title 90.92 labeled the WWWMP as a pilot program, lasting ten years from 2009-2019.

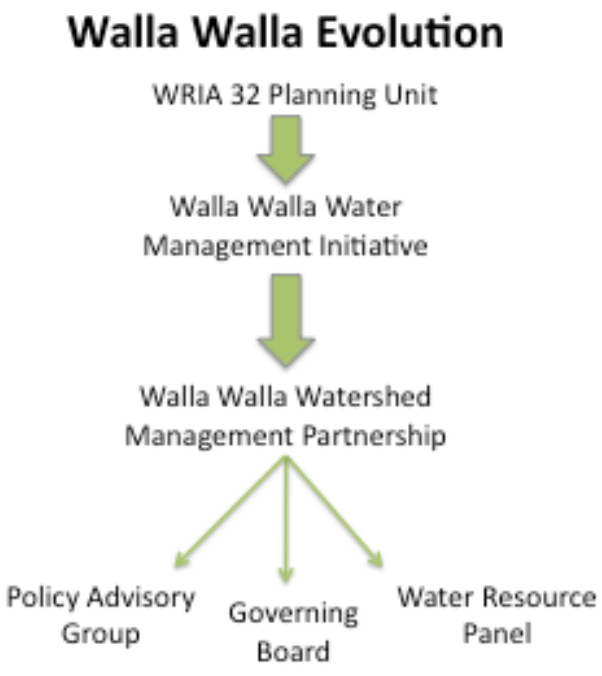

Figure 4.2: Organizational Flowchart, Courtesy of WWWMP.

Unlike Watershed Planning Units, the pilot water management initiative is able to purchase and manage property and water rights (Title 90.92 RCW 2009). It can also apply for grant funding, accept donations and develop sources of funding. Similar to the state initiative, the water banking system allows water right holders to temporarily or permanently bank their water usage rights, thereby contributing to instream flow. Water rights are not subject to forfeiture after 5 years while they are temporarily banked. This adjustment in the Water Code provides assurance to the water right holders. Temporarily banked rights also remain in the water right holder's possession. However, permanently banked rights will become trusted water rights and therefore appropriated by the state of Washington. These trusted rights do not lose their seniority status. The first water rights were accepted into the water bank in April 2010 (WWWMP 2010d).

Water right holders can determine how long they would like to bank their water, but the time period cannot exceed June 30, 2019, which marks the end of the pilot program.

Foreseeing some of the potential conflicts, the act mandates dispute resolution procedures and outlines an adoption process for local water plans within the Planning Unit's jurisdiction (Chapter 90.92 RCW 2009). The terms and conditions do not require water rights holders to participate in local planning and water plans must make sure they do not impair existing rights for those who choose not to participate.

ORGANIZATIONAL STRUCTURE

The Partnership's primary focus is water management; while it will indirectly improve salmon habitat, other local and regional initiatives are targeting the restoration of endangered species through efforts including hatchery management. The Partnership adopted the WRIA 32 Planning Unit's watershed plan and signed a Memorandum of Understanding (MOU) with Walla Walla County for the transfer of the Planning Unit's records (WWWMP 2009b). The WWWMP is comprised of a Governing Board, a Policy Advisory Group (PAG), and a Water Resource Panel (WRP). The partnership's Governing Board has 9 members, who meet monthly to oversee all efforts, approve water management plans, acquire and distribute funds, report on progress and resolve local disputes (WDEC 2008).

Board of Directors

Mark Wagoner – Chair
Gardena Farms Irrigation District #13

Edward Chvatal, Jr. – Vice-Chair
Columbia and Walla Walla Conservation Districts

Richard Jones – Member
County Commissioner, representing Columbia Co.

Perry Dozier – Member
County Commissioner, representing Walla Walla Co.

Jim Barrow – Member
City Councilman, representing City of Walla Walla

John Barkley – Member
Confederated Tribes of the Umatilla Indian Reservation

Michael Buckley – Member
Farmer, representing Water Right Holders

Judith Johnson – Member
Kooskooskie Commons, representing Environmental Interests

Greg Farrens – Member
representing Citizens-at Large

Six of the nine Board members represent the following entities as defined in the legislation: Walla Walla County, Columbia County, City of Walla Walla, CTUIR, Gardena Farms Irrigation District, and a Conservation District representative, jointly appointed by two districts (Chapter 90.22 RCW). The six entities represented appoint the other three Board positions, to include representatives from environmental interests, water rights holders, and citizens-at large. The Partnership has two staff positions filled by Cathy Schaeffer, the Executive Director and Matt Rajnus, Program Director. The partnership's current Strategic Plan was developed in 2010 and will remain in effect until 2012, at which time

the partnership will re-evaluate its priorities and strategies. However, the PAG will review the Partnership's progress with respect to the Strategic Plan once a year.

The Partnership uses Roberts' Rules of Order on Parliamentary Procedure, as codified in their bylaws (WWWMP 2009e). A simple majority of Board members constitutes a quorum. If a Board member is absent from meetings more than three times consecutively, the Board may take action to replace that member. When quorum exists, decisions are made by majority vote. The Chair and Vice-Chair are also elected by majority to one-year terms, with no limit to the number of terms they may serve. The PAG and the WRP operate within their respective charters to make decisions consistent with the program's legislative intent (WWWMP 2009c, WWWMP 2009d). Both the PAG and the WRP try to achieve consensus whenever possible, but are at liberty to determine a process for majority decision-making process as long as a minority report is provided.

Policy Advisory Group

The Policy Advisory Group (PAG) is made up of 28 members and meets at a minimum quarterly. The group helps the Partnership Board develop policy solutions and planning efforts, provides stakeholder input and coordinates with all necessary jurisdictions in the watershed (WWWMP 2009c). The PAG also aids in long-term strategic planning for the partnership. The Board appoints members who must include the following entities:

- Washington Department of Ecology
- Washington Department of Fish & Wildlife
- Implicated state agencies
- Other appropriate interests

Water Resource Panel

In contrast, the Water Resource Panel is composed of 7 members and provides technical assistance in the development of local water plans and advises the Board of Directors on local water plan approval, denial, and modification (WWWMP 2009d). The Board of Directors appoints each member to a 2-year renewable term. Partnership staff is designated to chair the panel as a non-voting member. Additional members may be appointed as needed. RCW 90.92 states that members of the Water Resource Panel should have technical expertise in the following areas:

- Irrigation Management and Engineering
- Water rights
- Fisheries habitat
- Economic development
- Hydrological analysis, as it pertains to surface and groundwater

Both the Washington Department of Fish & Wildlife and the Department of Ecology must be invited to participate in WRP meetings, all of which are also open to the public. The US Geological Survey (USGS), the Tri-State Steelheaders, and the Department of Ecology all maintain streamflow monitoring gauges in the watershed (WWWMP 2009). USGS and the

University of Washington are also working to model potential climate change impacts in the basin. The Partnership is able to use these as a basis for its technical decisions.

The Partnership's metrics for success include the number of local water plans, the number of water banking transactions, the number of watershed plan actions completed (WWWMP 2010b). The Partnership chose not to include instream flow for several reasons including the availability of sensitive monitoring equipment, climate, and the complicated nature of surface-groundwater interaction in stream reaches where local water plans are implemented, among others.

The legislature provided the WWWMP with $450,000 in initial funding to establish the new entity (WWCWPD 2009). In the past, various local, state, federal, tribal and private monies have supported projects that the Partnership has been involved in. These projects included the following partners: Columbia & Walla Walla Conservation Districts, Washington Department of Fish & Wildlife, US Forest Service, counties, municipalities, Department of Natural Resources, Walla Walla Watershed Alliance, Walla Walla Watershed Council, USACOE, CTUIR, Tri-State Steelheaders, Inland Action Empire Coalition, Walla Walla Community College, Blue Mountain Land Trust, the Irrigation Districts, Pacific Northwest National Laboratory and Kookooskie Commons. However, the largest funding sources have been the WA Department of Ecology, the Salmon Recovery Funding Board and the Bonneville Power Administration's Fish & Wildlife Program. The Partnership will continue to use its diversity to seek out funding from a variety of sources.

CHALLENGES

Photo 4.1: Ditch lining to reduce seepage and conserve water, Courtesy of WWWMP.

Trust & Participation

In the past, despite the incentive programs developed to encourage water right holders to conserve instream flow, the program lacked participation. A 2003 report found that many watershed residents distrusted the Department of Ecology to return their temporarily banked water rights, fearing ESA backlash or a change in regulation (Lorvich et al. 2003). Agriculture is a way of life fueled by water in the Walla Walla basin. Water right holders highlighted concerns over the return of their temporarily trusted water rights. They fear that waters could be designated critical habitat under the ESA or their historical use reviewed during the process, only to determine they did not put their water to beneficial use. As previously mentioned, water rights can be relinquished if gone unused for 5 years or more. Similarly, some farmers have claimed that water metering actually increases the

amount of water used by a water right holder. If they know they are not using their allocation, they could increase their diversion to make sure they are not risking the loss of their water rights. Donating instream flow could also limit a farmer's flexibility to adjust to market conditions or weather patterns. Many complained about the program's lack of consistency and slow processing pace as well. Farmers also contested findings regarding adequate instream flow, water shortages, and the salmon's threatened status, indicating a greater need for education. The analysis suggested that the management process should consider local conditions and be grounded in local leadership, one of the reasons the Department of Ecology has strongly supported the local efforts in the Walla Walla basin. In the past, farmers have cited their support for Conservation Districts. Organizations like the Washington Water Trust and the Walla Walla Water Management Initiative were seen as necessary to further conservation goals in the watershed.

Coordination

The Walla Walla watershed extends into two states and coordination amongst disparate groups has always been a challenge (Schaeffer 2010). Numerous individual programs and initiatives have evolved to address the severe problems in the Walla Walla watershed, independently targeting instream flow, salmon recovery and hydroelectric energy, among other watershed issues. In the past, coordination amongst these different entities has taken significant time and effort; several planning documents existed, rather than one comprehensive one. However, Cathy Schaeffer, the Partnership's Executive Director highlights the positive aspects, "sometimes the fragmentation creates opportunity for the Partnership to bridge the gap. I think a more homogenous effort might benefit from being less fragmented but would likely not be large enough in scale to encompass the various stakeholder groups and ecosystem-based issues. Fragmentation is also sometimes due to unequal funding, because not every issue is getting the same amount of attention."

ACCOMPLISHMENTS

Water Banking

In September 2010, the partnership had over 30 agreements with water right holders to bank their water use rights and augment instream flow (Schaeffer 2010). The partnership is also developing water-banking options that could incentivize water conservation. The water bank hopes to compensate water right holders that conserve their water.

While the following accomplishments cannot be directly attributed to the partnership, they are the result of basin-wide efforts to improve the health of the natural environment.

Photo 4.2: Water depth gauge, Courtesy of WWWMP.

Salmon Runs

In 2004, the Spring Chinook returned to the Walla Walla River for the first time in nearly 100 years (WDEC 2008). Tribal groups have been populating the streams with Chinook since the year 2000 when the ESA settlement agreement was signed to ensure at least 25 cfs of streamflow year-round. Tribal fishing for Spring Chinook salmon was allowed in June 2010 for the first time since the fish had disappeared. Over the years, the CTUIR and other basin entities have helped install fish ladders and fish screens to help salmon navigate the manmade barriers and protect them.

Aquatic Habitat & Water Efficiency

As a result of all the basin's organizations working together, 380 fish screens, 350 water meters, 229 miles of riparian buffer and 300 other instream structures have been installed to improve aquatic habitat (WDEC 2008). Landowners have also used federal and state incentive programs to improve irrigation efficiency and land management. In response to a state law requiring water right holders to monitor and report water usage, the Walla Walla Conservation District installed over 200 water meters (Siemann and Martin 2007). The NRCS Conservation Reserve program, the Environmental Quality Incentives Program (EQIP), the Conservation Reserve and Enhancement Program (CREP) all offer incentives programs through the Conservation Districts and the local NRCS offices that farmers and ranchers have been able to take advantage of. The Irrigation Districts have also developed four Comprehensive Irrigation District Management Plans, which have lined conveyance channels to reduce water loss to seepage and implemented other water efficiency measures (WDEC 2008).

PUBLIC OUTREACH & EDUCATION

The William A. Grant Water & Environmental Center opened its doors on October 12, 2007 in Walla Walla (WWCC 2009). The Water & Environmental Center is part of the Walla Walla Community College and houses the Watershed Ecology and Water Management degree programs. Within the Water Management program are two American Association for the Advancement of Science (AAAS) degrees in Irrigation Technology and Water Resources Technology. The Center also provides free community workshops and K-12 experiential education programs. The Walla Walla Watershed Management Partnership, the CTUIR, and the Walla Walla Watershed Alliance also call the Center home. The Alliance was established in 2001, as a non-profit organization seeking to address bi-state issues and implement site-specific, demonstration projects. Recognizing the redundancy of its efforts, the Alliance now emphasizes water resource policy, advocacy and public education in the watershed.

Moreover, the Walla Walla Watershed Management Partnership sends out quarterly newsletters and maintains a well organized, elaborate website. In the past, the Planning Unit placed over 80 signs to identify waterways and watershed boundaries in Walla Walla and Columbia counties (WDEC 2008). However, the Planning Unit relied upon its partners, like the Walla Walla Watershed Alliance, Kooskooskie Commons, the Walla Walla Basin Watershed Council (WWBWC), Tri-State Steelheaders, to lead education and outreach efforts in both states. These programs include K-12 education, science clubs, science camp, volunteer water quality

monitoring, fishing days, basin tours, watershed forum workshops, community dinner/dialogue, Salmon Fest and environmental film festivals. The Conservation Districts also inform landowners of incentive programs and successful habitat conservation projects through its staff and quarterly newsletter.

LESSONS LEARNED

"I am careful in characterizing this effort as an integration of entities so that I don't imply that any of the individual entities have abdicated their authorities. However, the integration of goals and objectives is an important part of our collaborative effort, with the local entities retaining their original unique authorities."

- Cathy Schaeffer, Executive Director for the Walla Walla Watershed Management Partnership

The Partnership represents a delicate balance of the basin's interests. Water sustains residents' livelihoods and economic wellbeing. While many partnerships have successfully found ways of addressing water quality issues, fewer models exist for water quantity, given the restrictions of prior appropriation water law. As seen in the Klamath example, water quantity disputes can become lengthy, emotional battles. The basin has been careful not to fault any one group of water users and tried to find ways everyone can contribute to the solution (Ruckelshaus Center 2007). Their motto "Flow with Flexibility" recognizes the competing needs of each of the entities, but encourages the WWWMP to develop creative solutions. The success of its cooperative approach and long list of partnerships will also give it the legitimacy to resolve local disputes.

"There is a credible commitment to collaboration in the Walla Walla area, and we have seen parties consistently approach collaboration in a manner that keeps participants at the table, rather than prone to losing trust."

- Cathy Schaeffer, Executive Director for the Walla Walla Watershed Management Partnership

The Irrigation Districts could have responded differently to the potential ESA violations and the CTUIR could still pursue litigation to revive the salmon fishery. Yet, the Valley's unique response to these situations has been labeled the "Walla Walla Way" and is one of the reasons the WA Department of Ecology's Jay Manning pushed them to take their efforts a step further. Schaeffer notes, "With opposing perspectives often in play, we have to work hard at maintaining trust through keeping the lines of communication open." Their communication reduces any uncertainties or surprise occurrences within the watershed. The state of Washington is also currently considering water law reform. The Department of Ecology recently published a report to the legislature, outlining its recommended potential changes and proposing user fees as a means of funding more active water management statewide. Schaeffer acknowledged the high hopes many have for WWWMP, but cautions any general applicability by saying, "we seem to be riding the bicycle as we build it these days."

Conclusions

The Walla Walla's local approach has been the key to its success. The potential ESA violation was the crisis that inspired people to work together, but the trust and commitment that they have built over time has enabled their progress. Their mission statement also codifies their commitment to the balance between human livelihoods and ecosystem health. Like the WWWMP, the Roaring Fork Watershed initiative's structure and activities will likely evolve over time as its partners continue to work together and build relationships. The Roaring Fork will also have to respond to changes from external factors, like the regulatory and political climate in Colorado.

Similar to Washington, the Colorado Water Conservation Board instituted an instream flow program in 1973 (RWAPA 2008). Given its low levels of participation, the Colorado General Assembly passed legislation, allowing temporary water leases or loans without the threat of abandonment. Pitkin County has taken advantage of . A credible, trusted local entity in the Roaring Fork could manage a water bank, increasing participation levels and make a substantial contribution to instream flows.

Agriculture is a way of life for the Walla Walla, more so than in the Roaring Fork, and most of the Walla Walla Watershed is privately owned. In contrast, a large portion of the Roaring Fork Watershed belongs to the US Forest Service and private land is concentrated in the riparian area along the Roaring Fork River and major tributaries. These landowners could be enticed to protect and improve riparian habitat through incentive programs. Nevertheless, the US Forest Service's support and commitment to the Roaring Fork Watershed Collaborative's goals will also be crucial as the initiative forms and moves into implementation.

Photo 4.3: Walla Walla landscape, Courtesy of WWWMP.

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APPENDIX

Appendix F. Walla Walla Watershed Partnership Bylaws
Appendix J. Walla Walla Watershed Partnership Charter
Appendix Z. Walla Walla Watershed Partnership Newsletter

CASE 5. THE ANIMAS RIVER STAKEHOLDERS GROUP

Location: Southwestern Colorado
Prepared by: Anne Kohl

Mission: The Animas River Stakeholders Group has the mission of improving water quality and aquatic habitats in the Animas River watershed through a collaborative process designed to encourage participation from all interested parties.

The Animas River Stakeholders Group (ARSG) is located in Silverton, Colorado and formed in 1994. The ARSG is an example of community-based environmental management (CBEM), an approach that centers on community interests playing an active role in managing resources. However, before the creation of the ARSG, there was little community interest within the Animas Watershed to tackle remediation efforts due to decades of mining. It took the threat of new stringent water quality standards or Superfund designation by governmental actors to push initial participants to come together.

Figure 5.1: Map of Animas River Watershed, Source: USGS.

BACKGROUND

The Animas River is formed by the confluence of three drainages: Mineral Creek, Cement Creek, and the upper Animas. The Animas is the largest remaining free-flowing river in the West that is on average roughly 100 feet wide (Steelman and Carmin 2002). The Animas River Watershed covers 692 square miles in the southwest corner of Colorado, located near Silverton, Colorado (Simon 2008). The watershed is contained within San Juan County, which has a varying population throughout the year due to harsh winters. There are approximately 500 year-round

residents and an additional 3,500 tourists and temporary residents in the summer. Roughly 83% of the land in San Juan County is publicly owned. Near Durango, Colorado, the upper Animas turns into the lower Animas (Koontz et al. 2004). The River winds and cascades through 14,000 feet of mountains, canyons, and cliffs and is part of the highly mineralized geological zone.

Photo 5.1: Inactive mine, Courtesy of Animas River Stakeholders Group.

Mining has been an important part of this area's history with millions of tons of gold, silver, lead, zinc, and copper excavated in the last 120 years. Heavy-metal loading severely impacts the headwaters of the Animas because of this activity. Past mineral practices and natural geological processes account for the copper, iron, aluminum, manganese, lead, and cadmium loads that make the upper Animas ecologically lifeless. It is estimated that 1,500-2,000 abandoned and inactive mines leak acid mine drainage into the watershed (Steelman and Carmin 2002). The last mine closed in 1991 after 120 years of hardrock mining, leaving behind "unique historic features, a mining heritage, high unemployment, and a legacy of pollution" (Simon 2008).

PARTNERSHIP'S BEGINNING

Water quality in the Animas River was not a concern until the early 1990s. The Colorado Water Quality Control Commission (WQCC) set water quality standards and use classifications on the upper Animas in 1979 and reassessed them every three years. The Colorado Water Quality Control Division (WQCD) is the state agency responsible for regulating surface water and groundwater quality and to make recommendations for action to the WQCC. They determined there was little aquatic life in the river due to low pH and heavy metals contamination (Koontz et al. 2004, Steelman and Carmin 2002). The WQCC first set water quality standards on the upper Animas as ambient in 1979. No use standards (i.e. the desired conditions for the water resources in question) were applied to the river because of poor water quality and waters not being used as a source of drinking water (Steelman and Carmin 2002, Koontz et al. 2004). However, in the late 1980s, some local residents reintroduced trout into one of the streams, thinking that there were parts of the watershed that would be able to support aquatic life. Following the trout introduction, the WQCC needed to reassess the use classification on the river (Steelman and Carmin 2002).

From 1991 to 1993, the WQCD conducted a biological and water quality sampling program in the upper Animas to determine "the potential for water quality improvement sufficient to allow natural reproducing trout populations." At the end of the study the WQCC found reproducing populations of mixed species and determined that the quality of water in the watershed

A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount among the pollutant's sources.

could be improved. However, how to set new standards remained a challenge. The abandoned mines in the area are considered nonpoint sources of pollution and therefore fall under the total maximum daily load (TMDL) programs of the EPA. Setting TMDLs is complicated and the EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming) was reluctant to impose standards on financially vulnerable interests in the watershed (Steelman and Carmin 2002).

Photo 5.2: Acid Mine Drainage, Courtesy of Animas River Stakeholders Group.

There were two paths the WQCD could pursue. They could impose new use standards, but knew that stakeholders in the region would resist more stringent water quality standards. The WQCD had no desire to engage in legal and technical battles that would not benefit the watershed. The other option was to use community-based environmental management, a method suggested by the EPA. It was the EPA's hope that through this process, locally determined standards would be set, managed and enforced. The next step was to involve local stakeholders, including the gold mining industry, in a process "to determine collectively what standards would work best for the varied interests in the watershed" (Koontz et al. 2004, Steelman and Carmin 2002). However, no group or organization existed that could coordinate this effort at the time.

In response to the EPA's request, the WQCD retained the services of the Colorado Center for Environmental Management (CCEM) to coordinate the creation of the Animas River Stakeholder Group (ARSG). In January 1994, the CCEM began talking with various people in the watershed to understand all different perspectives about water quality. Another challenge arose in terms of defining "community" and "stakeholders" for this process. Since the population of San Juan County is only 500, the initial local community from which stakeholders could be

drawn was small. Furthermore, 83% of the land in the county is publicly owned, so it was important to include the federal agencies responsible for the management of those lands in the process. Lastly, many of the people who owned the mines in the area were absentee landowners. The beginning of the process was met with skepticism from the initial participants of the ARSG, since it involved the EPA and was coordinated by an outside group, the CCEM. The initial participants included the Bureau of Land Management; U.S. Forest Service; U.S. Geological Society; U.S. Army Corps of Engineers; U.S. Bureau of Mines; Colorado Department of Public Health & Environment; Colorado Division of Reclamation Mining and Safety; local agencies; local mining companies; land owners; and residents of Silverton and Durango (Simon 2010). It was after the state of Colorado made it clear that new standards would be determined with or without their involvement and the EPA threatened designating the area a Superfund Site did participants come together. The stakeholders saw it in their best interest to undertake the collaborative ARSG process, as it would more directly involve those who would be most affected by new standards (Steelman and Carmin 2002, Koontz et al. 2004).

The ARSG first met in February 1994 and according to the CCEM status report on the ARSG, "an acrimonious mood prevailed during [the] early sessions due to general distrust that permeated the setting" (Steelman and Carmin 2002). However, a core group was able to set aside the suspicions and remained interested in pursuing the WQCC challenge to set standards in the watershed. They had seven months to convince the WQCC that they could develop a reasonable regulatory alternative to government-imposed standards. A bump in the road came in February 1995 when the WQCC decided to impose strict numerical water quality standards for the watershed without consulting the ARSG. The group opposed the new standards and asked the WQCC to delay the effective date. The WQCC then challenged the ARSG with the tasks of characterizing existing sources of pollution, determining the feasibility for remediation, making recommendations for implementation of practical and attainable stream standards and use classifications, and beginning remediation. The ARSG was given three years to complete a use attainability analysis (UAA), a composite of all the studies conducted in the watershed. Without the formal regulatory authority, the ARSG could only provide technical expertise and community-supported recommendations to regulatory entities – the WQCD, WQCC, and EPA. During the three years the ASRG was conducting studies the existing ambient standards remained in place (Steelman and Carmin 2002, Koontz et al. 2004).

The ARSG process came up for review in 1998 after the three years ended. Since the ARSG has not completed the UAA, they asked the WQCC for an additional three years to continue studies to make recommendations for use-designation standards. In January 2001 the ARSG completed the UAA. Because they did not have rulemaking authority, it was up to the WQCC to accept the UAA and recommendations. The WQCC formally accepted the ARSG's UAA on October 9, 2001. This was certainly a victory for two reasons: first, because a diverse stakeholder group had been able to agree on use standards, and secondly, the standards stood more chance of being implemented by the various stakeholders involved in the process (Koontz et al. 2004).

PARTNERSHIP'S EVOLUTION

The ARSG formed for the specific purpose of developing water quality use standards for the Animas River. The group has changed little over time. One notable change is the evolution of ARSG from an agency-inspired stakeholder group to a community-based forum to address water quality issues in the watershed (Steelman and Carmin 2002).

ORGANIZATIONAL STRUCTURE

By mid-1994, the ARSG decided on a mission statement, goals, and organizational structure. Their mission statement is, "to improve water quality and aquatic habitats in the Animas River watershed through a collaborative process designed to encourage participation from all interested parties" (ARSG 2010). To pursue this mission, the group conducts extensive collection and analysis of the chemical, physical, and biological components necessary to assess the impacts of contamination on aquatic life and habitat within the watershed (Coughlin 1999).

Overarching goals of the ARSG are as follows (ARSG 2010):

- To monitor the water quality and aquatic habitats of the Animas River and its tributaries and provide access to the public of this information.
    - Determine which parameters (heavy metals, acidity, nutrients, etc.) presently limit aquatic life and habitats
    - Determine levels of reduction of those parameters necessary to substantially improve aquatic life
- To analyze all water quality information within the Upper Animas watershed to determine the extent and effects of metal contamination from natural, geologic processes and historic mining, and to identify major source locations.
- To determine the feasibility of remediation of sites discovered to be major contributors of metals or related contaminants.
- To use information from monitoring and feasibility determinations to develop a basin wide remediation plan consisting of cost estimates, possible technologies and probable candidate sites.
    - To reduce metal concentrations in the Animas River to a level which will maximize aquatic life while maintaining costs acceptable to the general public
    - To remain flexible, allowing prioritization of sites to change in response to technological developments, availability of funds, owner cooperation, regulatory changes, and other factors which may be beyond the control of the Stakeholders Group
- To encourage private and public entities to reduce the amount of contaminants entering the Animas River from abandoned mine sites through the following means:
    - Educating the public concerning environmental issues involved
    - Assisting in the development of cost effective remediation technologies
    - Encouraging the implementation of demonstration technologies
    - Assisting in the procurement of funds necessary to attain the goals and objectives of the group, including funds for voluntary site remediation
- To affect changes in current regulations and permitting procedures, which would encourage voluntary approaches to remediation.

The group also has a standing policy for remediation efforts in the watershed. In order to preserve the historical heritage of the area, each remediation project is reviewed by the San Juan County Commissioners for possible historical impacts. The Commissioners have a county Historical Review Committee, which provides comments and recommendations (ASRG 2010).

The ARSG remains an ad hoc entity with no bylaws and no voting privileges, so that all members of the community, including government agencies, mining corporations, advocacy groups, and landowners would have an equal voice (Simon 2008). Decisions are reached through consensus which has promoted the feeling of teamwork within the group. Bill Simon, a local resident, scientist, and researcher was the sole ARSG Coordinator until about a year ago. A selection committee chose him from an applicant pool of over 35 people. He now serves as Co-Coordinator with Peter Butler, a former representative from the Friends of the Animas River and current Chair of the WQCC. Butler's work is mostly unpaid and Simon is now only part-time. They serve as the only staff of the ARSG. The group meets once a month in Silverton, Colorado (Coughlin 1999, Simon 2010).

The members of ARSG consist of federal, state, and local government agencies, nonprofit organizations, and industries (Koontz et al. 2004):

Federal government agencies: U.S. Bureau of Land Management, U.S. Bureau of Reclamation, U.S. Corps of Engineers, U.S. EPA, USDA Forest Service, U.S. Geological Society

State government agencies: Colorado Department of Public Health & the Environment, Colorado Water Quality Control Division, Colorado Department of Minerals and Geology, Colorado Division of Wildlife, Colorado Geological Society

Local government agencies: City of Durango, San Juan County Commissioners, Town of Silverton, Southern Ute Tribe, Southwest Colorado Water Conservation District

Nonprofit Organizations: Colorado River Watch, Friend of the Animas, River Watch Network, San Juan County Historical Society

Industries: Durango and Silverton Narrow Gauge Railway, Echo Bay Mines Company, Gold King Mines, Little Nation Mining Company, The Mining Remedial Recovery Company, Asarco, The OSIRIS Gold Company, The Root and Norton Assayers, St. Paul Lodge, The Sunnyside Gold Corporation, Silver Wing Company, The District Tusco Company, and Hydrosphere.

In 1995 the ARSG created three smaller workgroups:

- The *Monitoring Work Group* which coordinates the collection, assessment, and management of the watershed characterization information and the identification of source areas contributing to heavy metal contamination.

- The *Feasibility Working Group* conducts feasibility studies to identify alternatives for remediating mines and implementing remediation projects.

- The *Regulatory Working Group* tracks the changes in relevant statutes and regulations and provides information about the group's work to various regulatory agencies, such as the WQCC (Koontz et al. 2004).

Sub-workgroups form when needed and then terminate (Coughlin 1999). The workgroups meet before the monthly meetings and then present action items to the whole group. A fourth group meets in Denver to coordinate multiagency activities and disseminate information to those who cannot attend the regular monthly meetings in Silverton. This group consists of technical and agency staff. The ARSG uses consensus decision-making to encourage the inclusion of all stakeholders (Koontz et al. 2004).

FUNDING

The ARSG is funded by multiple sources. The ARSG has access to federal funds that might not have been provided if WQCD and the EPA were not participants in the group's creation. The EPA's Rocky Mountain Headwaters Mining Waste Initiative provided substantial financial support initially and up until 1996. In conjunction with the WQCD, the EPA provides funding through the Section 319 program of the Federal Clean Water Act for specific remediation projects. Other government agencies such as the U.S. Forest Service, Bureau of Land Management, and Colorado Division of Wildlife provided financial support, though those resources are not as robust as those from the EPA and WQCD. The Sunnyside Gold Company has also provided a large amount of money towards reclamation efforts in the area. Local mining corporations and the Southwest Water Conservation District helped to pay for a small portion of the administrative costs. They recently were awarded a $100K grant from the Colorado Energy Assistance Program with a $10K match from San Juan County to cover administrative costs as well (Simon 2010). The Southwest Water Conservation District has also picked up a portion of the cost for the salary of the ARSG coordinator (Koontz et al. 2004). The ARSG also receives $5K per year from the Southwestern Water Conservation District (Simon 2010).

CHALLENGES

An early challenge the ARSG faced were questions about **its legitimacy as a community-based group**. The ARSG was perceived as having little connection with the local community and an inability to build bridging capital to other entities. Local citizens criticized the group, frustrated with the number of government agencies participating in the process. In response, watershed coordinator Bill Simon attempted to make the meetings more open to the local community by leaving the highly technical data off the agenda and focusing more on broader policy concerns. He also began to meet individually with local citizens to explain the ARSG process and to hold topical discussions to reach out to more people. Other outreach efforts included newspaper articles, holding an open house, and conducting field trips. A report done in 1996 on ARSG encouraged them to "maintain continuous contacts with the local population at large and to seek expanded local participation and/or acceptance in the process" (Steelman and Carmin 2002).

The ARSG has overcome the challenges of legitimacy by bringing together the necessary public, private, and nonprofit stakeholders important for the issues they are addressing. The group makes efforts to include the local community and makes several attempts to involve them in the process by opening the meetings to public and by having no official membership. The ARSG stakeholder process has been more community-based and involved than if WQCC were to determine use standards without input from those who would be most affected by the standards (Steelman and Carmin 2002, ARSG 2010).

Another initial challenge was **ensuring sufficient representation** in the collaborative process. The area is proud of its mining history and for many the need for collaboration is admitting failure to take care of the natural resources in the watershed in the first place. Consequently, a lack of landowner representation and a lack of resident participation resulted. Since 1994, there has been an improved participation on part of the landowners, though Simon has indicated a lack of trust with both state and federal agencies in past interviews. The initial lack of citizen involvement stemmed from not understanding their role in the collaborative management. They saw bureaucrats coming together to decide their future, so citizens felt little empowerment to join in (Coughlin 1999).

The ARSG has been able to overcome the challenges of representation through both active recruitment and loose group structure. Bill Simon works to ensure a fair perspective. He says, "When it gets out of balance, I try to find somebody or some group from the other side of the fence to come to a meeting and put forth the other side of the issue" (Coughlin 1999). Conducting business as a loose structure has fostered a greater involvement because people feel that they can jump in at anytime (Coughlin 1999).

In the beginning, **accommodating the diverse interests of the group** has slowed down the process, but also enhanced decision making of the ARSG. Also, the group has to deal with the impatience of some members. Bill Simon has said, "Our biggest challenge is time. Everybody expects action. In our case we have 120 years of mining related damages and people want action right away. The challenge is in keeping the greater community patient and letting this process run its course" (Coughlin 1999). Another challenge is developing and maintaining trust within the collaboration. The ARSG has had to convince some that there is actually an environmental problem in the watershed. Because of this, it has been hard to develop trust between agency representatives and local community members (Coughlin 1999).

There are three ways the ARSG was able to overcome the challenges of accommodating diverse interests: first is to provide forums for information sharing, education, and addressing concerns, the second is to encourage after-hours interaction, and third is to force action. As a way to educate locals and non-permanent residents about the issues in the Animas watershed and the activities of the ARSG, the group uses what they call a library series, a friendly non-intimidating forum. Other advantages to this forum are that it is used to get more people on board and to reassure participants that their issues will be addressed rather than swept under the rug. ARSG encourages participants to get together for social gatherings outside of meetings as a way for people to get to know each other rather than just their interests. Lastly, the threat of Superfund designation has been used to convince people to work together to provide management alternatives (Coughlin 1999).

Dealing with scientific issues such as water quality, designation of the area as a Superfund site, and brown trout, falls under the jurisdiction of the ARSG. The challenges that come from this are **different perceptions of the nature of the problem, verification of information, and balancing the discussion**. As mentioned earlier, some people in the watershed had different perceptions of the nature of water quality degradation. There were some who did not even feel there was a problem. This skepticism caused a challenge for agency representatives who tried to bring the local residents up to speed about the scientific issues involved. Since there were so many agencies involved, participants voiced the concern that the agencies tend to invalidate the findings of other agencies. Lastly, many had complained that meetings were conducted using scientific language and jargon that the everyday participant cannot understand. As a result, they did not attend meetings, feeling like it is a waste of time and that they would not be able to voice their concerns and opinions (Coughlin 1999).

There are two ways the ARSG was able to overcome the challenges of dealing with scientific issues: the first is to use work groups and the second is to avoid jargon or acronyms. The working groups were formed with people who are more familiar with specific issues such as mine tailings, chemistry of water, etc. If necessary they sought outside help to get a better understanding of an issue, but usually there was enough expertise and knowledge within the group. Furthermore, the groups have set protocols and the ARSG monitoring workgroup is responsible for collecting data and ensuring its quality. These workgroups then make presentations to the whole group after various studies have been conducted. Lastly, avoiding jargon and acronyms have allowed for a richer involvement of all stakeholders (Coughlin 1999).

ACCOMPLISHMENTS

In order to determine the chemical and biological conditions of the streams in the watershed, the ARSG developed an extensive monitoring program. They have also developed and consolidated a database. Water quality data is being collected by several of the ARSG stakeholders (Coughlin 1999).

The ARSG has coordinated or participated in nearly 50 individual site characterization studies of the geology, hydrology, and biology of the region since 1995. They work in conjunction with various state and federal agencies (Koontz et al. 2004). These site characterizations help determine feasibility of cleanup for a specific area and to prioritize those sites. This is done through a cost-effective remediation plan in cooperation with landowners. While creating the site characterizations, stakeholders put an emphasis on the preservation of both cultural and naturally significant sites (Coughlin 1999).

The ARSG also participates in implementing and assisting with remediation activities. There have been over 35 remediation projects completed since 1999 and more are planned. Due to these projects, fish populations have shown improvement. Natural reproducing trout were recorded in the lower Animas River for the first time in 1996. Furthermore, electrofishing testing conducted in 1992 and in 1998 showed that trout populations had increased in cleaner portions of the upper Animas watershed (Koontz et al. 2004).

CONCLUSION

Over time, the ARSG has become less of a creation of the WQCD and EPA, but more of a community-based group (Koontz et al. 2004). The ARSG has become known as a forum for addressing water quality issues (Steelman and Carmin 2002). It is important to note that the role for an agency in the ARSG was one of participant, not boss. The WQCD and the EPA initiated the group formation, and both were content with remaining a stakeholder member rather than a lead organization. Both organizations placed trust in their fellow ARSG members, instead of imposing irrelevant external rules. *"The ARSG has demonstrated that a government-led, community-based effort need not be an oxymoron" (Koontz et al. 2004).*

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CASE 6. OWL MOUNTAIN PARTNERSHIP

Location: North Park, Colorado
Prepared by: Bethany Hellmann

In 1993, the Colorado Department of Wildlife's North Park Habitat Partnership Program established Owl Mountain Partnership (OMP) as an advisory organization for natural resource management. OMP strives,

"To serve the economic, cultural and social needs of the community while developing adaptive long-term landscape management programs, policies and practices that ensure ecosystem sustainability."

OMP collaborates with rural landowners, federal, state and local government agencies, business owners and environmental groups in North Park, Colorado. They perform on-the-ground, sustainable, natural resource management. OMP works with social, cultural, economic and environmental sectors to ensure benefits for all stakeholders. OMP builds trust between rural, western landowners and government agencies, which can enlighten the Roaring Fork Watershed Collaborative. Through multiple successful projects, OMP engages a variety of supportive stakeholders. OMP strongly believes that their governance model should be duplicated by other natural resource management entities.

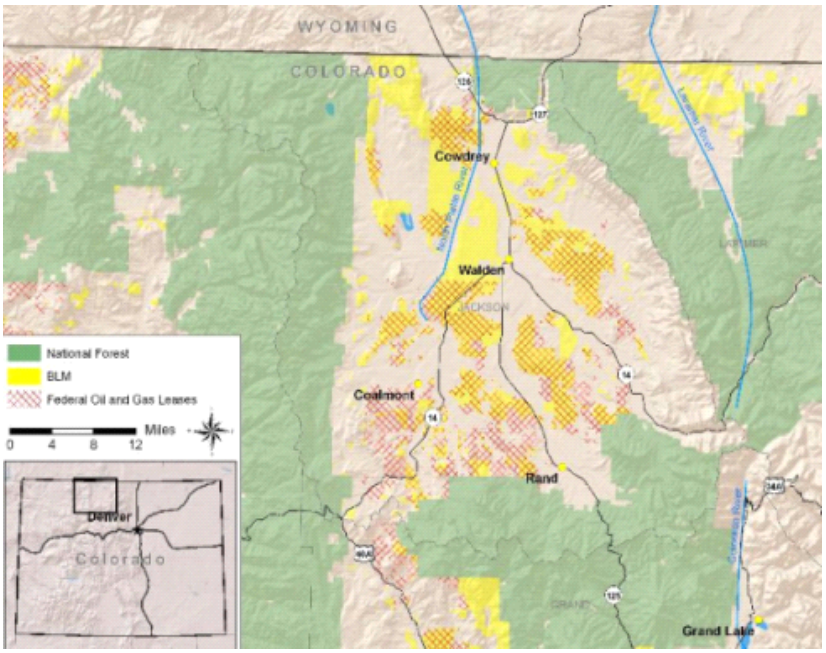


Figure 6.1: North Park, Colorado, Source: Mapping.com.

BACKGROUND

The Owl Mountain Partnership (OMP) is headquartered in Walden, Colorado (NPR WQMP 2002). OMP conducts natural resource management throughout rural Jackson County, Colorado. This area, also known as North Park, is situated in north central Colorado along the Continental Divide and just south of Wyoming. Jackson County covers 1,628 square miles and is home to only 1,733 residents. The town of Walden contains nearly half of the population. Walden is coined the "moose viewing capital of Colorado" and its Chamber of Commerce boasts abundant wildlife, fishing, hiking and cross-country trails in the area (Walden 2010). North Park is surrounded by 12,000-foot mountain peaks, coniferous forests, sagebrush uplands, pasture lands, verdant river valleys, sand dunes and hay fields. Approximately 300 inches of snow fall per year in North Park. The main industries are agriculture, livestock grazing, recreation, mining and logging. North Park maintains extensive trails for snowmobiling and cross-country skiing in the winter months (Visitor's Bureau 2010).


Photo 6.1 and Photo 6.2: Agriculture in North Park, CO, Courtesy of Owl Mountain Partnership.

Lands managed by the BLM, USDA Forest Service and private landowners are used primarily for ranching (NPR WQMP, 2002). The extensive logging and grazing on these lands decreases sage grouse and deer populations and increases wildlife encroachment on private lands. The closure of mines, lumber mills and the railroad in the mid-1990s created a local economic depression in North Park. The community also became socially fragmented due to federal grazing fees, environmental regulations and the proposal for a new ski area. The new residents that settled in the area created further fragmentation. (Manskopf 1999, Owl Mountain Partnership 2010).

Land ownership under OMP management (Porter 1996):

Land ownership	Number of acres	Percent of Total
Private	87.791	37%
U.S. Forest Service	62,165	25%
Bureau of Land Management	45,795	19%
State Forest	19,840	8%
Wildlife Refuge	23,267	9%
State of Colorado	6,261	2%
Total	245,119	100%

PARTNERSHIP'S BEGINNING

OMP's creation was a long and arduous process ripe with natural resource conflicts and controversy (Roath 1996). Elk from the Arapahoe National Wildlife Refuge, encroaching on adjacent privately-owned ranches, galvanized the collaborative. Moose and cattle encroaching on riparian areas degraded water quality. Noxious weeds and the decline of sage grouse and deer populations were secondary, albeit important, issues.

A study by Manskopf (1999) identified North Park ranchers as initially skeptical of ecosystem management proposed by government resource managers to settle public/private resource conflicts. However, the North Park community, government agencies and other stakeholders soon realized that collaboration was necessary to resolve the natural resource issues.

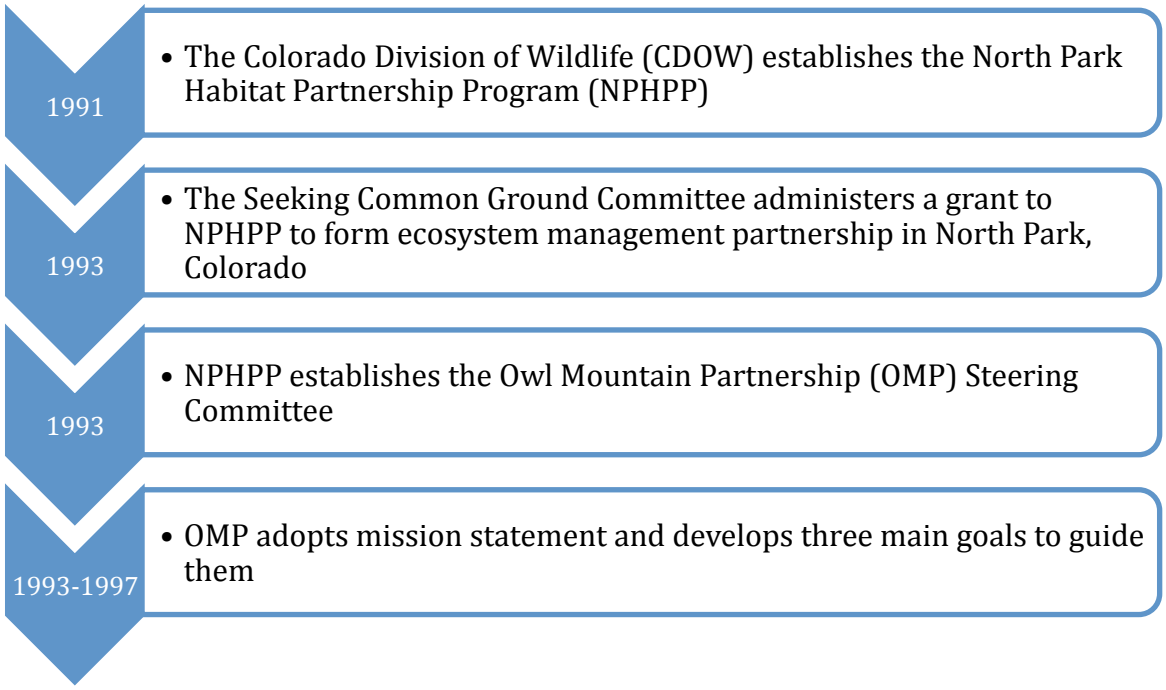
Photo 6.4: North Park, CO, Courtesy of Owl Mountain Partnership.

In 1991, the Colorado Division of Wildlife (CDOW) established the North Park Habitat Private Partnership Program (NPHPP) in North Park, CO (Porter 1996). NPHPP is part of a statewide effort to reconcile conflicts between livestock and big game interests by developing partnerships between land managers, landowners, sportsmen, the public and CDOW. The NPHPP assists the Division of Wildlife (DOW) in meeting game management goals and is authorized by the Colorado State Legislature and the Colorado Wildlife Commission. An initial NPHPP committee attempted to address livestock and big game conflicts in North Park. While applying for grants, the North Park HPP committee saw the need to expand their focus beyond isolated issues. They acknowledged the need to monitor soil, vegetation, and water in order to manage wildlife. Stephen Porter, a member of the OMP Steering Committee and Colorado Department of Wildlife biologist, stated that NPHPP "decided to take the big bit...total resource management instead of singular elk-livestock conflicts and no one really knew exactly what they were getting into" (Manskopf 1999).

In 1993, the NPHPP committee received a grant from Seeking Common Ground (SCG), an ad hoc coalition striving to improve natural resource management in the western United States

(Roath 1996). The SCG grant encouraged NPHPP to form a private-public partnership to address ecosystem management. Previous attempts at ecosystem-scale management failed in North Park. NPHPP sought assistance from Colorado State University for technical and organizational support. NPHPP, subsequently, conceived the Owl Mountain Partnership Steering Committee. The Owl Mountain Partnership was one of the first working prototypes for ecosystem management in the United States. Regional ecosystem management was a new movement that centered away from expert decision-making and toward rational consensus. An environment of openness, mutual respect, and consensus decision-making can lead to coordinated resource management groups building their own democratic political organizations with real power to enact change (Wallace et al. 1996).

Timeline for Owl Mountain Partnership (adapted from Owl Mountain Partnership 2010):



The OMP Steering Committee included federal, state and local government, landowners, business people and members of NPHPP. The study by Manskopf (1999) found that the North Park community did not initially trust or get involved with OMP. "There were great many misconceptions, fears and political factors surrounding the concept of ecosystem management," according to Greg Sherman, the environmental representative on the OMP Steering Committee. The Steering Committee was entrenched in private sector fears about more government land regulations and/or removing property rights. A local economic depression deepened this turmoil. Previous attempts at ecosystem-scale management had failed and led to potential lawsuits (Porter 1996).

According to Manskopf (1999), the OMP Steering Committee conducted public meetings, published newspaper articles and held private discussions with landowners to gain support from the North Park community. In the public meetings, OMP assured the ranchers of their intent to emphasize land capacity and support livestock grazing. Ranchers began to respect OMP and

eventually agreed that livestock and big game conflicts required collaboration with government agencies. Ranchers could envision OMP bringing beneficial projects to their land and developing better grazing techniques that would increase grass for cattle and wildlife. Ranchers participating in OMP were guaranteed grazing permits. Government agencies embraced OMP as a chance to improve their credibility within North Park. In addition, the previous success of NPHPP drove government and landowners collectively to pursue natural resource management in North Park.

PARTNERSHIP'S EVOLUTION

The OMP Steering Committee struggled to define ecosystem management. They adopted the mission statement *"to serve the economic, cultural and social needs of the community while developing adaptive long-term landscape management programs, policies and practices that ensure ecosystem sustainability."*

The OMP Steering Committee set three goals through discourse with interested agencies, individuals and community members (Porter 1996):

1. Create partnerships that build trust and teamwork to achieve ecosystem health and resolve resource conflicts, which will serve the economic, cultural, and social needs of the community.
2. Develop and implement an adaptive ecosystem management plan across political, administrative and ownership boundaries based on identified issue needs and
3. Document the implementation process of ecosystem management and communicate knowledge gained from the project to partners and the public.

The OMP Steering Committee prioritized projects based on their need for immediate action (Manskopf 1999). OMP provided recommendations for the management of a million acres of public lands owned by Bureau of Land Management (BLM), USDA Forest Service (USFS), United States Fish and Wildlife Service (USFWS), National Park Service (NPS), State Land Board, Colorado Department of Wildlife (CDOW), Colorado State Forest Service (CSFS) and the Colorado Division of Parks and Outdoor Recreation. The Steering Committee also set forth five fundamentals for "successful community land stewardship" (Porter 1996):

1. Increased trust must be developed between local stakeholders and all levels of government.
2. Ecosystems allow harvest and use of appropriate natural resources on a sustainable basis.
3. Local people being affected must be involved and empowered to make decisions and implement actions that will contribute to sustaining the social, cultural, economic, and ecological systems on which they depend.
4. Environmental education is a crucial element of management because it is a process of mutual leaning about interactions and interdependence of socio-cultural, economic, and ecological systems that support mankind.
5. Issues that drive an ecosystem management effort must, in large measure, originate from the community's grass roots, where a sense of place and community ties to a natural world are best expressed.

Initially, OMP called meetings as needed, but they soon found that meetings held every other month were more effective and have kept this schedule to the present time (Torma 2010). Since ranchers are busy in August and most government representatives take vacation in August, they decided to bypass the August meeting. A core group of 15 to 20 members attend each of the meetings.

OMP developed a five-year plan to address database and inventory, planning, projects, monitoring, analysis and education (Manskopf 1999). They spent most of their time, effort and money on an extensive site inventory. Within the first few years OMP evolved from focusing on livestock and big game conflicts to expanding its focus to soils, vegetation, wildlife, water quality, timber and land health.

Successful implementation of highly visible, on-the-ground projects built public support for OMP (Porter 1996). OMP's initial successful project centered on the Michigan River and the Illinois River, bisected by Owl Ridge and Owl Mountain. This initial project provided the namesake for OMP. This project contained lands owned and managed by the BLM, USFS, USFWS, CDOW, Colorado State Land Board, 35 ranchers and 300 small landowners.

OMP began considering shifting from a project-oriented to issue-oriented focus to reduce the amount of money required operationally (Manskopf 1999). However, in 2010, OMP still focuses highly on project implementation because they have found this to be the most effective way to help manage the North Park lands (Torma 2010). Currently, OMP is writing a Watershed Plan and continuing with 3 large comprehensive grazing plans to address more "big picture" issues. "In order to solve issues, you still need to do projects to help benefit those resources that are being impacted from whatever issues are going on" states Pete Torma the Project Manager for OMP and BLM employee.

Initially, there was a lot of pressure for OMP to expand (Torma 2010). People wanted OMP to do everything for the community and help with the development of the small towns. More recently, the pressure for OMP to expand has subsided. Torma states that "the pressure now is on finding ways to take some of the stuff happening on federal and state land and put it more on private land."

OMP has since resolved much of the tension between the North Park community and government agencies that was felt in the first six years of evolution. Pete Torma tries to present himself as a person attempting to resolve the natural resource conflicts. He downplays the fact that he is a BLM employee and does not try to force government agendas on the local landowners. On one side, Pete Torma wears "the separate hat" when reaching out to the community. He has found it is essential for the local federal agencies to support the partnership. On the other side, the local landowners realize the federal agencies provide enormous opportunities for federal funding of their projects. OMP and its federal agency partners have built credibility in the North Park community by connecting with the individuals and implementation of successful and useful projects. By treating the community with respect, communicating honestly and avoiding hidden agendas, OMP has built a sense of credibility and open communication with the North Park community (Torma 2010).

Figure 5. North Park, Colorado. Courtesy of Owl Mountain Partnership.

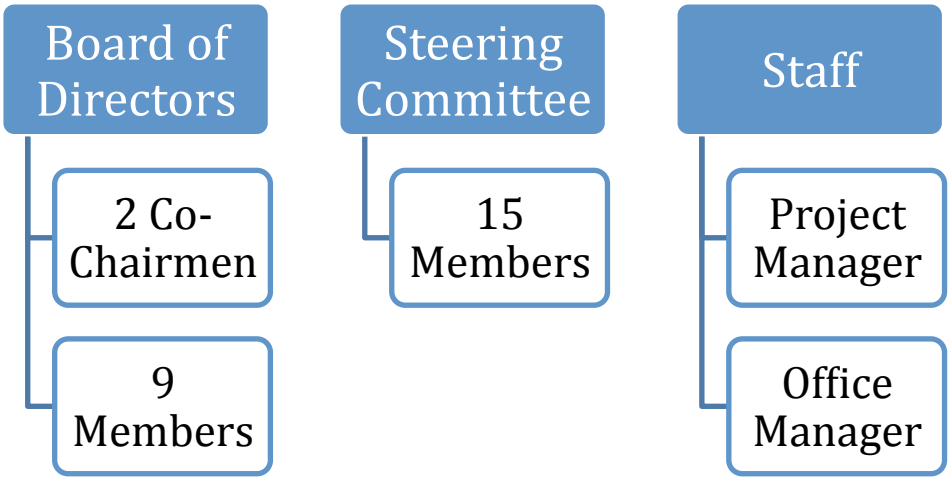
From its inception in 1993 to the present, OMP has maintained a project manager, office manager, and two private landowner co-chairmen (Torma 2010). The organizational structure of OMP, as described in its by-laws, has remained fairly consistent the past 17 years. Torma explains, "some of the structure has stayed the same over the past 17 years. Some has changed to clarifying what their role is. Not trying to always try to contact specific people like their initial plan had stated in the past." They don't get involved specifically with the community as much as they had initially intended. Other people from the community have stepped in to fill those roles. OMP strives to bring people that want to work on wildlife and livestock related issues to the table and see what projects they would like to help conduct.

OMP's bylaws have not changed much over the 17 years (Torma 2010). See Appendix D for bylaws. OMP continues to improve education and outreach, enhance land health, build trust, and surpass political and administrative boundaries. OMP does not intend to "be a federal planning group. It's participating with anyone that wants to participate" according to Torma. OMP's longevity is due to their commitment to working collectively and cooperatively. The members understand that they can get more work done collectively than working separately (Roath, 1996).

ORGANIZATIONAL STRUCTURE

Government agencies and private landowners collaborate through the Owl Mountain Partnership to resolve resource conflicts on both publicly and privately owned lands (Wagner et al. 2009). They address livestock grazing on public lands, noxious weeds and the interactions between livestock and wildlife.

The organizational structure of OMP is:



Board of Directors

Co-Chairmen

- Two Co-chairmen offer the private landowner perspective to OMP decisions (Torma 2010). They advise on projects and facilitate an open partnership. They provide a supervisory role and make some decisions when the project manager is not available.

Members

- US Fish and Wildlife Service (USFWS)
- Colorado State Parks
- Colorado State Land Board
- USDA Forest Service
- Private landowners
- National Resource Conservation Service (NRCS)
- Bureau of Land Management (BLM)
- Partners for Wildlife
- Colorado Department of Wildlife (DOW)

The Board of Directors makes decisions for Owl Mountain Partnership through consensus (Manskopf. 1999). The chairman and co-chairman are elected each December by the steering committee. The chairman determines the activities of the project committees. The chairman and co-chairman facilitate OMP's monthly meetings. On controversial issues, other facilitators have been hired to allow equal participation by all members in the meetings. Facilitators are not needed as much as they were initially.

The OMP steering committee serves as the governing body to "define, approve and establish goals and objectives and handle budgetary matters. All formal recommendations and actions originate in the steering committee" (OMP 2010). The Steering Committee consists of 15 members including ranchers, landowners, and representatives from the Bureau of Land Management, Colorado Division of Wildlife, Colorado State Forest, USDA Forest Service, US Fish and Wildlife Service, Colorado State Land Board and NRCS (OMP 2010). Key to becoming a member of the steering committee is showing commitment to the collaborative process and goals of OMP (Manskopf 1999). The amount of time devoted to OMP varies among the committee members. Pete Torma, the project manager and Nancy Wannamaker, the office manager work 40 and 30 hours per week, respectively (Torma 2010). Other members may work from several hours a month to 20 percent of their time. Office space for the steering committee is provided by the USDA Forest Service.

OMP Staff

- Office manager is charged with budgeting, answering phones and questions at the OMP office, and helping out with some projects (Torma 2010). The office manager's main duties are keeping track of grants, paying bills and maintaining a presence in the North Park community.
- Project manager develops, coordinates and implements projects on the ground to resolve issues. The project manager advises the steering committee on project progress, supervises the office manager and directs the partnership. The project manager reports to the Steering Committee.

OMP aspires to create and implement a local land ethic by which citizens manage their resources responsibly and sustainably without need for additional laws or regulations (Manskopf. 1999). Communication, collaboration and consensus are the keys to their success. OMP analyzes the whole ecosystem and conducts projects to deal with the problems and not just the symptoms. Common sense, local expertise, and analysis are all integrated into OMP's decision making.

The membership of OMP is diverse with people of varying values and motives (Manskopf. 1999). Membership in OMP is open to anyone interested in becoming a long-term participant in North Park resource management; they may submit a written application to be approved by the steering committee. More than one representative from any one agency is discouraged. Members include ranchers, timber industry representatives, outdoor recreation representatives, Colorado State University, federal and state agencies. Getting participation from the environmental community and local landowners has been a challenge. The OMP by-laws require a minimum of four landowners to be involved in each decision-making process.

Meetings

Meetings are held six times a year in the USDA Forest Service building and are open to the public (Torma 2010). The project manager and office manager set the topic and agenda for the meetings. Generally, the meetings begin with a project update and getting everyone informed on current topics and the budget. Recent meeting topics have included maintaining the longevity of OMP through more funding opportunities. The by-laws stipulate that representatives from the partner agencies and two private landowners must attend the meetings in order to make decisions. All board members do not attend every meeting.

Decisions at the meeting are made as follows:

1. Ideas are brought to the Steering Committee.
2. The originator of the idea presents it, gives the pros and cons and concentrates of the pros.
3. The committee attempts to tie the idea back to OMP's objectives.
4. The committee looks for data and input, and then decides whether to pursue it further (Manskopf 1999).

Decisions are made by the Board of Directors and co-chairmen through consensus as written in the by-laws (Torma 2010). OMP requires full agreement from each group member. Benefits to consensus are that each committee member acquires a good understanding of all the issues and the best decision can be made. Drawbacks to consensus are the time required to make a decision. If consensus cannot be reached, OMP will return to it later or continue to discuss the issue until the opposition has been resolved. Guests at the meetings are not allowed a vote. OMP's decisions are solely advisory, and they offer solid recommendations through their expertise. Agencies and landowners that manage the resources may accept or reject the suggestions made by OMP. By establishing credibility with resource managers over time, OMP's recommendations have a better chance of implementation (Manskopf 1999).

As written in the by-laws, budget, economic, education and project subcommittees are appointed by OMP to perform in-depth research for the steering committee (Torma 2010). Several standing subcommittees have evolved over time. In 2010, the only subcommittee working group in use is the Silver Spur Grazing Plan Subcommittee that meets once a year to collaborate on ideas and issues surrounding the grazing plan. OMP plans to form a working group for the upcoming Watershed plan. Subcommittee working groups consist of interested OMP members and non-OMP members from the community interested in a certain project. It begins with a kickoff meeting to explain the project, its goals and objectives, obtain local input and form the subcommittee.

OMP strives to maintain participation by stakeholders who are not able to attend the meetings (Manskopf 1999). They send out a newsletter, sponsor public events and give tours of their current projects. They also make direct contact with environmental groups to keep them up to date on OMP's progress.

Projects

Residents in North Park bring problems to OMP such as elk populations and distributions, competition for forage, damage to hay stockpiles, decline of sage grouse, noxious weeds and water quality (Manskopf 1999). OMP undertakes projects such as high tensile hay stacks, realigning fences, irrigation projects soil studies, vegetative inventories, bird inventories, reseeding and sagebrush treatments. Water and timber experts provide scientific expertise on rangeland health, riparian and watershed quality, wildlife habitat and noxious weeds in project implementation. Ranchers provide expertise on the grasses and plants important to land health. Experts outside OMP are also consulted when necessary. OMP contracts outside businesses to perform work necessary to complete the projects (Torma 2010). 90% of the time, the project manager takes the lead on the project. If the project is initiated by another agency, sometimes that agency will take the lead on the project.

Between meetings, the project director communicates with individuals interested in particular projects and issues (Torma 2010). The project manager is currently in contact with the BLM hydrologist about the Watershed plan and the Department of Wildlife on the sage grouse issues.

FUNDING

Funding for OMP relies mainly on in-kind support from their partners including: Partners for Wildlife, North Park HPP, BLM, the Rocky Mountain Elk Foundation, Rocky Mountain Mule Deer Foundation, Colorado State Land Board, USFWS, USFS, and various landowners (Torma 2010). In-kind partner contributions are necessary because the government funding OMP receives, such as from the Clean Water Act, is only" seed money" not long term. Further contributions are necessary to maintain the partnership.

"It really boils down to people believing in (OMP)," states Torma. He continues that OMP "does something that most federal and state agencies can't do – bring people together to solve a problem. They are able to share funding that might not otherwise be available to do the projects. By bringing all these different monies to the table, state dollars, federal dollars, a grant and use it all to get the project done that would not otherwise get done" by only one agency.

OMP does not collect membership dues (Torma 2010). Only two people are employed by OMP. They rely on federal agencies for seed money to get the organization or a project going. It is necessary to fund someone to handle the administrative work that is essential for any working business.

CHALLENGES

The major challenge for OMP, as with most non-profits is ***funding*** (Torma 2010). "Finding money and partners to work on projects is the biggest issue. We get a lot of funding through grants," states Torma. Colorado non-point source grants have been issued to help improve water quality. Local groups like the NPHPP have also funded some of OMP's projects. OMP has also worked across state lines with National Fish and Wildlife Federation in Wyoming to supplement funding. Another challenge to funding is that many ***federal grants are linked to issues outside the realm of OMP***, like homelessness or improving child education. It is difficult to find grants that tie to OMP's objectives. This makes forming relationships with local federal and state agency representatives essential in getting government funding. Federal agencies that are interested in OMP projects can bear some of the financial burden.

Another challenge for OMP has been ***maintaining county officials in active partnership*** (Manskopf 1999). County officials may fear federal and state governments are a threat to the county. OMP has tried to resolve this issue by open discussion and assurance to city officials that partnerships with state and federal agencies are intended to help everyone involved in OMP. A contentious lawsuit on timber practices and a controversial ski area development may have also kept some county officials from joining OMP.

Obtaining participation from the environmental community was a challenge for OMP in the early years. Greg Sherman, the environmental representative on the OMP Steering Committee and President of Western Environment and Ecology stated that,

> "Recognized environmental groups like the Sierra Club and Friends of the Earth are not interested in collaborative partnerships. They feel it is not the best use of funds and the products produced because the compromises do not meet their goals. Universally, recognized environmental groups do not like the collaborative process and don't get involved and don't support it. Compromise does not produce controversy and national environmental groups are funded on controversy" (Manskopf 1999).

Environmental organizations cite OMP's distance from their office and the amount of time required for collaborations as reasons for not joining the collaborative (Manskopf 1999). However, there are some environmentally conscious landowners that partner with OMP. Environmental groups do not directly oppose; rather, environmentalists generally support OMP's goals and objectives. ***Obtaining landowners and citizen representation*** in OMP is also a challenge. Many landowners fear that the government agencies in OMP will want to regulate their private land. OMP would like to bring more landowners into the decision making process to ensure strong local support and responsibility for land use and planning.

There is ***local and governmental tension*** (Torma 2010). A lot of land in North Park is publicly managed by the BLM and USFS, but many of the issues dealt with by OMP are local. OMP addresses the local-national tension up front, identifying it and discussing it. They analyze each issue on a case by case basis and recommend their best decision without being swayed by popular opinion or newspaper articles (Manskopf 1999). Once the residents have seen the

beneficial projects conducted by OMP the tensions between the government and local citizenry have been essentially resolved. Through the longevity of the partnership, they have gone beyond the negativity between the government and land owner rights (Torma 2010).

Another great challenge for OMP is ***accommodating diverse interests*** (Manskopf 1999). Many of the interests initially had never collaborated with each other. A key to collaboration between the stakeholders and partners was establishment of trust. ***Building trust*** in the community for collaborative resource management may have been the most difficult challenge for OMP. Only through time, completion of successful projects and benefits to the community, has trust been built and fears about losing their land, lawsuits, fines or threatening their way of life been diminished. Attending meetings together and addressing differences openly also helped to develop trust for OMP. Some members interact outside of the formal partnership meetings through attending workshops together and barbeques which also helped to develop trust. They found that the diversity in stakeholders and partners adds depth to their decisions and project implementation.

OMP's ***location in a small community*** presents a challenge (Torma 2010). The people involved in OMP are involved in many other activities so it is hard to get new private landowners willing to see the benefits of OMP. Residents feel like they do not need to be involved. The project manager anticipates that the upcoming Watershed plan will bring more community involvement. "Anytime you talk about water, it scares people here," comments Torma.

ACCOMPLISHMENTS

OMP has been ***active since 1993***, and has ***received several generous grants*** for land health improvement projects (Torma 2010). "Getting projects on the ground and done" is the major accomplishment of OMP according to Torma. Even if money is available for a project, without a working partnership, there may not be an individual willing to take on that project. OMP has helped all partners meet their individual goals and objectives through ***successful completion of projects*** that benefit varied landowners and build trust in the community.

Recent major accomplishments include (Torma 2010):

- Developing a ***grazing system*** for the Silver Spur ranch in North Park which gave ranchers the ability to graze 70,000 acres of the public and private lands. To develop this plan, OMP held meetings once a year for all interested parties to discuss the current state of grazing in North Park. These meetings created greater understanding and communication between ranchers and other interested parties to that grazing land. The plan makes other parties aware of when animals will be present and grazing in a particular area.
- OMP is currently developing a ***Watershed Plan***. The intention of the plan is two-fold. EPA has provided money to write a watershed plan. To help get further funding for projects from the EPA, OMP needs a written watershed plan. The second intention of the plan is to help any streams with water quality issues, and to identify any areas where project implementation would improve water quality. North Park is

> rich in diverse wildlife and the water quality is not impaired by mines. "To keep it that way would be beneficial" commented Torma.

The major driving factor for support is completion of projects. "People don't see OMP as trying to take over grazing on public land by the BLM. People see it as a way to share ideas" states Torma.

> "Several important projects, more localized decision-making, a more holistic approach to resource issues and the ability to disseminate funds for resource management may never have occurred within North Park without OMP. Without the OMP, there would have been a greater top down push from the government especially with the BLM in the west undergoing the implementation of Standards for Public Land Health and Guidelines for Livestock Management. Since BLM has been so intimately involved with OMP, the majority of the permittees will not have any problems. A great success is OMP's ability to ***gather money and combine agency funds*** to put towards projects" (Manskopf 1999).

PUBLIC AWARENESS AND EDUCATION

The citizens of North Park are encouraged to participate in OMP meetings and activities (Torma 2010). OMP advertises meetings in the local newspaper and through mailers. OMP also sends its newsletter, *Mountain Ecos,* to interested residents. This newsletter discusses OMP's accomplishments throughout the previous year. The newsletter gives OMP's partners an opportunity to share the accomplishments and projects in their organizations. It is sent to about 300 people in the North Park community once a year in the Fall. Because of budgetary and time constraints, OMP discontinued the newsletter for about 6 years, and then realized the necessity for it in disseminating information about projects and issues in OMP. OMP continues to publish the newsletter today.

OMP also conducts tours of their current projects, which is effective to demonstrate their progress (Torma 2010). OMP encourages stewardship of the land and natural resources. With the forthcoming watershed plan, they will educate people on how to improve their water and riparian habitat. OMP also works with the Nature Conservancy and land trusts, which provide other forms of media in their outreach in line with OMP's mission. The challenges to the public outreach effort lie in improving education about projects and opportunities through OMP. "If you don't get out there and tell people what you are doing they don't know what you are about" notes Torma.

CONCLUSIONS

The biggest challenge that OMP has overcome throughout its 17 years of providing consultation on managing North Park lands is helping landowners to build trust with the government agencies. OMP has been able to build communication and trust with many North Park stakeholders who are not actively engaged in the collaborative. Pete Torma states that this success has been built upon keeping "open communication between people that may not even be a part of your partnership. Some county commissioners and other landowners still don't believe

in OMP. I still need to tell them what is going on." Providing residents with visuals on their successes is also helpful. Torma states,

> "Taking people out on tours, showing them what you are doing makes a difference as well, rather than just telling them what you did. It doesn't have to be a tour for the state of Colorado. It can just be a tour for the people you think are important. We do a tour every other year focused on whoever we think is important – like 319 non-source people or NPHPP people or local community."

Roath (1996) discusses the importance of technical support, guidance and vision when starting an initiative. OMP received technical support from Colorado State University and guidance and vision from the innovators of the North Park Habitat Partnership Program.

Torma discusses the importance of going after the "low-hanging fruit." He states that a good organization will "work on projects that are easily attainable to complete. There are a lot of good people that want to do a lot of good things. They have restored 16 miles of river, they want to plant 6,000 willows, but it may not really be attainable in a reasonable amount of time."

Torma also discusses the difficulty in making collaboration work. He states,

> "It's not easy. You will make a lot of mistakes but you need to be willing to admit to them and learn from them. In the future, working in our area on private land is difficult. A lot of people believe in their individual private property rights. They are afraid that you'll find something wrong and you will make them do a whole bunch of things. We still do work on private lands but it's not always easy to. More work needs to be done to get work done on that private land. We won't go in there with a statute that forces them to do work. We would rather have them work with us willingly."

Torma also stresses the importance of working with other organizations in the area. "Get partnerships. Most of our projects have 4 or 5 partners involved – BLM, OMP, EPA non point source funding, private landowner. The more partners you get together the easier it is to stomach the cost, but it's hard to develop that relationship" admits Torma.

Getting residents to believe in OMP and their mission is essential for building support for the partnership. Torma states,

> "Find the niche of what people are worried about. In North Park that is conservation of water and conservation of open space. TNC, land trust, USFWS, and Partners for Wildlife focus on particular areas. I can draw on them for support and funding. If RFW can find an issue-driven niche, it will be better than tackling issues that aren't as important in the area."

Start by focusing on issues that are also valued by residents in the Roaring Fork Watershed. This strategy will make it easier to get their support and participation in the Roaring Fork Watershed Collaborative.

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APPENDIX

Appendix D. Owl Mountain Partnership Bylaws

CASE 7. THE WATER FORUM AGREEMENT AND THE WATER FORUM SUCCESSOR EFFORT

Location: Northern California
Prepared by: Kathleen McIntyre

The Water Forum Agreement and Water Forum Successor Effort began in 1993 and culminated in the signing of a negotiated agreement on water management in 2000. The Agreement and Successor Effort concern the Sacramento County, the City of Sacramento in California, and sustainable use of the American River. The Agreement brought together 46 stakeholders within Sacramento, Eldorado, and Placer counties including water purveyors, business interests, public interests, and environmental interests. It was formally facilitated and revolves around two co-equal objectives:

> *"To provide a reliable and safe water supply for the region's economic health and planned development to the year 2030, and, to preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River."*

The Successor Effort acts primarily as a forum for resolving future disputes between parties and a watch-dog to ensure compliance with the legally non-binding agreement. This case study illustrates the difficulties of convening diverse interests with many representatives as well as the difficulties associated with voluntary agreements. It also illustrates the power of formal facilitation.

BACKGROUND

The Sacramento River and American River are two rivers that flow into the Pacific Ocean in Northern California. The Sacramento River flows south from Mount Shasta and the Northern Sierra Nevada Mountains, while the American River flows west from the Central Sierra Nevada Mountains. Their confluence flows into the San Francisco Bay Delta (Orton 2004). The American River is an important ecosystem and recreational area for the region and has been given protected status as a recreational river under the federal Wild and Scenic Rivers Act and the state Wild and Scenic System. The American supports an abundance of plants, animals, reptiles, fish, and birds. The Lower American River has 41 reported fish species including the Chinook salmon, American Shad, and Steelhead Trout (Orton 2004). There are has been

Photo 7.1: American River, Courtesy of The Water Forum Successor Effort.

significant water infrastructure developed on the American River and the Bureau of Reclamation assumes a role of management and operations. There are five power plants on the middle fork and 11 power plants on the south fork of the American (Rafting 2006). It was on the American River that gold was discovered in 1848 (Orton 2004).

The Sacramento River is the largest river in California and drains an area of roughly 27,000 square miles (McHugh 2004). The discovery of gold on the Sacramento led to a population boom in the 1800's. Intensive mining and agriculture in the region has led to chronic pollution issues. Sacramento River water is generally used for irrigation purposes and serves the areas of Central and Southern California, and provides the water supply to over ½ of California's population.

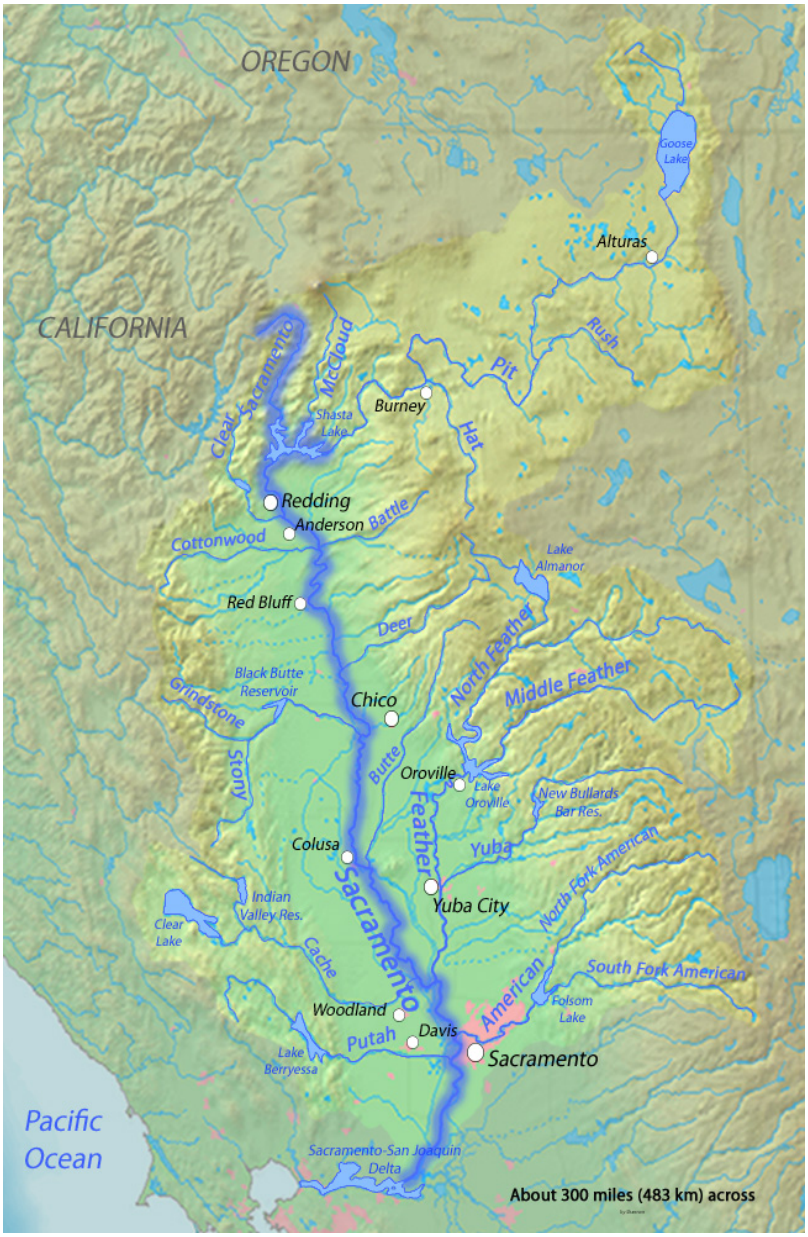

Photo 7.2: Sacramento River Map. Source: Wikimedia.

The City of Sacramento is located at the confluence of the American and Sacramento Rivers. Both the city of Sacramento and the County of Sacramento use surface water and groundwater to meet the needs of their customers and citizens. However, the population of this region has threatened to outstrip resources. In 1990, county population exceeded 1 million with an expected additional 1 million residents by 2030 (Orton 2004).

These rivers have a long history of legal battles for water. In 1972, a case was filed against the East Bay Municipal Utility District (EBMUD), water providers for San Francisco, when they sought to obtain American River water. The case took 20 years to decide, and the final ruling stated that if EBMUD wanted to divert water there would need to be minimum flow levels left in the river. These are known as the "Hodge Flows" for the judge that made the decision (Connick 2006).

Another conflict concerning the American River was between the County of Sacramento and the City of Sacramento. The City of Sacramento sought to expand its waste water treatment plant on the American River, however, the County of Sacramento believed they were the protector of the river and fought the expansion. The City was forced to forgo expansion due to challenges to their environmental impact report (Connick 2006). Environmental Impact Reports are the California Environmental Quality Act's (CEQA) equivalent of NEPA's Environmental Impact Statements. This challenge to the City's expansion reinforced the need for a regional understanding of water-supply needs.

In 1993, the Sacramento County General Plan was updated. A general plan is a set of guidelines and long-term goals that dictate local land use decisions within a county. California law requires that each county and city within the state develop and adopt a General Plan (The Governor's Office of Planning and Research 2007). The update included new urban service boundaries beyond which no new growth was permitted and all new growth must use supplemental surface water resources not groundwater (Connick 2006). These new stipulations meant that future conflicts over allocation of surface water resources from the American and Sacramento were imminent without new policy.

CONCEPTION OF THE WATER FORUM AGREEMENT

In the early 90's, city and county officials recognized the urgent problems of groundwater use and quantity, water supply for new development, and wildlife and recreation. There was recognition that unless they acted there would be severe water shortages, environmental degradation, groundwater contamination, and limits to economic growth. The preceding battles over water led the City of Sacramento to investigate a consensus building approach to achieve their regional goals. The City and County of Sacramento came together to form the City-County Office of Metropolitan Water Planning (CCOWMP). This joint office's mission was:

> "To formulate an area-wide plan for providing a safe and reliable water supply in a manner that protects the environment. The plan shall include the sound and efficient management of available surface water, groundwater, and reclaimed water resources and water conservation. The institutional arrangement necessary to insure successful implementation of the plan shall also be identified (Connick 2006)."

The City and County split the costs of the joint office with the Associated City Manager appointed to serve as Executive Director 30% of the time and the county Deputy Director of Public Works appointed to serve as Deputy Director 80% of the time. The CCOWMP aimed to use the consensus-building process and hired a facilitator from the Center for Collaborative Policy at Sacramento State University, Susan Sherry, to aid in drafting a comprehensive agreement.

The first step Susan Sherry took was an assessment to identify the relevant interest groups and concerns. She looked for groups that would be directly affected by an agreement, could make changes to the agreement, and could block the changes. Sherry brought together 46 stakeholders encompassed in 4 caucuses or interest groups (Connick 2006). The Foothill Water Interests caucus was added after the process began. Stakeholder representation included (The following list are examples of participants, but does not include all participants):

> **Business Interests**: Associated General Contractors, Sacramento Metro Chamber of Commerce, Sacramento Association of Realtors, etc.
>
> **Environmental Interests**: Friends of the River, Sierra Club Mother Lode Chapter, Save the American River Association, etc.
>
> **Public Interest**: City of Sacramento, County of Sacramento, League of Women Voters of Sacramento, etc.
>
> **Water Purveyors (Sacramento Water Districts)**: City of Folsom, Citrus Heights Water District, Sacramento Metro Water Authority, etc.
>
> **Foothill Water Interests**: City of Roseville, El Dorado County Water Agency, Placer County Water Agency.

Many of the participants had only functioned in an adversarial relationship with one another. For example, historically, environmentalists challenged water purveyors in court with lawsuits and CEQA (the California State version of NEPA). However, the stakeholders were highly interdependent and each had something the other wanted or needed (Connick 2006).

Photo 7.3: Negotiation Process, Courtesy of Water Forum Successor Effort.

The process began with the convening and organization phase where ground rules and a shared purpose were outlined. Ground rules included how decisions should be made, how press inquiries would be handled, etc. Voting rules were established; within each caucus a ¾ majority vote was required for an issue to be supported by that caucus. For an item to be adopted by the Water Forum and put in the Agreement all caucuses must support (Connick 2006).

It then moved to the information gathering phase that included sharing information about each party's interests and concerns. Education was included within this phase with three types of learning: learning facts and information about relevant water policy and technical topics, understanding issues important to each caucus, and understanding why these issues are important to each caucus (Connick 2006).

The next phase was the negotiation and resolution of issues. The participants focused on three issue areas: surface water diversions, groundwater management, and demand conservation. They

were to negotiate a framework agreement in principle that would guide development of solution packages, from which they would then negotiate a final solution package (Connick 2006).

THE WATER FORUM AGREEMENT:

CONCEPTION OF THE WATER FORUM SUCCESSOR EFFORT

After 6 years and close to 10 million dollars an agreement was developed. The agreement pivots on two coequal objectives (Water Forum Agreement Introduction and Summary 2000):

1) Provide a reliable and safe water supply for the region's economic health and planned development into the year 2030.
2) Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River.

To achieve these coequal objectives, the agreement outlines 7 main principles. The continuation of this case study will be focused on the seventh element, the Water Forum Successor Effort (Water Forum Agreement Introduction and Summary 2000).

1) Increased Surface Water Diversions
2) Actions to Meet Customer's Needs while reducing diversion impacts in drier years
3) Improvement pattern of Fishery Flow Releases from Folsom Reservoir
4) Lower American River Habitat Management Element
5) Water Conservation Element
6) Groundwater Management Element
7) Water Forum Successor Effort

ORGANIZATIONAL STRUCTURE

The Water Forum Successor Effort (WFSE) was created to ensure implementation of the Water Forum Agreement. It is responsible for overseeing, monitoring, and reporting on implementation. However, WFSE does not have authority to govern or regulate its signatories (Water Forum Agreement Introduction and Summary 2000). It is housed within the CCOMWP, meets monthly, and is crucial to guiding the implementation and monitoring of the Water Forum Agreement (Orton 2004). According to Tom Gohring, executive director, they are not a 501(c)3, but rather quasi government and quasi non-profit.

The structure of the WFSE is very loose. The plenary, 80 representatives of all signatories to the Water Forum Agreement, meets 6 times per year. The executive director annually produces a work plan and budget. There is a coordination committee that has representatives of all funders and the public, business, and environmental caucuses. This committee is charged with providing

guidance to WFSE staff and developing recommendations on the work plan and budget. Decisions made during these meetings are implemented by the executive director (Gohring 2010). According to Susan Sherry, facilitator for the Water Forum Agreement, the water purveyors are the primary implementers of decisions because they control the water.
The executive director convenes the environmental caucus, plenary, and coordinating committee. He sets the agenda for meetings and the topic differs per meeting. Generally, the objective of meetings is to create awareness on progress and gain support for on-going work (Gohring 2010).

The City of Sacramento and the County funded the original Water Forum Agreement. However, the WFSE is funded by water purveyors who are signatory to the Agreement. Funding per purveyor is based on the number of connections they serve and payments are made to the City of Sacramento (Water Forum Agreement Introduction and Summary 2000). The financial agent of the WFSE is then technically the city of Sacramento. The City sets aside a fund that pays for four staff and all contracts (Gohring 2010).

Education and outreach by the WFSE is limited. During the crafting of the Water Forum Agreement there was no public education, though there was an education phase between stakeholders (Sherry 2010). They currently engage in outreach to maintain awareness about water issues within the region, however, it is limited to attending events such as Creek Week and the Salmon Festival (Water Forum Progress on the Seven Elements 2005).

The WFSE acts as a venue for conflict resolution and discussion amongst parties as well as a watch dog for the Water Forum Agreement. Their job as an organization is not to participate in on-the-ground restoration efforts, but rather to ensure the agreement is upheld and each caucus is complying. Hence, the WFSE would make sure habitat management and restoration was taking place through contracts, but they would not themselves do the work. Similarly, they do not implement the conservation measures; they ensure the purveyors are implementing the conservation measures.

CHALLENGES

The Water Forum Successor Effort is **completely reliant on the success of the Water Forum Agreement**. If it were not for the creation of that agreement, the WFSE would not exist. There is concern that **changing conditions** could threaten the foundations of the agreement, hence the WFSE. Similarly, most challenges facing the Successor Effort hinge completely on the Water Forum Agreement.

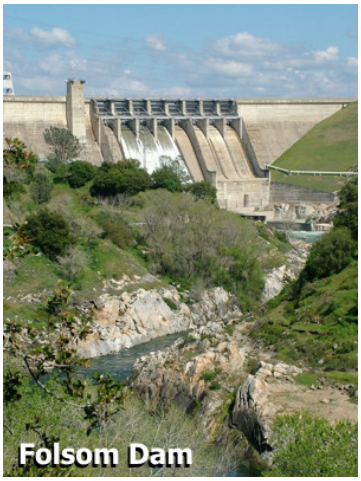

Photo 7.4: Folsum Dam, myfolsom.com

Tom Gohring, executive director, mentions that one of the primary challenges is **differing interpretations** of what the Agreement means. He notes “people have different ideas of the same concept and different definitions of things. They can literally be sitting across the table from each other agreeing and not know what they are agreeing to.” This misunderstanding has

led to conflicts over what the original Agreement really means, and whether or not agreement stipulations have been met by different parties. Gohring also believes that **constant change in staff and players** has made implementation difficult. There is a serious concern associated with new members as they lack the continuity, commitment, and history of the Water Forum Agreement; they were not part of the process.

Ron Stork, representative for Friends of the River, believes a large draw back to the Water Forum Agreement is its **lack of legal standing**. The Water Forum Agreement is an MOU, a "**moral code lacking validity"**. It is voluntary and any member can withdraw with a thirty day notice. Susan Sherry, facilitator of the Agreement, also suggests this is a "gentleman's agreement." According to her, "the water purveyors have gotten everything they need. It begs the question, how long will they continue to pay to fund the WFSE?" Stork and Sherry's criticisms reveal the fragility and vulnerability of the WFSE. At any point, the entire agreement and organization could dissolve.

One of the largest challenges the WFSE has faced and will continue to face is the adoption of an improved Lower American River **(LAR) flow standard**. This was one of the environmental caucus's major bargaining points during the agreement. In order for them agree to new water projects (a bargaining point for the purveyors), there would need to be establishment of an improved LAR flow standard. However, the government agency that regulates the American River is the Bureau of Reclamation and they were not signatories to the Water Forum Agreement. The Bureau of Reclamation has not permanently adopted the new LAR flow standard, and at any point can completely change the standard as they see fit (Orton 2004). This leaves the environmental caucus in a vulnerable position.

ACCOMPLISHMENTS OF THE AGREEMENT AND WATER FORUM SUCCESSOR EFFORT

Most people point to the Water Forum Agreement and the collaborative efforts as the success of this process. Einar Maisch, representative from Placer County Water Agency, believes an accomplishment was simply **getting agreement** on the co-equal objectives. He notes "it's a matter of framing your objectives in broad terms rather than narrow terms. Interests instead of positions. Keep the objective, not the solution, in mind." Tom Gohring reflects on the unique nature and creation of the WFSE as a success, "There have been a lot of things like the Water Forum and consensus-based efforts. But the Water Forum Agreement is the only one I know of that added a Successor Effort and **funding for that effort**."

Quantifiable accomplishments include **new diversions and water projects without litigation**, water conservation plans for purveyors, commitments to flow standard, agreement on dry year diversions, restoration projects, groundwater improvements, and more reliable water supplies. According to Terry Davis, representative from Sierra Club-Mother Lode Chapter, a major accomplishment was getting purveyors to agree **not to divert in very dry years** and shift to reliance on groundwater.

However, above these successes lies a list of more abstract accomplishments achieved only through the success of a consensus based process. Ron Stork, representative from Friends of the River, believes this has been a strong **unifying force** for the purveyors in the region. "They did not have this kind of forum before to cement their relationships in the purveyor community and have relationships with environmentalists." It helped forge **working relationships** between unlikely partners. Terry Davis believes "Any kind of lengthy stakeholder process has positive benefits. You have more opportunities to sit in a room with people who have differing interests and try to resolve your issues in good faith." The process of creating the Water Forum Agreement created **social, political, and intellectual capital**. It offered the opportunity to educate each other as well as participants' communities. According to Susan Sherry, "stakeholders have taken the knowledge they learned and moved forward and are empowered. They use what they learned through this process outside the agreement in other relationships."

LESSONS LEARNED

"Professional relationships are personal"

-Tom Gohring, Water Forum Successor Effort

Even though the development of the Water Forum Agreement was a structured, formal process it is important to remember that participants are human and relationships are personal. An integral aspect of development of a successful plan or agreement is the personal relationships cultivated between participants. This is how feuding parties can come to agreement; by seeing each other outside of their professional role. Gohring believes it is important to remember that, "bad relationships can ruin a project and good ones can make it work or overcome difficulty."

"People have different definitions for the same words; you have to take time to make sure that people really understand each other."

-Tom Gohring, Water Forum Successor Effort

When developing a plan or agreement it is crucial to hammer out definitions and clarify what exactly is being agreed to by participants. This has threatened the survival of the Water Forum Agreement and Successor Effort. Participants have changed and/or do not feel that what they agreed to is what is expected of them. In a completely voluntary agreement or plan this threatens its successful implementation. It can negate the months spent generating a plan/agreement, create warring factions within a partnership, and ruin professional and personal relationships.

"It is important to remember that people have unstated agendas."

-Terry Davis, Sierra Club- Mother Lode Chapter

Though participants may convene with the best intentions to cooperate, in large groups with many stakeholders from large entities it is difficult to know everyone's agenda and unstated intentions. Terry Davis uses the example of water purveyor representation during negotiations:

> "There was too little involvement of elected boards of water providers. They sent staff unable to make final decisions. This created a firewall; the people who set policy were on

> the other side of these staff. The purveyor staff were attending negotiations, and then taking back differing stories to their boards depending on their agendas. They pinned environmentalists against the water purveyors."

This story illustrates the importance of ensuring the support of and maintaining communication with those who have final decision making ability in planning and implementation stages. Similarly, be aware that representatives have underlying agendas defined by their personal and professional affiliations, which sometimes leads to differing definitions and understanding of issues.

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CASE 8. THE BELLE FOURCHE RIVER WATERSHED PARTNERSHIP

Location: Western South Dakota
Prepared by: Angela Michalek

The Belle Fourche River Watershed Partnership (BFRWP) began in the late 1990s, as a local effort to address water quality and quantity issues on a broader scale. The partnership's first initiative was a watershed assessment they conducted with the South Dakota School of Mines & Technology. The assessment provided a scientific basis for the partnership to address erosion, water efficiency and riparian degradation. The Board is composed of Conservation District supervisors and the Irrigation District Manager, all of whom are also local farmers and ranchers. Like the Roaring Fork Valley, the Belle Fourche River Watershed has a substantial amount of agriculture and pasture. The BFRWP has successfully engaged these stakeholders using technical support, incentives to implement Best Management Practices and other voluntary measures, an approach that merits equal consideration by the Roaring Fork Watershed.

Partnership's Goal

The Partnership's goal is to provide a voluntary management approach to the Belle Fourche River Watershed to conserve its natural resources, foster a long term economic stability of its communities, maintain the social and cultural values of those communities, and ensure the sustainability of the primary aquifer basin's safe yield (BFRWP 2010).

BACKGROUND

Like most watersheds, the Belle Fourche River basin knows no jurisdictional bounds. 2.4 million acres are located in Wyoming, 2.1 million acres in South Dakota and 100,000 acres are in Montana (RESPEC 2005). The Belle Fourche River eventually flows into the Cheyenne River and later joins the Missouri River. South Dakota's part of the watershed is strikingly bucolic and generally characterized by prairie grasslands. However, the Black Hills rise out of South Dakota's southern edge, offering a marked contrast. The largest town on the South Dakota side is Spearfish, home to slightly more than 13,000 people with an estimated average household income of $50,294 (Spearfish Economic Development 2009). In Wyoming, the biggest municipality is Gillette with a population of over 30,000 people (City of Gillette Planning 2009). Agriculture, rangeland/pasture, residential, recreation, and sylviculture are all land uses found in the watershed (Hoyer and Larson 2006). Nevertheless, about 74% of the watershed is rangeland (Stoltenberg 2010). Alfalfa, wheat, grasses and hay are dryland farmed, whereas corn is irrigated

and thus grown in the irrigation district (RESPEC 2007a). Most of the land is privately owned; federal land only makes up 15% of the watershed (RESPEC 2009).

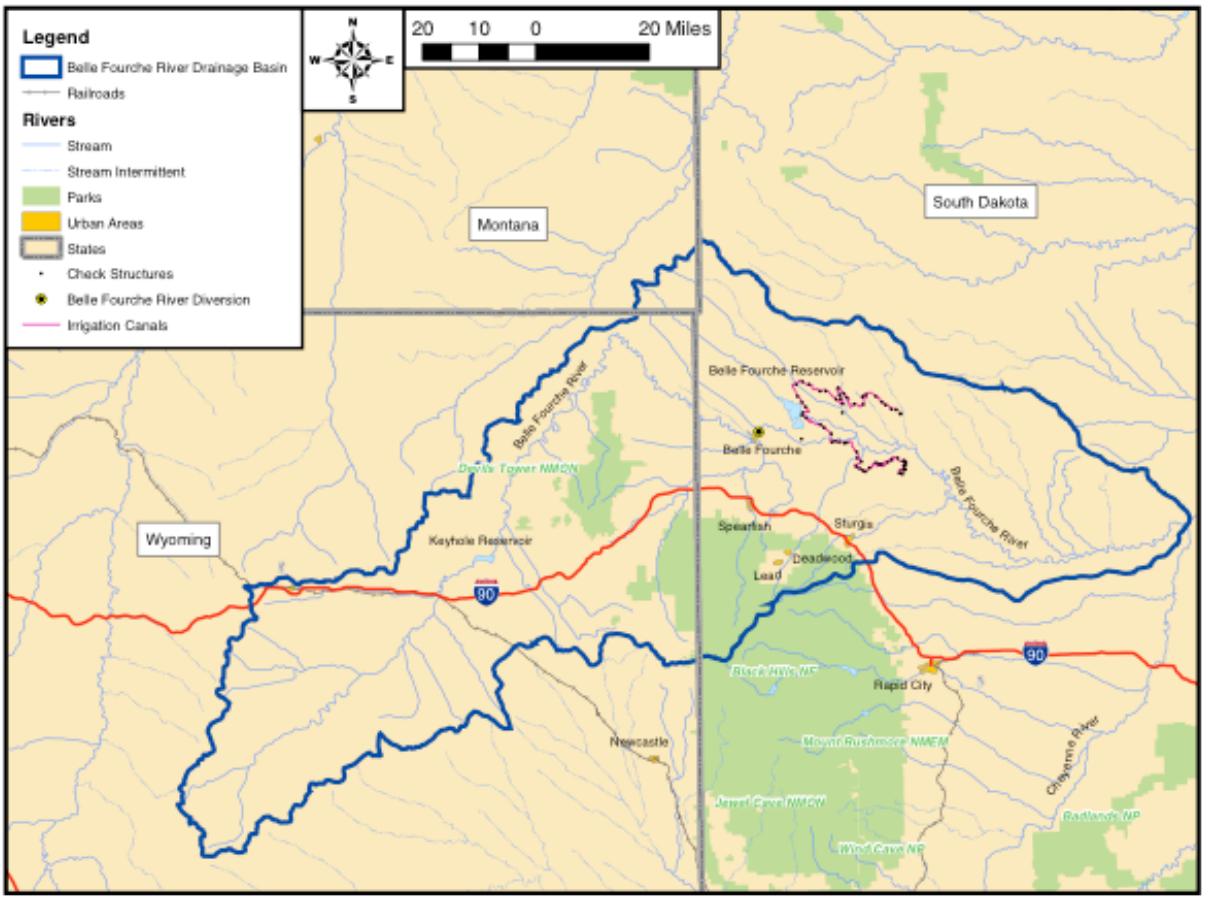

Figure 8.1: Map of the Belle Fourche Watershed, Courtesy of RESPEC.

Water law in all three states operates under prior appropriation, where water rights are allocated by "first in time, first in right" (Hutchins 1977). However, South Dakota also recognizes domestic use riparian rights (Hutchins 1977) and each state differs in its water quality regulations (Reich 2010).

The Belle Fourche storage reservoir provides most of the irrigation water for the South Dakota part of the watershed (RESPEC 2005). The Belle Fourche Irrigation District (BFID) fills the reservoir by diverting approximately 120,000 acre-feet annually. However, the irrigation district legally could take 185,000 acre-feet, leaving only 5 cubic feet per second of flow in the Belle Fourche River. The water is sent through an extensive system of irrigation canals, laterals and ditches. The Belle Fourche Irrigation District holds additional water storage rights further upstream at Keyhole Reservoir in Wyoming, owned and operated by the Bureau of Reclamation. South Dakota farmers own the majority of Keyhole's water rights and the BFID supplements their producers with water from Keyhole as needed.

Annual rainfall averages range from 14.5 inches in Belle Fourche to 28.9 in the town of Lead[1], up in the Black Hills (RESPEC 2005). In contrast to the generally dry climate, the Black Hills enjoy significantly more precipitation and their sandier, permeable soils allow that water to recharge the underlying aquifer (Stoltenberg 2010). Groundwater aquifers are only accessible in the Black Hills. In the rest of the watershed, pure, thick shales underlie the topsoil, making the water table more than 1000 ft deep. Outside of the Black Hills, people rely upon surface waters for their water supplies. Landmarks like Mount Rushmore, Crazy Horse Memorial and Custer State Park are all located just south of the watershed. In recent years, southwest South Dakota is attracting more tourism and development from people able to work via technology in remote locations (Reich 2010). Locals fear this continued development will impact water quality and put additional pressure on their water supplies.

In 1874, gold was discovered in the Black Hills (Rahn et al. 1996). Southwest South Dakota is now home to 900 inactive and abandoned mines, only 200 of which are located on federal land (SD DENR 2001). Reclamation projects have cleaned up some of the historical mining sites in the watershed (RESPEC 2005). However, many of the mines were operating long before most environmental legislation (Rahn et al. 1996). Whitewood Creek between the town of Lead and the Belle Fourche River is a Superfund site. Based in Lead, the Homestake Mining Company produced gold from 1876 to 1988 and dumped its mercury and cyanide-laced tailings directly into Whitewood Creek until 1977, when they were forced to comply with the Federal Water Pollution Control Act. Despite clean-up efforts, contaminated sediment deposits will impact water quality and aquatic life for years to come.

Photo 8.1: Belle Fourche River, East of Vale, Courtesy of the Belle Fourche River Watershed Partnership.

[1] Annual average from 1948-2002

PARTNERSHIP'S BEGINNING

The effort towards watershed management began in late 1995 (Quinn 2010). The National Resource Conservation Service (NRCS), along with Butte Conservation District Board members, Tim Reich and Bill Kiery, tried to establish a large watershed partnership over the entire Belle Fourche watershed. NRCS played a large initial role in the effort, hiring a Regional Coordinator to help spur its development. While they initially only invited the Conservation Districts, the initiative expanded to include municipalities, counties and other agencies. The original meetings included nearly 10 political jurisdictions in 3 states and their discussions covered a multitude of issues over 4.5 million acres. The watershed's size made travel difficult. Municipalities and Conservation Districts would often send their office managers and other staff, who lacked the fiscal responsibility of elected officials. These representatives were unable to make decisions without consulting with their respective supervisors, slowing the group's progress. The unwieldy size and scale of the group was also a limiting factor; commitment and interest wavered. In the end, the needs and desires of all the political entities involved were too diverse, precluding any sort of agreement.

After 2 or 3 years, the NRCS stepped back. "We had years of failure before we realized that the government agency [NRCS] was not the end-all-and-be-all, as far as getting these watershed partnerships to work," said Tom Quinn, former NRCS District Conservationist involved in the effort. Bill Kiery, Tom Quinn and Tim Reich were still committed to riparian conservation and water quality management, but they decided to address it in a different manner. At the time, Bill Kiery chaired the Butte County Conservation District's Board of Supervisors and was the logical choice to lead a more local effort. The group decided to work with willing participants on the South Dakota side of the watershed (Reich 2010).

Conservation Districts

Each of South Dakota's 69 Conservation Districts is governed by a local, publicly-elected Board (SDDA 2009). Their primary objective is to help conserve natural resources, like soil and water, by working with landowners, organizations and agencies to develop local solutions. In the 1930s, the Dust Bowl darkened the sky with topsoil and spurred a national movement of state-legislated Conservation Districts (NACD 2010). While they are state entities, their funding sources vary by district and by state, including everything from mill levies to state appropriations.

Tim Reich was able to bring his extensive experience and personal connections to the local effort. Tim Reich not only sat on the Butte County Conservation District's Board of Supervisors, but he chaired the South Dakota Nonpoint Source (NPS) Task Force from the early 1990s until 2000 (Reich 2010). South Dakota's Nonpoint Source Task Force formed in 1988, in response to the Clean Water Act's 1986 amendments establishing the Nonpoint Source Management Program under Section 319 (Copeland 2006). The federal program distributes grant monies to states, territories and tribes with EPA-approved Nonpoint Source Assessment Reports and Nonpoint Source Management Programs. The state may then make these funds available through smaller grants to eligible entities (Copeland 2006). His role on the task force gave Reich a snapshot of what was going on in the state, "at the time, we were funding water

quality projects in pretty small watersheds, 5,000, 15,000-acre watersheds." However, the group was hoping to address water quality issues on a larger scale. Reich's knowledge of state and federal processes told them that before they could get funding, they needed more support and credibility. The group ended up partnering with the adjacent Conservation Districts in southern Meade, Butte, and Lawrence counties to form the Belle Fourche River Watershed Partnership (BFRWP).

Once the partnership had established its Board and structure, their first priority was to conduct a water quality assessment of the watershed (Reich 2010). They needed to find the water quality "hotspots" before they could begin to address them. Dr. Scott Kenner and a PhD student, Dan Hoyer, from the South Dakota School of Mines & Technology had heard about the watershed group and became involved with them in 1998 (Kenner 2010). The School of Mines spearheaded the assessment, lending some credibility to the nascent group. When they first proposed the assessment in the Belle Fourche River basin, the funding agencies, the state Department of Environment & Natural Resources (DENR), NPS Task Force and NRCS, were skeptical, astonished by its size and scale (Reich 2010). However, the group continued to push the issue and refine their argument before they finally received a 2-year assessment grant. The money was cobbled together from the counties, municipalities, NRCS, hoping to pilot rapid watershed assessment techniques, and the South Dakota Nonpoint Task Force, who also had EPA 319 funds available for assessment (Rapid City Journal 2002).

During the 2-year assessment, the School of Mines conducted rapid water quality assessments in specific reaches and took water quality samples along the course of the Belle Fourche River where major tributaries entered it (Reich 2010). The partnership looked at establishing Total Maximum Daily Loads (TMDLs) in severely degraded areas and began to work closely with state agencies, like the Department of Environmental Quality and DENR. A TMDL is the EPA's non-regulatory attempt to address nonpoint source pollution in impaired waters, by calculating the amount of pollution a water can withstand while meeting water quality standards (Copeland 2006). By collaborating with these entities early on and further legitimizing their efforts, BFRWP hoped to be eligible for grant monies to fix some of these issues in the future. Their perception of state and federal regulators also began to change, they realized that "they [agencies] really wanted local people to address these issues, they didn't want to do the regulatory stuff" said Tim Reich. The assessment was conducted from 2001-2003 and its findings were published in late 2004.

Photo 8.2: The Belle Fourche River near Hereford, Courtesy of the Belle Fourche River Watershed Partnership.

The assessment gave the partnership the data it needed to try to address the watershed's problems. In 1998, a 17-mile stretch of the Belle Fourche River was placed on the EPA's impaired waters, or 303(d), list for

Total Suspended Solids (TSS) (USEPA 2010). The assessment determined that 75% of the TSS in the Belle Fourche River was caused by stream degradation and streambank sloughing (Hoyer and Larson 2006). Keyhole Reservoir's pulses of high-energy flows down the Belle Fourche River were severely eroding the streambank's clay soils. In order to remove the Belle Fourche River from the impairment list, it would require a 55% TSS reduction. The assessment also identified that Horse Creek was in need of a TMDL for both conductivity and TSS. The assessment suggested that heavy sediment loads were entering Horse Creek as flood irrigation water returned to nearby waterways.

However, other revelations came out of the assessment. The study revealed abnormally high fecal coliform levels in the Belle Fourche River and Whitewood Creek (Hoyer and Larson 2006). Fecal coliform is often a source of pathogens and bacteria in the water (USEPA 1986). If a waterway with high fecal coliform is classified for recreation activities like swimming, people have a significant chance of becoming sick. Given the high percentage of ranching in the watershed, the assessment suggested the high coliform counts were due to livestock. However, the BFWP Board knew there were few cattle up in that part of the watershed (Reich 2010). Then, the School of Mines asked about septic systems and the Board replied that there were not many people living up there either. The partnership developed a TMDL for Whitewood Creek and found through DNA ribotyping that greater than 80% of the coliforms were from avian and rodent sources (RESPEC 2007b). The partnership then sponsored another water sampling study in 2004 and 2005 to help determine the fecal coliform TMDL for the Belle Fourche River, by again testing the coliform DNA. The DNA ribotyping samples indicated that for the most part, sources were neither human nor cattle; again, wildlife and birds were the most likely sources.

While they were exploring the cattle issue with regard to fecal coliform, the Partnership discovered the USDA had done research several decades ago that ratioed how many people it took in a day's time to produce the same amount of fecal coliform as birds and animals (Reich 2010). The USDA proposed 1:3500 as the cattle to people ratio. Tim Reich explained, "In other words, one cow produces as much fecal coliform as 3500 people…I said that's not possible." They consulted with Dr. Kenner and he was able to find the original lab notes from the study. He compared them with the published data and found that a decimal point had been moved two places. Tim Reich explained, "It's not a problem if it stays in obscurity, but what some of the green groups are doing is using those ratios to try to get private grazing off of public lands. The numbers sound a lot worse in terms of pollution on grazing on federal lands with livestock than what they actually are. I can't figure out how to get USDA to admit that they've held onto a mistake like that for 60 years, but they have." These discoveries helped the newly established partnership gain the respect of landowners and producers in the watershed.

PARTNERSHIP'S EVOLUTION

Once they completed the assessment, the partnership started applying for implementation funds. Dan Hoyer worked on the Belle Fourche watershed assessment as part of his dissertation at the South Dakota School of Mines (Kenner 2010). Once Hoyer completed his degree, he went to work for RESPEC, a national consulting firm with a branch office in Rapid City, South Dakota. The partnership's work followed him there. RESPEC took the lead, helping the partnership

develop and implement its strategic plan. In 2005, the BFRWP published its 10-year Strategic Plan and the 5-year Belle Fourche Irrigation District Water Conservation Plan. The EPA also approved the partnership's TSS TMDLs for Horse Creek and the Belle Fourche River in 2005.

While the initial partnership board was only comprised of the Conservation Districts, the Board members and partners came to appreciate the Belle Fourche Irrigation District's integral role in water quality management. The Belle Fourche Irrigation District supplies irrigation water to 57,068 acres and manages two dams (RESPEC 2005). Several years after the partnership formed, the Manager of the Belle Fourche Irrigation District became the BFRWP's fourth Board member (Reich 2010). Tom Quinn, NRCS District Conservationist, formally became the Secretary for the BFRWP, taking minutes at meetings and offering comments, but behind-the-scenes, he played a larger role.

Photo 8.3: Pasture, close to the Black Hills, East of Sturgis, Courtesy of the Belle Fourche River Watershed Partnership.

The partnership emphasizes voluntary management. Tim Reich noted, "Landowners don't want to be known as polluters." Once the partnership had some initial success and established some legitimacy, Belle Fourche watershed residents were more willing to work with them.

ORGANIZATIONAL STRUCTURE

Board of Directors

Tim Reich – President
Chairman of the Butte County Conservation District's Board of Supervisors and a local rancher

Dale Lundgren – Vice-President
Chairman of the Elk County Conservation District's Board of Supervisors and a local rancher

Karl Jensen – Treasurer
Chairman of the Lawrence County Conservation District's Board of Supervisors and a local rancher

Clint Pitts – Member
Manager of the Belle Fourche Irrigation District and a local farmer

The organization became a 501(c)3 around 10 years ago, enabling it to apply for grant funding. The Partnership's Board of Directors is comprised of locally-elected officials and members of the agricultural community. Agencies participate regularly in the partnership's public board meetings, in an advisory capacity. The BFRWP's composition and simple structure allow it to respond quickly to project opportunities and needs in the watershed (Kenner 2010). The partnership funds its projects primarily

through state and federal grants, but has also received money from large non-profits, like Pheasants Forever and Trout Unlimited.

The Board consists of 4 voting members and meets every 2-3 months, depending on the number of projects at any one time. The President, Tim Reich, manages the meetings and sets the agenda (Reich 2010). The partnership has only one part-time staff member, a secretary they share with the Conservation District (Stoltenberg 2010). Instead of hiring a large staff, the Partnership contracts a national consulting firm, RESPEC, with a branch office in Rapid City. The consultants do all the grant writing and reporting (Stoltenberg 2010) and the firm gives the partnership access to expertise that would be difficult to find locally (Kenner 2010). The partnership's grant cycles also tend to ebb and flow (Stoltenberg 2010). In between projects, the RESPEC provides the consultants with other work. The Board is in contact with the consulting firm multiple times per week and they present project and proposal updates at every Board meeting.

Partnership's Goal

The Partnership's goal is to provide a voluntary management approach to the Belle Fourche River Watershed to conserve its natural resources, foster a long term economic stability of its communities, maintain the social and cultural values of those communities, and ensure the sustainability of the primary aquifer basin's safe yield (BFRWP 2010).

CHALLENGES

Currently the partnership is operating under a 10-year strategic plan and is in its sixth year of implementation (Hermann 2010). While the BFRWP Board and its local partners feel like they have only scratched the surface, they are concerned grant opportunities might dry up once they reach a certain lifespan on paper. Even now, the budget can limit how much data collection and monitoring can be done (Kenner 2010). Sustainability is also an issue, in terms of human capacity (Hermann 2010). While the Board is active now, there will come a day when these local leaders consider retirement and they will be difficult to replace.

The partnership is thinking about extending its lifespan by inviting more Conservation Districts to join its effort (Hermann 2010). From the beginning, the size of the watershed was perceived as the most poignant challenge (Reich 2010). The Partnership's founders had difficulties finding their first assessment grant because of the scale at which they wanted to work. However, the BFRWP's success has changed the focus of the funding agencies. They now encourage watershed groups to address issues on a larger watershed scale. While Wyoming and Montana are currently kept abreast of the partnership's initiatives, their involvement has been limited by distance, differing state regulations and the scale of effective coordination. Nevertheless, the headwaters lay in Wyoming and the partnership hopes to mitigate impacts in the Belle Fourche River by addressing the upstream sources.

ACCOMPLISHMENTS

Putting the time and money into the assessment to provide high-quality technical information truly paid off (Kenner 2010). The partnership continues to visit this data to prioritize watershed concerns and tries to collect more data when uncertainties arise.

Water Conservation & Use Efficiency

Improved water use efficiency in the Irrigation District became the partnership's top priority because the partnership felt they could get participation from the Irrigation District as well as landowners on that particular issue (Kenner 2010). The Irrigation District maintains water rights at both the Belle Fourche Reservoir in South Dakota and the Keyhole Reservoir further upstream in Wyoming (RESPEC 2005). The assessment found that a significant portion of the Total Suspended Solids (TSS) in the River was a function of how the Irrigation District was releasing water from Keyhole Reservoir (Quinn 2010). A significant amount of unused irrigation water was tearing past the dried up streambanks and carrying away the highly erodible soil. Several complex hydraulic models were used to give the partnership a good picture of the watershed and the things that needed to be done. The partnership helped update the irrigation district's water ordering system and install flow automation units and measuring devices (RESPEC 2009). Some of the open ditch canals were also located on gravelly soils, prone to seepage (Stoltenberg 2010). The BFRWP helped line canals from the Irrigation District to producers, using 31,732 total feet of pipeline (RESPEC 2009). After significant improvements in the watershed, the Belle Fourche River segment was de-listed in 2008 from the EPA's 303(d) list (USEPA 2009). The latest report estimates their measures have reduced TSS by 83,833 tons per year (RESPEC 2009).

The watershed partnership has also conserved significant amounts of water and prevented erosion by installing center pivot irrigation systems (Quinn 2010). Center pivot irrigation systems make a distinctly circular shape in square fields and can be 50% more water use efficient than flood irrigation systems (Quinn 2010, Stoltenberg 2010). The return flows from flood irrigation were carrying large amounts of sediment in the Belle Fourche River. The BFRWP has helped to install 17 center pivot irrigation systems in the watershed (RESPEC 2009). A smaller quantity of water, more efficiently used by the plants and soil, will not runoff into nearby streams and rivers.

Participation & Support

Nevertheless, the partnership's main measures of success are high landowner participation rates and overall improvements in water quality, over time. Dr. Kenner noted, "When I compare it to other implementation efforts within South Dakota on a pretty large watershed scale, the challenge is getting participation and getting people to buy-in. That's a huge accomplishment I believe." The partnership's level and scope of work has literally paid off. The partnership has received over $1.7 million in EPA 319 funds, $3.3 million in matching funds, and $2.2 million in support from other agencies and organizations for their current grant, providing over $7 million

in nonpoint source implementation activities in the watershed (RESPEC 2009). The Board President, Tim Reich, estimates their investment, over the past 4 years, to be $17 million. Because 74% of the watershed is rangelands, the BFRWP works with ranchers to develop grazing plans, helping to coordinating livestock water and cross-fencing (Stoltenberg 2010). Grazing plans differ according to soil types, vegetation, and topography and additional fencing can help keep vegetation and livestock healthy. The BFRWP has helped to write grazing plans for 120,000 acres of ranchland in the watershed (RESPEC 2009). The partnership has helped install 56 watering facilities to help keep livestock out of riparian areas. NRCS also has a great relationship with landowners in the watershed and often informs them about applicable programs that fit their needs, whether they are from the US Department of Agriculture or the BFRWP (Hermann 2010). Former NRCS District Conservationist, Tom Quinn explained, "The whole theory behind this is that it's not just one conservation practice or another. It's getting people to buy into the whole system and that whole system is anywhere from 2 to 6 conservation practices installed together, to help save water."

Photo 8.4: Pasture on the edge of the Black Hills, Courtesy of the Belle Fourche River Watershed Partnership.

Future Initiatives

Struggling to stretch their skeleton staff and inadequate resources, local weed management boards have recently approached the Partnership to help address invasive species (Reich 2010). The Belle Fourche River channel and riparian corridor spreads invasive species, like Salt cedar, *Tamarisk ramosissima*, and *Phragmites australis*, otherwise known as the Common reed. Since natural resource conservation falls under the partnership's mission, it has agreed to help. Tim Reich acknowledged a concern that has recently changed their strategy, "we ran into one landowner, who was concerned that if we attack the *Phragmites*, we'll be de-stabilizing the riverbank." *Phragmites* is pervasive in the Belle Fourche's riparian area and its deep root structure helps to keep soil in place. Taking the landowner's point into consideration, the partnership has decided to take a two-pronged approach. The partnership hopes to remove invasives in the riparian corridor and then use another grant to return and stabilize the areas with native vegetation. Reich noted that several grant opportunities currently exist for riparian improvement and restoration programs. However, the partnership recognizes that effective invasive species management will require large-scale participation on behalf of the landowners because "the one that doesn't participate is a seed-source for all the ones who do," said Tanse Hermann, NRCS District Conservationist in Sturgis, SD.

EDUCATION & PUBLIC OUTREACH

In the first couple years of the partnership, the group held public informational meetings, every 6 months, inviting landowners and moving the meetings to different locations within the watershed (Reich 2010). At each meeting, 20-40 people would show up, curious about the initiative. They also used these opportunities to talk about the partnership and introduce the assessment's findings, pointing out pollution sources in the watershed. While not as frequent, the partnership still holds public meetings, informing residents about opportunities and successes that the effort has enjoyed.

Photo 8.5: Soil Demonstration Table, Courtesy of the Belle Fourche River Watershed Partnership.

Information and education initiatives are required components of most grant proposals (Quinn 2010). In 2008, the BFRWP decided to make a substantial investment in its education program. The partnership bought a stock trailer and had it customized to demonstrate best resource management practices. The trailer boasts 14 different demonstrations, simulating rainfall, wind erosion, tillage, cover crops, diversions, terraces and their effects on different soil types. The demonstrations also make use of a slope table, to show topography. Tom Quinn, former NRCS District Conservationist, now works for the partnership through RESPEC, teaching farmers about soil conservation practices. One of the simplest demonstrations takes 4 beakers of water and places a soil pot in each one, conveying the difference in aggregate stability between conventional and no-till soils. The wind erosion demonstration takes pans of different soils and sets them up in a small field. A fan is placed at one end and cheesecloth sprayed with oven cleaner sits on the soil on the other, simulating cover crops. When the fan is turned, the audience can watch the dust blowing off the half without the 'cover crop'. The Soil Quality trailer is popular with producers and schoolchildren alike. The hands-on demonstration generates a lot of discussion and interest in non-conventional agricultural systems. Tom Quinn estimates that the trailer has already been in front of nearly 10,000 people. While the trailer belongs to the partnership, they do loan it out to partners like NRCS (Hermann 2010). The Sturgis NRCS office acknowledged the unusually high number of farmers using minimum-till or no-till practices in the watershed and attributes it, at least in part, to the Partnership's soil quality trailer.

The partnership also conducts tours of conservation practices in the watershed, for funders, local decision-makers and other interested parties (Stoltenberg 2010). They also have a booth at local agricultural shows during the winter months, where they hand out brochures and encourage people to visit the website. At first, the turnout and interest at shows and events, ranged from poor to mediocre. However, in the past couple of years, the BFRWP began advertising on the radio and now fields a lot more questions from farmers and ranchers at these events. Occasionally, the partnership's grant opportunities are published in local newspapers. However, the partnership currently cannot keep up with the demand of people looking to work with them.

LESSONS LEARNED

"The true recipe for success is strong local leadership."
- Tom Quinn, Retired NRCS District Conservationist

The BFRWP Board members are all producers themselves that live in the watershed. They understand their neighbors' concerns and can see things from their perspective, which has in large part contributed to the success of the partnership. "Some of the funding agencies didn't understand where the landowners were coming from," said Tim Reich. Landowners are willing to work with the partnership because they see it as an entity that looks out for their interests and values.

"For example, the USFWS was partnering with other organizations, like Ducks Unlimited, to build ponds for waterfowl. I looked at it and said 'We're not gonna be able to do this with landowners unless you take out the clause that says they have to allow public access.' When you put in 'have to allow public access,' nobody will open their gates to it. The landowners don't have any problems with people saying 'You know I'd like to come hunt ducks on your pond, would that be alright?' but just to say 'Well the gate is open, anybody can come whenever they want to, you don't have to ask,' that doesn't work with landowners," said Tim Reich.

The partnership negotiated with the USFWS to take out the public access clause and consequently was very successful in getting landowners to establish waterfowl habitat on their property. The partnership's leadership is also very knowledgeable about water resources and the state regulatory system, which is why the agencies prefer to work with them (Kenner 2010). However, the partnership has helped the agencies to understand that they need to come to the table with some flexibility to encourage participation from farmers and ranchers in the watershed. The partnership tries to work with the agencies to minimize some of the 'red tape' for the landowners. In a sense, the partnership has become a forum for innovative resource management solutions.

"The incentive programs are part of the success because if you come in and start telling private landowners what to do, you aren't going to get anywhere." - Matt Stoltenberg, RESPEC

Tanse Hermann, NRCS District Conservationist echoed Stoltenberg's words,

"If you are looking for folks to change, you've gotta convince them that whatever your suggested change is, it's going to work better than what they are already doing and it better not cost them more money for the same amount of crop. If there's a cost upfront that's fine, but there's got to be an end-benefit."

Behavior change is anything but easy and usually takes place over a period of time. Regulatory agencies often struggle with whether to apply the carrot or the stick when looking for compliance. However, the partnership is a 501(c)3 and its voluntary approach has to be a basket of carrots to entice landowner participation.

"Another advantage of having a group like this is you can be proactive. You are kind of set up to do some of these projects already." - Matt Stoltenberg, RESPEC

The partnership has explored projects from carbon sequestration and cellulosic ethanol to invasive species and groundwater inventories. Its relationships with the SD School of Mines & Technology and RESPEC allow it to address issues of concern today while also looking ahead to tomorrow. For example, the partnership is already concerned about population growth rates in the area and how it will impact water resources. Both RESPEC and the School of Mines have the resources and ability to stay abreast of current technology and solutions, in contrast to agencies and local producers. Tom Quinn noted that while center pivots have been around for decades, NRCS only recently began cost-sharing them. The partnership made a strategic choice in hiring the consulting firm, as opposed to hiring its own staff. Dr. Scott Kenner also expanded on the issue,

"People say 'consultants, oh they cost so much,' but look what has been produced. No other partnership that I've worked with has produced such a large amount of high-quality work. When a group becomes a government entity, sometimes the productivity level isn't quite there. An outside consulting firm sometimes gets held closer to the flame than when it's a state or government entity."

"I think probably the biggest key to our success is that nobody cares who gets the credit." - Tim Reich, BFRWP President

Everyone involved in the partnership, agencies, landowners, the Partnership Board, works hard to see that BFRWP's efforts are fruitful. "It takes a dozen people that are dedicated to an idea to get it to work. The Partnership has some pretty lofty goals as far as water quality is concerned, but we move forward in baby steps," said Tanse Hermann. While the partnership works with producers on a fairly small scale, it hopes the water conservation and grazing improvements will have a larger effect over time. Demonstration projects will hopefully go from new-fangled ideas to common practice.

Conclusions

As seen in the BFRWP, demonstration projects are a common way to promote Best Management Practices (BMPs). Aspen's Jenny Adair Stormwater Project is a constructed wetland and structural BMP that has received state-wide recognition for its innovative construction and environmental benefits. BMPs range in size and scope and seek to mitigate the costs of water quality issues like sediment, contamination or nutrients over time. The Roaring Fork Valley has broad water quality and quantity objectives that might be easier achieved in a piecemeal fashion, using BMPs. Like BFRWP, the Roaring Fork could provide cost-share and incentive-based programs to encourage BMP implementation amongst private landowners. In the Roaring Fork Watershed, riparian land is largely private and bought at a premium in urban areas like Aspen. Moreover, private landholders prefer to manage their property as they see fit. Incentives are an important tool watershed groups can use to restore riparian habitat on private land. Similarly, where diversions occur in the watershed, increased efficiency would minimize the amount of water diverted and control water losses to seepage. After the assessment, the BFRWP quickly

realized that changes at the Irrigation District would have a substantial impact on water conservation and sediment loads in the watershed.

While the barrier of an institution still exists, a 501(c)3 structure, like the BFRWP, would also allow the Roaring Fork to acquire funding from a wide variety of sources. Similar to BFRWP, the Roaring Fork watershed entity could consider using the basin's consulting firms as opposed to hiring a large staff. Consulting firms bring a wealth of expertise and work on a contract basis, taking into account cyclical funding streams.

Photo 8.6: The Belle Fourche River, Courtesy of the Belle Fourche River Watershed Partnership.

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APPENDIX

Appendix M. Belle Fourche River Watershed Partnership Radio Script

CASE 9. BLACKFOOT CHALLENGE

Location: Blackfoot River, Montana
Prepared by: Amanda Barker

The Blackfoot Challenge is a 501(c)(3) nonprofit organization, chartered in 1993. The organization provides an avenue for cooperative resource management of the Blackfoot River, tributaries and surrounding lands in Montana's Blackfoot Watershed (Blackfoot Challenge 2005). Formed out of a desire to change and rectify poor traditional management practices, the Challenge is a coordinated effort to "enhance, conserve and protect the natural resources and rural lifestyle of the Blackfoot River Valley for present and future generations" (Blackfoot Challenge 2007). Ranchers, environmentalists, timber interests, recreation groups, state and local agency administrators, federal agency officials, watershed landowners, and citizens form the principal vehicle for pursuing improved collective resource management of the Blackfoot Watershed in Montana (Rogers and Weber 2010).

The Mission of the Blackfoot Challenge is *"to coordinate efforts that will enhance, conserve and protect the natural resources and rural lifestyles of the Blackfoot River Valley for present and future generations. We support environmentally responsible resource stewardship through cooperation of private and public interests. The Board shares a common vision of how the Challenge operates in the Blackfoot watershed and believes that we can achieve success by building trust, partnerships, and working together."*

BACKGROUND

The Blackfoot Watershed encompasses about 1.5 million acres, extending from the headwaters of the Blackfoot River to its confluence with the Clark Fork River at Bonner, just east of Missoula. The watershed includes the Blackfoot River, its tributaries and all adjacent lands within a three-county area. The length of the river covers some of the most productive fish and wildlife habitat in the Northern Rocky Mountains (Blackfoot Challenge 2005). The watershed is rural, home to approximately 2,500 households, with seven separate communities and seven public schools serving over 1,100 K-12 students. The dominant industry is ranching, almost exclusively cattle, followed by timber production. The mining industry has declined significantly in Montana, due to a state ban on cyanide mining. Recreation is a growing sector of the economy. Anglers now comprise the largest percentage of recreational users of the Blackfoot River. Commercial outfitting (both water-based recreation and backcountry) has increased dramatically due to recreation demands. New ranching practices, recreational and second home development, and eco-tourism are changing the economy of the watershed (McDonald 2003).

Photo 9.1: Blackfoot Community Conservation Area, a current project of the Blackfoot Challenge, Ovando Montana.

Breakdown of land ownership within the Blackfoot Watershed:

- 60% of the watershed is National Forests
- 20% corporate timber holdings
- 20% privately owned ranches, of which 10% are currently in conservation easements to protect the conservation values including wildlife habitat.

Landowners and land managers in the watershed face a variety of resource management issues that involve balancing the protection of the natural resources with human activities. Critical natural resource management issues were identified in the Blackfoot Challenge 2000-2005 Strategic Plan (Blackfoot Challenge 2005), including:

- Protection of water quality and availability
- Conservation and restoration of fisheries resources
- Conservation and restoration of wildlife habitat
- Protection of threatened and endangered species
- Forest management practices including fire hazard reduction
- Adverse impacts from subdivision of large tracts of private land
- Reclamation of abandoned mines
- Noxious weed management
- Grazing management

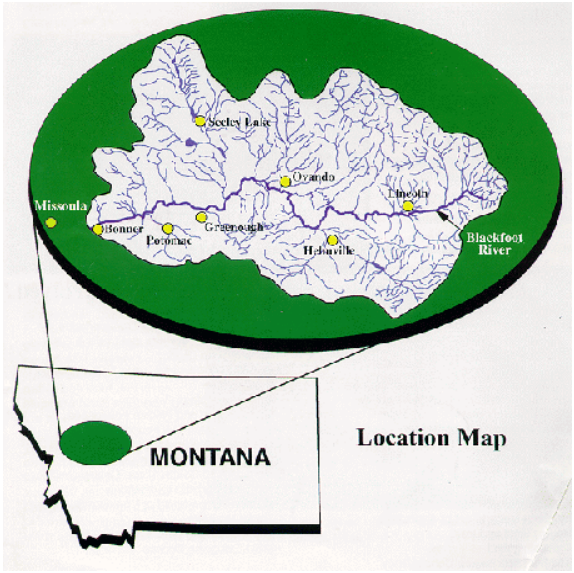

Figure 9.1: Location Map, Source: USFWS.

PARTNERSHIP'S BEGINNING

In the early 1990s, growing concern over the quality of the environment and quality of rural life in the Blackfoot Watershed prompted landowners, public agencies, and community leaders to take a proactive role in the watershed's future. Poor mining, logging, and grazing practices in the past had resulted in water quality and supply issues, sedimentation, and declining fisheries (Coughlin 1999). For ranchers in the Blackfoot Valley, noxious weeds, private property damage from elk migration, and water rights were of great concern. Ranchers were also looking for ways to improve grazing conditions in order to keep ranching economically viable in the Blackfoot

Valley (McDonald 2003). At the time, many ranches were being sold off and subdivided. The loss of rural character in the Blackfoot Valley was of concern to both ranchers and public land managers. Public managers were concerned about losing large tracts of intact wildlife habitat on large ranches (Coughlin 1999).

The unsolved problem was that the Montana Blackfoot Watershed was one of the ten most endangered rivers systems in the United States. Environmental groups and local communities were unsuccessful in advocating protection and "the traditional government conservation approach of top-down, agency-led planning and decision- making failed to effectively protect the fragile ecosystems and only led to increasing tension between parties" (Coughlin 1999). Citizens began to recognize that a cohesive group might be more effective than individuals.

Residents of the Blackfoot Watershed collaborated with the U.S. Fish and Wildlife Service to create a grassroots movement of people with the shared goals of preserving the Blackfoot Watershed. Soon after, other state and federal natural resource agencies joined the movement and the "Blackfoot Challenge" was informally created in 1991.

The Blackfoot Challenge (BC) is a community-based conservation organization which promotes cooperative solutions to "meet natural resource objectives while maintaining ...rural lifestyle activities such as ranching, hunting, fishing, and timbering" (Blackfoot Challenge 2010). In 1993, it incorporated as a 501(c)(3) nonprofit organization with the mission to protect native streams, habitat, open lands, ranching, and a rural way of life across the 1.5 million-acre watershed from "ridge to ridge" (Belsky 2008).

Photo 9.2: Blackfoot River, Blackfoot Angler and Supplies.

PARTNERSHIP'S EVOLUTION

Starting slowly with small, tangible projects, the Blackfoot Challenge has grown over the years to handle more complicated issues at the watershed scale. Before the offical formation of the Challenge, US Fish and Wildlife Service agents began working with local landowners on specific, low-risk projects. One example was the installation of artificial nesting structures for Canada geese (Coughlin 1999). The success of these projects eventually led to other projects like wetland, stream, and riparian restoration. Noxious weed management and grazing practices were also taken on by the Bureau of Land Management (BLM), Powell County Weed District, and other partners (McDonald 2003). Small-scale, short-term projects were done for several reasons: first, to establish trust between landowners and government agencies, and second, to show how working together could produce positive results (Blackfoot Challenge 2006). If these initial projects had not been successful, BC may not have garnered the necessary support to form.

In 2010, the Blackfoot Challenge continues to face a variety of issues (Blackfoot Challenge 2009), including:

- balancing protection of natural resources with human activities
- protection of water quality and availability
- conservation and restoration of fisheries and wildlife habitat
- protection of threatened and endangered species
- forest management practices and fire hazard reduction
- adverse impacts from subdivisions of large tracts of private land
- reclamation of abandoned mines
- noxious weed management
- grazing management

Maintaining the rural character of the Blackfoot Valley is part of the Challenge's mission, which includes several issues, such as loss of agricultural lands to other uses, the shift from traditional to non-traditional ranching, increased recreational activities, and pressures on natural resources (McDonald 2003).

Photo 9.3: Blackfoot Challenge members at the Blackfoot River, Source USFWS.

ORGANIZATIONAL STRUCTURE

The Mission of the Blackfoot Challenge is,

"to coordinate efforts that will enhance, conserve and protect the natural resources and rural lifestyles of the Blackfoot River Valley for present and future generations. We support environmentally responsible resource stewardship through cooperation of private and public interests. The Board shares a common vision of how the Challenge operates in the Blackfoot watershed and believes that we can achieve success by building trust, partnerships, and working together." (Blackfoot Challenge 2010)

Goals of the Blackfoot Challenge (Blackfoot Challenge 2006):

- **Be Inclusive**- Recognize and work with diverse interests in the Blackfoot Valley.
- **Avoid Confrontation**- Bring together public and private resources to help resolve issues and avoid conflicts.
- **Work together and Partner**- Promote a coordinated approach to problem-solving and project implementation. Forge partnerships among the members to achieve Blackfoot Challenge objectives.
- **Share Information**- Provide for the exchange and distribution of technical and topical information. Foster communication between public agencies and private landowners to avoid duplication of efforts and to capitalize on potential opportunities for responsible land management. Serve as a clearinghouse for information between agencies, conservation groups, and landowners in the Blackfoot Valley.
- **Achieve Resource Stewardship**- Examine cumulative impacts of land management decisions and promote actions to lessen adverse impacts in the Blackfoot Valley. Undertake activities and projects to coordinate protection of the natural resources and maintenance of the rural lifestyle of the Blackfoot watershed. Advocate resource protection and rural lifestyle.

Blackfoot Challenge Chairman and valley rancher Jim Stone observes: "The Challenge and eventually, the valley, is dead if we do not keep the family ranches going. If there is a primary goal for the Challenge, it is to try to keep the landownership pattern in a state where we still have [ranch] ownership by these older families" (Coughlin 1999).

The Blackfoot Challenge Strategic Plan identified the following values, intrinsic in the partnership (Blackfoot Challenge 2006):

- Communications tool
- Clearinghouse of information
- Place for honest discussion of differing viewpoints
- Vehicle for achieving cooperative resource management
- Way to build alliances and avoid conflict
- Place to forge cooperative, collaborative solutions to problems

- Collectively able to address issues which cannot be addressed individually
- Respect for the rights of private property owners
- History of successful activities leading to on-the-ground projects by partners.

The Blackfoot Challenge has a Board of Directors, composed of ten to sixteen members representing various businesses, farms and ranches, communities and residents, as well as the county, state, and federal agencies residing and/or operating within the Blackfoot Valley. The Blackfoot Challenge has over 60 major partners (see Appendix MM for complete list of partners) who regularly collaborate on activities with the Challenge (Blackfoot Challenge 2010). Partners participate most often when issues overlapping with their own missions are before the Blackfoot Challenge Board, such as The Nature Conservancy as a leading participant in the Blackfoot Community Conservation Area. Board meetings and membership meetings are open to the public (Blackfoot Challenge 2006). Projects are implemented with approximately 80% agreement from the Board (Blackfoot Challenge 2010).

The Challenge holds monthly open meetings and an annual community barbeque in Ovando, Montana. In the case of large projects, such as the Blackfoot Community Conservation Area, participants met weekly with the community over an extended period of time. This project alone had 153 weekly meetings (Rogers and Weber 2010).

In 2010, the Blackfoot Challenge has 240 partners in the collaboration: 160 private landowners, 30 conservation organizations, 20 local, state and federal agencies, and 30 private businesses, including timber companies and private foundations (Blackfoot Challenge 2010). In order to deal with the variety of issues and technical specialties, the Challenge utilizes issue-specific committees. In 2009, there were seven major committees working within the program (Blackfoot Challenge 2009). They include standing committees (**Executive, Education**) and issue-specific committees (**Conservation Strategies, Forestry, Water Resources, Weeds, Wildlife**)

- *The Executive Committee* (EC) is composed of officers and up to three additional Board members appointed by the Board Chair to serve on the committee. The EC serves as the finance and administrative oversight for the Challenge. The EC oversees the budget, expenditure, and fund-raising, as well as the work of the Executive Director. The Challenge employs a contracted Executive Director (ED) to carry out the Strategic Plan, implement a fund-raising strategy, and administer all funding contracts, project activities, and services on behalf of the Challenge. The ED oversees administrative assistance, bookkeeping,

Blackfoot Challenge Standing Committees (2010)

Executive Committee
Jim Stone, Chair
Racene Friede, Chair Outreach
Gary Burnett, Executive Director

Education Committee
Racene Friede, Chair
Nancy Schwalm, Coordinator

Conservation Strategies
Greg Neudecker, Chair
Brian McDonald, Coordinator
Brad Weltzien, Land Steward
Hank Goetz, Land Director
Nancy Schwalm, BCCA Coordinator
Alicia Vanderheiden, BCP Coordinator

Forestry Committee
Denny Iverson, Chair
Erin Zwiener, Coordinator

Water Resources
David Mannix, Chair
Harry Poett, Chair Drought Response
Brian McDonald, Coordinator

Weeds Committee
Jim Stone, Chair
Brian McDonald, Coordinator

Wildlife Committee
Greg Neudecker, Chair
Seth Wilson, Coordinator
Peter Brown, Range Rider

and tax preparation, as well as programs and projects.

- *Education Committee.* As stated in the 2009 Annual Report, "Education is key to the future of our watershed, because today's youth will be tomorrow's land stewards" (Blackfoot Challenge 2009). This program is the longest-running committee in the Challenge. Since 1993, the Challenge has conducted or sponsored numerous educational meetings, workshops, demonstration projects, teacher resource training, tours, and field days (McDonald 2003).

  The most notable education programs are ProjectWET (Water Education for Teachers) and weed management education. ProjectWET instructs teachers on how to blend water resource education into their curriculum. Weed education is intended to "raise awareness of landowners, land managers, and the public about the long-term adverse impacts of noxious weeds, as well as promote public information, education, and partnerships in noxious weed control." (Blackfoot Challenge 2006) Other education topics include habitat restoration, drought, native fisheries, wildlife, recreation, and water quality (Blackfoot Challenge 2009). Annually, the educational outreach involves more than 500 school children and 200 adults in a watershed with a total population of 8,000 (Rogers and Weber 2010).

- *Conservation Strategies.* This forum of private landowners and land trusts coordinates management of conservation easements and is the participating branch of the Challenge in cooperative conservation projects like the Blackfoot Community Project, discussed below.

- *Forestry Committee.* In 2008, in response to high local interest in forest restoration and fuels mitigation, the Challenge formed the Forestry Committee to prioritize mitigation efforts, strategize on treatments, and increase fire safety in communities.

- *Water Resources.* Severe drought combined with frustrations with Montana's Drought Management Plan led to the formation of the Drought and Water Conservation Committee and the development of the Blackfoot Drought Response Plan in 2000. Meeting weekly, the Drought Committee provides Blackfoot water users with the information necessary to prepare for and respond to drought. This committee oversees implementation of the Drought Response Plan during low flow periods. Outcomes of this committee include conserving an estimated 50 cubic feet per second during low flow periods. On average, 70 local irrigators, homeowners, businesses, and fishing outfitters participate in the Drought Response Plan. 15 soil moisture monitors have been installed since 2002.

- *Weeds Committee*. This committee works on an integrated approach to managing weeds in the Blackfoot Watershed. Outcomes of this committee boast 474,727 acres in 12 Cooperative Weed Management Areas, more than 100 host specific insect releases for biological control, 13 re-vegetation test plots in the Watershed, and 380 private landowners utilizing integrated weed management.

- *Wildlife Committee.* This committee works to minimize human-wildlife conflicts. Outcomes of this committee include 45 ranchers participating in the program. Since 2005, there have been 340 bear carcasses removed, 14,000 linear feet of bear fencing installed, 40 bear resistant dumpsters installed, and 100 residents participating in a bear-alert phone tree.

Over the past decade, the Challenge created many of the previously mentioned committees, and dissolved the *Administration, Planning and Development Program,* the *Partnership, Facilitation, and Projects Program*, the *Financial and Technical Assistance Program*, and the *Communication, Coordination, and Cooperation Program*. Notably, these broad-focus, general programming committees were disbanded in favor of issue-specific committees. A broad focus was helpful in the first years of the Challenge, so that goals and vision were consistent across programming. Information sharing between participants instilled trust with the Challenge and confidence in the longevity of the initiative. Allowing flexibility and evolving committees helps to maintain strong participation (McDonald 2003), particularly so that specialists, technical experts, and landowners have committees which best utilize their knowledge.

Current Blackfoot Challenge Projects

Blackfoot Community Project

Notable endeavors for BC in recent years include progress on the Blackfoot Community Project, a partnership created in 2003 between the Blackfoot Challenge, The Nature Conservancy (TNC), and Plum Creek, a sizeable timber company in the area. The partnership was designed to enable Plum Creek to sell timberlands to the project for protection instead of putting it on the open market. The goal of the project is to prevent further land fragmentation via land sales and residential development and to promote conservation of working forests, wildlife habitat, and a land-based, rural lifestyle. Of particular note within the Blackfoot Community Project is the creation and management of the Blackfoot Community Conservation Area (BCCA), an innovative project involving community forest ownership and cooperative ecosystem management across public and private lands (Blackfoot Challenge 2009). BCCA encompasses an important transition zone between wilderness, national forest and productive private land, including ranches and farmland, within the valley.

Conservation easements for private property were first utilized in the region in 1995 by the USFWS. BC contained a progressive new approach to protect land in perpetuity that has now been adopted as policy in all USFWS regions. Traditional USFWS easements in the 1990's focused on protecting specific pieces of a landscape, primarily wetlands, grasslands, and the areas immediately surrounding them (buffer zones). This approach is problematic in that natural resource issues, such as endangered species and water quality, require more comprehensive easement approaches because they cut across the property, ranch, landscape, or ecosystem. The traditional approach does not address development pressures, including industrial–commercial land uses or residential subdivision development, or aesthetics (Rogers 2010).

With the Blackfoot Community Project, TNC purchased 11,208 acres of Plum Creek Timber Company land near Ovando Mountain, within the Blackfoot Challenge area scope. Of this acreage, TNC decided to transfer 5,609 acres in the core area to BC after numerous public and internal meetings. The remaining 5,599 acres was sold to public agencies including the USDA Forest Service, Department of Natural Resources and Conservation, and Montana Fish, Wildlife, and Parks. Additionally, TNC had an 8,316-acre conservation easement sold to BC, and the

Forest Service and private landowners contributed lands, for BCCA to be a 41,000-acre block (Blackfoot Challenge 2009). The transaction involved years of quiet deliberation among the partners. The plan involved TNC owning the land until it could resell it either to adjacent landowners for consolidation of smaller ranches, to private buyers with conservation easements, or to federal agencies for inclusion into public land holdings (Blackfoot Challenge 2009).

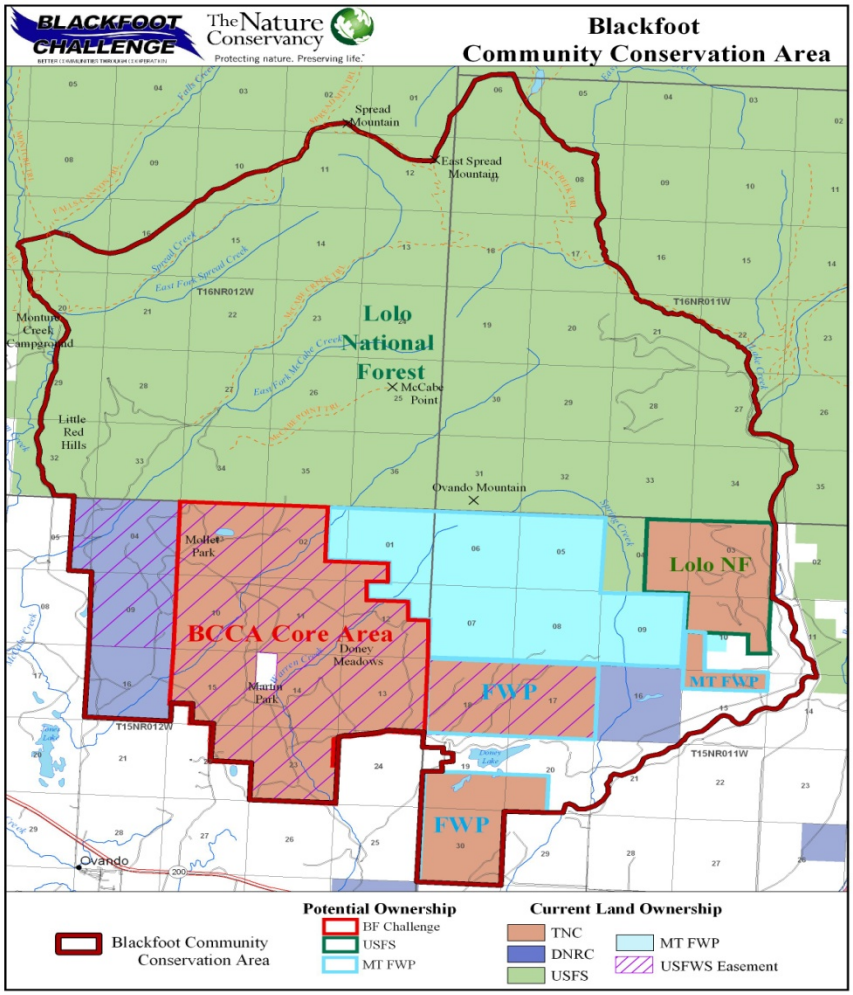

Figure 9.2: Map of the Blackfoot Watershed displays the Blackfoot Community Project and the BCCA, located in the heart of the valley, Courtesy of the Blackfoot Challenge.

Decisions regarding which lands are to be resold and under what arrangement are decided through a process of public involvement, led by the Challenge's land director, Hank Goetz. A 15-member community-based group, appointed by the Challenge's Board of Directors and named the Blackfoot Community Conservation Area Council developed a management plan based on scientific expertise, with comments and input from Blackfoot valley landowners and residents through public meetings, work groups, surveys, and mailings (Blackfoot Challenge 2006).

By late 2006, the partnership purchased 68,000 acres of Plum Creek timberlands. Almost 25,000 acres have been resold to public agencies with money from the Federal Land and Water Conservation Fund and 160 acres have been resold to private buyers (Blackfoot Challenge 2009).

To offset the loss of tax-exempt federal lands, the Challenge is raising an endowment fund to make payments in-lieu of taxes (PILTs) to the counties involved. As the name suggests, PILTs provide funds to compensate for funds lost from property foregone in the shift from private to public ownership (Belsky 2008).

These lands are highly valued by valley residents and users from other communities (such as the city of Missoula located 45 miles away) for world-class recreation and hunting. With restoration, they also can be a future source of timber revenue. Thus, goals for BCCA include restoring BCCA area and coordinating management to meet user as well as ecosystem needs and priorities of adjacent private and public lands (BC 2009). As Rogers and Weber (2010) explain,

> "Instead of treating easements as an afterthought, we led with them, we put them front and center as part of an overall strategy to help the Blackfoot heal and to maintain it over the long term. And we weren't satisfied with conserving just bits and pieces of the watershed, we knew that our [multiple] endangered species problems, and our water quality problems, and our desire to preserve the unspoiled, wild character of our place required something more comprehensive, the kind of protection across the entire ranch landscape that regular easements could not provide"

Adopt-A-Swan Program

The Blackfoot Challenge received $1 million from a North American Wetland and Conservation Act grant to conserve wetlands. Twenty-nine trumpeter swans were relocated from Wyoming and released in the Blackfoot Watershed. BC now has an Adopt-A-Swan program for middle-schoolers in their education program (Blackfoot Challenge 2010), which includes a curriculum to teach about reintroduction techniques, as well as tracking and GPS.

Water Quality Restoration/TMDL Planning in the Blackfoot

The Blackfoot Watershed is divided into four Total Maximum Daily Load (TMDL) planning areas, including the Blackfoot Headwaters (Lincoln), the Middle Blackfoot (Ovando & Seeley Lake), Nevada Creek (Helmville), and the Lower Blackfoot (Greenough, Potomac, & Bonner). As of 2010, four water quality restoration plans/TMDLs for the Blackfoot Headwaters were completed by the Water Resources Committee and approved by the Blackfoot Challenge at large, and are currently in the implementation phase.

A Basin-Wide Restoration Action Plan

Restoration has been going on in the Blackfoot Valley for over 15 years. As programs have grown, so has the need to coordinate. In partnership with the Big Blackfoot Chapter of Trout Unlimited, and Montana Fish, Wildlife and Parks, the Challenge developed a basin-wide action plan for the Blackfoot River drainage, to restore impaired streams in the watershed. Agency partners with technical expertise compiled data on fish populations, stream flow, water quality, TMDL status, and geomorphic/habitat conditions. Out of this data, a list of streams in need of restoration was developed and prioritized based on biological/resource benefits, social and financial considerations (Blackfoot Challenge 2010).

Monitoring

In 2004, the Habitat Water Quality and Restoration Committee implemented a 12-station water quality monitoring network in the Blackfoot. This monitoring program created and is building upon baseline water quality conditions data and over time and shows water quality trends (Blackfoot Challenge 2010). As monitoring continues at this level, the Challenge expects better understanding of the cumulative effects of restoration in the Blackfoot in addition to larger studies of the Clark Fork Basin.

FUNDING

The Blackfoot Challenge receives funding from a number of sources and is constantly struggling to secure more. Agencies including US Fish & Wildlife Service (Partners in Wildlife Program), Bureau of Land Management, Trout Unlimited, Ducks Unlimited, and Pheasants Forever, as well as private donors have all contributed (Coughlin 1999). Darrell Sall, former area manager of the Bureau of Land Management, was also instrumental in helping the Blackfoot Challenge gain momentum once initiated. He was able to obtain money from the BLM for administrative support, temporary help, an executive director, and a computer (Neudecker 1999). As the group became established, soliciting funds for administrative needs through grants and donations became easier (Blackfoot Challenge 2009). However, a significant amount of time is allocated to the Financial and Technical Assistance Program and the Administration, Planning, and Development Program to successfully run the collaborative.

CHALLENGES

In the ongoing projects and evolution of the Blackfoot Challenge, the organization continues to encounter challenges. Trust between participants has increased over the Challenge's long history, but elements of mistrust continue. A landowner survey asked about the proposal for the Challenge to become the legal owner and key manager of the Blackfoot Challenge Community Conservation Area (BCCA), and results indicated half of respondents needed more information from the Challenge (Belsky 2008). This finding underscores the ambiguity regarding terms and conditions of ownership in this evolving community forestry regime. Residents question the endurance of an organization like the Challenge, even after fifteen years, as well as the organization's capacity to be responsive to interests and manage effectively (Belsky 2008).

Based on these results, in 2005 the Blackfoot Challenge leadership created the Blackfoot Community Conservation Area Advisory Council to solicit ideas and offer recommendations on how best to proceed. Council membership was open to volunteers from across the valley. The council meets once a month to identify key issues and work toward developing a "community-driven" plan for owning and governing BCCA (Belsky 2008). Among challenges facing the BCCA advisory council is deciding what exactly it means for the community forest to be managed for the protection of the "rural lifestyle" (Belsky 2008). The ongoing challenge facing the BCCA management plan is to accommodate different interest groups.

ACCOMPLISHMENTS

The Blackfoot Challenge and its many partners have accomplished an impressive array of conservation projects that have garnered national recognition. These include:

- Extensive stream and grassland restoration, weed control, and conservation easements on some 90,000 of the 300,000 acres of private land in the Blackfoot Valley (more than any other watershed in Montana). Importantly, these efforts have been reached through a consensus-oriented, collaborative approach to decision-making and stewardship (Blackfoot Challenge 2010).
- Early on, the Challenge developed a noxious weed control project with the help of agency representatives. The program has helped unify the group with somewhat noncontroversial management practices. A local landowner indicates "weed control got the group into the minds and hearts of landowners, because it was easy for landowners to see the critical importance of a coordinated approach in tackling this problem." (Coughlin 1999)
- ProjectWET has enjoyed success through educating teachers and children in the valley about their watershed. By conveying a message to the children that the watershed is a place to be taken care of, and explaining ways that they might have a positive impact on it, coordinator Becky Garland has also been pleased with the effect that it has on both the children and the teachers (Blackfoot Challenge 2010).
- The Blackfoot Community Conservation Area (BCCA) provides an opportunity for local residents to guide the ownership and management of nearly 41,000 acres of large, intact landscapes that possess critical community, agricultural, and biological values (Blackfoot Challenge 2010).

Photo 9.4: ProjectWET teacher participants, Source USFWS.

Conservation easements held by the Challenge are vehicles for building trust between the Challenge and landowners because owners see that they and their livelihood are valued. This facilitates additional environmental restoration and water conservation projects in the area (Rogers and Weber 2010). The BCCA program is another tool the Challenge utilizes to maintain the rural character of the Blackfoot Valley. As one stakeholder put it, “the more comprehensive easements keep people on the land, while protecting all the critical biological elements. It’s good for ranchers, it’s good for all the rest of us who care about the whole watershed and all the natural resources” (Rogers and Weber 2010).

The efforts of the Blackfoot Challenge are well documented, have been recognized as a prototype of successful collaborative resource management, and are going strong after 17 years. Among other awards, the effort received the prestigious *Innovations in American Government* award from Harvard University's JFK School in 2006 and a 2003 award from the federal Clean Water Action Plan that recognized the Blackfoot efforts as one of the "nation's best" for its watershed approach to stream restoration (Rogers and Weber 2010).

Participation in the project selection process increased transparency, trust and acceptance (Blackfoot Challenge 2009). Collaboration increased support, which was needed to implement the solutions. Implementation was strengthened, because those participating were also responsible for implementation. Moreover, partners in the collaboration possessed the innovative resources (local expertise, funds etc.) to implement solutions. Diffusion was facilitated through a broad network of collaborating partners who shared the same goals (Bommert 2010).

Perhaps the biggest accomplishment so far is unmeasurable. The Blackfoot Challenge has helped enhance the quality of life in the Blackfoot Valley. New relationships have formed, trust between public agencies and the public has increased, and respect for differing values has grown (McDonald 2003). With a sense of place and community, accomplishments of the Challenge have been achieved without compromising the rural lifestyle of the Blackfoot Valley. Ranching, logging, and to a lesser extent mining, continue to contribute economically as new activities, like recreation, are integrated (Blackfoot Challenge 2009).

LESSONS LEARNED

Decisions made by the Blackfoot Challenge involve both science and local knowledge (BC 2006). Science plays a vital role in the actions of the Challenge, especially with projects involving fisheries and stream restoration. However, local knowledge plays an equally important role. Most of the ranchers who run operations in the Blackfoot Valley are at least second-generation, and they know the land. It is a two-way learning process in which both ranchers and public agents learn from each other. George Hirschenberger, BLM, reflects, "You can't help but learn something new every day" (McDonald 2003).

The Challenge has evolved over the past two decades from a broad information-sharing initiative to a more focused, project-based initiative. Confidence in scientific monitoring and evaluation was cultivated over many years. The initiative opened the process to various partners and thus integrated creativity and ingenuity to a complex problem. Collaboration helped to generate novel solutions that are responsive to local needs. Those affected by the outcome have a say, utilizing local knowledge to improve idea selection and assess potential solutions. Stakeholders in the Blackfoot Challenge believe in long-term problem solving across the range of problems facing the Blackfoot Valley. There is a confluence of an interconnected community that includes important mammal species, diverse ecosystems, and the human population (Rogers and Weber 2010).

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APPENDIX

Appendix MM. Blackfoot Challenge Partners

CASE 10. CIMARRON WATERSHED ALLIANCE

Location: Colfax County, New Mexico
Prepared by: Bethany Hellmann

The Cimarron Watershed Alliance (CWA) is a broad-based 501(c)3 watershed partnership in Colfax County, New Mexico, comprised of various stakeholders working for the common good of the watershed community. The mission of CWA is:

"To strive for and maintain a healthy watershed through collaborative community activities involving all stakeholders with an interest in water."

CWA forms strong, enduring partnerships to accomplish successful projects that are important for their constituents and further the group's mission. The CWA fosters environmental education of local students in order to promote a sustainable impact and influence the future generation of decision makers in the watershed. Their methods of increasing rural involvement in the alliance are useful for the Roaring Fork Watershed Collaborative. These methods include providing an open communication policy for all constituents and fostering a "can do" attitude.

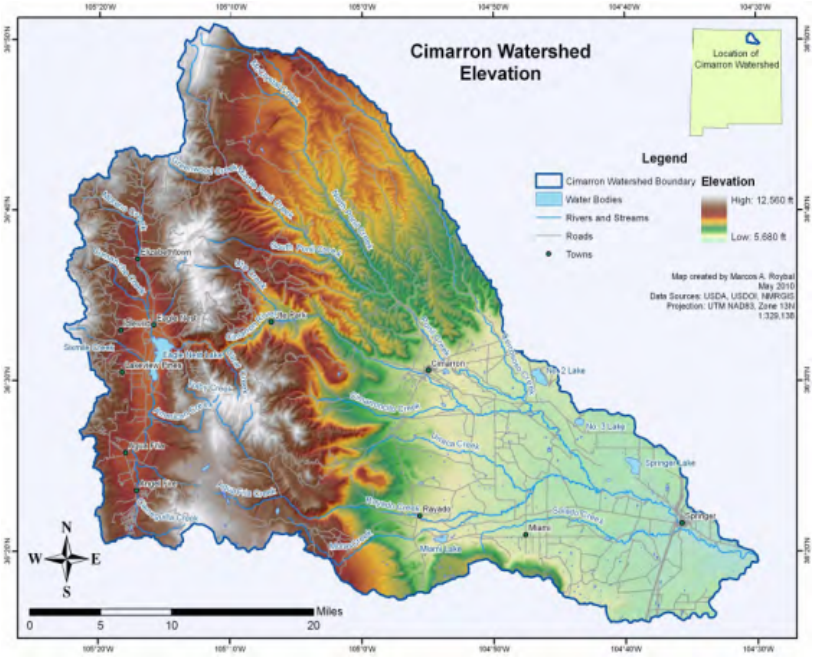


Figure 10.1. Cimarron Watershed Elevation Map, Source: Thomson et al. 2010.

BACKGROUND

The Cimarron Watershed covers 1,032 square miles in Colfax County, New Mexico along the eastern slopes of the Sangre de Cristo Mountains (Thomson et al. 2010; Core Work Plan 2003). It is a sub-watershed of the Upper Canadian Watershed. Elevation ranges from 12,000 feet above sea level at its headwaters in Moreno Valley to just under 6,000 feet at the confluence of the Cimarron and Canadian Rivers. The watershed is covered in forestland and grasslands with varying degrees of bank stability, canopy cover and ground cover. The major towns in the watershed are Angel Fire, Eagle Nest, Cimarron and Springer. The principal source of water supply to residents of Colfax County's major towns including Raton, Springer and Cimarron is surface water. The majority of water rights are allocated to agriculture for irrigation of livestock feed. Residents in other areas use ground water for their drinking water (Huerta 2010). Colfax County is home to several nationally recognized attractions, including the Maxwell National Wildlife Refuge, which boasts 3,000 acres of prairie, lakes and reclaimed farmland (CommunityByDesign and Planners Ink, 2004). It also serves as a stop over for migrating birds and in the fall may have 90,000 birds. The Capulin Volcano National Monument covers 793 acres and provides a clear view of five states including New Mexico, Texas, Oklahoma, Kansas and Colorado. Sugarite Canyon State Park covers more than 4,000 acres along the New Mexico-Colorado border, which contains beautiful scenery and 12 million year old basalt rock

Photo 10.1: Cimarron Watershed. Courtesy of A.C. Huerta, © 2006.

columns that are 10 to 100 feet thick. Cimarron Canyon features some of the best water for fly-fishing in Colorado (Huerta 2010).

Colfax County, New Mexico has a current population of approximately 14,000 people and it is expected to increase (CommunityByDesign and Planners Ink, 2004). The Colfax Regional Water Plan of 2002 projected a low estimate of 15,112 people and a high estimate of 37,204 people by 2040. As population and businesses grow, there will be continued stress on water quantity and water quality (Thomson et al. 2010). Population fluctuates seasonally due to the large summer tourist influx. Twenty-five percent of jobs in Colfax County are state, local or federal government. The major source of tax revenue for Colfax County is outdoor recreation including hunting and fishing, which add to the local economy through tourism-related business income (Huerta 2010). The people of Colfax County value their "rural character and lifestyle," "preservation of their county heritage and social/cultural roots" and open land with "development clustered in existing communities" (CommunityByDesign and Planners Ink, 2004). Some of the more progressive businesses and residents in Colfax County value the sustainable eco-tourism wilderness and pragmatic use of the area's natural assets (Huerta 2010). The values of the residents are important to note when communicating with residents. Historically, mining provided many high-paying jobs (CommunityByDesign and Planners Ink, 2004). By 1950, intensive mining activities reduced the amount of recoverable coal. The last productive coal mine, York Canyon Mine, was closed in 2003 raising the unemployment rate from 5% to 7.3%. The average income in this area is less than the average annual income for the State of New Mexico and the United States (Thomson et al. 2010). Forest restoration, eco-tourism and oil and gas are sources of future jobs and income in Colfax County (Huerta 2010).

Figure 10.2. Cimarron, New Mexico tagline. Courtesy of Cimarron Watershed Alliance.

CWA encourages management of the land in Colfax County to protect the sustainability and health of the Cimarron Watershed, to promote the health of the natural resources and wildlife and for economic viability of the outdoor recreation businesses (Thomson et al. 2010). Most of the land is privately owned for cattle grazing and beef production. The USDA Forest Service (USFS), New Mexico State Parks, and New Mexico Department of Game and Fish also own major public tracts of land. Vermejo Park Ranch, Philmont Scout Ranch, and the UU Bar Express Ranch own the major private tracts of land (Huerta 2010). The villages and smaller ranches own all other land.

PARTNERSHIP'S BEGINNING

A consent decree signed by WildEarth Guardians and the New Mexico Environment Department (NMED) on April 29, 1997 initiated the formation of the Cimarron Watershed Alliance (Bain 2010). WildEarth Guardians is an environmental advocacy group active in litigation against infractions to the EPA's Clean Water Act; according to their website, WildEarth Guardians works to "protect and restore wildlife, wild places and wild rivers in the American West" (WildEarth Guardians 2010). The legally binding consent decree required NMED to address non-point source pollution in the Cimarron Watershed (Bain 2010). In 1997, NMED performed a watershed study, which revealed that several creeks and rivers exceeded EPA's acceptable levels of total maximum daily loads of non-point source pollution (CWA Annual Report 2005). In 2001, state officials from NMED's Surface Water Quality Bureau (SWQB) acquired Clean Water Act grants to hire the non-profit Meridian Institute to help form an organization to remediate non-point source pollution in the Cimarron Watershed. The Meridian Institute, headquartered in Keystone, Colorado, is a dispute resolution firm that facilitates collaborative processes. For three years, the Meridian Institute facilitated public meetings in the Cimarron Watershed to gather stakeholder input. The public meetings organized stakeholder involvement, which facilitated the formation of the Cimarron Watershed Alliance.

Three leaders were instrumental during CWA's formative years: Frank Atmore of Express Ranches in Ute Park, Hoot Gibson, the mayor of Angel Fire and Betsy Reed, the project officer for SWQB (Cudia 2010). After the Meridian Institute completed their facilitation contract, CWA took over its own administrative and project-driven functioning. CWA developed both the capacity and motivation to govern all its functions, and SWQB's administrative capacities were no longer necessary. The CWA was incorporated as a 501(c)3 non-profit in May 2004 (Walsh 2010). CWA's initial projects included replanting riparian habitats, fire mitigation through reducing forest biomass and improving wastewater management.

PARTNERSHIP'S EVOLUTION

CWA has remained a collaborative process and encourages open communication at all of its meetings (Walsh 2010). According to Patricia Walsh, the current President and Chairman of the Board of CWA, the great leadership by former CWA President and Board Chairman Frank Atmore and the former Executive Director Mike Bain, along with insight from other members, helped the partnership evolve through its formative years. They created a positive, open atmosphere in which new ideas and new participants were always welcome. CWA continues to promote a positive, open atmosphere. Mike Bain, a former rancher, earned the confidence of the large ranching community in Colfax County, which allowed him to build relationships with state legislators and federal agencies. Bain identified the need to use a consistent, patient approach when building trust with the ranching community (Bain 2010). Bain's ranching background, educational background (he earned a Master's in Business Administration), intelligence and thoughtful personality earn him respect throughout the Cimarron Watershed community (Walsh 2010).

Over time, the Board of Directors has learned that being adaptable and flexible to new ideas and new challenges is essential for the partnership to grow (Walsh 2010). The Board decided to operate through consensus which continues to work well. Additionally, by-laws have been changed when warranted and will continue to be amended when necessary. According to Walsh, CWA's welcoming disposition for all stakeholders regardless of affiliation, view, opinions or politics has given the group longevity and allowed them to evolve over time.

ORGANIZATIONAL STRUCTURE

The mission of CWA is "to *strive for and maintain a healthy watershed through collaborative community activities involving all stakeholders with an interest in water*." CWA avoids taking positions on controversial issues and is neither a political nor advocacy organization (Walsh 2010).

CWA has three main objectives (CWA Core Work Plan 2003):

1. To restore, maintain, and preserve surface and groundwater quality, aquatic resources, and water supplies.
2. To protect, restore, and maintain natural resources including the land, water, forest, and wildlife in the watershed.
3. To serve as a resource on watershed issues and to promote eco-education and information dissemination.

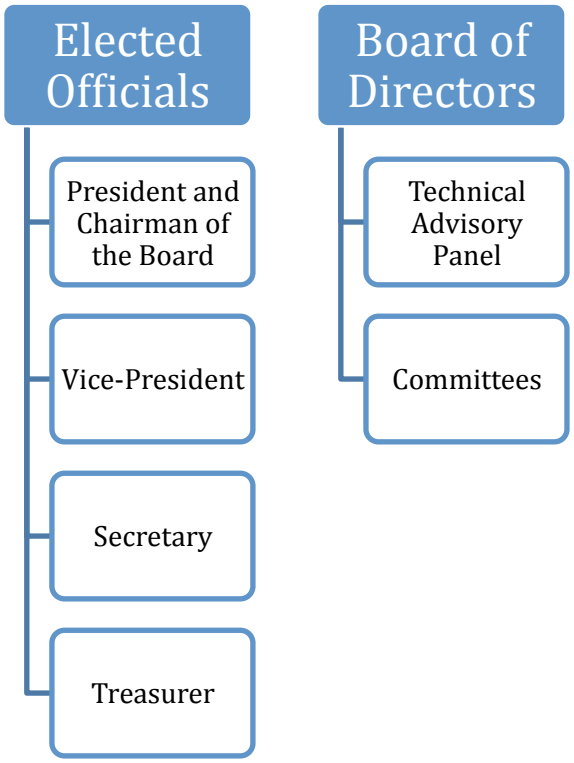
The CWA categorizes its objectives into long-term and short-term (Walsh 2010). They currently focus on the most critical watershed health issues, which are riparian restoration, forest health, wastewater management and erosion control.

The Watershed Restoration Action Strategy (WRAS), written by CWA, guides the actions of CWA.

The guidelines and goals under the WRAS are (CWA Annual Report 2007):

- Riparian restoration
- Forest health by reducing biomass fuel
- Wastewater management
- Erosion control
- Healthy stream and river temperatures
- Reduction of turbidity
- Identify fecal coliform sources
- Public education to foster a new generation of ecological stewards by targeting grade school and high school students

The **organizational structure** of the CWA is (CWA Annual Report 2007):



Patricia Walsh, an interpretive ranger for the New Mexico State Parks, is the current President and Chairman of the Board for CWA (Walsh 2010). William "Hoot" Gibson, representing the town of Angel Fire, is the current Vice-President. Judy Piper, a certified Public Accountant and representative of the Bar YC Ranch, is the current Treasurer. Gus Holm, a certified public accountant and assistant manager of the Vermejo Park Ranch, is the current secretary. The only paid position at CWA is a recording secretary who works several hours a month writing the meeting minutes for CWA.

Currently, there are nine members on the Board of Directors and six members on the Technical Advisory Panel (Walsh 2010). The Board of Directors, representing many interests, works to reach a consensus in which all members can at least partially agree and support the decision before calling a vote. They then use democratic voting to make decisions. A characteristic that CWA looks for in board members is willingness for open participation in the collaborative process. They allow all interested persons to join the Alliance and participate in whatever capacity they desire. The Technical Advisory Panel advises the Board as needed on specific issues. Members of the Board and Technical Advisory Panel are on a volunteer basis.

As needed, the CWA Board of Directors forms committees and chooses project directors to refine project parameters (CWA Annual Report 2007). Operations committees have included *Administration*, *Planning and Project Review* and *Fundraising*. Project committees have included *Water Quality Monitoring*, *Public Outreach and Education*, *Forest Health*, *Erosion Control*, and *Wildlife & Domestic Animal/Watershed Interface*.

Partners

CWA partners are a "diverse, committed and stewardship-minded group" of volunteers representing a wide array of interests in the watershed including private landowners, business owners, government officials, ranchers and local schools (CWA 2010). The partner organizations currently involved in the Cimarron Watershed Alliance include (Walsh 2010):

- New Mexico Environment Department/Surface Water Quality Department (NMED)
- USDA Forest Service
- Quivira Coalition
- New Mexico State Parks
- New Mexico State Forestry
- New Mexico Game and Fish
- Vermejo Park Ranch owned by CNN creator Ted Turner
- Philmont Scout Ranch
- Angel Fire Resort and Ski Area
- Cimarroncita Historic Ranch Retreat
- Towns of Raton, Cimarron and Angel Fire;
- Many local residents

These partners, mainly from Colfax County, care about water issues and are involved in CWA to help ensure the health of their watershed (Walsh 2010). Any partner can be involved in any aspect of the Alliance. Partners may serve on the Board of Directors, Technical Advisory Panel, Committees or help with project implementation, which creates a lot of flexibility within the structure of the organization. The New Mexico State Parks joined CWA in 2006 because CWA indicated they had grant funding available for their education outreach programs.

Michael Bain, former Executive Director of CWA, now works for the Quivira Coalition, a progressive coalition of ranchers and environmentalists based in Santa Fe, New Mexico (Walsh 2010). The Quivira's mission is "to build resilience by fostering ecological, economic and social health on western landscapes through education, collaboration, and progressive public and private land stewardship" (Quivira Coalition 2010). Their projects have been conducted throughout much of New Mexico (Walsh 2010). While working for Quivira, Bain maintains a strong partnership with CWA and continues to oversee many of the grants obtained by CWA. The mutually beneficial partnership between CWA and Quivira Coalition helped CWA receive an Environmental Protection Agency grant to develop and update a Watershed Based Plan, which is necessary for future federal funds via the Clean Water Act. CWA contracted Bain to write this plan.

Meetings

CWA holds a monthly stakeholder meeting that is open to the general public (Walsh 2010). Some CWA meetings have been "standing room only" since the first organizational meeting in November 2001, although attendance has tapered off in recent years. CWA usually holds its meetings on the fourth Wednesday of each month. Interested stakeholders who are actively

participating in watershed activities attend these meetings. The active stakeholders create a "can do" group that strives to be non-political and accomplishment oriented. Patricia Walsh facilitates the officer meetings prior to the stakeholder meetings. An official board meeting requires five of the nine board members to be in attendance.

Projects

CWA's Board of Directors chooses projects that meet their goals, visions and objectives and are driven by the needs of their constituents (CWA 2010). They choose projects based on a majority vote. Projects are evaluated by specific criteria and guidelines using a standard process to maintain transparency and prevent conflict of interest. The Project Selection Process and Project Selection Criteria can be found in Appendix DD and Appendix EE. The CWA focuses on riparian restoration, education, water quality monitoring, erosion control, forest restoration and wastewater management monitoring (Walsh 2010).

CWA is working to restore Cieneguilla Creek by protecting and restoring native riparian vegetation, which reduces bank erosion (Walsh 2010). In 2010, CWA constructed an elk exclosure on Cieneguilla Creek to allow re-vegetation of the riparian area, which will be continually monitored. CWA is presently monitoring Cieneguilla Creek by collecting data on water temperature, canopy coverage and obligate plant growth (Huerta 2010). Some of CWA's previous data collection projects recorded turbidity and fecal coliform levels. This data, in conjunction with the New Mexico State University Biology department, was developed into a biological source tracking study, which revealed that waterfowl such as geese and ducks are the primary source of coliform bacteria in the Cieneguilla Creek.

Photo 10.2: Cieneguilla Creek flowing into Eagle Nest Lake State Park, Courtesy of Cimarron Watershed Alliance.

CWA is currently exploring ways to restore forests, meadows and riparian areas in the Valle Vidal unit of the Carson National Forest (Walsh 2010). CWA is proposing planning efforts for research to determine the benefits of wildfire mitigation in overgrown conifer forests through selective thinning. CWA is also considering restoration of cottonwood forests in riparian areas and aspen regeneration to develop a biologically diverse ecosystem.

CWA coordinates with public and private entities to accomplish projects for the betterment of their watershed (Thomson et al. 2010). For instance, CWA collaborated with the New Mexico State Parks to help seventh grade students construct an osprey-nesting platform. CWA collaborated with Colfax County to conduct a workshop on building and maintaining roads that prevent erosion. CWA collaborated with Western Wood Products to construct a transfer station in the town of Eagle Nest, which reduced the distance landowners needed to haul wood materials from forest thinning projects.

CWA partners with the Quivira Coalition to restore riparian forests, stabilize streams banks, and control erosion (Huerta 2010). A major project funded by an EPA Clean Water Act grant is presently underway on the Middle Ponil Creek. This project is a collaborative effort of the CWA, Philmont Scout Ranch, three cattle ranches, the Village of Cimarron, New Mexico State Forestry Department, and New Mexico Department of Game and Fish. Their goal is to decrease the creek temperature and remove Ponil Creek from the Clean Water Act list of impaired waterways by 2011.

FUNDING

On December 6, 2004, the EPA awarded a Clean Water Act Section 319 grant of almost $649,000 to CWA to address non-point source pollution along affected waterways (CWA Annual Report 2010). This grant was administered through the Surface Water Quality Bureau of the New Mexico Environment Department. This initial funding allowed CWA to move successfully through its formative stages and to develop and implement projects.

As with most rural watershed groups, funding continues to be the major limiting factor for CWA (Walsh 2010). CWA members and members of the watershed community donate money and volunteer time to support the functioning of the alliance. Additionally, the CWA collected one-time membership fees of twenty-five dollars for many years. However, in 2010, CWA shifted to annual fees because of difficulties in handling their overhead costs. Funding gaps are a recurring problem for CWA.

CWA's greatest financial concern is start-up costs for restoration projects (Walsh 2010). The State of New Mexico has granted additional monies to CWA, but this funding has not been enough to cover administrative functions. A New Mexico state grant through the Riparian Ecosystem Restoration Initiative allows the CWA to work on an elk exclosure on Cieneguilla Creek. Meanwhile, a federal Clean Water Act grant allowed CWA to work on stream restoration on the Ponil River.

CHALLENGES

Since CWA's formation in 2004, they have faced several challenges and limitations (Bain 2010). Initially, two-thirds attendance by the CWA Board of Directors was needed in order to conduct business. However, this quorum number was too high for a volunteer group like CWA. Since attendance is variable, the quorum number was an obstacle for getting work completed and has since been reduced to require 5 of the 9 members of the Board. CWA has ***no official authority***. Members are almost entirely volunteer and decisions are made through consensus.

Members of CWA have also experienced ***personality conflicts*** (Walsh 2010). These conflicts were resolved through acknowledging the contributions of all members and leadership insisting upon mutual respect and communication. Additionally, much time and effort recently has been devoted to ***securing administrative funding*** for rent and utilities since CWA's grant money is nearly depleted. More monitoring projects are desirable but would be at the cost of the implementation projects due to budgetary restraints (Bain 2010). For instance, the EPA 319 grant promoted implementing Best Management Practices, but did not fund monitoring.

ACCOMPLISHMENTS

The public has positively received the CWA (Bain 2010). This is likely because at all CWA meetings, attendees are expected to leave out their personal and organizational agendas. Encouragement of open and respectful discussions has been key to ***establishing credibility*** within the alliance. Patricia Walsh measures CWA's success by gauging successful collaboration between members that are ***able to implement projects*** (Walsh 2010).

The following are CWA's significant accomplishments over the past six years (Walsh 2010):

- Forest thinning/wildfire mitigation project in the Taos Pines subdivision near Angel Fire.
- Coordinating a Collaborative Forest Restoration Grant project at Sugarite Canyon State Park.
- Riparian restoration on the Middle Ponil River, which was impacted by a major fire years ago.
- Water quality monitoring and research in the Moreno Valley. A university professor reported waterfowl as the primary source of E. coli contamination.
- Elk exclosure on the Cieneguilla River near Angel Fire.
- Relocation of a ranch road out of a riparian area.

Population in the Cimarron Watershed is low; therefore, it is reasonable to assume that the CWA's sphere of influence would also be low (Bain 2010). However, CWA has surpassed this expectation. The CWA is rural-based and project implementation driven. Members collectively represent over 1 million acres of private land. "Given this direct influence over vast expanses of

land (i.e. stakeholders actually own large chunks of the watershed), a group like the Cimarron Watershed Alliance arguably has much greater potential to affect immediate landscape-scale change" according to Chris Cudia, a water quality specialist for the New Mexico Environment Department's Surface Water Quality Bureau.

PUBLIC AWARENESS AND EDUCATION

Photo 10.3: Restoration and Stewardship in the Cimarron Watershed, Courtesy of Quivira Coalition.

CWA provides information to the public on watershed issues via monthly stakeholder meetings, a web site, and presentations given by group leaders at local and regional conferences (CWA 2010). CWA's monthly meetings are held at CWA's office in Cimarron, New Mexico, and field workshops take place throughout Colfax County (Walsh 2010). Meetings are open to the public and are announced by email announcements, local newspapers and radio stations. A public outreach component is imbedded in all meetings and projects (Walsh 2010). CWA members have monitored success of their education programs through discussion at their monthly meetings. In retrospect, the CWA would have liked to expend more resources on securing sustainable funding and promoting public awareness about projects dedicated to watershed health. CWA has dedicated more time and energy toward implementation of watershed protection than fostering public support for their efforts.

The CWA has contributed $30,000 for State Park education projects in the last four years (CWA 2010). These projects focus on participation by area students and include (CWA 2010):

- Squirrel study in Sugarite Canyon State Park by local seventh grade students. This study is part of forest thinning monitoring project.
- Construction of a beaver dam flow device on the Cimarron River by high school students.
- Construction of an osprey nest platform by seventh grade students.
- Educational supplies for several state parks' school programs.

CWA's projects aim to provide service-learning opportunities for local students (Walsh 2010). Their projects include orientation for students to understand the issues involved. For example, high school students received information on the value of beaver ponds for riparian areas before they built the flow device aimed at providing a way for humans to co-exist with beavers. Also, students working on the osprey nest platform learned about how ospreys were affected by use of DDT prior to the 1970s. The intent is for students to think about the possible impacts of household cleaning solutions and other chemicals on their water quality. The interpretive ranger

measures success of these programs gauging students' active participation and recording whether finished product is achieved. CWA hope that educating the watershed community about wildlife and ecosystems will encourage behavior changes that positively impact the quality of their watershed.

LESSONS LEARNED

An essential lesson for watershed partnerships learned from the CWA is the necessity to establish sustainable funding resources. Funding can be the most limiting factor for a successful partnership especially in a rural setting. It is important to continually seek out new funding sources and prepare for future funding needs. Funding can be secured from government grants, members' donations and/or membership dues. If the partnership is able secure future funding before it is needed, it will be able to function better over time.

A "can-do" group is formed by getting stakeholders who participate in watershed activities to attend meetings (Walsh 2010). Participation within the partnership may be on a volunteer basis, but it is important to have a core group of members who regularly attend meetings and make decisions. Stressing the economic importance of a healthy, vibrant watershed will help garner support from the watershed's community. For instance, the Cimarron Watershed boasts a large outdoor recreation sector centered on using the rivers for fishing and water sports. Clean and beautiful rivers are necessary for successfully attracting tourists to vacation in the Cimarron Watershed. Additionally, a watershed partnership must invite community members to all its meetings to garner public support and involvement. Announcing public meetings through the local paper radio, newspaper, website and email lists can help to advertise the meetings widely throughout the watershed.

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APPENDICES

Appendix AA. Cimarron Watershed Alliance Core Work Plan

Appendix DD. Cimarron Watershed Alliance Project Selection Criteria

Appendix EE. Cimarron Watershed Alliance Project Selection Process

Appendix II. State of New Mexico Department of Environmental Services Professional Services Contract

CASE 11. CLEAR CREEK WATERSHED FOUNDATION

Location: Idaho Springs, Colorado
Prepared by: Bethany Hellmann

The Clear Creek Watershed Foundation is a 501(c)3 non-profit organization, which partners with several stakeholders to improve the ecological and economic conditions in the Clear Creek Watershed. The mission of CCWF is:

"To promote sustainable natural resource management throughout the Clear Creek Watershed and serve as a model for the arid mountain west."

CCWF was formed in 1997 as the "action arm" of the now defunct Clear Creek Watershed Forum, which was housed under the Colorado Department of Public Health and Environment (CDPHE). Similar to the Roaring Fork River, Clear Creek is an over-appropriated water body, supplies water to residents on the Front Range and Western Slope of Colorado and draws large wildlife populations to its riparian corridor. The Clear Creek Watershed Foundation offers useful insights on how a watershed partnership can manage the supply needs for communities on both sides of the Continental Divide, while ensuring acceptable levels of water quality and in-stream flow. The Clear Creek Watershed's mountain rivers and landscape attract residents and tourists to recreation opportunities such as rafting, fishing and gold panning. CCWF's remediation of abandoned mines, restoration of aquatic habitat, and sustainable land use decisions improve water/environmental quality, and overall quality of life for residents in the Clear Creek Watershed.

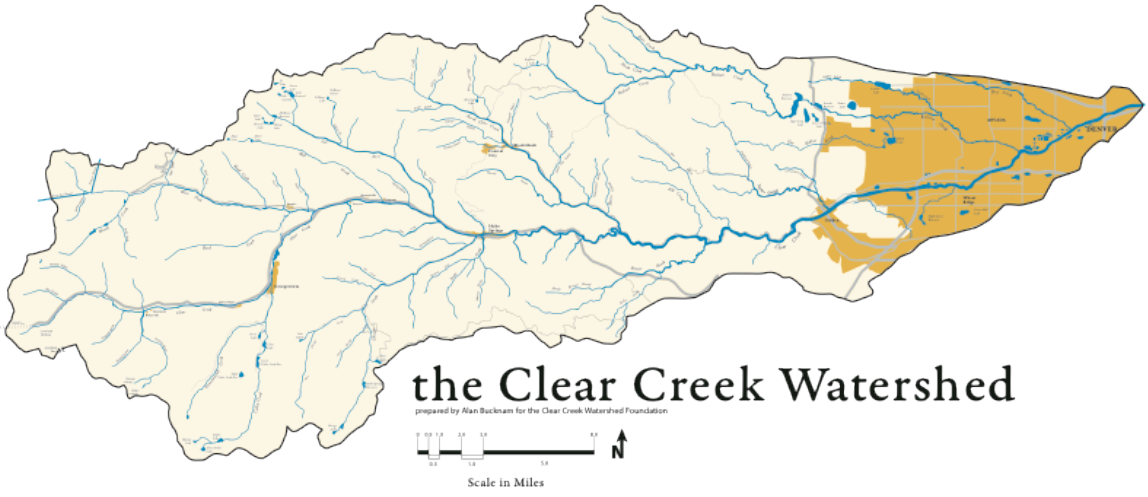


Figure 11.1: Clear Creek Watershed, Courtesy of Clear Creek Watershed Foundation.

BACKGROUND

The Clear Creek Watershed covers 575 square miles in north central Colorado between the Continental Divide and the Plains (CCWF 2010). Clear Creek's headwaters begin near Torrys Peak, Mt. Evans and Mt. Bierstadt, 14,000-foot mountains that tower over the watershed. The river runs eastward through urban plains and several Denver Front Range communities before joining the South Platte River near Commerce City. Clear Creek supplies water to approximately 350,000 Front Range residents. Clear Creek is "a prime model of an arid mountain west watershed in which to pilot and prove tools and techniques for sustainable watershed management" (CCWF 2010).

Clear Creek, its tributaries, and groundwater sources supply water to the following municipalities and industries (CCWF 2010):

- Upper watershed towns including Silver Plume, Georgetown, Empire, Idaho Springs, Black Hawk and Central City
- Upper watershed industries including Loveland Ski Area and Henderson Mine
- Lower watershed municipalities including the cities of Golden, Arvada, Northglenn, Thornton and Westminster, the counties of Jefferson and Adams and a portion of Denver
- Lower watershed industries including Coors Brewing Company and agriculture

Surface and subsurface water rights belong to municipalities, agricultural, industrial and recreational interests (CCWF 2010). One-third of the Clear Creek Watershed is also located within the Arapaho and Roosevelt National Forests, under the jurisdiction of the Clear Creek Ranger District. As is common in the arid west, water and land use issues frequently arise in this area.

Gold mining around Clear Creek began in 1859, which led to the Colorado Gold Rush. Once the placer and easily reached gold deposits were depleted, the miners shifted to hard-rock underground mining. Mining attracted 50,000 residents to the Clear Creek Watershed. The area became quite affluent and in 1872 the first train was built between Clear Creek Canyon and Black Hawk. While the miners were drawn to the mountains, the agricultural community was expanding on the Eastern plains. Farmers began diverting water from Clear Creek to irrigate their crops. Over the years, pollution and waste from urban development, mining and agricultural activities has negatively affected water quality in the Clear Creek Watershed (CDPHE 2006).

Photo 11.1: Mining in the Clear Creek Watershed, Courtesy of Clear Creek Watershed Foundation.

In September 1983, the Environmental Protection Agency (EPA) designated the Clear Creek/Central City area a Superfund National Priority Site (EPA 2007). The river was contaminated with heavy metals from waste rock piles and mill tailings associated with 100-plus years of gold and silver mining. High levels of toxic metals including iron, zinc, copper, arsenic, lead and cadmium polluted the surface and groundwater (Spangler et al. 2008). Abandoned and inactive mines continue to contaminate the watershed and severely degrade aquatic species habitat (TDS Consulting 2005, CDPHE 2010). Under the Superfund Program, EPA and the CDPHE worked to remediate the most severely degraded, highest priority areas of the Clear Creek watershed by collaborating with other state and federal agencies, local governments and private industries (EPA 2007).

In 1991, voter-approved amendments to the Colorado State constitution changed the economy of the Gilpin County portion of the Clear Creek Watershed, particularly Central City and Black Hawk, by allowing small stakes gambling. These same amendments also regulated clean-up and capping of numerous mine waste rock piles in the local area (CDPHE 2006). The EPA and CDPHE began working with local developers and officials to clean polluted sites in the watershed and create a large gambling and recreational area. Developers are attracted to this area to renovate historic structures and redevelop remediated mine sites into casinos, restaurants and hotels. Casino developers, in particular, have "excavated and removed acidic waste and mine tailings rock, stabilized and capped tailings, and removed contamination from the wetlands" (EPA 2007). This development has increased local employment, incomes, property values and public revenues. Dozens of casinos are currently operating and additional casino projects are underway. These amendments to Colorado's constitution also established the Colorado State Historical Fund, which uses a portion of the gaming tax revenue to help preserve and restore historical sites in the state, particularly in Central City and Black Hawk (EPA 2007). In 1998, EPA collaborated with a property owner to move four historic houses away from casino development for restoration and preservation. The property owner and EPA signed a Prospective Purchaser Agreement, removing any liability associated with previous contamination for the property owner and reducing government clean-up expenses.

Photo 11.2: Mining in the Clear Creek Watershed., Courtesy of Clear Creek Watershed Foundation.

According to the Clear Creek Watershed Foundation's website, the Clear Creek Watershed has "conflicting national purposes" (CCWF 2010). Remarkably, the valley contains National Defense and Homeland Security facilities, a transportation interstate highway, two National Historic Landmark Districts, a Preserve America Community, a county designated as one of

Colorado's most endangered places (Clear Creek County), threatened fish and wildlife species and a Superfund site.

PARTNERSHIP'S BEGINNING

As previously mentioned, the EPA placed the Clear Creek/Central City Superfund Study area on the National Priority clean-up list in 1983 (EPA 2007). EPA determined the benefits of cleaning up the site outweighed the costs. EPA conducted numerous mine tunnel drainage studies, remediation on active and abandoned mine sites through water quality monitoring. Soon after the EPA became involved, several government agencies including Colorado Division of Reclamation, Mining and Safety/Abandoned Mine Section and USDA Forest Service Abandoned Mines Lands Program, joined the remediation efforts on Clear Creek. However, tension arose between the local residents with historical knowledge of the watershed and the regulatory agencies with remediation technology and resources (CCWR 2010).

When they realized that they were unable to engage the local communities in remediation projects, Ed Rapp decided to help (Rapp 2010). Rapp is one of the founders and president of CCWF. He is a retired district engineer for the Army Corps of Engineer, has served as a county commissioner and a county engineer and taught at the Colorado School of Mines within the Clear Creek Watershed. As a long time Clear Creek Watershed resident, Rapp had a personal interest in restoring the water quality.

Photo 11.3: Monitoring of Clear Creek, Courtesy of Clear Creek Watershed Foundation.

Rapp told the EPA, "It appears you don't care about how things got to be the way they are, the set of values that brought about this place and that the initial discovery of gold brought about statehood here." Rapp explained that the EPA's approach scared local residents; it appeared they were looking for someone to cite and fine (Rapp 2010). Rapp suggested that the stakeholders of Clear Creek be given the opportunity to discuss their values. The Clear Creek Watershed Forum was formed by CDPHE in 1990 as an informal organization intending to "bring people together from throughout the watershed to share knowledge, attitudes and values and thus develop cooperative water quality improvement strategies and projects" (CCWF 2010). A "culture of cooperation" was established in which Superfund clean-up and other watershed issues could be discussed. The first actual forum, held in May of 1993, explored the values of the residents in the watershed and how they would like those values incorporated into the remediation process. This forum helped the stakeholders develop a level of trust with the EPA and CDPHE. A second forum was held to develop a list of projects that all stakeholders could agree upon. The first willing participant to collaborate with the EPA on a remediation project owned a mill site on Chicago Creek near Idaho Springs, CO. The landowner volunteered her mill site to be cleaned up and contributed

some of her own money, once she was assured that she would not be sued or fined. The success of this initial project helped to build trust between the EPA and the Clear Creek community and set the stage for future projects.

PARTNERSHIP EVOLUTION

Through many meetings hosted by the EPA, the wide ranging interests of the mountain rural, urban, agriculture, industry, recreation and regulatory stakeholders were incorporated into watershed priorities (Rapp 2010). They established project partners and a "culture of cooperation" that resulted in on-the-ground, sustainable improvements for the Clear Creek Watershed. Conversely, a significant level of trust or "culture of cooperation" has not been consistently achieved in the nearby mining town of Leadville. "Once the level of trust has been destroyed in an area, it's nearly impossible to regain it" according to Rapp. He continues to explain,

Photo 11.4: Torrys Peak in the Upper Clear Creek Watershed, Courtesy of Clear Creek Watershed Foundation.

"People who live in Clear Creek Watershed have long memories that extend back many generations. Some people are unwilling to cooperate with other residents or partners because of old rivalries that extend back to their grandparents' generation. If there is no level of trust between people who live along the river, projects can be easily destroyed."

The Clear Creek Watershed Initiative (WIIN) existed from 1991 to 1995 (CCWF 2010). It began as a joint project of Coors Brewing Company and the Center for Resource Management to "provide leadership and coordination of ecological and recreational improvements in the Clear Creek Basin" (CCWF 2010). WIIN encouraged collaboration and cooperation among the concerned individuals, community organizations and agencies of the Clear Creek Watershed. They focused on water quality, fish and wildlife, public utilization and stream flow augmentation. They accomplished several beneficial projects including habitat restoration, greenway development, trash removal and wetland construction. Their public outreach efforts included the Clear Creek Splash Festival, a quarterly newsletter and recreational opportunities.

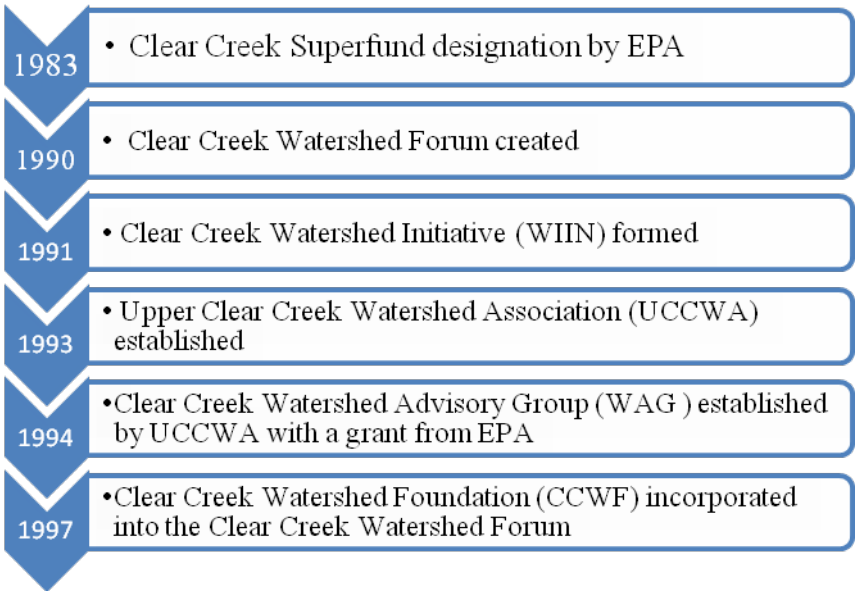
In 1993, the Denver Regional Council of Governments (DRCOG) collaborated with the Clear Creek Watershed Initiative to develop a plan for coordinating water quality issues in the watershed (CCWF 2010). The Watershed Management Agreement, signed by 23 participants, established the Upper Clear Creek Watershed Association (UCCWA) as a "cooperative watershed management program" (CCWF 2010). UCCWA, the city of Arvada and the Standley Lake cities of Northglenn, Thornton and Westminster began an intensive annual monitoring program to measure nutrient loads, metals, turbidity and flow. The Clear Creek Watershed

Management Agreement Report is presented annually to CDPHE/Water Quality Control Commission (CCWF 2010). This report documents the results of the water quality monitoring program, improvements to wastewater treatment facilities, voluntary mine waste clean ups, and various Superfund clean-up activities. UCCWA continues to work on water quality and wastewater treatment issues and improvements. In 2001, they received an EPA 319 grant to produce the Upper Clear Creek Watershed Plan, a framework to respond to Total Maximum Daily Loads (TMDLs) in the upper basin. Additionally, in 2006, the Regional Wastewater Study group formed to optimize wastewater treatment in long-range planning. UCCWA has also developed an entity-specific best management practices (BMP) protocol for non-point source pollution and a wetlands inventory.

In 1994, EPA gave UCCWA a technical assistance grant to form the Clear Creek Watershed Advisory Group (WAG) (CCWF 2010). The technical advisors including engineering, water quality and mining experts, explained EPA actions and trace metals monitoring data to the public and took community concerns and recommendations to the agencies. During WAG's seven years, they hosted several public workshops, open houses and presentations, produced newsletters, constructed the Argo Water Treatment Plant, and cleaned up the Big Five Mine, the Little Bear Mine and the Boodle Mill. The WAG prepared a final technical report and maintained a technical library in Idaho Springs.

CCWF evolved from these previous efforts to collaborate on remediation and protection of the Clear Creek Watershed. These initial efforts and previous organizations are described below.

Timeline (adapted from SWC 2010):



CCWF was created in 1997 as the "action arm" of the Clear Creek Watershed Forum (CCWF 2010). Under the guidelines of a 2003 EPA Action Memo, the CCWF continues to conduct, facilitate and expedite cleanup of the remaining 1,600 or so orphan mine/mill sites that were not listed as Superfund priority sites. CCWF and its partners provide on-the-ground revitalization for the community by addressing mine remediation, water quality and the associated public

health safety and welfare issues. The evolution of the Clear Creek Watershed Foundation has occurred through many small steps (Rapp 2010). The initial forum was necessary to help the stakeholders and EPA understand each other's value sets and what they wanted to achieve.

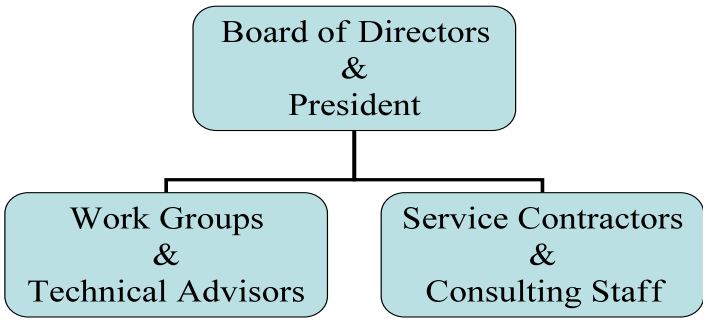
CCWF has evolved over time (Rapp 2010). They began their work improving water quality on old mine and mill sites and have evolved toward a broader sustainability model. They currently have eight areas of interest, or "market areas" upon which they base their projects/proposals, each of which has a substantially positive benefit to cost ratio. These areas of interest are abandoned mine remediation, natural resource management, water and wastewater management, historic mine preservation and promotion, alternative energy and transportation, waste stream reduction, subsurface rights and uses, and education and outreach. The initial mine/mill remediation project, the McClellan, served as a test case of cooperative clean-up because the landowner was willing to collaborate with the EPA on the remediation. The involved partners/stakeholders insisted upon leaving a usable surface after the McClellan mill remediation. This usable surface became a boat launch for rafting and served as a model that usable land can be made out of the mine piles and mill sites without anyone being sued. Clear Creek is now the second largest rafting river in Colorado. The Clear Creek Forum, and subsequently the CCWF, have built upon the mill's successful remediation and reclamation and implemented more projects over the years.

Major facilitating factors for the success and longevity of CCWF are Ed Rapp's 100% volunteer leadership and obtaining funding for projects outside the watershed basin tax base (Rapp 2010). CCWF reduces the burden of operational and project implementation costs by basing general remediation techniques on previously conducted technical/scientific studies and conducting successful projects by following an established and approved Best Management Practices for storm water management and mined land remediation. Rapp advises that when forming a partnership, one should not worry about getting credit, but rather giving credit. "Make as many heroes as possible from others and their organizations," he advises.

ORGANIZATIONAL STRUCTURE

The mission statement of CCWF is "*to promote sustainable natural resource management throughout the Clear Creek Watershed and serve as a model for the arid mountain west*." Over the past 13 years CCWF has broadened its areas of focus from primarily mine remediation to broader land use and watershed sustainability issues (Rapp 2010). According to Rapp, remediation projects constitute 80% of their success; the other 20% is achieved by maintaining those improvements and broader watershed sustainability projects and initiatives such as alternative transportation and energy options.

The organizational structure of CCWF is (Rapp 2010):



Ed Rapp, CCWF President, is the sole staff member of CCWF and works as a volunteer (Rapp 2010). Christine Crouse has been involved for 15 years in the Clear Creek watershed in various capacities and now serves as the Outreach & Administrative Coordinator on a contract basis (Crouse 2010). The Clear Creek watershed runs through her backyard; it personally motivated her to join CCWF. Crouse said, "It is a fantastic job opportunity with an impressive collaborative stakeholder effort" and she is "honored to be a part of the foundation."

CCWF has nine-member Board of Directors, including Rapp, that meets on average twice a year (Crouse 2010). CCWF likes to add experienced individuals, who are either currently working in a relevant field or have a lot of experience in the environmental, economic or social realm of the watershed, to their Board. The Board of Directors has representatives from the watershed's two major industries — Coors Brewing Company (Molson Coors) and Henderson Mine, the Greater Denver Audubon Society, the Clear Creek Economic Development Corporation, a Colorado State Senator, a retired EPA administrator, and a local mine/mill property owner. CCWF has numerous technical advisors including people from the fields of engineering, water quality, GIS, mining and transportation. Crouse states that "having a diverse board of directors and advisors with vast experience helps CCWF make sound project decisions."

CCWF has a four-member consulting staff on contract to provide research and management for projects and programs (Crouse 2010). CCWF hires part-time contractors, usually local small businesses or consulting firms, for particular projects and/or needs such as engineering, water quality monitoring and construction. Additional volunteers help with particular projects when appropriate. CCWF also collaborates on projects with the Historical Society of Idaho Springs and Clear Creek Tourism, which are housed in the same building as CCWF.

Photo 11.5: Clear Creek running through Clear Creek Canyon, Courtesy of Clear Creek Watershed Foundation.

Partners

CCWF has a number of partnerships with cities, towns, Clear Creek County, individual property owners and numerous agencies (Rapp 2010). Stakeholders represent the social, economic and environmental interests of the watershed and include the EPA, CDPHE, Colorado Division of Reclamation, Mining and Safety (DRMS), Division of Wildlife (DOW), and the Fish and Wildlife Service. CCWF partners with the two largest industries in the watershed, Coors Brewing Company (Molson Coors) and Henderson Mine. Coors Brewing Company in Golden, Colorado is the only brewing company in the world that owns prior appropriation water rights. Henderson Mine is a deep molybdenum mine near Empire, Colorado. According to Rapp, Henderson is "a very environmentally responsible mining operation … they are sensitive to meeting or exceeding water quality requirements." By working holistically for the betterment of the watershed, a "culture of cooperation" continues to be fostered (Rapp 2010). CCWF also tries to tap into the experience, skills and values of each partner/stakeholder.

Projects

CCWF decides many project and initiative priorities through discourse-based consensus (Crouse 2010). On average, CCWF holds one Stakeholder Forum per year focused on a particular issue of concern for the watershed. Interested parties are invited to participate in the day-long session as part of a work groups. Work groups typically consist of eight people with expertise in the areas of regulation, personal property rights, geography, geology and history. Each work group puts together draft Action Plans that are presented to the full group, and then CCWF uses the plans to pursue partners and funding for projects. One recent action plan centered on renewable energy and proposes investing in wind and water energy so that the Clear Creek Watershed can produce enough energy to maintain its needs and export any excess energy that has been generated (Rapp 2010). The forums also keep the public informed about CCWF's projects and activities.

Photo 11.6: Double jacking at the Phoenix mines, Courtesy of Clear Creek Watershed Foundation.

CCWF and its partners have successfully completed approximately 80 projects in the watershed; most have centered on remediation of "orphan mines' — mines that are remnants of the Colorado Gold Rush of 1859 that are inactive and/or abandoned and therefore have no "potentially responsible party" to clean them up (CCWF 2010). Most remaining "orphan mines" are in the steep mountain canyons of Clear Creek and Gilpin Counties, and unless cleaned up, the sites are a continued source of water pollution for Clear Creek. CCWF conducts its mine

remediation projects under an EPA Action Memorandum, similar to a memorandum of understanding (Rapp 2010). Based on agreed priority sites, CCWF enlists the assistance on numerous partners for financial, regulatory, and technical support.

Rapp states, "If you can visualize something that can be done and put a name on it and describe it in a paragraph and put it on a list, people will get it done, especially if there is a unity of effort among six or seven partners" (Rapp 2010). When several partners agree upon the need for a project they will work together to get it completed. Unfortunately, major sections of Clear Creek have still not been delisted from the State's impaired water body list (the 303 d List), and the CDPHE Water Quality Control Division and EPA have increased the stringency of the standards.

Generally, Rapp makes all day-to-day project decisions and solicits input from the Board of Directors as needed (Rapp 2010). CCWF chooses to implement projects based on the availability of resources, both financing and labor. The Board determines the guidelines and boundaries for the projects. The Board also considers the overall potential benefit to the watershed. According to Rapp,

> "Cost-benefit in an environmental area is a very nebulous thing. But we show in our *2007 Clear Creek Watershed Report: Exploring Watershed Sustainability* how you can do this with a multi-attribute utility analysis and other valid techniques to determine the relative values of one project to another or one area to another area."

CCWF has also prepared and published several comprehensive documents highlighting and updating watershed-wide projects, including the 1997 State of the Clear Creek Watershed Report and the Healthy Watershed 2000 Report Card.

CCWF has achieved success without spending an enormous amount of time re-studying the watershed's environmental problems (Rapp 2010). Volumes of technical reports document the basic issues in the watershed. According to Rapp, CCWF relies on proven Best Management Practices guidelines when preparing project proposals, rather than elaborate designs or bidding documents. This practice significantly reduces CCWF's upfront administrative costs, yet allows for engineering/construction field changes as needed. Some large, multi-partner projects, such as remediation in the Virginia Canyon, the Big 5 Tunnel, and the Argo Water Treatment Plant, have resulted in immediate aesthetic and water quality benefits.

FUNDING

CCWF obtains most of its funding through reimbursement-based federal and state grants; occasionally, they are supplemented by private donations (Rapp 2010). The Foundation has no membership dues and does not host any fundraisers. CCWF has found that people are willing to donate their time and resources because they know CCWF is a sound, effective organization. For instance, $21,000 worth of rock from a major quarry was donated for a recent "Fishing is Fun" project. They have found that people/businesses are often looking for an opportunity to donate to a good cause. Rapp operates under the assumption that Clear Creek is "the waters of the United States" and when impaired, federal and state money should be used to the extent

possible for mine remediation to improve water quality in the Clear Creek Watershed (Rapp 2010).

CHALLENGES

Rapp tries to give people recognition when appropriate (Rapp 2010). Rapp also comments that "trust is a very important part of any partnership" and a project can be destroyed quickly if there is a ***breakdown in trust***. People need to trust that each partner will fulfill their commitments to the project. Also, Rapp feels it is necessary to keep the ***burden and overhead costs*** down. His goal is to conduct projects so that 90% of the money is going toward completing the project.

CCWF must also remind government administrators that CCWF staff is volunteer and/or paid hourly from project grants, not salaried with benefits (Crouse 2010). CCWF does not have the funds and staff to perform hours of administrative budget and work plan revisions that are often required by granting agencies. "Stringent administrative grant requirements can be a hardship because we don't have the ***administrative manpower***; it's not in our project budgets" explains Crouse. Time is an extremely valuable commodity in a non-profit organization like CCWF. The most effective use of time, effort and resources is spent putting projects in place. CCWF finds it is important to encourage a "culture of cooperation" with the administrators, as well (Rapp 2010).

ACCOMPLISHMENTS

Successful Clear Creek ***remediation and redevelopment*** is achieved through continued ***public involvement*** (EPA 2007). Collaboration between the EPA, the state of Colorado and the Clear Creek community has been essential for the success of CCWF, and the EPA's Technical Assistance Grant program has been used to encourage citizen participation in cleanup decisions.

Clear Creek Watershed stakeholders and partners have fixed many of the environmental problems in Virginia Canyon (Rapp 2010). Previously, when the canyon would flood, a large amount of copper, zinc and lead would get into the streams and the sediment. The area has been treated with sediment traps and runoff controls. The water that is cut off at the bottom is piped to the Argo Water Treatment Plant. Another accomplishment was remediation of the Big 5 Tunnel. The Big 5 Tunnel was belching out yellow, polluted water whenever there was a blow-out of a naturally-forming "slime dam." Measures were implemented to capture water and route it to the Argo Treatment Plant. CCWF tries to solve problems by ***thinking creatively*** and looking at different technology, alternative transportation, and alternative energy options to find ***innovative solutions.***

A substantial accomplishment for CCWF is their survival over 13 years (Rapp 2010). Organizations now approach CCWF with project ideas for their forums. A driver for this ***longevity*** is "being a project, product and output oriented group" according to Rapp. He continues, "The partners set aside their egos for the betterment of the projects and the

organizational goals. They don't look for getting credit and set completing projects as their number one priority" according to Rapp.

Chris Crouse attributes the longevity and success of CCWF to Ed Rapp's commitment to sustainability in the Clear Creek Watershed (Crouse 2010). She states Rapp is "a hero to this organization. Ed's history, vision and experience have been instrumental to CCWF's success." Rapp working as a volunteer is a very important psychological component as well. As a retiree, Rapp states "I have enough money to survive and do not need to be paid to work for CCWF. I just want to leave Clear Creek Watershed a better place which helps build support for CCWF and its work." ***Volunteer efforts*** such as Rapp's provide much-needed in-kind contributions to limited budgets.

The Clear Creek Watershed public views CCWF as a ***credible institution*** (Rapp 2010). Also, over the 13 years that CCWF has been in existence, they have never been sued (Rapp 2010). Residents are supportive of the progress and projects of CCWF. Rapp holds an annual hearing with the Clear Creek County Commissioners in which the public is allowed to voice their opinions about the work of CCWF. During the hearing, Rapp presents what CCWF accomplished the previous year and what they have planned for the following year. The restored Clear Creek has ***increased recreation*** for residents and tourists, attracting rafters, fishermen, kayakers and gold panners (EPA 2010).

EDUCATION AND PUBLIC OUTREACH

According to their website, "CCWF continues to cultivate a 'culture of cooperation' with ongoing forums, tours, presentations, status documents, and the 'Clear Creek Watershed Exhibit' that is housed in the Idaho Springs museum" (CCWF 2010). This goal has remained the same over the past 13 years. They encourage collaboration among partnerships to best utilize limited resources in the watershed and get projects completed. CCWF has hosted numerous stakeholder forums, watershed improvement initiatives and published many newsletters. CCWF's goal is to bring stakeholders, projects and partners together while promoting sustainable water management in the Clear Creek Watershed.

Public education for students is an important component of CCWF outreach efforts (Crouse 2010). Their primary message and goal is to "have the next generation of watershed decision makers have a balanced perspective of natural resource management and sustainability in the areas of ecology, the economy and social values of the watershed" according to Crouse. They strive to target fourth and seventh graders through specific education tools and teacher resources.

The three topics CCWF educational programs focus on are (CCWF 2010):

1. Mining history in the watershed
2. Natural resources management in general with emphasis on mineral resources, and
3. Watershed science, the overall watershed message, water cycle, water conservation, and water quality.

Funding and staffing are the major challenges of CCWF's public outreach (Crouse 2010). Because of limited funding, and grants being competitive, CCWF partner with other organizations in public outreach. CCWF works with the Colorado Department of Public Health and Environment, the Division of Reclamation, Mining and Safety, their local museum and other education and outreach groups. CCWF strives to strike a balance among the funding and time restraints in order to complete all their educational and outreach goals.

Photo 11.7: Gold panning at the Clear Creek, Courtesy of Clear Creek Watershed Foundation.

CCWF gauges the success of its public outreach through the positive feedback they receive from teachers, students and parents who participate in their programs (Crouse 2010). CCWF is working toward having programs funded and available on request whenever teachers ask for it. If funding becomes available, they would like to conduct a survey for the teachers who use their resources to monitor success and make revisions when necessary.

Crouse initially thought that performing public outreach and education would involve making new worksheets and other educational materials for distribution (Crouse 2010). However, Crouse found that other mining and water educators were very willing to share their plethora of materials. Now, Crouse focuses her efforts on polishing these resources for specific teacher needs and watershed issues, making them user friendly and applicable to teachers' lesson plans. Crouse states that "Dropping off box loads of resources to classrooms is not necessarily helpful because teachers don't have time to sort through it all to make it applicable to their forty minute time period. Giving materials that are specific to teachers' needs and that deliver our message is very helpful" says Crouse. CCWF produces a "Summer of Gold" student workbook, a comprehensive 20 page workbook for fourth graders on Colorado and local mining history. The student workbook centers on the story of a young boy who visits the Idaho Springs area and learns about mining and how it led to Colorado statehood. The boy learns about historical mining impacts and work that is being done to remediate those impacts. The workbook discusses the uses of minerals in cell phones, televisions and cars; the economics of mining and natural resource extraction; jobs that are available; and abandoned mine and mine safety issues. CCWF is trying to secure funding to get more copies of the workbook widely distributed for teachers to use in their classrooms. Ed and Chris also conduct a fun gold-panning demonstration in fourth grade classrooms while talking about the history of mining.

Figure 11.2: Clear Creek Watershed Festival logo, Courtesy of Clear Creek Watershed Foundation.

CCWF's most successful outreach program is the Clear Creek Watershed Festival, which was held for the second time in September of 2010 (Crouse 2010). The festival attracts students and families to a one-day outdoor environmental education event. There were 500 participants in 2009 and 800 participants in 2010. CCWF coordinates environmental education passport stations for this festival. As people enter the festival, they receive a Clear Creek Watershed Passport, which they get stamped at the different stations after they engage in a learning activity. There were 30 passport stations in 2010, ranging from the Audubon Society, EPA, Project WET, and local rafting and skiing companies. The different entities that are at the festival may offer conservation tips or suggest some positive behavior changes. Explains Crouse, "The goal of the festival is to get the people excited about the fact they live in a watershed, defining what a watershed is and give them a better understanding of non-point source water pollution. At the Passport Stations, they discuss what residents dump down the drain, flush down the toilet, what goes into the storm gutter from out of their driveways affects the water quality of their river. They also learn about various natural resources including water quality and quantity, forests, wildlife, energy, and more."

The "Fishing is Fun" activity sponsored by Trout Unlimited and some of the local fishing outfitters anchors the festival (Crouse 2010). The Division of Wildlife stocks a pond on Clear Creek with trout and kids learn how to tie flies, fish in the pond and learn about catch-and-release. Additionally, a local ski company brings in a snow making machine and performs a snow-making demonstration every hour during the festival. Other fun activities include face painting, live music, a petting zoo, a woodcarving demonstration, and a barbeque lunch. Once their passports are completed, the participants receive a BPA-free water bottle that they can fill with cold drinking water provided by the Idaho Springs water treatment facility. Crouse states that "the free stuff gets people there, but they leave much better informed about their watershed, what makes the Clear Creek Watershed unique and what can be done to take better care of this really special place."

Figure 11.8: "Fishing is Fun" activities anchor the Clear Creek Watershed Festival, Courtesy of Clear Creek Watershed Foundation.

CCWF also works with the local museum and gives tours of the Clear Creek Watershed Exhibit to school children who visit from around the state (Rapp 2010). CCWF discusses the watershed map, and before and after pictures of abandoned mine remediation. Children perform a

scavenger hunt throughout the museum, and they are given a reward like a bat sticker, bookmark or pencil upon completion.

CCWF does not focus education efforts specifically on adults (Crouse 2010). They believe that by getting fourth and seventh grade students involved and interested in watershed topics, their parents and other adults will become interested as well. However, as previously explained, the CCWF forums are geared toward adult professionals of the watershed to motivate their involvement in projects. Another organization called the Colorado Foundation for Colorado Education focuses on adult outreach and Colorado water issues, and CCWF feels they fill the adult water/watershed education niche.

CCWF primarily uses word of mouth and their website as their communication venues, and they used a local radio station and local newspapers to advertise the Clear Creek Watershed Festival (Crouse 2010). They have also started a Facebook page for social media. They distribute brochures and other educational materials from other organizations with larger budgets for education. They have found that "word of mouth, being involved in the community and their website are their best marketing tools" according to Crouse.

A recent EPA grant focusing on watershed sustainability helped fund creation of their website (Crouse 2010). Crouse would someday like to have more teacher resources online and offer educational Loan Boxes to elementary schools with rock samples, experiments, books, videos, and games for watershed education if funding becomes available.

Crouse's advice for successful public awareness campaigns is: "Choose which message you want to deliver, since you can't tell the public everything. Research what other groups in the area are doing and don't compete with other organizations. Develop a unique, important message and try to maintain the momentum in your outreach. Communication with the public is an ongoing and iterative process that requires continual information sharing to be successful."

CONCLUSIONS

One of the greatest lessons that can be learned from CCWF is that "communication and trust" are the cornerstones to any successful partnership, according to Ed Rapp, CCWF's current president (Rapp 2010). When EPA initially attempted to remediate the Superfund site in Clear Creek, they could not find any willing participants from the watershed to help in their efforts. However, when they approached the citizenry with an open forum to discuss their values and integrated the resident's input into their action plans, the partnership began to bloom. After a few initial projects were instituted without negative legal repercussions, fines or citations, additional individuals were much more willing to take part in the remediation activities. As Rapp explains, "The important things are you focus on getting things done, you focus on what can be done and you do it and you maintain a level of trust. And you keep your burden rate way down and your doing rate way high. There's plenty of opportunity. It's a simple equation." Once the momentum got started and projects were being completed, the simple use of Best Management Practices has ensured the most efficient use of their time and money and has also increased their credibility in the eyes of the public.

CCWF has developed and maintained a "culture of cooperation." According to Crouse, the most effective aspects of the partnership are, "Working together, working cooperatively, talking early on in projects, and being honest and respectful. In project development and brainstorming, that is the best way to get things done; not how the CCWF can maintain control or how can we make money." By concentrating on working collaboratively, dividing the work and credit, CCWF is highly effective (Crouse 2010). Crouse continues that "we have the best interest of the watershed in mind. Always looking for creative, out-of-the-box ways to get projects going and keep them going and let people know we are here as a catalyst." Ongoing trust and improving watershed sustainability are their number one priorities.

Rapp admits that dealing with many different entities can be difficult (Rapp 2010). He states that "the whole thing is contingent upon bureaucracies cooperating and not being in a contest of egos. That is a difficult thing to do and to maintain over a period of time but so far we have been successful."

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CASE 12. THE COALITION FOR THE UPPER SOUTH PLATTE

Location: Central Colorado
Prepared by: Angela Michalek

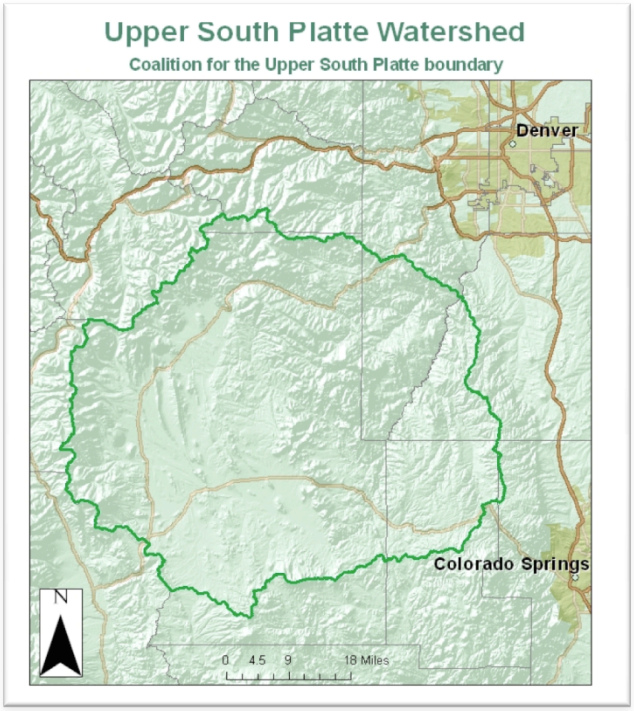
The Upper South Platte Watershed Protection Association was formed after the USDA Forest Service began considering Wild & Scenic River status for the Upper South Platte River in Colorado. The regional water providers began discussions with other stakeholders about ways to protect the waterway's Outstanding Remarkable Values without the limitations of a Wild & Scenic River classification. The Upper South Platte Watershed Protection Association became a 501(c)3 in 1998 and three years later, changed its name to the Coalition for the Upper South Platte (CUSP). CUSP has built strong relationships with many different agencies, local governments and organizations and attributes a large part of its success to these relationships. The organization broadly interprets watershed health by addressing forest health, wildfire prevention, noxious weeds, energy efficiency and stream restoration, among other issues. The Roaring Fork Valley is also located in a rural setting in Colorado with comparable issues and regulations. CUSP offers lessons on the benefits and challenges of the 501(c)3 structure in this environment. Their comprehensive approach to community outreach and classroom-based education could serve as a model for future education initiatives in the Roaring Fork Valley.

Mission Statement

The Coalition for the Upper South Platte seeks to protect the water quality and ecological health of the Upper South Platte Watershed through the cooperative efforts of watershed stakeholders, with emphasis placed on community values and economic sustainability.

BACKGROUND

The Upper South Platte watershed extends nearly 2,600 square miles in Colorado's Douglas, Teller, Jefferson and Park counties (USPWPA 2001). The Forest Service manages more than 50% of the land in the watershed, a little over 46% of the watershed is private, Denver Water Board owns 2% and less than 2% belongs to the state of Colorado and other governmental entities (Ekarius 2010). Upland of Colorado's largest cities, Denver and Colorado Springs, the watershed welcomes over 3 million visitors each year (USEPA 2005). However, the watershed itself is remarkably rural. The largest town in its boundaries, Woodland Park, has a population of around 9,000 (USFS 2000). Elevation in the area ranges from 6,000 to over 14,000 feet (Bruno 2006).



Cheesman Lake is one of five municipal reservoirs in the watershed and downstream of it lies gold medal trout waters (USFS 2000). Cheesman receives the water before it arrives in Denver. The other reservoirs are Jefferson, Antero, Spinney and Elevenmile. More than 75% of Colorado residents receive water from the Upper South Platte (USEPA 2005).

Water quality fluctuates in response to wildfire impacts and streamflow. The watershed contains 84 abandoned mines that are considered problematic for water quality (Bruno 2006). Fourteen Total Maximum Daily Loads have been approved since 1995, primarily to address sediment loading, fecal coliforms, and metal contamination (USEPA 2010). The watershed currently has 10 waterways listed on the EPA's impaired waters 303(d) list.

PARTNERSHIP'S BEGINNING

Plans for Colorado's infamous Two Forks dam turned into a long, arduous battle between various agencies, government officials, environmental interests and Denver water users. To help meet Denver and other Front Range communities' water needs, the Two Forks project sought to place a 1.1 million acre-foot storage reservoir on the South Platte River, one mile below the confluence with the North Fork (EPA 2000). Colorado has one of the highest population growth rates in the nation and the project would have reliably supplied only 98,000 annual acre-feet to the Denver area. The reservoir would have primarily served as a storage facility for water rights held elsewhere and included a transbasin diversion from the Colorado River, increasing potential environmental impacts (Luecke 1999). However, the EPA vetoed the Two Forks project in 1990 through their authority in the Clean Water Act's Section 404(c).

Nonetheless, the Forest Service had also been considering Wild & Scenic River designation for two sections of the South Platte. The Wild & Scenic Rivers Act was passed in 1968 in response to the early 20th century's investments in water development projects (Public Law 90-542 1968). The Act sought to preserve what was left of free-flowing rivers. Segments of the South Platte River were identified in the National Park Service's National River Inventory (NRI) as potentially eligible for Wild & Scenic River designation as early as 1982 (USFS 2004). Eligible rivers must be free-flowing and have at least one Outstandingly Remarkable Value (ORV). Rivers can be designated in two ways, either by Congress or the Secretary of the Interior. While Congress can designate rivers provided the land management agency has submitted a Legislative

Environmental Impact Statement (LEIS), the Secretary of the Interior must receive a Wild & Scenic River application from the state's Governor. Wild & Scenic River studies are part of agency land management planning under Section 5(d)1 of the legislation (Public Law 90-542 1968). Regardless of the EPA's decision on Two Forks, a Wild and Scenic River study would have been necessary prior to any construction.

In 1995, the Forest Service published its intent to prepare an EIS and river study in the Federal Register (USFS 2004). However, water users had over the years procured a substantial amount of water rights and land in the watershed and wanted to reserve the right to their future use. The Denver Water Board has held water rights in the watershed since 1902 (Luecke 1999).

In 1996, the Clean Drinking Water Act was also amended, requiring states to develop a Source Water Assessment Program (Public Law 104-182 1996). This legislation asks states to prevent contamination and pollution of drinking water by conducting an assessment and taking measures to protect source water, like the Upper South Platte Watershed. Fires are also a grave concern in the Upper South Platte Watershed. That same year, the 12,000-acre Buffalo Creek fire burned in the watershed, which at the time was the largest fire in Colorado history (USFS 2000). Erosion after large fires can clog up nearby storage reservoirs.

In response to all these occurrences, Denver Water and the Suburban Water Providers' initiated conversations with other entities involved in the watershed (USFS 2004). 73 agencies and organizations were invited to participate. Representatives included municipalities, county governments, environmental and recreation interests, and water providers, among others. They formed four committees to develop an alternative to designation: 1) flow management, 2) water quality, 3) recreation, scenery and wildlife, and 4) endowment fund. While many did participate, tension still resided within the group. Both Two Forks and the Upper South Platte Wild & Scenic designation were highly contentious, polarizing issues. Nonetheless, for the first time, people with an interest in the watershed were talking to each other directly, rather than through attorneys (Ekarius 2010).

A facilitator was involved in the beginning and as people came to meetings, they became more communicative. Part of their goal was to find projects that they all could agree upon to protect the watershed. Their alternative became known as the South Platte Protection Plan. However, before the Protection Plan was finished, they had formed the Upper South Platte Watershed Protection Association (USPWPA).

The Water Quality committee members were hoping to pursue voluntary water management solutions through what became known as the Upper South Platte Management Program (USPWPA 2001). The parties signed a Memorandum of Understanding as they proceeded to develop the program. In 1998, they formed a tax exempt, 501(c)3 organization called the Upper South Platte Watershed Protection Association (USPWPA). The Association's first grant was from the EPA to conduct a watershed assessment and inventory. The contracted consulting firm, Brown & Caldwell, concluded that only one segment in the entire watershed was not impaired (USPWPA 2001). Carol Ekarius, USPWPA's Executive Director, was hired in 1999 on an interim basis given the uncertainty of funding at that time (Ekarius 2010). The future success of the organization hinged upon her ability to develop projects and secure funding. She achieved

these goals and the Board of Directors adopted the first Strategic Plan in 2001 (USPWPA 2001). That same year, the organization changed its name from the Upper South Platte Watershed Protection Association to the Coalition for the Upper South Platte (CUSP) (Ekarius 2010).

South Platte Protection Plan

The stated purposed of the South Platte Protection Plan was to protect the Outstandingly Remarkable Values (ORVs) identified by the US Forest Service. The South Platte Protection Plan outlined 8 actions (Leaverton 2004).

1. Commitment not to build any water projects or facilities in Cheesman or Elevenmile Canyon
2. Development of a streamflow management plan
3. Management partnership with the US Forest Service and Colorado State Parks from Elevenmile reservoir to Chatfield Reservoir, establishment of a recreation area at Bailey Canyon and other areas along the North Fork
4. Collaborative water quality initiatives through the Upper South Platte Watershed Management Program
5. Endowment fund of at least $1 million to protect ORVs in the watershed
6. Establish the South Platte Enhancement Board to manage the endowment fund and comment on land management decisions
7. Withdrawal of 1986 Water Court applications for 74,000 feet of storage by the Metropolitan Water Authority and Denver Water at the proposed Two Forks reservoir site.
8. 20-year voluntary moratorium on Denver's 1931 right-of-way at the proposed Two Forks site

Eventually, more than 70 entities and interests came to propose the South Platte Protection Plan (SPPP) (USFS 2004). The Forest Service held public meetings and sent out mailings to determine the public's interest in the debate. In the end, the Forest Service responded favorably to local interest in watershed protection. The Forest Service published its record of decision in June 2004 (Leaverton 2004). Their decision on the Wild and Scenic River Study was to "amend" the Forest Plan. The Forest Service chose not to make a decision on the suitability of the River, as a way to ensure the success of the SPPP. While the SPPP outlined several objectives, notably, two of them established the South Platte Enhancement Board and indicated support for the Upper South Platte Watershed Protection Association.

The South Platte Enhancement Board (SPEB) formed to manage the endowment fund outlined in the South Platte Protection Plan. The fund includes contributions from 19 water providers and local governments on the Front Range (SPEB 2008). The Board is comprised of 17 members that serve 3-year volunteer terms. The fund received $1 million over three years from the water providers, contingent upon the Forest Service's decision regarding Wild & Scenic River designation for the South Platte. In 2006, SPEB awarded its first grant to the Coalition for the Upper South Platte for $20,000 to restore and protect a river segment, in partnership with Trout Unlimited, US Forest Service and the Colorado Division of Wildlife, among other entities. By

2007, SPEB had received the full endowment. The endowment is held in trust and donations are accepted to the fund. SPEB is now looking at expanding its activities, beyond grant dissemination (Ito 2010). They recently hired one staff person to help with administrative tasks. Notably, some of SPEB's Board members also serve on the CUSP Board (Ekarius 2010).

PARTNERSHIP'S EVOLUTION

The Hayman Fire swept through the watershed in 2002, destroying almost 138,000 acres (Graham 2003) and superseding the Buffalo Creek fire as the largest wildfire that Colorado had seen to date. The carbon monoxide produced from the Hayman Fire was 5 times the annual emissions from Colorado's industrial sector. 132 homes were destroyed in the conflagration. In addition to the fire, soils in the watershed are highly erodible, and without trees to hold the soil in place there was severe sedimentation in the Cheesman Reservoir, the South Platte and its tributaries. The USDA Forest Service estimated water storage losses at $37 million from these impacts (Graham 2003). Residents and agencies needed a community-based organization that was able to quickly and efficiently utilize emergency funding (Aplet 2010). CUSP immediately took on that role, putting volunteers to work on stabilization projects and emergency response. The Hayman Fire took CUSP down a new path. For the next 2 years, CUSP focused on disaster relief, mitigation, and fire prevention. After the crisis had subsided, they re-focused their objectives towards overall forest and watershed health.

ORGANIZATIONAL STRUCTURE

CUSP owes its success to its dedicated staff (Ekarius 2010). The organization went from one employee in 1999 to 22 current staff members. The Executive Director, Carol Ekarius, and staff seek out grant opportunities and develop projects. CUSP also explains that while everyone has a particular role in the organization, each employee is happy to help with other programs (Campbell 2010). The Executive Director keeps the Board abreast of the Coalition's initiatives and solicits feedback to ensure that the work of the organization adheres to its vision and goals. The Board does not play a role on a day-to-day basis; instead the Executive Director serves as the primary decision-maker. CUSP's activities have changed over time, but the organization has maintained the same mission. CUSP is not a political organization and avoids anything with advocacy overtones; many attribute the organization's success, at least in part, to this tenet (Long 2010, Ekarius 2010, Aplet 2010).

Mission Statement

The Coalition for the Upper South Platte seeks to protect the water quality and ecological health of the Upper South Platte Watershed through the cooperative efforts of watershed stakeholders, with emphasis placed on community values and economic sustainability.

Board members generally meet on a quarterly basis, although occasionally more frequently when needed. The Board includes members of 10 different stakeholder groups (CUSP 2010a).

- County Representatives – 4 representatives max.
- Other Local Governments of – 2 representatives max.
- Front Range Water Providers – 4 representatives max.
- Conservation Districts – 2 representatives max.
- Conservancy Districts – 2 representatives max.
- Business Community – 3 representatives max.
- Environmental Community – 3 representatives max.
- Recreation Community – 3 representatives max.
- Interested Individuals – 7 representatives max.
- State agencies – 2 representatives max.

The Board of Directors must include a minimum of 11 members, but no more than 22 members total. Federal agencies may also have 2 ex-officio representatives on the Board that serve as advisors, rather than voting members. The Board elects officers from within, each serving a 2-year term. These officers, the Chair, Vice-Chair, and Secretary/Treasurer, make up the Executive Committee. This committee can make decisions on behalf of the Board between meetings, depending on the circumstances. One person may be elected as both the Secretary and Treasurer at the discretion of the Board (CUSP 2010a). CUSP's Executive Director puts together the first draft of the Board meeting agenda and sends it out to the Board members, encouraging feedback and suggestions (Aplet 2010). While the Bylaws do allow the Board to establish committees, none are long-standing. Instead, CUSP will form advisory committees for specific projects (Ekarius 2010). Board members also represent CUSP externally to the public and relay CUSP's successes back to their own organizations (Aplet 2010).

In order to have a quorum, 51% of the members must be present (CUSP 2010a). All votes require a quorum and a majority is required for all business decisions. During strategic planning efforts, broader stakeholder meetings are convened separately and 80% of the Board is necessary to approve the Plan (Ekarius 2010). The Strategic Plan was last rewritten in 2007 (Campbell 2010).

Funding

The Coalition is primarily funded through grants. However, the organization does receive monies through donations and each Board member, or the organizations they represent, contributes an annual fee (CUSP 2010a). The Board determines the annual contribution and they are able to use a sliding scale to adjust for a member's ability-to-pay. The water users pay the largest amount and account for most of the unrestricted funding to the Coalition. CUSP's 501(c)3 status has enabled them to maintain a diversified funding portfolio. Money can also be channeled quickly through the organization in an emergency.

CHALLENGES

Sustainability

Funding is always challenging for a non-profit. 95% of the staff's funding is grant-based, which naturally fluctuates over time (Ekarius 2010). When hiring new staff, the organization explains that while money is available now, they cannot guarantee it will be in the future. Financial constraints are a limiting factor for the organization, both in what their staff can accomplish and the resources that they have at their disposal. In the same way that funding streams ebb and flow, programming follows the same pattern. Restoration priorities or environmental programs sometimes change as a result of available grants or funding opportunities. Moreover, significant competition exists between environmental nonprofits; these organizations often have similar goals and objectives and write grants to the same agencies or foundations (Springer 2010). CUSP advocates partnerships with other environmental organizations, as a way to stay above this competitive fray. However, long-term sustainability is a concern, if grant funding should dry up.

Overall Impact

Another question CUSP struggles to answer is, do all these grassroots efforts equal positive change and how can CUSP measure that at a watershed scale? "Are we able to affect enough acres, enough miles of stream to really make a difference?" asked a CUSP Board member (Aplet 2010). Larger pots of funding are often available for on-the-ground implementation projects as opposed to monitoring. However, natural disasters, increased development and other human impacts can counteract restoration activities, making it difficult to ascertain the overall impact of such a large watershed. Like many organizations, CUSP uses its aggregate statistics to measure its success, including the number of volunteer hours, linear feet of trail and river repaired, shrubs/trees planted and debris removed from river corridor (Ekarius 2010).

ACCOMPLISHMENTS

Broad-based Support

Over the years, CUSP has been able to leverage more funding and grow as an organization. The staff makes sure that they work at a very high rate of return for grant monies and donation dollars. 88% of funding goes towards their projects and programs (CUSP 2010b). They try to prioritize their projects where it will make the most difference, which in a watershed often means near the headwaters (Campbell 2010). At this point, the partnership is focused on identifying sources of contamination by targeting

Photo 12.1: Wildfire destruction in the watershed, Courtesy of Coalition for the Upper South Platte (CUSP).

abandoned mines, improving forest health to reduce the likelihood of catastrophic fire and continuing to prevent erosion. Since the Coalition will only pursue voluntary projects with a broad base of support, they benefit from high participation of landowners, agencies and partner organizations (Ignatius 2010).

Community Wildlife Protection Plans

Community Wildfire Protection Plans (CWPP) came out of the Healthy Forests Initiative (HFI), or Healthy Forest Restoration Act of 2003 (Public Law 108-148 2003). The Bush administration passed the legislation after a record year of wildfires in Western states. The legislation empowered communities to develop and prioritize projects, considering local public safety values. The devastation after the Hayman Fire helped to educate the public and gave local government the social license to push fire prevention programming (Ignatius 2010). In response to the HFI, Teller County established a Community Wildfire Protection Commission and with CUSP's help, they put together the first CWPP in the state of Colorado. The County quickly recognized the benefits of working with a non-profit and empowered them to take the lead on a number of initiatives. CUSP has helped the County apply for and administer several grants and, in 2005, CUSP took over the Teller County's Slash-and-Mulch program. CUSP bought a chipper and began doing drive-by chipping to help landowners reduce fuel loads. Teller County decided to subsidize CUSP's efforts, instead of maintaining its own program (Campbell 2010). The County exists entirely in wildland-urban interface and residents own relatively large plots of land. The population density in Teller County is one person for every 8 acres (Ignatius 2010).

"We have a tree density of up to 1000 trees per acre where normal is about 40 trees per acre. There are a lot of people that have moved to Teller from the Midwest. When they come here, they throw their lawnmowers and weedwackers away and say, 'Those trees are beautiful' and they don't want to touch them. We had to get people to understand, 'Okay you can throw away your lawnmower, but now you gotta buy a chainsaw and manage your property.'" said Jim Ignatius, Teller County Commissioner.

Community Wildfire Protection Plans

CUSP has adopted the Society of American Forester's Community Wildlife Protection Plan process, which utilizes the following steps (SAF 2004).

1. *Bring together community members, agencies, and decision-makers.* Local fire authorities, local government, and the state agency responsible for fire management are required to be involved. However, community members will be responsible for prioritization and at least in part for implementation. They should play an integral role in the process.
2. *Develop a community base map to help with risk assessment.*
3. *Identify hazardous areas and prioritize them for treatment according to risk, address both fuel reduction and structural ignitability.*
4. *Develop an action plan and put together the human and financial resources to implement it.*

After developing Teller's county-wide plan, CUSP and its partners began working on these issues at both the community and "landscape" level. CUSP took a lead role in writing grants and developing the Woodland Park Healthy Forest Initiative, which became one of seven state-funded demonstration projects (Ignatius 2010). Originally focused on the Woodland Park municipality, they formed a local advisory committee, comprised of USDA Forest Service, Colorado Forest Service, County officials and municipal representatives. The partners expanded the project to the "landscape" scale. While the Woodland Park Healthy Forest Initiative falls under the umbrella of Teller County's CWPP, it is a more targeted approach in an extremely vulnerable area. It recently became one of nine projects nationally to receive federal funding from the Secretary of Agriculture. The Coalition also recently received a $1.18 million American Recovery and Reinvestment Act grant to further develop, update, and implement CWPPs in the watershed (Long 2010).

In order to fund fire mitigation and prevention, communities need to prove they have a CWPP. The Coalition's CWPP Coordinator, Marti Campbell, works with communities to put plans together. Campbell facilitates the process by helping residents identify their community values, for example, recreation, property, and/or historical sites. She also works with them to determine where wildfire hazards exist and their severity. Campbell says that their prevention efforts should be focused where their values and hazards intersect, like a Venn diagram.

After the fires, streambank restoration and soil stabilization was needed to keep soils from running off the mountains into streams and reservoirs. Initially, they used strawbales and sandbags to keep 3-feet of soil from flowing down towards people's homes (Campbell 2010). Later, CUSP developed Trees for Trout. They took burned trees from the Hayman fire, sharpened the tops, and drove them into the side of the streambank. The root ball hangs out into the stream providing shade for trout. They were able to show people that something good can come from disaster (Campbell 2010).

CUSP has programs focusing on noxious weeds, ecological restoration, water quality assessment at abandoned mines, and energy efficiency (Ignatius 2010, Springer 2010). Moreover, CUSP has stabilized 10.5 miles of stream and riverbanks, maintained/constructed over 12 miles of trails and planted 8000 trees, over the past year alone (Ekarius 2010). CUSP has also created independent websites and online videos, showcasing some of their projects and programs. Public education and awareness is a core principle that they tie into each and every initiative.

EDUCATION & PUBLIC OUTREACH

A goal of CUSP is to get residents to be responsible for their forest. People move to the watershed because they love the scenery and forest. However, it can be difficult to get people to cut down trees. CUSP is trying to develop a comprehensive understanding of forest health and watershed management. Over time, timber production, grazing and fire suppression have substantially impacted the forest (Graham 2003). The natural ecosystem is accustomed to more frequent fires. Without them, the result is a dense forest, largely composed of Ponderosa Pine and Douglas Fir. Fuel builds over time, increasing likelihood that a severe fire will occur.

Prescribed burns and thinning are two management techniques that can prevent future large-scale fires (Campbell 2010, Ignatius 2010). However, landowners tend to resist prescribed fires.

CUSP also tries to target an entire community with a single message in a variety of ways, "very rarely are we just going out and handing out information, expecting change" said Theresa Springer, CUSP's Education Coordinator. Once they have identified a part of the watershed that needs work or a CWPP, CUSP tries to collaborate with teachers through their schools. Springer made the point that parents are often interested in what their kids are learning. At the same time, they try to extend the same message to adults through nearby demonstration projects or events. Springer notes that what CUSP teaches is not found in science books; they are place-based issues that directly impact households in the watershed. CUSP helps communities develop CWPPs in this way, slowly sensitizing them to forest health issues. CUSP also uses their website, quarterly newsletters and social media, like Facebook and Twitter, to promote messages and educate the public.

Photo 12.2: CUSP volunteer workday, Courtesy of CUSP.

While CUSP has an excellent staff, the organization also taps the energies of many volunteers. CUSP incorporates an education component into their volunteer experience (Campbell 2010). CUSP's staff goes out of its way to make their volunteers feel successful and accomplished, working side-by-side with them. CUSP has also worked with companies, like Hewlett Packard and IBM, to coordinate stewardship events for the staff of these companies. The Hayman Fire helped CUSP establish a large volunteer network. People tend to instinctively help when there is a disaster. CUSP had 3,100 volunteers in 45 days (Springer 2010). Nonetheless, the fire affected people outside the watershed as well. Smoke was billowing out of the mountains, hanging over Denver and dropping ash. The Hayman Fire became the crisis situation that motivated participation. At one point during the disaster, the entire 9th grade of a Denver area high school came to help. CUSP would provide one hour of environmental education and then kids would spend the next couple hours sandbagging, raking or mulching. They also generated a lot of media attention at that time, trying to send the message "Volunteers make a difference" (Springer 2010).

Theresa Springer joined CUSP as the Education Coordinator early. She was recruited to the job because she managed a buffalo ranch and had taught, although not formally. She mentioned that she had a hard time initially relating to environmental groups, but has never had a problem with landowners. Theresa adjusts CUSP's message to the target audience, while also taking into account the saliency of particular issues. For example, when the mountain pine beetle began to ravage the lodgepole pines in one nearby town, they put together an education program for the elementary school kids on characteristics of the beetle and how to identify a dead tree. CUSP

went a step further for the high school students. They provided students with baseline knowledge and then took the kids out to identify unhealthy trees in their town park. CUSP cut down the diseased trees and the kids hauled out the fuel. Afterwards, the Coalition bought new trees and the kids replanted the park.

Springer acknowledged that, at times, it is challenging to establish a relationship with a new school; it often requires finding the right teacher. Proactive teachers take the initiative to build CUSP's curriculum into their own. At that point, CUSP will step back and contact teachers, from time to time, to see if they need any materials or guidance. However, other teachers require repeated visits and annual support. Over the past 10 years, CUSP has collaborated with over 30 schools (Springer 2010). In 2010, CUSP worked with close to 900 students and teachers (Ekarius 2010).

Photo 12.3: CUSP Volunteers, Courtesy of CUSP.

Springer's greatest advice to environmental educators is "don't try reinventing the wheel." She uses materials from Project Learning Tree, Project WET, and Project WILD, among others, but edits the materials to make sure that the language is consistent and the approach is appropriate for the target audience. CUSP also brings different scientists from partner organizations into the classroom. Springer travels anywhere from 20 miles to over 200 miles to work with a school. At times, Springer asks more affluent schools to donate to CUSP in exchange for her time and travel. CUSP's school programs range from 2 weeks to 18 weeks during the school year. When she is working with a school over 200 miles away for a couple of days in a row, Springer spends the night in town and tries to maximize her time in the community, doing presentations for Boy Scouts, Girl Scouts or 4-H clubs (Springer 2010).

CUSP has found it difficult to secure transportation for both its volunteers, staff and school groups. School budget cuts have reduced the number of field trips down to one in some school districts (Springer 2010). The sheer size of the watershed is a challenge. Nearly 2600 square miles, the watershed covers an area larger than the state of Delaware (US Census Bureau 2000). "We call it the need for wheels to the field…it's our biggest hurdle" said CUSP's Education Coordinator, Theresa Springer.

CUSP emphasizes several different themes at different times throughout the year, or with different schools. Currently the core themes are: 1) Forest ecology 2) Historical mining 3) Noxious weeds 4) Streambank health.

In the fall, CUSP focuses on forest ecology and forest health and runs forest monitoring programs at some schools (Springer 2010). Springer describes how to collect data and what data is used for, employing the scientific method, before going out into the field. During the spring, the classes focus on mining, first learning the chemistry of the metals and then going out to visit abandoned mines. CUSP measures how much kids take away from their programming through test scores. Springer has found that the more she can get kids out into the field, the more they retain when tested at the end of the school year. CUSP also works with poor-performing schools with high-dropout rates and low achievement-test scores. One school in particular tested in the 14th percentile before CUSP's involvement. At the end of the school year, following CUSP's 13-week program, students were testing in the 41st percentile. While CUSP's program focuses on wildlife, wildfires and forest ecology, they try to build students' skills in English, science, and math (Springer 2010).

During the summer, CUSP emphasizes noxious weeds to adults. CUSP's weed education program uses a face-to-face, peer-to-peer approach. When they notice properties with noxious weeds growing on them, they will knock on the landowner's door and educate them on what noxious weeds look like, what they can do, where they can find herbicides, which contractors specialize in noxious weed management and discuss how CUSP can help. Springer explained, "We've noticed that people don't want to use chemicals, so we've become very proficient at providing how-to advice to manage weeds without herbicides." Their success is marked by how many people have eradicated weeds on their properties (Springer 2010). Overall, social marketing strategists have noted that personal approaches are more effective at changing behaviors than traditional media campaigns, but the approach can often be cost-prohibitive (Colehour 2010). However, CUSP benefits from an extraordinary volunteer network, making these techniques a viable option.

LESSONS LEARNED

"If I was going to give a new watershed group advice, one of the first things I would suggest is that they join other groups. Being able to provide help to others makes that partnership community begin." – Marti Campbell, CUSP CWPP Coordinator

CUSP certainly attributes a lot of its success to building partnerships and they are open to working with anyone, government, private or non-profit. The Coalition also aids various entities when they need volunteer labor and assistance. The grassroots nature of CUSP helps people consider them a reliable neighbor. These relationships have allowed the Coalition to initiate stakeholder dialogues and promote behavior change on issues like fuel reduction and noxious weeds. They also aid in procuring grants (Ignatius 2010). Funders look at how many partners a grant applicant has and the scope of their work. They are looking for the biggest "bang for their buck." CUSP has stayed out of politics so they have not made many enemies. Other environmental groups draw member support from their stances on particular issues and can seem relatively inflexible. As a result, CUSP has built strong relationships with key legislators and land managers at both the state and federal level. When funding opportunities do come around, CUSP is in a good position to receive it.

"They have the advantage of working with private landowners because they're not a government entity." – Larry Long, Colorado State Forest Service

Larry Long of the Colorado State Forest Service acknowledged that CUSP is able to work with the landowners, who distrust any sort of government involvement or advice (Long 2010). CUSP begins by starting a dialogue and casually educating private landowners. Since CUSP has foresters on staff, they are able to use agency standards and produce high-quality work. CUSP has their own work crews so they are willing to take on smaller projects that agencies or contractors might not want to do. The Coalition also has a substantial amount of breadth in its staff and offers a variety of services that other local groups do not.

One of the reason Teller County collaborates with CUSP on a number of projects is CUSP's efficiency when working with landowners (Ignatius 2010). County Commissioner Jim Ignatius said, "It's my feeling that private industry and especially non-profits can leverage their dollars through in-kind volunteer efforts and be much more efficient than government can." Non-profits are under considerable pressure to produce results in order to survive. Government employees do not always have the same incentives to achieve results (Ignatius 2010).

"I often did work without pay for periods of time because I thought this was a good thing and I believed in it and I'd keep going until we'd get another grant."
– Carol Ekarius, CUSP Executive Director

Success can often hinge upon one committed, motivated individual. CUSP's Executive Director recommends finding a way to fund a staff position or two at high enough levels to acquire someone with a broad base of experience in grant management, non-profit and government work. The initial development phase requires a dedicated individual to put in time and effort. The Board should also bring a wealth of knowledge and experience that the Executive Director can rely upon for support and guidance. Ekarius noted that a nonprofit with a completely voluntary Board of Directors and no paid staff rarely has the sophistication to manage large government grants and implement projects at the watershed scale.

Conclusions

Both the Upper South Platte and the Roaring Fork Watersheds are located in rural areas of Colorado. CUSP employs a voluntary project-based approach towards watershed management, focusing on water quality, riparian land use issues and forest ecosystem health. While the organization works with local governments, state and federal agencies, it does not advocate for regulatory solutions to watershed management. CUSP's politically neutral stance has built a broad base of support for the organization. Over the years, CUSP has proven its versatility by successfully managing large grants and a range of projects. If the Roaring Fork decided to move in this direction, they would need the administrative capacity to apply, manage and account for grants. CUSP has also expanded the scope of its activities in response to changes in funding streams. When considering a non-profit structure, the Roaring Fork Water Committee should be aware of these shifts in funding and the competition they would face from other non-profit organizations for these limited resources. Despite these limitations, the 501(c)3 model allowed

CUSP to quickly respond during the Hayman Fire, exemplifying their competence and efficiency to local government and agencies.

In addition, CUSP has a particularly robust education program and targets communities through schools, demonstration projects and peer-to-peer outreach. Their comprehensive approach is analogous to community-based social marketing. Notably, the Roaring Fork Watershed faces many of the same forest fire threats and has suffered the deleterious impacts of the mountain pine beetle. Many of CUSP's education modules are modified from existing online resources and are directly applicable to the Roaring Fork.

Photo 12.4: Forest thinning and chipping, Courtesy of CUSP.

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APPENDIX

Appendix O. Coalition for the Upper South Platte Forest Measurement Guide
Appendix P. Coalition for the Upper South Platte Student Presentation Rubric

CASE 13. THE COOS WATERSHED ASSOCIATION

Location: Southwest Oregon
Prepared by: Kathleen McIntyre

The Coos Watershed is one of the most diverse watersheds on the Oregon Coast situated in the southwest corner of Oregon. The Coos Watershed Association formed in 1993 with the following mission:

"To provide a framework to coordinate and implement proven management practices and test promising new management practices, designed to promote environmental integrity and economic stability for communities of the Coos Watershed."

The Coos Watershed Association is an excellent example of an organization overcoming and utilizing unique landownership patterns and cultural geography. They have approached work within the watershed in two-steps: the uplands and the lowlands. They were able to accomplish quick, on-the-ground successes in the uplands because it is managed/own by a few entities, the original partners. The lowlands are predominantly smaller land holdings with hobby farms. As the Association has shifted work into the lowlands they have redefined their outreach to involve unique and personalized and activities. Their outreach efforts and diverse array of partners working proactively to address watershed issues makes the Coos Watershed Association a valuable case for the Roaring Fork Watershed Collaborative.

Photo 13.1: Restoration Project before and after, Courtesy of Coos Watershed Association.

BACKGROUND

The Coos watershed is found in the southwest corner of Oregon and drains into Coos Bay as it enters the Pacific Ocean. The watershed includes all forks and tributaries of the Coos and Millicoma Rivers as well as all the sloughs and creeks that drain into the estuary (Coos Watershed Association General Brochure). It is one of the most diverse watersheds on the Oregon Coast and is found in the coastal temperate rainforest, an area characterized by high precipitation, presence of mountains and coast, little fire, and steady climate (About Coastal

Photo 13.2: Coos Bay Watershed, Courtesy of Coos Watershed Association.

Temperate Rainforests n.d.). There are 390,000 acres of estuary uplands and urban areas. Coos Bay is one of the largest and most productive on the Oregon coast as well as crucial habitat for Coho Salmon. The Coos Watershed has the highest percentage of private lands on the Oregon Coast of any watershed its size. 80% of the watershed is private while only 11% is federal, and 9% is state. 50% of the watershed is in large holdings by the state and federal government, and the Weyerhaeuser Corporation, a large timber company. There are significant amounts of urban and rural residential lands in lowland areas. The cities of Coos Bay and North Bend have a combined population of 25,000 people with approximately 5,000 more living outside the cities in unincorporated towns and rural areas (Model Watershed Program 2008).

Coos Bay is an area of the country where culture has been influenced by the abundance of natural resources. The waters are rich in salmon and shellfish and some of the largest spruce and fir trees in North America are found here. This abundance has led to booms in both the fishing and timber industries and a sense of pride in the community. It is the largest commercial oyster producer in the region, and during the 20th century, was home to one of the largest lumber mills in the world known as "Big Mill". In the past, mills run by C.A. Smith Company and later Georgia Pacific and Weyerhaeuser provided thousands of jobs (Coos Watershed Association 2004).

Photo 13.3. Restoration Efforts, Courtesy of Coos Watershed Association.

However, early natural resource extraction practices failed to integrate long-term management strategies. Timber harvest, coal mining, agriculture, and fishing negatively affected the biological health of the land and watershed. The Northwest Forest Plan, enacted in 1994 under President Clinton, was a collection of federal policies and guidelines aimed at protecting critical habitat for Northern Spotted Owl. The Northern Spotted Owl is an endangered species reliant on old growth forest for habitat, primarily the trees most valued for timber. The Northwest Plan regulated activities on federal lands including national forests, BLM lands, National Parks, and wildlife refuges. Washington, Oregon, and Northern California were all affected by these policies (Northwest Plan 2008). The Northwest Forest Plan encompasses five key principles (Northwest Plan 2008):

1) Never forget human and economic dimensions of issues
2) Protect long term health of forests, wildlife, and waterways
3) Focus on scientifically sound, ecologically credible, and legally responsible strategies and implementation
4) Produce a predictable and sustainable level of timber sales and non-timber resources
5) Ensure that federal agencies work together

The plan has been criticized heavily for its role in crippling the timber industry and economies based on timber in the northwest by decreasing the amount of timber that could be harvested on federal lands. In regions where forest was predominantly federally owned, drastic effects were felt as mills closed and workers were laid off (Northwest Plan 2008). The Northwest Plan had large implications for regional economies that relied heavily on these industries, such as the Coos Bay.

PARTNERSHIP'S BEGINNING

The Coos Watershed Association is a local 501(c)3 that formed in 1993 as a way for people to get together and discuss issues surrounding the Coos Watershed (Coos Watershed Association General Brochure). Land managers of the upper watershed were concerned that Coho Salmon would be listed under the Endangered Species Act (leading to the same impacts caused by the Northern Spotted Owl). Landowners felt they could create a conservation plan for Coho that would preclude the need for ESA listing in the basin. Parties to the original discussion (first members of the Executive Council) included (Model Watershed Program 2008):

1) Mike Graybill- South Slough National Estuarine Research Reserve
2) Bob Laport- Coos County Forester
3) Jim Clarke- Weyerhaeuser Timber Company
4) Tom Hoesly- Menasha Forest Products
5) Allan Rumbaugh- Director of the Oregon International Port of Coos Bay
6) Joan Mahaffey, Dan Brelage and John Brands- Agriculture
7) Ken Messerle and Robert Mahaffey- Small Woodlands
8) Timm Slater- North Bend Mayor
9) Mel Chase- Bureau of Land Management
10) Clark Seeley- Oregon Department of Forestry

Several key pieces of state legislation laid the ground work for the Coos Watershed Association (CoosWA). These acts provided funding and political support for new watershed organizations, like CoosWA.

1) In 1987, SB 23 created the Governor's Watershed Enhancement Board (GWEB). The board's intention was to provide outreach and assistance to private landowners to increase local watershed health as well as enable state agencies to work across bureaucratic lines to improve watershed management and health (Oregon Association of Conservation Districts n.d.).
2) In 1993-1995, HB 2215 created the Watershed Health Program, which designated 10 million dollars to establish local watershed programs throughout Oregon (Oregon Association of Conservation Districts n.d.).
3) In 1998, Passage of Ballot Measure 66 set aside 15% of lottery revenues to spend on acquisition and maintenance of state parks as well as support the restoration of native salmonoids and watersheds (Oregon Association of Conservation Districts n.d.).
4) In 1999, HB 3225 created the Oregon Watershed Enhancement Board (OWEB). This board was created to administer the funds made available by Ballot Measure 66 and expanded the GWEB's support of voluntary local watershed efforts (Oregon Association of Conservation Districts n.d.).

Mike Graybill, one of the CoosWA original founders, recognized that ongoing partnerships in watershed management were going to be supported by the governor. He contacted Bob Laport, another founding member and county forester, to discuss organizing in order to address habitat issues. Graybill recognized that areas such as the Rouge and Applegate systems were receiving money to manage salmon and their watershed, "Why couldn't the Coos?"

Bob Laport made the phone calls and helped to convene the initial meetings. The first meeting was to simply sit down and see if collaboration was possible with the partners present (Graybill 2010). Interests present included federal, state, and county forest organizations, farmers, private landowners, fishermen, environment, and ranchers (Hoesly 2010). Though representation was diverse, large landowners in the uplands and industry were the driving force behind this organization, and the association was intended to be controlled by these land owning interests (Graybill 2010). According to Mike Graybill the Coos Watershed Association (CoosWA) was able to make progress quickly because of the unique land ownership pattern in the watershed. Four to five major landowners own the upper watershed, streamlining decision making. The Association did not need consensus from a thousand people. Instead, the large land holders made informed decisions on what could/would happen on their land. The initial representatives did not want a regulatory agency as a voting member. Bob Laport explains "it was a trust issue. They don't trust a regulatory agency. People in those agencies have an agenda." Instead, the partnership wanted land managers.

An external threat, the listing of the Coho Salmon, galvanized initial meetings and the idea that the local entities could lose power to a federal agency, NOAA. Under this alternative scenario, a solution might not fit the local area appropriately. Motivation for participation centered on the Coho Salmon (Graybill 2010). According to Clark Seeley, Oregon Department of Forestry representative, "it was at that point of time, there was a significant amount of interest and awakening about fisheries, salmon, and habitat that people could rally around. There was a common issue or need." For example, the Weyerhaeuser Timber Company had eagles on their tree farm and had dealt with the Endangered Species Act previously (Clarke 2010). The Coho Salmon issue began upwelling at the same time the company was moving towards stewardship

and a broader vision. Weyerhaeuser was interested in supporting fish at the local level as well as the corporate level (Clarke 2010). Another example was the motivation for commercial fishermen who relied on healthy upstream habitat to act as productive breeding grounds for their cash crop, fish (Seeley 2010).

PARTNERSHIP'S EVOLUTION

The Coos Watershed Association has evolved in its mission, issues, and organizational structure. In 1994, there was only an Executive Director, Annie Donnelly, but now there are ten staff and an annual budget of approximately 1 million dollars (Coos Watershed Association 2004). Early on the CoosWA operated as a "pass through organization"; funneling funds to restoration work (Coos Watershed Association 2004). The staff performed little on-the-ground restoration. As the Association staff accumulated knowledge on watershed science they became more involved in the project implementation. In 2000, Annie Donnelly resigned as Executive Director, replaced by Jon Souder. With a new director, programs evolved to meet the executive council's desire for a more "science oriented" organization (Model Watershed Program 2008).

According to Jon Souder, current executive director, issues have expanded past the initial focus on salmon. Over time, they have explored water quality issues such as total maximum daily load (TMDL) regulations, bacteria and microbial tracking, shellfish, and storm water management. It has been a natural evolution/expansion as many of these issues directly/indirectly affect the productivity and survival of salmon (Souder 2010). Similarly, salmon are anadromous. Anadromous means they are born in freshwater, live in salt water, and travel back to freshwater to spawn and die. This complex migratory nature demands broad habitat protection and watershed management. Souder suggests that the activities of the Association have broadened into all the uses of the watershed. Jim Clarke, representative of Weyerhaeuser Timber Company, believes the mission has evolved and taken on a broader goal. Originally the partnership wanted to bypass the salmon listing. However, they were unsuccessful and instead began discussing ways to help the watershed.

One of the biggest changes in the Coos Watershed Association is the new focus on lowland landowners. Though the CoosWA continues to serve the needs of its upland constituency, they are also responding to new requests from a growing market in the lowlands focused on water quality issues. The lowlands represent a valuable opportunity for habitat improvement and the region is home to over 30,000 people. The shift from upland landowners to lowland landowners requires intensified education, outreach, and communication because of the ownership pattern. Smaller plots of land with more diverse uses characterize the lowlands, while the uplands are large plots of land with few owners (Coos Water Association 2004).

The Coos Watershed Association has a high level of authority due to the cultural geography of the region and the voluntary nature of their program. The fact that the upland area is primarily comprised of four or five landowners, representatives and founders of the CoosWA, makes it extremely easy for the Coos Watershed Association to achieve success. They can quickly achieve consensus on management issues (Clarke 2010).

The initial CoosWA policy was a "no foul policy". Landowners would allow them on their land to perform stream assessments with the understanding that if a violation was found it would be fixed, not regulated or ticketed (Graybill 2010). Violations include not following laws and regulations to improve water quality, land use, etc. The CoosWA stressed that it did not use a regulatory approach; it was on a completely voluntary basis (Coos Watershed Association 2010). However, it is these voluntary partnerships that build broad based support, successful projects, and are integral to implementation of activities.

Several factors have contributed to the success and early formation of the Coos Watershed Association. Jim Clarke, representative of Weyerhaeuser Timber Company, believes it was imperative to have a person willing to find money and make the collaborative work in its initial stages. He suggests this person was Annie Donnelly, the first executive director. That person will keep the effort alive and is clearly dedicated to the vision and future success of an organization.

Donnelly believes it was the good faith and honesty of representatives involved. She states, "If you have one person there with an agenda and won't participate, it is a seed for disaster." Clarke echoes Donnelly's sentiment "Openness of each participant to other people's input allowed for free and open discussion amongst people." This open and honest atmosphere allowed participants to freely discuss issues and interests, creating win-win solutions.

Bob Laport, the Coos County Forester, believes to achieve success in a more rural area it is important to have faces within the community. He states "the board of directors is comprised of people who live in the community." And "It is crucial to have face to face time with people; to have people who can knock on doors and sit down with intellectuals, land managers, ranching, and dairy to discuss actions." This community presence and personal contact builds trust in the Association and working relationships for future partnerships.

ORGANIZATIONAL STRUCTURE

The mission statement of the Coos Watershed Association is,

"*to provide a framework to coordinate and implement proven management practices and test promising new management practices, designed to promote environmental integrity and economic stability for communities of the Coos Watershed*."

In the first two years the Executive Council developed a statement of shared values that guides the Association and includes the following principles (Model Watershed Program 2008):

1) They believe it is possible to achieve both environmental integrity and economic stability
2) Natural products and process of watershed are indicators of watershed health and are important to the economy and vitality of the community
3) Human activities have a legitimate place in the watershed
4) They recognize that actions can affect stability of watershed and related economy
5) There should be deliberate planning and action for watershed health as they are important and achieved by people who live and work within the watershed
6) Watershed scale perspective improves ability to sustain the health of the watershed
7) Coordination of efforts can achieve a synergistic effect on the watershed.

The Coos Watershed Association has a hierarchical organizational structure and is governed by a 16-21 member, self-selected, board of directors representing a diverse group of stakeholders (Model Watershed Program 2008). The board of directors sets the program's direction, approves the annual work plan, policies, and budget, and participates in various sub-committees (Coos Watershed Association 2004). Committees organized under the board of directors include the executive committee, strategic planning committee, audit committee, research and outreach committee, and restoration projects committee. The board of directors can form special committees as needed to provide guidance and assistance on projects and activities (Coos Watershed Association 2004).

The executive committee is composed of four board members who meet monthly and report to the board on actions taken. It provides direct management and financial oversight to the executive director (Coos Watershed Association 2004). Underneath the executive director is a program manager that manages grants and day-to-day operations of the Association. There is also an assessment and outreach coordinator, monitoring coordinator, and 2 project managers (Model Watershed Program 2008).

All board actions must have unanimous support. Decisions are made differently depending on the scenario. According to Jon Souder, the board makes policy decisions and he makes operational decisions. He is responsible for implementing the policies and strategies developed by the board. There are 10 stakeholder categories for board members (Model Watershed Program 2008):

1) Industrial timber- 2 representatives
2) Small woodlands- 2 representatives
3) Agriculture and ranching- 2 representatives
4) County and local government- 2 representatives
5) State Land Managers- 2 representatives
6) Federal Land Managers- 2 representatives
7) Waterfront Industries- 1 representative
8) Fisheries and Aquaculture- 1 representative

Photo 13.4: Restoration project., Courtesy of Coos Watershed Association.

9) Tribes- 1 representative
10) Public at Large- 4 representatives

The original board began as a stakeholder board with stringent representation requirements, otherwise known as the "Noah's Ark Model". However, Souder has worked to steer them away from that model because he does not believe it is effective for older organizations. Souder's rational for this decision is,

> "Non-profit theory suggests successful non-profits evolve from a "stakeholder" driven board to one where board members represent the interests of the organization. Secondly, as an organization grows, stabilizes, and evolves there is a need for different skill sets on the board and requiring the board members to represent certain interests limits the skills available."

In the past five years the Association removed the "stakeholder" part of the bylaws so there are no longer required classifications for representation. However, they continue to recognize value in diversity including gender and age (Souder 2010).

Priorities for 2005-2015 recognize that long term organizational health is dependent on efficient operating systems, diverse funding, beneficial partnerships, and increased staff capacity. Goals include (Coos Watershed Association 2004):

1) Build capacity to increase tenure of staff, establishing a deputy director position, and enhancing operational capacity
2) Expand partnerships for mutual benefits
3) Enhance outreach, communication, and education to expand constituency
4) Articulate return on investment
5) Diversify funding base
6) Support program innovation
7) Measure Organizational Impact

Programs and activities carried out by CoosWA fall into three categories: education, conservation stewardship, and information. An assessment and outreach program was begun in 2005 and directed at lowland landowners such as dairy farmers and small hobby farms. The unique mixture of private land uses and small acreages in the lowlands makes communication between the Association and individual community members necessary (Coos Watershed Association 2010). The association utilizes a mixture of activities including coffee klatches and site tours in an attempt to engage and influence this crucial area (Coos Watershed Association 2008).

Photo 13.5: In stream restoration project, Courtesy of Coos Watershed Association.

Conservation stewardship activities range from fish passage and in-stream habitat improvements to riparian area enhancement and road related erosion control. In-stream restoration activities include designing and installing large pieces of wood and boulders in waterways to interact with the stream. Fish passage improvements comprise culvert replacements or bridge upgrades. Road related erosion control projects consist of native planting, bioengineering bank stabilization, invasive weed clearing, fencing of stream banks, and decommissioning of roads (Coos Watershed Association General Brochure).

Monitoring activities include in stream structure and fish passage monitoring, road sediment monitoring, riparian silviculture monitoring, and Coho Salmon life cycle and tide gate effectiveness monitoring (Coos Watershed Association 2005). Monitoring is important to ensure specific project success and guide future restoration efforts (Coos Watershed Association 2010).

FUNDING

The Coos Watershed Association receives private donations online, allowing individuals to become a "Friend of the Coos Watershed" (Coos Watershed Association 2010). However, the organization receives the majority of its funding from state and federal grants. In 2008, 76% of program and support services were paid from state grants (Coos Watershed Association 2008). There was a large decrease in federal grants down from 28% in 2007 to 2% in 2008 (Coos Watershed Association 2008). Most partners offer private contributions to restoration projects in cash and sweat equity (Coos Watershed Association 2004).

Past funding support for the Coos Watershed Association focused on restoration projects, largely due to Ballot Measure 66 funds directed towards these types of projects (Model Watershed Program 2008). However, the Coos Watershed Association has targeted a new growing niche that concentrates on developing new products for watershed restoration. Recent funding supports DNA identification of fecal pollution and publication of a "how to" guide for private landowners engaging in riparian reforestation (Coos Watershed Association 2004).

CHALLENGES

There are several challenges facing the Coos Watershed Association currently and in the future. These include funding, the lowlands, and the voluntary nature of the Association.

1) Funding- Multiple interviewees stated that funding is always a challenge for the Coos Watershed Association. John Souder points to future funding from Ballot Measure 66 as particularly precarious. "The fuel of Oregon watershed councils is the lottery money, which is set to expire in 2014." There is a renewal initiative; however this renewal is taking place in a bad economy.

2) The Lowlands- The lowlands are composed of a very different ownership pattern than the uplands. The lowlands are characterized by smaller land holdings with more diverse ownership, while the uplands are few large land holdings primarily managed by industry, state, and federal governments. The lowlands require a more intensive, personalized education and communication effort and in order to achieve success there must be more buy-in from more people (Joyce 2010).

3) Voluntary nature- Clark Seeley, Oregon Department of Forestry representative, suggests because there is no law to mandate action "the Association relies on people's willingness to come together. You may have people who simply don't want to play the game. And if there are enough of them who don't want to then the ultimate success of the organization can be stressed pretty hard." The lack of regulation is a good thing because it helps get people on board, however success is contingent on willingness of key players. Seeley states "Part of the downside of that is it takes time. It takes time from people who think they don't have time to give."

ACCOMPLISHMENTS

Accomplishments and successes for the Coos Watershed Association center on the longevity and ability of the partners to work within a diverse array of ownership patterns in the region. Quantifiable accomplishments include the miles of river improvement projects implemented to benefit the Coho Salmon, brush control, and weed removal (Clarke 2010).

Annie Donnelly, first executive director, suggests that in addition to the work that has been done the **creation of a place where open communication can occur** is an accomplishment. "The first time they were getting together there were groups of two or three that would speak together, but they wouldn't be seen speaking publicly because they were worried what people would think." The major accomplishment is **"this place"** where people can talk honestly and work together. Bob Laport agrees that the existence of a **locally based group** of people and framework to communicate within is an accomplishment. He suggests "it offered a window to have conservationists speak with the timber industry."

Jon Souder believes the **effectiveness of the Association to communicate with stakeholders** and companies to solve land management objectives and restoration needs is an accomplishment.

The Association has been able to build **working relationships** with a wide array of stakeholders from small private land owners in the lowlands to large timber industry representatives in the uplands.

Clark Seeley believes a **measure of success has been whether they could sustain work together**. He suggests that as data accumulated and projects were implemented a measure of success ultimately became the actual scientific improvement of water quality. Jim Clarke believes many measures of success are much more straightforward and include things such as seeing year to year improvements in water quality and fish, continued staff/ long-term staff members, and if the Association is able to fund projects.

EDUCATION AND PUBLIC OUTREACH

The Coos Watershed Association began a formal outreach program, run by Bessie Joyce, and directed to landowners in the lowland areas in 2005. The mixture of private land uses and smaller acreages in lowland areas made it necessary to establish communications and working relationships with these landowners (Coos Watershed Association 2005).

Photo 13.6: Volunteers, Courtesy of Coos Watershed Association.

CoosWA had been focusing most of their restoration efforts in the uplands where forested areas were owned by large industrial timber corporations. They had addressed the "low hanging fruit" in the uplands, and needed to start moving down the watershed to more salmon habitats located in lots of different types of landowners. This area of Coos County is extremely conservative with degraded forests, fishing, and economically unstable ranching and dairy (Joyce 2010).

The Association started a program of Coffee Klatches carried out in sub-basins to engage different land owners' issues. They devised this program to assess the sub-basins as well as the individual landowners. They wanted to steer away from "town hall" meetings and create a more personal, relaxed atmosphere. The Association would find a host in the sub-basin, a landowner that could host the meeting at their house and have local foods to make it friendlier. Bessie Joyce stresses the importance of creating a comfortable atmosphere. These meetings allowed neighbors to meet neighbors (Joyce 2010).

Coffee Klatches were held in a set of three meetings. There were no newspaper announcements, instead, Joyce sent out personalized invitations to people in the area. The first meeting was the most important and was used to collect information on land owner objectives/concerns, introduce individuals, and voice hopes for the watershed. The Coos Watershed Association would explain their voluntary nature and that nothing was mandatory or regulatory (Joyce 2010). Bessie Joyce said "landowners would come distrusting and intense and learn what the Association was doing and different services offered. By the time they left, landowners felt they could work together."

During this first meeting, Bessie Joyce would collect the top three concerns from landowners on anonymous index cards. She also had them fill out a survey on demographics so she could determine characteristics of the sub-basin. She used the land owner concerns and objectives in a prioritization process with two sets of criteria; biological and socioeconomic. She would grade each action against water processes and how well it would be accepted in the community, funded, and accepted by neighbors. Actions with a low socio-economic score meant the Association would need to do more outreach and they should provide the community with more scientific information. If there was an action that scored low biologically but high socio-economically the Association would provide more technical expertise to the landowners, but the action would lack funding (Joyce 2010).

The second meetings were reserved for field trips and the third meetings were wrap ups. By the third meeting, Bessie Joyce suggests "we had folks that were thinking about possibilities for their property. They would approach us to have one of our project managers assess their property for future projects."

Even if the Coos Watershed Association did not solicit many projects there is the benefit of landowners learning from each other, meeting their neighbors, learning about services available, and reasons why they should care about their watershed. Coffee Klatches offer the opportunity for the Association to clarify any confusion or negative connotations surrounding their work and approach (Joyce 2010).

Joyce believes there has been an excellent success rate with a list of 200 potential projects. However, the Association still faces challenges with their lowlands education program. One challenge is getting people to participate and show up to the Coffee Klatches (Joyce 2010). Joyce says "this is a rural community with a lot of hobby farms and people who want to be left alone." Another challenge is timing. This process can take years and success is not immediate. This long time scale and delayed results can discourage participation and excitement among landowners (Joyce 2010).

LESSONS LEARNED

"You cannot have a state agency with one arm in land owner assistance and another that is enforcement. People won't trust you."

-Annie Donnelly, First Executive Director for the CoosWA

As mentioned above, the initial strategy for the Coos Watershed Association was a "no foul" policy. They emphasized to landowners that they were not there to regulate and ticket violators, but rather to fix ecological problems and gain access to the watershed. Bob Laport specifies why they did not want a regulatory agency as a voting member on the board, "It was a trust issue. The communities do not trust the regulatory agency. People in these agencies have agendas." It was critical in a rural, western watershed to emphasize this voluntary, not regulatory approach. Often these communities heavily value property rights and sovereignty to manage their land as they see fit. They are distrustful of government intervention and regulation. Donnelly also notes, "In these

communities, anytime you are perceived as being part of government you put a big ball and chain around your neck. You want to be able to tell everyone you make your own decisions." The voluntary nature has allowed the Coos Watershed Association to forge successful partnerships and make progress towards their mission. This is important for the Roaring Fork Watershed Collaborative to remember when determining how to build support for their watershed plan.

"The Association was intended to be controlled by the primary land owning interests in the watershed"

-Mike Graybill, One of the original founders

The Coos Watershed Association was able to progress quickly and ensure success because they utilize the landownership pattern within the watershed. By having a representative of each type of land user/owner, The Association can provide for all interests and adapt to new scenarios and challenges. From industrial timber to small woodland owners, the vast array of representation offers an avenue to gain access to varied types of land. It allows for a more comprehensive understanding of landowner concerns and management, outreach, and restoration strategies. A strategic channel to gain power and support is to focus representation around players that have a property right or legal authority to access of the watershed. It is easier to gain support and participation if the landowner or entity feels represented. As Annie Donnelly says "No one wants to be an actor in someone else's play."

"We had to rethink our outreach strategy as we began to move from large industrially owned regions to smaller parceled, multi use holdings."

-Bessie Joyce, Assessment and Outreach Coordinator

An innovative aspect of the Coos Watershed Association is their approach to outreach in differing communities. They quickly recognized the unique, cultural geography of the Coos Bay region. As Joyce notes, "The upland forested areas were owned by large industrial corporations and this is where we initially addressed the "low hanging fruit", the easier decisions and successes." As they began addressing issues in the lowlands they realized how important personalized, one-on-one contact would be in gaining support. This is an area with diverse interests and numerous landowners. To gain success, the Coos Watershed Association would need to gain support from many more people. This flexibility in outreach has led to the success of the Association. It is important to recognize that not just one outreach strategy may work, and that populations differ in receptivity depending on the cultural geography and norms associated with sub-regions of an area.

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APPENDIX

Appendix N. Copy of Coffee Klatch Invitation Letter

Strategic Framework 2005-2015. To view full Strategic Framework please visit: http://www.cooswatershed.org/Publications/CoosWA%20Strategic%20Framework%20-%20Final.pdf

CASE 14. THE DESCHUTES RIVER CONSERVANCY

Location: North Central Oregon
Prepared by: Anne Kohl

Mission: Our mission is to restore streamflow and improve water quality in the Deschutes Basin. Our objectives are to meet or exceed state water quality standards and to restore the natural hydrograph to the extent environmentally, socially and economically feasible in the Deschutes River and its tributaries.

The Deschutes River Conservancy (DRC) is located in Bend, Oregon and for the past 14 years has built a strong foundation for collaborative work in the Deschutes River Basin. The DRC was formed to address water quantity and quality issues within the Basin so the needs of agriculture, recreation, timber, ranching, hydropower, and the environment can be met. They are a nationally recognized leader in river restoration and attract those with the belief that people can work together for the good of all river users. The DRC works with their partners to fund restoration projects, develop restoration strategies, and build alliances.

BACKGROUND

Figure 14.1. Deschutes River Basin is part of the Columbia River Basin. DRC.

The Deschutes River is a major tributary of the Columbia River. Most of the river is designated as a Federal Wild and Scenic River and State Scenic Waterway (DRC Website 2010). The headwaters of the river are Little Lava Lake, located in the Cascade Mountains. It provided a major route to and from the Columbia for Native Americans and pioneers on the Oregon Trail. The river mostly flows through rugged and arid country, providing irrigation and popular locations for whitewater rafting and fishing. The river basin covers 10,500 square miles (Huntsinger 2007). Settlers arriving in Oregon in the late 1800s and early 1900s were enticed by the abundant rivers and natural resources in the region. It did not take long for virtually the entire river to be diverted for the growing number of families, livestock and agriculture (DRC Website 2010). Since 1970 the population in the Basin has steadily increased. It is estimated that 225,000

people currently live in the Deschutes Basin (McCaulou 2010). Employment has also steadily increased since 1970; Deschutes County alone experienced a 640% increase in job growth from 1970-2008, from 13,667 to 101,177 jobs (Profile of Socioeconomic Measures: Deschutes County, OR 2010).

Photo 14.1: Irrigation Pivots off Highway 20 in Oregon, Courtesy of DRC.

The biggest challenge the DRC is addressing is nearly 90% of the streamflow from the Deschutes River in Bend, Oregon, is diverted through irrigation canals during the irrigation season, which runs from April through October. The diversions cause a dramatic reduction in streamflow during the summer months. Due to the region's porous volcanic soil, as much as 50% of the water that is diverted from the river in irrigation canals seeps into the ground before it even reaches the farm. As a result, the irrigation district must divert twice the amount of water they need to serve their patrons. The result is seasonal flow disruptions that contribute to a decline in the overall health of the river including degraded fish habitat and poor water quality (DRC Website 2010). The river and its tributaries historically supported a wide variety of native resident and anadromous fish such as redband trout, spring and fall Chinook, Sockeye salmon, Pacific Lamprey, and summer steelhead. However, due to the diversions as well as land use changes, these fish have limited populations or are no longer present in many of the streams. Currently, the Basin still supports spring Chinook, Kokanee, bull trout, redband trout, and Pacific Lamprey (DRC Website 2010).

PARTNERSHIP'S BEGINNING

The Deschutes River Conservancy is a 501(c)3 non-profit corporation founded by Environmental Defense, a national environmental organization, the Confederated Tribes of the Warm Springs Reservation and local irrigation districts. Located in central Oregon, and formed in 1996, the DRC was created due to "the growing need for a consensus building organization, specifically designed to address concerns about water quantity and quality in the Deschutes River Basin" (Scarborough and Lund 2007). At the time, the Confederated Tribes of the Warm Springs were in negotiations for a reserve water right that would establish an entitlement to water that could potentially supersede all other water rights, which could disrupt agricultural access to water. Also, the U.S. Geological Society (USGS) was conducting a series of hydrologic studies to understand the relationship between upper basin groundwater use and lower basin surface water flows. As a result of these two events, considerable attention was directed to the need for additional flow restoration and water management planning in the Deschutes basin (McCaulou 2010).

The DRC is a collaborative, multi-stakeholder organization comprised of public and private interests including farming, ranching, timber, development, hydropower, recreation, tribes, and environment. In the beginning the DRC, rather than getting tied up in analysis, saw community consensus surrounding issues of water quantity and streamflow restoration and decided to build on-the-ground partnerships to tackle those issues (McCaulou 2010).

What most enabled the DRC to get started was the presence of federal money to offer various interest groups within the community. As a result, the DRC was brought in contact with ranchers, farmers, NGOs, and state and local agencies and they were able to have a collaborative and mutually supportive conversation with them. Strong relationships and trust was built early. When the DRC was unable to provide grants, they were able to partner and work on bringing new financial and technical resources to their problems (McCaulou 2010).

In order to achieve its mission, the DRC employs four market-based programs: the *Leasing Program*, *Water Conservation Program*, *Transfers Program*, and the *Deschutes Water Alliance (DWA) Water Bank*. Each is discussed below.

ORGANIZATIONAL STRUCTURE

DRC is comprised of 11 staff and 27 individuals, representing the diversity of the stakeholders. The Board of Directors includes a representative from the following (DRC Website 2010):

- Deschutes National Forest,
- Jefferson County, Deschutes County, Shermon/Wasco County, Cook County,
- City of Sisters,
- The Nature Conservancy,
- The Confederated Tribes of the Warm Springs Reservation,
- Bureau of Reclamation,
- Oregon Water Resources Department,
- Central Oregon Irrigation District,
- Warm Springs Water & Power Enterprises,
- Portland General Electric,
- North Unit Irrigation District,
- Ochoco Lumber Company,
- Oregon Department of Fish & Wildlife,
- William Smith Properties Inc.,
- Recreation and Tourism,
- Grazing/Livestock,
- At-large members.

The DRC attorney also sits on the Board as a non-voting member. The Board is in charge of making decisions for the DRC, which is done by consensus. The Board selection is done through an informal process of identifying people in the community who support the mission of the DRC, care about the river and want to see it restored, and want to do it in a way that involves compromise and consensus. There is no formal vote taken, but simply by a conversation between

Board members. Sometimes the desired candidate is present and participates in the conversation with the Board (McCaulou 2010).

They meet quarterly and the Executive Committee determines the agenda. This is comprised of the Board Chair, the DRC attorney, and any board member who wants to sit on the Committee. Currently, those members include an irrigation district manager, a tribal representative, and a development representative. The Board Chair runs each meeting, which is open to the public, and provides time for public comment. There are presently three sub-committees: the *Executive Committee*, the *Projects and Transactions Committee*, and the *Finance Committee*. The *Projects and Transactions Committee* works with the Board to determine projects/transactions the DRC staff is going to pursue. This committee is comprised of the technical experts on the Board, such as attorneys, hydrologists, biologists, and state water regulators. They meet quarterly and in advance of the *Finance Committee*. This Committee looks at DRC finances, are liaisons to the DRC auditors (the DRC requires a federal audit every year), and generally works with the Finance Director to make sure the fiscal management of the DRC is running smoothly. Once those two committees meet, the *Executive Committee* meets to finalize the agenda. The agenda is a compilation of all the decisions made within the three sub-committees (McCaulou 2010).

Implementation of decisions made by the Board is ultimately done through four staff members of the DRC; the Executive Director, and the three Directors that are under the Executive; the Program, Marketing, and Outreach Directors. The DRC is set up in a typical hierarchical manner, the Executive Director is responsible to the Board and the three Directors take their instructions from the Executive Director. The Program Director has a staff of seven, the Marketing and Outreach Director has a staff of one, and there are two part-time bookkeepers that work under the Finance Director (McCaulou 2010).

The mission of the DRC is to restore streamflow and improve water quality in the Deschutes River Basin. The main programs the DRC conducts are the *Leasing Program*, *Water Conservation Program*, *Transfers Program*, and the *Deschutes Water Alliance (DWA) Water Bank*.

- *Leasing Program*: Under this program, landowners who do not want to use their water rights have the option to temporarily leave their water in the river for the purpose of enhancing instream flows. Furthermore, DRC works with irrigators to protect the water they do not use. Water right holders can donate their water. In some circumstances, the DRC will pay them to lease their water instream (DRC Website 2010).

Photo 14.2: Swalley Main Canal Piping Project, Courtesy of DRC.

- *Water Conservation Program*: This program deals with permanent streamflow protection, which is different from the Leasing Program. Here the DRC works through two methods: piping and lining canals and on-farm efficiency projects

  (DRC Website 2010). This picture is from the Swalley Main Canal Piping Project,

which involved piping 5.1 miles of Swalley Irrigation District's main canal. As a result, 29 cfs of streamflow were restored to the Deschutes River below Bend, Oregon.

- *Water Transfers Program*: This program is another example of permanent streamflow protection. Here when water rights holders no longer need their water, they can transfer that water to new lands or sell it outright. The DRC will purchase the water right to permanently protect it instream (DRC Website 2010).

- *The DWA Water Bank*: The water bank was established to assure adequate water supplies for agriculture while making sure there is water available for Central Oregon cities and rivers. The bank operates in a voluntary, market-based manner using existing Oregon water law statutes under a cooperative agreement (DRC Website 2010).

PARTNERSHIP'S EVOLUTION

A major change happening within the DRC is the role of the Deschutes Water Alliance. The forum is now beginning to think about developing a legislative sub-committee that would brainstorm consensus legislative ideas for water management. The DWA was formed by the DRC and staffed by the DRC; this shift is likely to create some grey areas for the DRC Board, due to the DRC objective of staying away from the political arena. Furthermore, to have legislative activity and conversation in that forum could create blurred lines. Currently it is unclear how far this effort will go and whether the DRC Board will sign on and participate in that forum (McCaulou 2010).

FUNDING

The budget for the DRC is estimated at about one third federal funding, one third state funding, and one third a combination of private sources, foundations, and private utilities. The DRC is not a dues-paying member based organization, because they feel it is not cost effective to run that type of organization. They also do not want to compete with other member-based organizations in the area such as Deschutes Land Trust and the Upper Deschutes Watershed Council. Portland General Electric (PGE) is the main private utility that provides funding to the DRC. Because they operate hydroelectric dams on the Deschutes River, there is a mandate that requires PGE to provide a certain amount of money for mitigation impacts towards the effects of those dams. The Bonneville Power Administration, a federal utility, has obligations on the salmon and steelhead recovery within the Deschutes Basin (McCaulou 2010).

There is also a private fundraising arm of DRC to contact community members, organizations, and businesses in the watershed that are interested in donating. The state of Oregon has a lottery created fund, the Oregon Watershed Enhancement Board, which operates a program in the Deschutes to fund restoration projects. The Board takes a portion of lottery proceeds and invests them in water conservation, flow restoration, land conservation, and habitat restoration (McCaulou 2010).

Funding for many of DRC's projects comes from federal sources. In the fiscal years 2009-2011, the DRC will receive funds from the American Recovery and Reinvestment Act (ARRA). Also, the Bureau of Reclamation will provide funding according to the terms of the DRC's Congressional authorization and the requirements of the ARRA legislation. Over the term of the agreement, the DRC must match the federal funding it receives on a one-to-one basis (DRC Website 2010).

CHALLENGES

The main over-arching challenge the DRC has dealt with is **securing funding** for all of their programs and partnerships. Another challenge of the DRC stems from their non-advocacy approach. Therefore, the DRC are absent from the legislative arena, which has implications when important decisions are being made about water management. The DRC feels that they are able to provide valuable input that will benefit their mission and the objectives of their partners, since they have a greater experience using Oregon's water code for streamflow restoration than other organizations that are at the table. However, the reason they stay at a distance from those processes is the chance that the legislative decisions made will run counter to the interests of a partner and the DRC cannot afford to be at odds politically with their partners. By remaining neutral, this ensures the DRC remains on good terms with the organizations on both sides of the political spectrum (McCaulou 2010).

There was also a lot of **suspicion early on** when DRC was created and they had problems getting their message out. According to Scott McCaulou, DRC Program Director, people in the area thought the DRC was going to end up competing with other organizations in the area for resources and ultimately derail other projects. The consequence is that the DRC basically operated under the radar of the general public. It has only been in the last five years that they have been able to increase their ability to reach out to the public through newsletters, attending community events, and their website (McCaulou 2010).

ACCOMPLISHMENTS

The major accomplishment of the DRC has been to restore over 200 cubic feet per second (cfs) of streamflow to the Deschutes River and its tributaries. Since 1999, through the Water Transfers Program, the DRC has restored over seven cfs of streamflow to their local rivers and streams. The habitat restoration projects funded by the DRC have restored almost 100 miles of stream, created 13 acres of new wetlands, and planted almost 150,000 native riparian plants. Lastly, in 2008, the DRC worked with 233 landowners to temporarily restore 92 cfs of streamflow to the River and its tributaries, through their Water Leasing Program (DRC Website, McCaulou 2010).

Their work has not gone unnoticed. In 2007, the DRC received the U.S. Department of the Interior's Cooperative Conservation Award for its many achievements in finding practical solutions to water management challenges. The Award recognizes achievements that involve activity among a diverse range of entities, including Federal, State, local, and Tribal

governments, nonprofit and for profit organizations, NGOs, and individuals (Bureau of Reclamation Website 2010).

EDUCATION AND PUBLIC OUTREACH:

UPPER DESCHUTES WATERSHED COUNCIL

Photo 14.3. Tumalo Group, Courtesy of Kolleen Yake.

The Upper Deschutes Watershed Council (UDWC) works with the DRC to carry out educational programs within the watershed. They also conduct water quality monitoring and habitat restoration in the 2,000,000 acre Upper Deschutes River sub-basin. Like most watershed councils in Oregon, the UDWC was organized after the Oregon Legislature unanimously passed House Bill 3441, which established guidance for the formation of watershed councils in Oregon. In 1997 the UDWC became a 501(c)3 non-profit organization (UDWC Website 2010). Their mission is to "protect and restore the upper Deschutes River watershed through collaborative projects in watershed stewardship, habitat restoration and community awareness" (UDWC Website 2010).

Photo 14.4. Tree Planting at Riverbend, Courtesy of Kollen Yake.

The UDWC focuses on coordinating education materials and outreach messages around their restoration projects, issues, and concerns within the watershed. Their outreach programs include watershed education curricula for K-12 students and project-oriented presentations geared toward adults to encourage sustainable stewardship practices for riparian areas and streams. UDWC's Education Director, Kolleen Yake, says their K-12 education program has been very successful since, "It is regionally-based, free, fun, and aligns with Oregon state benchmarks for education." She goes on to say, "students, parents, and teachers love our programs because they are educational and they get students out of the classroom and into the field" (Yake 2010). They had to discontinue their Community Rivers

Program due to funding problems even though it was well-received by partners and land owners (Yake 2010).

Through these outreach programs the UDWC works to increase stewardship awareness and improve stewardship actions. To motivate these actions, Yake says UDWC accomplishes these objectives by, "integrating regional information about the health of our watershed and issues of concern with hands-on stewardship activities that improve conditions. We foster informed, empowered, and skilled motivation for participants to undertake stewardship actions" (Yake 2010). UDWC uses a wide variety of media to convey their messages such as press releases, editorials, television spots, public radio interviews, paid advertising, event posters, and organization newsletters and journals. They also use giveaways such as posters, hats, stickers, and water bottles to reinforce their message. Lastly, in order to measure how successful their outreach programs are, UDWC utilizes "student and teacher surveys, pre and post tests, and a range of reflective writing activities to measure changes in knowledge and/or changes in participants attitudes or behavior" (Yake 2010).

CONCLUSIONS

Unlike most non-profit organizations, the DRC had secured federal funds at their conception and this has been critical to their success. This funding allowed the DRC to build alliances and partnerships with other organizations. Also, the DRC takes a market-based approach to help solve water quantity issues in their area. They take the time to work to create win-win situations between all stakeholders, rather than have parties cave to the demands of others. The DRC is an excellent example of the success that can be had when cooperative solutions are formed between unlikely partners.

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APPENDIX

Appendix B. Deschutes River Conservancy Bylaws

CASE 15. THE DIABLO TRUST

Location: Coconino County, Arizona
Prepared by: Amanda Barker

The Diablo Trust exemplifies a group of ranchers, government agencies and university institutions managing a 426,000 acre landscape of private, Arizona State, and USDA Forest Service lands in Coconino County (Muñoz-Erickson 2007). Formed as a 501(c)3 in 1998, the Diablo Trust serves as a forum to find solutions to the dichotomous objectives of protecting the land while running sustainable ranching operations.

Longevity of the Trust can be partially attributed to a large number of ranch owner participants with a clear long-term vision and motivation to see ecological and economic sustainability of the landscape. Working in partnership with local universities has allowed for joint learning and confidence in the science supporting chosen land management strategies. Despite enjoying many accomplishments and productive projects, the Diablo Trust continues to struggle with the limited capacity of dynamic individuals, both ranchers and agency representatives, who are overcommitted with different initiatives of overlapping scope in the area (Sisk 2010).

> Mission: "The purpose of the Diablo Trust is to maintain Diablo Trust ranches as long-term, economically viable enterprises managed in harmony with the natural environment and the broader community."

Photo 15.1: View of northern area of Diablo Trust lands, Source EPA 2010.

BACKGROUND

The Diablo Canyon supports a variety of vegetation and wildlife species, such as numerous game species highly valued by the public, including rocky mountain elk, mule deer, and American pronghorn. The area also has a high diversity of birds, small mammals, reptiles, and fish species (Muñoz-Erickson 2007). At an elevation of 7,500 feet, ponderosa pine forests descend into dense stands of piñon and juniper, opening into meadows and wetlands used by game species (RLCH 2008). The Diablo Canyon, for which the Diablo Trust is named, cuts between ranches (DT 2010b).

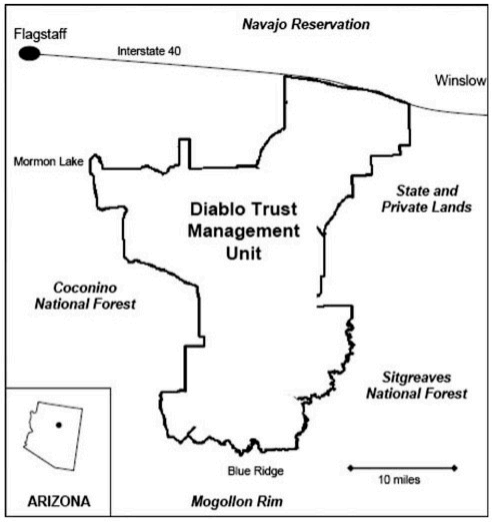

Figure 15.1. Map of Diablo Trust, Munoz-Erickson 2007.

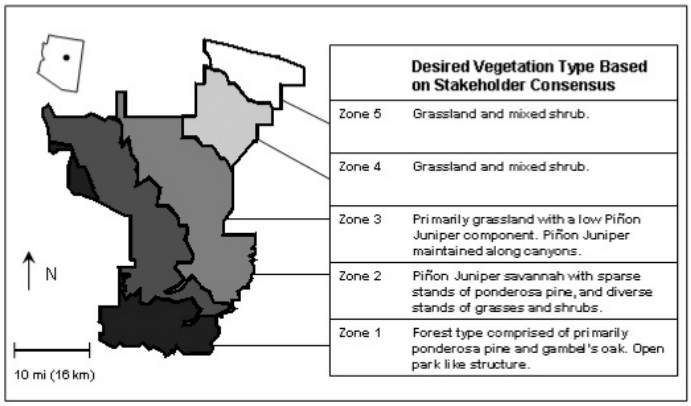

Figure 15.2. Vegetation types within DT area, Muñoz-Erickson et al 2004.

The Diablo Trust is located southeast of Flagstaff, with I-40 to the north, Lake Mary Road (federal highway 3) on the west near Mormon Lake, and the Blue Ridge area bordering the south. Ecologists classified the landscape with five significant vegetation types native in the area with combinations of grassland, shrubland, and forests (Muñoz-Erickson et al 2004). Elevations within the Trust range from 5010 to 7660 feet. Diablo Canyon bisects the two primary ranches within DT, Bar T Bar Ranch and Flying M Ranch. (Muñoz-Erickson 2007). The Diablo Trust management unit includes 58% federal lands, 22% state lands, and 20% private property (DT 2010b).

PARTNERSHIP'S BEGINNINGS

Since the late 1800s, two ranching families, the Prossers and the Metzgers, have owned the Bar T Bar Ranch and Flying M Ranch. Together, the two ranches cover 426,000 acres of private, state and U.S. Forest Service land, including large sections of the Coconino National Forest. The Bar T Bar and Flying M ranches have survived drought, fluctuating beef prices, competition from imported and feedlot beef, criticism from environmentalists, and other pressures that forced family ranches in the area to sell out, often for new subdivisions. In the 1980s, the two ranches

implemented grazing rotation measures, only to have large herds of elk devour the best spring grazing. They found little support from State or Federal land managers to manage the elk populations. The ranchers "felt punished for doing the right thing," says Norm Lowe, a range conservation consultant and Chairman of the Board of Directors (RLCH 2008).

Ranches were also dealing with the escalating intricacies of environmental reviews for grazing permits on state and federal land. "It was a challenge trying to maintain a viable ranching interest out here in the West while receiving pressure from regulatory burdens from the agencies as well as environmental pressures," says Bob Prosser, Bar T Bar Ranch owner. "We're somewhat challenged with how to move the ranch from one generation to the next without having to sell the darned thing" (RLCH 2008).

To confront these challenges, Bob and July Prosser, with Jack and Mandy Metzger, owners of the Flying M Ranch, called together local environmentalists, state and federal land managers, scientists and others interested in a sustainable approach to protecting the land while still running a viable ranching operation. A large turnout of approximately 80 people attended the first informal meeting of the Diablo Trust in 1993. Ranchers and environmentalists met head-on with each other (RLCH 2008). "There was lots of fist pounding and yelling at those first meetings," says Mandy Metzger. "The big thing was the building of trust. Both sides have learned from each other, no question." Diablo Trust members soon found they shared many of the same goals, despite their different backgrounds. "Ninety percent of what the ranchers want is what the environmentalists want: healthy habitat and healthy land," Norm Lowe says (RLCH 2008).

PARTNERSHIP'S EVOLUTION

The Diablo Trust became a 501(c)3 non-profit organization five years later in 1998 (DT 2010b). The Diablo Trust's first action was to develop a programmatic management plan, ''The Diablo Trust Area Range Management Plan and Proposed Action,'' which identifies ideal conditions for the landscape (DT 1999). The plan included various management approaches appropriate to each of its five major biological zones, with varying combinations of grassland, shrubland, and forests. Each zone contains characteristic plant and animal communities, which can be managed using similar multi-purpose management tools, including cattle grazing, recreation, hunting, fishing, wildlife management, forest health, and watershed protection (Muñoz-Erickson 2004, 2007).

ORGANIZATIONAL STRUCTURE

> Mission: "The purpose of the Diablo Trust is to maintain Diablo Trust ranches as long-term, economically viable enterprises managed in harmony with the natural environment and the broader community."

The organizational structure of the Diablo Trust tasks working committees to develop activities to meet its mission. The Board of Directors is the overarching decision maker, comprised of

seventeen landowners and citizens, which include positions of President, Secretary, Treasurer, Chairman, and Board Members at Large (DT 2010a). Agency representatives have a conflict of interest in participating on the Board, but are often lead members of committees. Committees meet regularly, on average monthly, to oversee day-to-day activities and the entire organization meets openly every month to share progress and decide future direction. This process is meant to be adaptive, with an emphasis on monitoring to evaluate progress and to inform future decision-making (Muñoz-Erickson 2007).

The working groups serve the biological, economic, and social sustainability needs of the Diablo Trust lands and community. As of 2010, working groups are:

- Science and Monitoring
- Land Projects
- Education
- Wildlife
- Rural Planning

Some completed and ongoing projects of these working groups to date include (DT 2010b):

- A Biological Assessment and Evaluation (BA&E). Management of the lands, waters and resources, including threatened and endangered species, is integral to the future vision of the Diablo Trust. The Trust is developing a monitoring protocol to keep information current relative to endangered species and habitats.
- A detailed land management plan for all 426,000 acres of Diablo Trust's federal, state and private lands. Included in the plan are proposals to restore historic springs and grasslands, create wildlife corridors, and protect endangered and threatened species habitats.
- A comprehensive inventory of all riparian areas. The Trust piloted Best Management Plans for livestock grazing as they relate to clean water issues. This effort helps to ensure an adequate and dispersed water supply for wildlife as well.
- Grazing studies conducted by Northern Arizona University and Prescott College to compare results from various grazing management techniques.

Complete listing of collaborators with the Diablo Trust (DT 2010b):

- Arizona Antelope Foundation
- Arizona Association for Environmental Education
- Arizona Farm Bureau
- Arizona Game and Fish Department
- Arizona State Land Department
- Arizona Wildlife Federation
- Artists' Coalition of Flagstaff
- Building Collaborative Communities
- Center for Sustainable Environments
- City of Flagstaff
- Coconino County
- Coconino National Forest
- Coconino County Comprehensive Plan
- Flying M Ranch
- The Malpai Borderlands Group
- Merriam-Powell Center for Environmental Research
- Northern Arizona University School of Forestry
- Northern Arizona University Sisk Lab
- Prescott College Agroecology Program
- Prescott College, Cultural and Regional Studies
- Quivira Coalition
- Red Lodge Clearinghouse
- University of Arizona, Arizona Master Naturalists
- University of Arizona Cooperative Extension

- An inventory of all federal, state and private monitoring sites. Diablo Trust is piloting a monitoring process that will enable management decisions to be timely and responsive to habitat conditions and wildlife needs.
- A hands-on education program for grades 6-12 to educate children about their role in the maintenance of healthy ecosystems. Diablo Trust wrote a curriculum and produced a video to be used in Arizona schools.
- "Reflection's of the Land, Diablo Trust Forum for the Arts" brought artists to the land and their work to the gallery in 2004. Almost 100 artists participated in this program.

Science and Monitoring Working Group

The Diablo Trust supports research and monitoring as important components of successful land management. Even before forming the Trust, the Flying M and Bar T Bar ranches previously monitored their land through partnerships with the United States Forest Service (USFS), Arizona State Land Department (ASLD), and the National Resource Conservation Service (NRCS) (DT 2010b). The USFS, ASLD, Arizona Game and Fish (AZG&F) and Diablo Trust ranches have been active participants in the Forage Research Study Group (FRSG). This is the longest consistent monitoring program in Arizona (DT 2010b).

The Diablo Trust Proposed Range Management Plan for ranches, prepared in collaboration with agencies and other Trust members over a one-year period, includes provisions for monitoring a variety of on-the-ground projects for land and wildlife improvement. Since 1987, researchers at Northern Arizona University (NAU), under Professor Tom Sisk, study the effects of livestock on grassland ecosystems (DT 2006). Researchers collaborate with ranchers in moving cattle among replicated 2.5-acre study plots. Results from this effort provide further understanding of the complex effects of grazing and rest, as well as the interaction between climatic variability and livestock grazing continuously incorporated into the Range Management Plan. Another project undertaken by NAU Professor John Bailey, studies the patterns and cycles of piñon-juniper seeding establishment in grasslands and how they are influenced by soil type (DT 2010b).

Photo 15.2: Students conducting field research on Trust lands, Source EPA, 2010.

The Diablo Trust continues to support and participate in an innovative approach to monitoring developed by NAU graduate student Tischa Muñoz-Erickson which integrates indicators of social as well as ecological wellbeing, the Integrated Monitoring for Sustainability project (IMfoS). This award-winning project received support from the EPA and several organizations that emphasize collaborative, quantitative approaches to environmental assessment (DT 2010b, Muñoz-Erickson and Aguilar-Gonzalez 2003). The project monitors experimental vegetation plots over time to explore the ecological effects of fire and grazing on grassland diversity and productivity, determine the effects of grazing on pronghorn habitat, and historical changes in grassland compositions. Through the IMfoS project, the Trust helped develop the Holistic

Ecosystem Health Indicator (HEHI) to assess and monitor the sustainability of the Diablo Trust's collaboratively managed rangelands. This monitoring tool measures ecological and social indicators of rangeland health and combines data from existing monitoring efforts, collected by different agencies, resource users, and volunteers, into a single data repository (DT 2010a).

The Trust accepted an invitation to become a field site for the Merriam-Powell Research Station at NAU. They developed criteria to guide research projects, which may take place on Diablo Trust lands. The criteria are (DT 2010b):

1. Projects must be consistent with the Diablo Trust mission and statement of desired conditions.
2. Projects must not make financial or time demands on the Diablo Trust or its ranches without appropriate compensation.
3. Preference will be given to projects that focus on or directly contribute to:
    a. Long term sustainability of the land and the economic viability of the Diablo Trust ranches.
    b. Assessment of and/or appreciation of the open space values provided by ranching.
    c. Land management decisions.
4. Preference will be given to projects that study large rather than very small land areas.
5. Preference will be given to projects of a holistic as opposed to fragmented design.

Land Projects Working Group

The Diablo Trust practices land stewardship, meaning *the practice of carefully managing land usage to ensure natural systems are maintained or enhanced for future generations (DT 2010b)*. These projects are ongoing, and range across the following management objectives (DT 2010b):

- Grassland restoration / juniper removal;
- Restoration of historic springs;
- Improving pronghorn habitat;
- Creation of wildlife habitat "parks;"
- Developing and maintaining wildlife corridors;
- Water provision for wildlife and cattle during drought;
- Improving water tanks.

Figure 15.3: Participants of Diablo Trust on field trip, Source EPA, 2010.

Education Working Group

The Diablo Trust created educational material and worked with local schools in order to reach a larger population in the greater Flagstaff area, educating in land conservation and restoration issues. In 1997, The Diablo Trust drafted curriculum for a field trip unit for grades six through

twelve, funded through the Flagstaff Arts and Science Commission and the Arizona Council for Environmental Education (DT 2006). The unit starts with a 45-minute classroom visit with four Trust members. Students are introduced to rangeland concepts through biological, historical and social lenses. A skit and slideshow highlights current rangeland controversies.

Participating teachers are provided with a packet of selected reading materials. Teachers agree to devote one class period to discuss the content of the Diablo Canyon. Each student is asked to prepare a few questions for the field trip. The all-day field trip includes six stops on the Flying M ranch, each selected to illustrate important topics. Students are provided with a handout for the tour, which includes fill-in sections relating to each stop. Trust members serve as "instructors" because of their experience and knowledge. A subsequent in-school class period is devoted to completing the field trip with discussion and Q&A session. Pre- and post-content tests along with student and teacher comments are used in evaluation.

From 1997-1999, five classes from grades six to eleven participated in the education unit. Three limitations became apparent: teachers needed more preparation if they were not comfortable in the course content, students needed additional educational materials, and the logistics and time commitment from trust members was a problem. The Diablo Trust applied for and received a second grant from the Arizona Advisory Council on Environmental Education to address these challenges. This grant ultimately produced an instructional video based on the field trip unit, with three fifteen-minute segments (DT 2010b):

- Video 1- a) the introductory skit b) ranch stewardship c) economic, governmental, legal and development threats to ranching d) the Diablo Trust and its ranches.
- Video 2- a) healthy rangeland requirements b) causes of unhealthy rangeland c) the water, mineral and energy cycles.
- Video 3- a) land ownership and rights b) economics of ranching c) rangeland products d) landscape goals e) ecological restoration f) rangeland stewardship g) human impacts and potential improvements h) the role of collaborative groups.

The media production department at NAU produced the video, filming onsite and using visual graphics with existing donated photos. The video has a teacher's guide with an annotated video script. Twenty copies of the video and supplements were distributed to all middle and senior high schools in the Flagstaff Unified School District. The Trust is currently working to produce a 15-minute edit of the video aiming to bring the issues to a greater segment of the community.

Past community outreach projects and events have included (DT 2010b):

- participation by members in outside collaborative planning efforts in the area;
- development and implementation of a field based environmental education curriculum and subsequent educational video;
- numerous presentations, including a skit by DT members to local, statewide and national groups;
- invitations to performing, literary, and visual artists in the Diablo Trust area to interpret the land through their world;
- an annual "Campout Under the Stars", during which members and prospective members enjoy some history and some music as well as conversation and good food**;**

- hosting land tours for community members wanting to learn more about this landscape and its ecological, economic and political promises and problems;
- table exhibits and presentations at various community events.

Wildlife Working Group

The Diablo Trust ranches and surrounding public lands are home to many wildlife species including deer, elk, pronghorn antelope, reptiles, mountain lion, and many types of birds. Lack of winter precipitation in recent years brought the well being of wildlife into the public eye and into local newspapers. The Wildlife Working Group, chaired by Cathy Taylor, includes agency personnel, ranchers, concerned citizens, and students.

Due to extreme drought conditions in 1996 and 2002, the Diablo Trust undertook a number of measures to aid wildlife, including (DT 2010b):

- hauling over 1,000,000 gallons of water to the area's wildlife in 2002;
- improving roads to access and maintain various water sources for the animals;
- purchasing, installing, and maintaining numerous water tanks; and
- fencing off many drying lakes and tanks to enclose deadly mud bogs which can trap thirsty animals.

The Wildlife Working Group participated in discussions with the Arizona Game and Fish Department, other agencies, organizations and volunteers concerning declining pronghorn populations. The Trust was also a participant in a USFS project for the Anderson Mesa Landscape Scale Assessment as a member of the Citizen's Working Group (USFS 2010). The result was a document illustrating existing conditions, desired conditions, and possible management practices.

Rural Planning Working Group: Diablo Canyon Rural Planning Area

The Diablo Trust participates as a member in the Diablo Canyon Rural Planning Area (RPA), another resource management group. The RPA was established by the Coconino County Board of Supervisors, with the Bar T Bar and Flying M Ranches, and Bar T Bar LLLP. The objective is to maintain the historic ranching operations, as well as pursue possible alternatives to supplement the economically cyclical nature of ranching operations and help offset the costs of various range improvements (DT 2005).

Goal Statement
To create a range of economic opportunities in support of private landholders and traditional uses while preserving open spaces for future generations.

Vision Statement
The Diablo Canyon RPA serves as a model approach for the continuation of traditional working ranches as long-term, economically-viable enterprises while maintaining unfragmented landscapes and restoring native ecosystems. The RPA successfully integrates economy, ecology, and community by pursuing a range of economic opportunities necessary to support and maintain the viability of ranching while recognizing the fundamental importance of the health of the land and the support of the broader community.

On March 11, 2003, the Coconino County Board of Supervisors adopted a resolution, proposed by Diablo Trust-founding Prosser and Metzger families, to establish the Diablo Canyon Rural Planning Area (DC RPA) (DT 2003). This planning area, the first of its type in Arizona, is authorized under Arizona statute A.R.S. 11-806.D(3). The statute allows rural landowners, in counties with populations fewer than 400,000 to petition the County Board of Supervisors to form RPAs. The expectation is that RPAs maximize available planning tools and incentives to promote sustainable open spaces and healthy watersheds (DT 2003). An RPA allows a rural landowner to be an integral part of the planning and permitting process, instead of the traditional limited capacity of reacting to established plans (DT 2010b).

Funds for the RPA come from the Arizona State Department of Commerce. A number of economic opportunities which could help ensure the future sustainability of the ranches were explored, including wind energy, conservation easements, ecotourism, and low impact housing (DT 2005).

The Coconino County Planning and Zoning Commission and the Board of Supervisors unanimously approved the Plan for the Diablo Canyon RPA on August 16th, 2005. The RPA manages 170,000 ha of mixed-ownership land, with broad landscape goals outlined in their management plan to complement the management objectives of the agencies for the public lands (Muñoz-Erickson 2007). "We're trying to do a broad toolbox of ideas that can be used as a pilot for other areas as well," Metzger of Flying M Ranch says. “The rural planning area includes a component of conservation easements to prohibit development on certain ranch parcels. Planning for low-impact housing will conserve key environmental areas, but housing development will be a last resort for the ranches” (RLCH 2008).

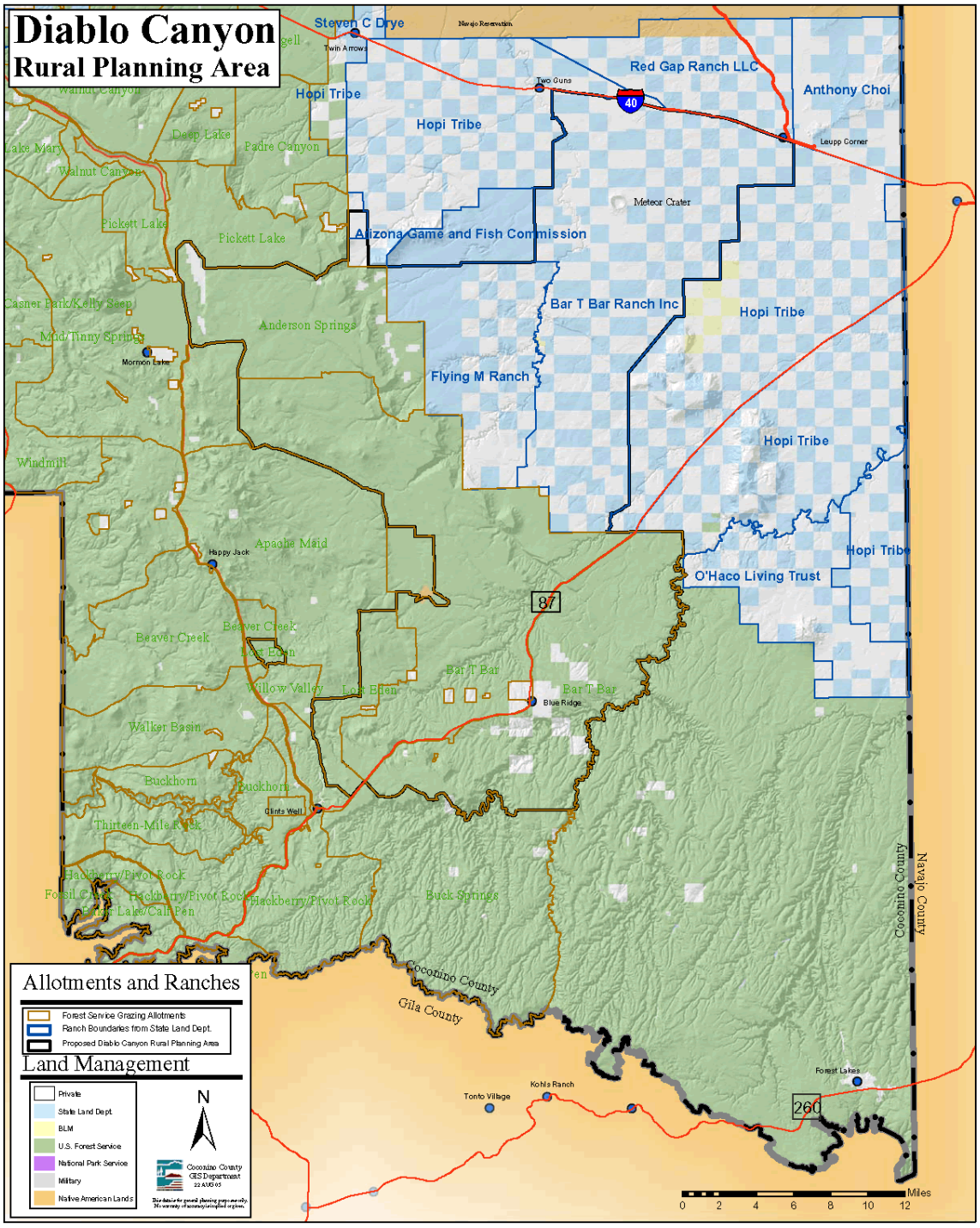

Figure 15.4: Map of Diablo Trust Rural Planning Area encompassing private and public lands, DT 2010b.

CHALLENGES

A particular challenge experienced by the Diablo Trust is the time-consuming nature of meetings (RLCH 2008). Many participants of the Trust participate in other regional initiatives, including the National Forest Recreation Association, an organization created in 1948 to represent and serve as an advocate for outdoor recreation businesses on federal lands and waters across the United States (NFRA 2010). Agency representatives working with other collaborative organizations find themselves overextended. Dynamic individuals in agency roles end up having limited capacity within the trust because of other initiatives working on a slightly different scope or scale in the area (Sisk 2010). Additionally, ranch owners serving on multiple working groups within the Trust lack time to fully commit to all projects affecting their interests (Sisk 2010).

The diffuse leadership is problematic within the Diablo Trust's organizational structure. Longtime board members and committee chairs are often ranch owners and managers with limited capacity to spearhead the consensus decision-making process. Consensus is the standard within the Board of Directors, and officer titles do not give any authoritative power to an individual to push an agenda (RLCH 2008). With more diffuse leadership, and as an advisory group with no capacity to enforce or regulate recommended actions, The Trust provides a useful venue for slow decision-making that accounts for all (or close to all) perspectives (Sisk 2010).

Ranch owners continue to struggle financially, despite the Trust's mission to ensure long-term economic stability of Trust participants. Ranchers seeking reimbursement for maintaining open space were unsuccessful, although the rural planning initiatives offer some hope. "No matter how you cut that economic cake, the cost of production continues to go up. We're trying to pay more with less," Bob Prosser, Bar T Bar Ranch, says. "My nature is to be pessimistic, but I do think we've made enough progress in all this that the outcome will be good" (RLCH 2008).

LESSONS LEARNED

Some success of the Diablo Trust can be attributed to the conviction that good land stewardship incorporates participatory research and monitoring projects (Tilt 2008), particularly through a partnership with local university, Northern Arizona University. Introducing scientists into a collaborative environment has helped the Trust develop appropriate research questions that are relevant to the ranchers. Integrated research and sound monitoring protocols generated clear measures of effectiveness and progress (Tilt 2008). By working with researchers at NAU and Prescott College, the Diablo Trust can incorporate research and monitoring into their rangeland management (Tilt 2008). Partnerships are encouraged by providing equal access to information for everyone, incorporating multiple sources of information and values, and engaging stakeholders in the data collection and generation of knowledge through multi-party monitoring projects (Muñoz-Erickson and Aguilar-Gonzalez 2003).

The inclusion of research and monitoring in the collaborative process has brought several benefits to scientists as well. Collaborations provide scientists with the resources to "scale up" their studies from small plots to whole landscapes (Tilt 2008). In addition, the ability to collaborate with the people who manage the land results in applicable science (DT 2010a). All

stakeholders share a common goal of sustaining research and monitoring over the long term.

By taking an active role and using this collaborative scientific approach, the Diablo Trust supports numerous successful projects, such as monitoring experimental vegetation plots over the long term, investigating the ecological effects of fire and grazing on grassland diversity and productivity, determining the effects of grazing on pronghorn habitat, discovering historical changes in grassland compositions, and developing the Integrated Monitoring for Sustainability project (IMfoS) (Muñoz-Erickson and Aguilar-Gonzalez 2003), which is a multi-party monitoring process that incorporates social and ecological well being and acknowledges their interrelationship. Working in this type of management structure has enabled participants to reduce redundancies in research, project scope, and funding.

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CASE 16. NORTH FORK RIVER IMPROVEMENT ASSOCIATION

Location: North Fork River, Colorado
Prepared by: Amanda Barker

Mission statement: To maintain the traditional uses of the river while improving stream stability riparian habitat and ecosystem along the North Fork of the Gunnison River.

The North Fork River Improvement Association (NFRIA) is an organization that highlights the challenges of nonprofit longevity on Colorado's Western Slope. The original scope of NFRIA included finding alternative methods to reduce extreme and accelerated bank erosion along the North Fork of the Gunnison River in Colorado. The scope quickly evolved into a pioneering local watershed group, whose purpose was "rehabilitating the ecology of the river corridor while working closely with all river interests to develop consensus and collaborative efforts" (EPA 2003).

The North Fork River Improvement Association formed in 1996 as a reaction to the agency management of stream banks, particularly 16-miles between Paonia and Hotchkiss. The banks consistently washed away each year with the snowmelt and high stream flows. The status quo solution to the problem was additional straightening and stream bank enforcement. Citizens saw more and more of their land washed away, despite the annual reinforcement. Landowners, business owners including gravel miners and irrigation companies, and an engineer keen on eco-friendly solutions for the area began an active discussion on how the health of their river ecosystem could be addressed and improved.

NFRIA recently merged in July 2010 with the Western Slope Environmental Resource Council (WSERC) to form the NFRIA-WSERC Conservation Center, Inc. (NWCC). This consolidation will allow both organizations to continue to pursue projects in their areas of environmental expertise, with lower costs from a combined effort. Addressing challenges and adapting their scope has yielded tangible results and many completed technical projects in their watershed. Because this merger was only one (likely) potential outcome for the watershed group when this research was conducted, the group's research questions were applied to the NFRIA, its history, accomplishments and challenges. The lessons learned and conclusions drawn from their unique history and achievements are useful for any struggling watershed group at a crossroads.

BACKGROUND

The North Fork of the Gunnison River watershed is located in southwestern Colorado. The North Fork River Improvement Association works in the middle basin, an area of approximately 968 square miles in 2 counties. The North Fork meets the main stem of the Gunnison River north of the Gunnison Gorge and the Black Canyon that runs through Gunnison National Park. The total population within the watershed is only about 5,000 people. The largest city in the region is Paonia, with approximately 1,500 residents in 2000.

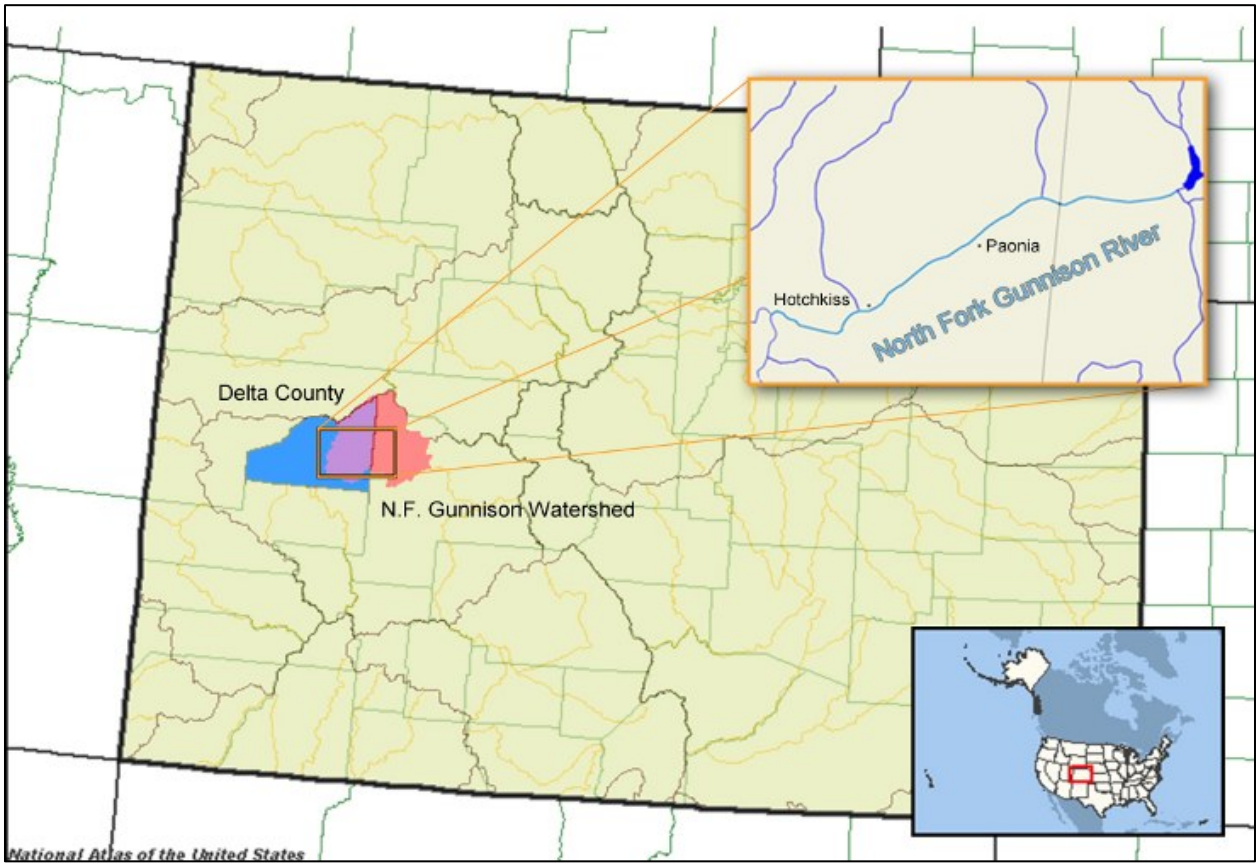

Figure 16.1. Focus area of the North Fork River Improvement Association, Courtesy of NFRIA.

Federally managed public land totals 73.7% of the 597,941-acre North Fork Gunnison Watershed. The remaining 26.3% is principally private land in the valley bottomlands of the watershed. Approximately 94% of both public and private lands are forest and undeveloped wildlife habitat. Another 4% are developed agricultural lands (NFRIA 2000). 80% of all privately owned land in the watershed is used for agriculture (NFRIA 2009).

Land-use in the North Fork area is primarily cattle and sheep ranching, fruit orchards, and agriculture. Resource extracting industries include underground coal mining, gravel mining, and logging. The general economy depends on tourism and outdoor recreation from abundant fish and wildlife resources in the watershed. Many local Paonia residents are employed in the coal mines in the surrounding few miles. Coal mining is a long-standing tradition in the area, since the concurrent settlement in the 1880s and the Indians were displaced on the Ute Indian

Reservation (Wills n.d.). The North Fork area is also known for its fruit orchards and vineyards. Sustaining a traditional rural way of life through agriculture, ranching, and mining is a primary concern for the North Fork area (Kenney 2000).

In the early 1900s, flood damage occurring during spring runoff intensified each year. Acres of orchards and good farm ground were lost overnight. Landowners did anything and everything in their power to protect their property. Each year they would add more car bodies, large boulders, cabled cottonwood trees, or whatever they could find to stabilize their banks. Given these conditions and the knowledge of the day, channelization of the river made the most sense. It was considered to be the best defense against flood damage, and it was strongly encouraged by agencies such as the Army Corps of Engineers and the Soil Conservation Service (NFRIA 2000). In reality, these practices only diverted river flows, which generally causes more flooding damage to downstream property owners.

Until the end of World War II, channelization and bank armoring efforts were undertaken manually and with teams of horses. In about 1947, Delta County purchased a surplus bulldozer from the Army. This single purchase intensified the annual campaigns to construct a straight, trapezoidal channel with high dikes, especially between the towns of Paonia and Hotchkiss. The bulldozing continued until 1980 and caused the channel to lower substantially. Today's river reflects the attempts to confine floodwaters in a straightened channel. Present river uses, such as in-stream gravel mining and the construction of annual gravel dams for irrigation diversions, continue to impact channel stability and riparian function.

PARTNERSHIP'S BEGINNING

Historical land and water management practices, including stream channel straightening and stream bank reinforcement, led to heavy annual stream bank erosion. In the mid-1990s, local landowners, business owners, and environmentalists were becoming extremely worried about riparian land erosion. This tense climate motivated watershed resident and engineer Jeff Crane to bring different stakeholders to the table to discuss alternative options for the future of the watershed (Crane 2010). His first goal was to complete a collaborative scientific analysis of the watershed and the geomorphology of the river in order to give this group the foothold to begin building relationships and successes for the watershed.

The first public meeting designed to gauge public sentiment about the river was held in February 1996. It was well attended, primarily by landowners and water users, and facilitated by Carl Zimmerman of the Colorado Soil Conservation Board (NFRIA 2000). It was a working session designed to determine the community's perception of the North Fork's problems. By the end of the meeting, identified issues commanding immediate attention in the watershed included bank erosion, land loss, and the unpredictability of the river. Other problems identified included: damage to irrigation facilities, gravel mining in the river, loss of fish and wildlife habitat, no access to the river, weed infestation, and the river's poor appearance (Crane 2010).

Several public meetings were held after that and eventually a non-profit, grassroots, local watershed organization (NFRIA) was formed in late 1996 with an elected Board of Directors,

articles of incorporation, and by-laws. Jeff Crane recruited key landowners to comprise the majority of Board positions. This was a strategic move by Crane to increase the community buy-in.

These determined landowners joined forces with the Colorado Soil Conservation Board and the Delta Conservation District to attain nonprofit 501(c)3 status. One of NFRIA's first tasks was to hire a consultant to perform an assessment of the condition of the river and to develop recommendations for its repair. The Board obtained a grant from the EPA and the Colorado Soil Conservation Board, and the study commenced in January 1997 (NFRIA 2000). The results of the study were published in September of that year and made available to the community. The response to the series of recommendations was mixed but generally favorable. Most concerns centered on the issue of property rights and protection of water rights.

In March of 1998, a survey was sent out to all landowners and water users along the North Fork, again to petition the community about the perceived problems along the river. The response was the same as the previous year, and the majority of those surveyed reiterated that they wanted to see on-the-ground restoration work done and not another study. Work then began on developing a funding strategy to begin their first demonstration project, Hotchkiss Demonstration Project (NFRIA 2000).

Additional stresses to the watershed were identified later in North Fork of the Gunnison River Watershed Plan *Update* (Sauter 2010) include:

- Four high priority segments of the North Fork listed on Colorado's 2010 303(d) impaired water list for selenium contamination;
- North Fork tributaries are on the Monitoring and Evaluation (M&E) list for recoverable iron;
- The North Fork contributes significant amounts of salt to the Colorado River System;
- *E.Coli* samples occasionally excede state water quality standards;
- No baseline data exists to evaluate natural gas development;
- Some stretches of the North Fork River channel continue to be structurally unstable;
- Low instream flows in the summertime;
- Limited public access to the North Fork River.

The first project NFRIA undertook was a scientific collaboration with local and state agencies to assess the morphology of the North Fork River. The study's purpose was to identify reaches in critical condition through a grant from the Environmental Protection Agency and the State Soil Conservation Board. Shortly thereafter, NFRIA selected and prioritized small-scale restoration projects, with grant money moving these projects into action (EPA 2003). From this assessment stemmed the NFRIA's first major collaborative effort, a demonstration restoration project of a 1.5-mile stretch of riparian habitat easily seen in Hotchkiss. Small successes in the early phases of the North Fork River Improvement Association went a long way to win the confidence and the support of the local residents and landowners.

Photos 16.2 and 16.3: Before and after photos of Hotchkiss Demonstration Project, Courtesy of NFRIA.

PARTNERSHIP'S EVOLUTION

NFRIA embraces open participation and membership of all interested parties and stakeholders. In the 1990s, a broad spectrum of stakeholders was encouraged to participate, and did, including private landowners and specialists from agencies working in the area. NFRIA worked to create sound relationships with anyone they thought might have an impact on the river and watershed, positive or negative. A great deal of energy was spent recruiting participants for meetings, programs, committees, or new initiatives (Stiller 2010).

During NFRIA's first few years, a technical advisory group met regularly to stay abreast of government policy changes, funding programs, and the individual technical expertise of various agencies (Kenney 2000). The technical advisory group was made up of representatives from the following agencies:

- USDA Forest Service
- US Fish and Wildlife Service
- Bureau of Reclamation
- US Bureau of Land Management
- Army Corps of Engineers
- Natural Resource Conservation Service
- Environmental Protection Agency
- U.S. Geological Survey
- Colorado State Soil Conservation Board
- Colorado Water Conservation Board
- Colorado Department of Health and Environment
- Colorado Division of Wildlife
- Delta Soil Conservation District
- Delta County Commissioners
- Colorado State University
- Colorado River Water Conservation District

The technical advisory group was an important tool for cultivating an informal partnership between agencies and the greater community, especially in regards to funding and identifying individuals who shared interest in NFRIA's scope. However, after a few years, participation dropped off, and the advisory group ceased to meet. Partnerships were created between agencies on projects, but the value of the technical advisory group was lowered as it became apparent the agencies were willing to participate in the partnership, but not to manage it (Crane 2010).

Over time, interest and participation from agency stakeholders waned. However, the time spent by board and NFRIA members building relationships has paid off in the long run. Agencies now participate with the initiative by bringing projects or potential grant monies to the Executive Director or the board's attention. The decision-making process currently lacks significant input from agencies, but many projects are driven from collaborative opportunities presented by those agencies (Crane 2010). For example, NFRIA continues to monitor the water quality of the North Fork River with financial and human resource assistance from government agencies, nonprofits, local governments, and local businesses (NFRIA 2010).

Today, NFRIA works towards a vision shared by citizens, landowners, businesses, and environmentalists. The group's authority is rooted in common goals for the community. "The power to legislate our goals into law was never a priority; buy-in from people working and living here into projects the NFRIA was always where we focused our efforts," states Jeff Crane, NFRIA board member and founding Executive Director.

Lacking the necessary funds for overhead costs ultimately pushed the North Fork River Improvement Association to begin talks with the Western Slope Environmental Resource Council. Throughout NFRIA's history, the Executive Director has always had a talent for acquiring significant funds from a variety of sources. Balancing project fundraising with general operational fundraising proved to be too great a challenge for the small non-profit. Merging with WSERC to form the NFRIA-WSERC Conservation Center, Inc. (NWCC) is seen as a positive move forward to stabilize the turbulent financial grant cycles experienced by NFRIA (Browning 2010).

The Western Slope Environmental Resource Council is an advocacy organization in the North Fork of the Gunnison watershed. They formed during the 1977 energy crisis in order to protect the environmental integrity of Delta County from exponential growth of the coal industry (Lindsey 2001).

Mission of Western Slope Environmental Resource Council: "Environmental resources include not only wilderness, clean air and water, but also human cultures and communities. We recognize these as intertwined and dynamic. As such, we cannot hope to safeguard our natural systems without also simultaneously protecting and nurturing our human systems. WSERC seeks to build an aware and active community that can live with harmony and respect for the land and resources that sustain us all."

Just before the vote to approve the merger, WSERC board member Marc Stimpert observed: "WSERC likes to talk and educate while NFRIA walks the walk and gets mud between its toes. NFRIA goes through economic boom and bust cycles depending on the availability of grants. WSERC remains stable, although it has had a deficit in income the last few years, which have been absorbed by their reserves. He believes the merger will make both groups stronger. He said NFRIA will complete WSERC" (Browning 2010).

> The mission of the new organization, NFRIA-WSERC Conservation Center, is "to build an aware and active community that protects, preserves and enhances our natural, human and economic resources."

In these difficult economic times, these mergers can be the final line of defense for non-profits like the North Fork River Improvement Association. Employees and board members remain optimistic. The mission and projects set for by NFRIA will be able to continue. The North Fork River Improvement Association and the Western Slope Environmental Resource Council merged in August 2010 to form the NFRIA-WSERC Conservation Center.

NFRIA ORGANIZATIONAL STRUCTURE

> NFRIA Mission statement: To maintain the traditional uses of the river while improving stream stability riparian habitat and ecosystem along the North Fork of the Gunnison River.

The overarching goal of NFRIA is "to solicit community input from all stakeholders and government agencies involved with the river, build consensus, and develop collaborative solutions to the common problems of this stream system" (Sauter 2010). Specific goals include: community education and outreach; researching cause and effects of hydrological processes in the watershed; developing and constructing floodplain rehabilitation/restoration demonstration projects to improve channel stability, irrigation diversions, and riparian habitat; and building organizational networking and capacity (Kenney 2000).

The Board of the North Fork River Improvement Association is made up of 8 to 12 representatives of farmer/ranchers, gravel miners, environmentalists, homeowners, irrigation companies, and recreationists. The organization is located in Hotchkiss, Colorado and holds monthly meetings. Decisions are generally based on consensus, but the group has no formal rule. Board membership is open to any participating organizations, landowners, and citizens. The Board of Directors meets monthly, although in exceptional cases they meet more frequently. Special board meetings have almost always been called by the Executive Director. The Director sets the agenda, although all board members have the opportunity to comment or provide input regarding the agenda. The bylaws allow for two co-chairs, either of whom manages the meetings. When neither co-chair is present, those attending choose an acting chair to run the meeting (Barna 2010). Though committees and sub-groups can meet as necessary, not much happens at the Board level between meetings.

As input to the association is funneled through the Board of Directors, "stakeholder group input is generally limited to their influence with the board," notes Dave Stiller, current Executive Director (ED) of NFRIA. "Originally, the board was comprised of various stakeholder representatives and the bylaws required stakeholder presence on the board. Subsequently, however, some stakeholders have dropped away and their influence is understandably diminished. Stakeholders can also influence the organization by attending periodic public meetings held to discuss or announce various actions or programs."

At NFRIA, the Executive Director makes all day-to-day decisions, though anything relating to policy or money is referred to the Board of Directors. The ED's decision-making authority is typically limited to situations where the policy is already explicit and easy to implement, or within approved organizational budget or project budgets already in play. If of a time-critical nature, the ED uses email and/or the phone to gain Board approval; if not, he must wait until the next monthly Board meeting (Barna 2010). The ED cannot sign contracts; they must be reviewed and signed by the board and chair, respectively.

NFRIA maintains a part-time Executive Director, whose influence and effectiveness is sharply constrained by lack of funding. One or two VISTA volunteers (Volunteers in Service to America) are on staff to assist when and as needed. In the past, the organization also had a part-time administrative assistant and part-time development director; however, budget constraints required the elimination of these positions.

The Board will continue to be the governing body in the merged NFRIA-WSERC Conservation Center, Inc (NWCC). Now officially merged, the current NFRIA Board of Directors will nominate three members from NFRIA. The current NFRIA Executive Director, Dave Stiller, will become Associate Director at NWCC.

FUNDING

The organization is funded primarily by a small percentage of federal or state agency or foundation grants set aside for project management, accounting and reporting requirements, plus community-member dues and several small unrestricted foundation grants. Projects are almost exclusively funded by restricted government or (rarely) foundation grants. Because these tend to be sizable projects, the granting cycles commonly are long (approximately one year), which makes financial planning extremely challenging. If a grant cycle is missed, for whatever reason, it has a cascading effect on the entire organization's ability to function (Crane 2010).

The annual budget of NFRIA came from a variety of government grants and community donations made through membership dues. The Environmental Protection Agency funds NFRIA through a Community Based Assistance Grant. The Colorado State Soil Conservation District annually awards a matching grant for the amount of the EPA grant. Funding from the Delta County Soil Conservation District was used to finance administrative costs. The organization was successful in developing a wide range of partners to provide cash and in-kind donations in order to fund education programs and construction of restoration projects (Kenney 2000).

CHALLENGES

The North Fork River Improvement Association faced numerous challenges throughout its history. Particular challenges for the growth and continuity of this nonprofit were identified in the updated Watershed Plan (Sauter 2010) and NFRIA history (NFRIA 2009).

Discontinuities in Participation

Over the fifteen years working in the North Fork of the Gunnison River watershed, volunteer participation with NFRIA dropped off. With such a small, rural population, there is not a large pool of potential volunteers. The same group of dedicated people undertakes much of the effort. Continuing the momentum of these efforts has been a true challenge over the past few years.

Jeff Crane describes the challenge inherent in keeping citizen participants at the table over the long term: "Even with individuals who identify with the goals of our organization, who know the work we're doing should be a priority for the community, these people still have full-time jobs and full-time lives. Adding our priorities and projects on top of their already full plates is a challenge. Instilling enduring passion is no small feat."

Shifting Representation

Without representation from all the constituent groups involved in the decision-making processes of NFRIA, key groups held the ability to constrain or block implementation of particular projects. Likewise, pet projects of particularly involved members or citizens were more likely to be approved by the Board of Directors, such as a particular irrigation diversion or stream stabilization project. Losing an active advisory group of agencies and officials ensured poor representation of a broad range of positions within the watershed. A lack of sufficient community representation created a small pool of similar stakeholders that could not adequately represent the needs and opinions of the area.

Lack of Resources

NFRIA was run entirely on grants to carry out their mission and goals. Lack of buy-in from local government and agencies, with human financial resources, kept the organization in a fragile state for its entire history. Lack of financial capacity or will to implement projects hindered the sustainability of the organization. As Dave Stiller, executive director of NFRIA, commented:

> "The board must be involved, especially in fund-raising, for any long-term success. Otherwise, the ED/staff spend an inordinate amount of time raising money to keep the doors open for another month, so they can raise more money to keep the doors open another month again. It's extremely difficult to develop or sustain momentum under such a scenario. I believe this is a constant, recurring problem throughout the non-profit universe. In a related way, it's very important for the ED to cultivate good relationships with individual directors and donors and not be timid about asking difficult questions."

"In my opinion, the organization's influence is sharply constrained by lack of funding. In contemporary non-profit organizational theory, the board is supposed to be actively involved in fund-raising; however, this has not been the case with our organization. This results in the Executive Director being responsible for nearly all fund-raising, either through grant writing or donor approaches."

ACCOMPLISHMENTS

The Hotchkiss Demonstration Project on the North Fork was completed in 2000. In view of the largest town in the watershed, it illustrated the available, cost-effective technology necessary to restore proper riparian function to a badly damaged section of the river. NFRIA, the Corps of Engineers, the Natural Resources Conservation Service, the Environmental Protection Agency, the Soil Conservation District, private consultants, and local landowners collaboratively designed the project, based on the recommendations of the morphological assessment in 1996 (Kenney 2000).

The NFRIA's accomplishments can be catalogued by additional physical accomplishments. After the Hotchkiss Demonstration Project was completed in 2000, the NFRIA undertook the Midway Enhancement Project. This project was completed in 2002, its primary goal to reduce and remove previous human intervention, including stream channel modification, in the active river channel to restore the natural flow of the river. Endorsement and participation from local landowners contributed to the project's success, with land ownership with the project location being completely private and primarily agricultural (NFRIA 2009).

Additional river enhancements, dam removal, irrigation diversions were all done with significant grant monies and collaboration between landowners, business owners such as gravel and irrigation companies, NFRIA, and support from agencies through grants and technical expertise.

EDUCATION AND OUTREACH

The North Fork River Improvement Association has made efforts to educate the public through community meetings, newsletters, educational brochures, local radio interviews, float trips, and display exhibits at community events. Informal conversations and discussions with all the landowners in the watershed allowed NFRIA to develop a comprehensive and holistic approach to community directed river management based on identified priorities (Kenney 2000).

These education tools are the primary way for NFRIA to connect the community to issues in the North Fork of the Gunnison watershed. The demonstration project allows the Hotchkiss community to actually observe the rehabilitation of the river from year to year, to observe the expansion of healthy riparian habitat.

With the merging of NFRIA into NFRIA-WSERC Conservation Center, Inc. (NWCC), the scope of education will be broadened to encompass the work that WSERC has completed in the past, with their goals for the future.

LESSONS LEARNED

The North Fork River Improvement Association has learned lessons from challenges over the years, as well as enjoying clear successes for the North Fork River. Dynamic and determined leadership, like founder Jeff Crane, contributed to their successes. The North Fork was fortunate to have such an individual uniquely placed to take on the burden of creating a working association and then moving that association forward through successes and challenges. Dave Stiller, current Executive Director of NFIRA notes,

> "One charismatic and energetic individual [Jeff Crane] saw the need for such an organization and worked independently for several years to get the organization up and running. Often, he went months between earning any salary."

NFRIA's financial instability and problems with fundraising throughout its history was a primary factor leading to the necessary merger in 2010. As Stiller comments,

> "In the past, I struggled to get my board involved in fundraising. In retrospect, I should have made very specific requests, rather than broad queries or complaints for help in fundraising. I ultimately concluded that most of them probably have little idea how to independently accomplish the things that need doing. In this sense, if the ED is passionate about the organization's mission, he/she might wish to influence board appointments to get people willing to assist and be active. Without an active board, and if the ED isn't willing to find board members willing to be involved, the ED may as well quit and do something else with his/her time."

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APPENDIX

Complete North Fork of the Gunnison River Watershed Plan *Update* (2010). To view full Watershed Plan, please visit: http://www.nfria.org/pdfs/2010_Watershed_Action_Plan.pdf

CASE 17. SIUSLAW WATERSHED COUNCIL PARTNERSHIP

Location: Central Oregon Coast, Oregon
Prepared by: Bethany Hellmann

The Siuslaw Watershed Council (SWC) was incorporated as a 501(c)3 non-profit organization in 1999. SWC's mission is that it,

"Supports sound economic, social, and environmental uses of natural and human resources in the Siuslaw River Basin. The Council encourages cooperation among public and private entities to promote awareness and understanding of watershed functions by adopting and implementing a total watershed approach to natural resource management and production."

SWC's formation, like most other Oregon watershed councils, was driven by the salmon crisis in Oregon. SWC has accrued educational and restoration project successes. SWC forms partnerships with timber companies, local, state and federal government entities, private landowners, and outdoor recreation companies. They have grown in number of staff and projects and influence over the Siuslaw Watershed since their formation. SWC's ability to form lasting partnerships and engage many watershed residents in their activities can serve as a model for the Roaring Fork Watershed Collaborative.

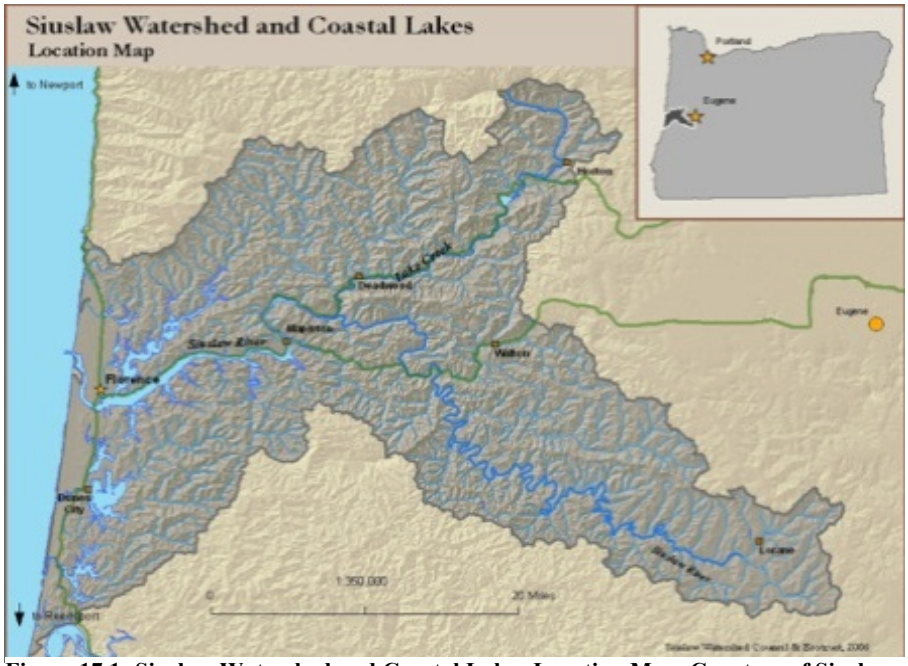


Figure 17.1: Siuslaw Watershed and Coastal Lakes Location Map, Courtesy of Siuslaw Watershed Council.

BACKGROUND

The Siuslaw Watershed is located on the Central Oregon Coast, encompasses 773 square miles, and flows through 150 miles of rivers and streams (EPA 2004). The main stem flows from Lorane Valley, through the Coast Mountain Range into to the town of Florence and empties into the Pacific Ocean (Chen 2009). The Coast Mountain range stretches along the northern and southern boundaries of the basin (EPA 2004). The three distinct geographic areas of the Siuslaw Watershed are the oak savanna forest and meadows, the Coast Range Mountains and the estuary zone. The largest remaining tracts of old growth, coastal rain forest in Oregon reside in Siuslaw. The Upper Siuslaw watershed remains largely forested and less developed than the rest of the basin (UM&USLAC 2003). The wide valleys retain alluvial deposits, making them suitable for settlement, farming and transportation. The Siuslaw River widens into a broad floodplain with many wetlands forming an estuary west of the town of Mapleton. Sand dunes, pine woodlands, plain lakes and wetlands form the coastal plain (SWC 2002). The streams of the watershed can be unpredictable and "flashy" due to the "lack of snowpack, steep terrain, low gradient streams, shallow soils, relative dryness in the east, and absence of a true headwaters" (SWC 2010). The land is not able to store water, which has been exacerbated by logging, road construction, valley clearing, wetland drainage, removal of logjams and resulting stream down cutting. The valley floods frequently.

The major urban area in the Siuslaw Watershed is the town of Florence located in the estuary (Kolkemo 2007). Tourism, recreational fishing, logging, development and agriculture have negatively impacted the estuary. Water quality has been degraded by excessive organic and inorganic nutrient loading, high water temperatures, hydrologic changes, toxic materials and introduced exotic species.

The watershed is a mosaic of farms, residential homes and young forests with various land ownership throughout the watershed as shown in Figure 2. The USDA Forest Service and the Bureau of Land Management oversee fifty percent of the watershed, the State of Oregon manages seven percent, industrial timber companies own a third of the watershed and private, non-industrial interests own the flat valley bottoms, lower hill slopes and estuary (EPA Watershed Initiative 2004). The western half of the watershed is mostly contained within the Siuslaw National Forest (Siuslaw Watershed Council 2002). The Siuslaw Valley consists of small farms and homes (Stone et al. 2009). Agriculture in the Siuslaw Basin includes family livestock and hay operations, vineyards, nurseries and rural residential properties (UM&USLAC 2003).

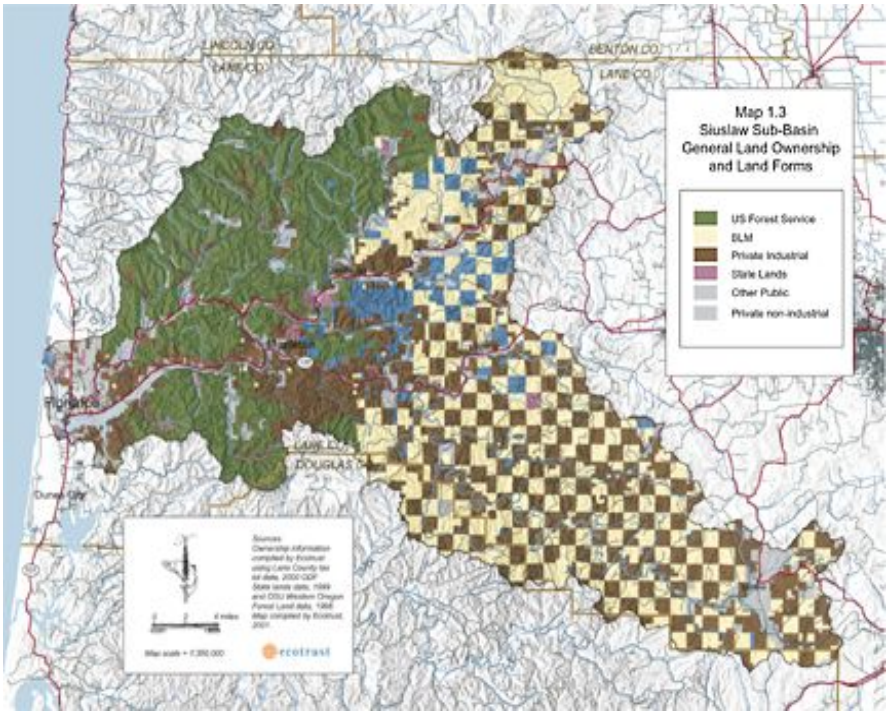


Figure 17.2: Land ownership in the Siuslaw Watershed, Courtesy of Siuslaw Watershed Council.

The Siuslaw Basin has historically been one of the greatest producers of salmon in the Pacific Northwest and subject to numerous aquatic studies (EPA 2004). Coho salmon populations are at less than 2% of their historical levels and listed as threatened under the Endangered Species Act. The fish crisis that led to the formation of the SWC was likely caused by over-fishing, poor ocean conditions and the impacts of clearing the land for settlement. "By 1882, all the farmable land up to tidewater was claimed" (SWC 2002). Driving logs repeatedly through the river, sometimes using dynamite scoured the creek bottoms to bedrock and channelized the streams. The aquatic ecosystem of the Siuslaw was no longer able to store water, sediment or nutrients. It functioned like an urban stream that quickly funneled water, making it inhospitable to salmon and other aquatic wildlife.

Between 1960 and 1990 vast amounts of timber were removed from the Siuslaw Basin (Kolkemo 2007). Other threats include installation of tide gates that prevent tidal flows in the estuary, increased sediment delivery to streams due to aggressive forest practices on steep slopes and riparian zones and high river temperatures. After World War II, extensive road systems were built on steep side slopes, which increased landslides further damaging the river basin (SWC 2010). Until the State Forest Practice Act of 1972, there was very little regulation on forestry of private lands. Attempts to clean the streams and aid salmon passage by state and federal biologists many times led to further destruction of habitat and stability in the structure of the streams. Other attempts at river remediation included restricting river fishing in 1939 by the Oregon State Fish Commission, closing of commercial fishing on the river in the 1950s, closing all canneries in the basin by 1956 and closing sport fishing for Coho in 1993. Large-scale construction of roads by private and public forest managers began in the mid 1970s. "The Northwest Forest Plan for federal lands, adopted in 1993, protected most of the Siuslaw National Forest and Bureau of Land Management (BLM) lands from clear-cut logging. Riparian buffers were greatly enlarged" (SWC 2010).

PARTNERSHIP'S BEGINNING

The Siuslaw Watershed Council officially began in 1997 (Vollmer-Buhl 2010). However, earlier meetings and efforts led to the formation of this council. The formation of SWC, like most other Oregon watershed councils, was driven by the salmon crisis of the 1990's. Several landowners and industry representatives led the establishment of SWC. These leaders saw the necessity to restore the health of the Siuslaw Watershed through collaborative ecosystem management. The SWC was incorporated as a 501(c)3 in 1999 (SWC 2010).

PARTNERSHIP'S EVOLUTION

The SWC mission statement has remained the same for the past 13 years (Vollmer-Buhl, 2010). The SWC "*supports sound economic, social, and environmental uses of natural and human resources in the Siuslaw River Basin. The Council encourages cooperation among public and private entities to promote awareness and understanding of watershed functions by adopting and implementing a total watershed approach to natural resource management and production."* However, the mission has evolved in interpretation, implementation and practice.

The structure of the leadership board, executive committee and technical advisory committee has also been consistent for the past 13 years (Vollmer-Buhl, 2010). The technical team has gained respect regionally and nationally among other watershed groups through their widely known expertise and ability to complete successful projects. The staff of SWC has grown in both their capacity for projects and obtaining more staff. When the by-laws were written, SWC had only one staff person and now they have 5 people on staff. Liz Vollmer-Buhl attributes this growth to SWC's ability to develop, implement, and promote projects and to obtain adequate funds.

ORGANIZATIONAL STRUCTURE

The SWC is a 501(c)3 non-profit, community-based advisory organization (EPA Watershed Initiative, 2004). SWC provides an opportunity for local people to plan and participate in the restoration of the Siuslaw Watershed. SWC promotes voluntary, non-regulatory practices, projects and programs to enhance stewardship of the watershed's natural resources. SWC welcomes advice from local, state and federal agencies, organizations and interests in the Siuslaw Watershed and informs interested stakeholders of SWC's work. SWC makes recommendations for the protection, restoration and improvement of ecosystem quality in the Siuslaw River Watershed and Coastal lake drainages.

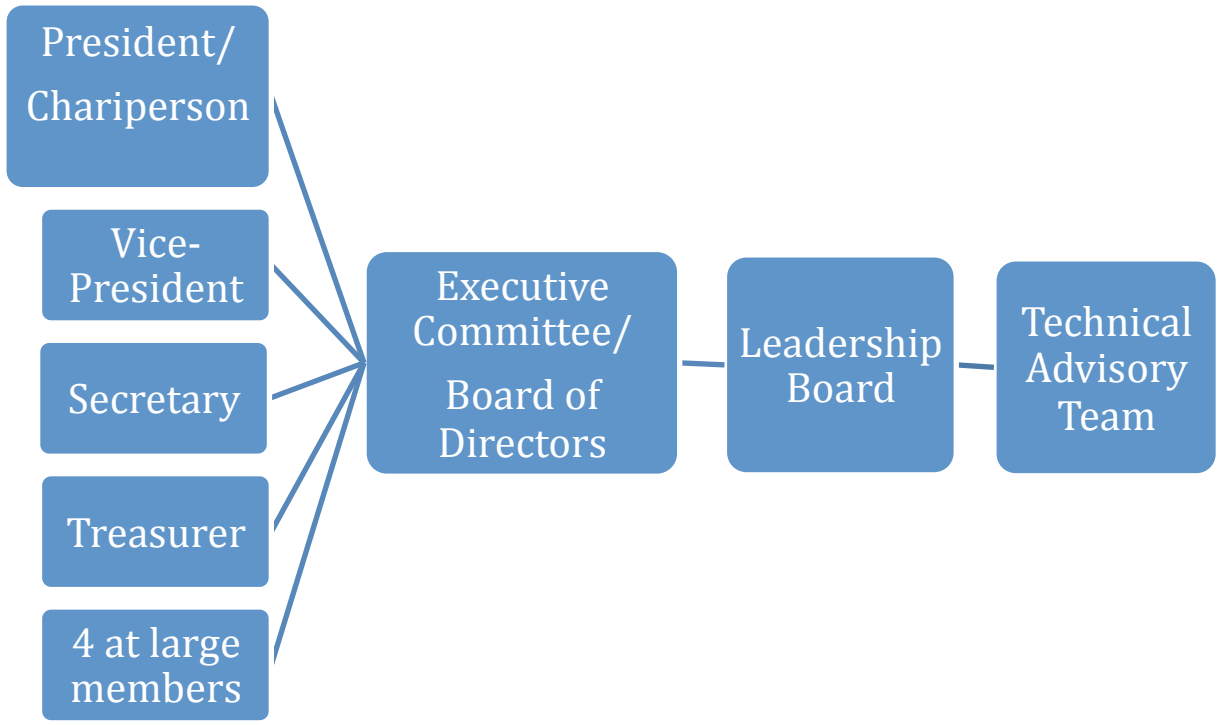
The SWC Bylaws were originally approved in 1997 by the Lane County Board of Commissioners and last revised in 2006. The bylaws outline the structure, duties and mission of the Siuslaw Watershed Council. (The SWC Bylaws are found in Appendix E.) The Bylaws may be amended through SWC consensus, and any council member may submit a proposal for bylaw amendments to the Leadership Board. SWC welcomes the public, but only Board members may vote on council issues (Chen 2009). SWC's goals are to implement research and restoration

efforts through partnerships, administer educational programs for the community and help landowners protect and restore their land (Kolkemo 2007).

SWC has defined its four major goals (SWC Bylaws, 2006):

- Provide a basin-wide framework for coordination, cooperation and citizen involvement in improving and maintaining the health of the Siuslaw watershed.
- Promote the protection, conservation, restoration and enhancement of fish, wildlife, forests, timberland, cropland, and water quality and quantity in the Siuslaw watershed.
- Contribute to the social and economic stability and productivity of families and communities within the Siuslaw watershed by supporting and attracting resources for local employment.
- Promote monitoring of the biological, physical and social components of the Siuslaw

SWC's organizational structure (SWC Bylaws, 2006):



SWC annually elects, by consensus, members to the *Leadership Board* (SWC Bylaws 2006). The Leadership Board represent SWC's interests and ratifies policies which promote the goals of SWC. Any vacant position may be filled at any general meeting. The Leadership Board adjusts membership dues and fees, forms advisory committees and prescribes duties for each committee. A member of the Leadership Board may be removed for not complying with the bylaws, not actively participating in the SWC activities, missing four consecutive meetings without an alternate present, or not paying dues on time. After a hearing, all other present members of the Leadership Baord must agree to the expulsion.

The Leadership Board represents the interests of the Siuslaw River Watershed. Each interest group has one primary representative and may have one alternative representative. The interests represented on the Leadership Board include (adapted from SWC Bylaws 2006):

Government Agencies	**Interest Groups**	**Landowners**
Federal Land Management	Academic/Scientific	North Fork Siuslaw
County Government	Agriculture/Ranching	Lower Siuslaw
Port of Siuslaw	Commercial Fishing	Middle Siuslaw
State Government	Environmental	Upper Siuslaw
City Government	Timber Industry	Deadwood Creek
Soil & Water Conservation District	Natural Resource Recreation	Indian Creek
Confederated Tribes of Coos, Lower Umpqua and Siuslaw	Public Education, grades K-12	Lake Creek
	Ecosystem Workers	Wildcat Creek
	Small Woodlot Owners	South Coastal Lakes
		North Coastal Lakes
		At-Large

SWC annually elects 4 officers and 4 at large members from the Leadership Board to the *Executive Committee.* The Executive Committee acts as the Board of Directors, conducts the administrative work for SWC and oversees the work of SWC's Chairperson.

The Executive Committee has the following powers (SWC Bylaws 2006):

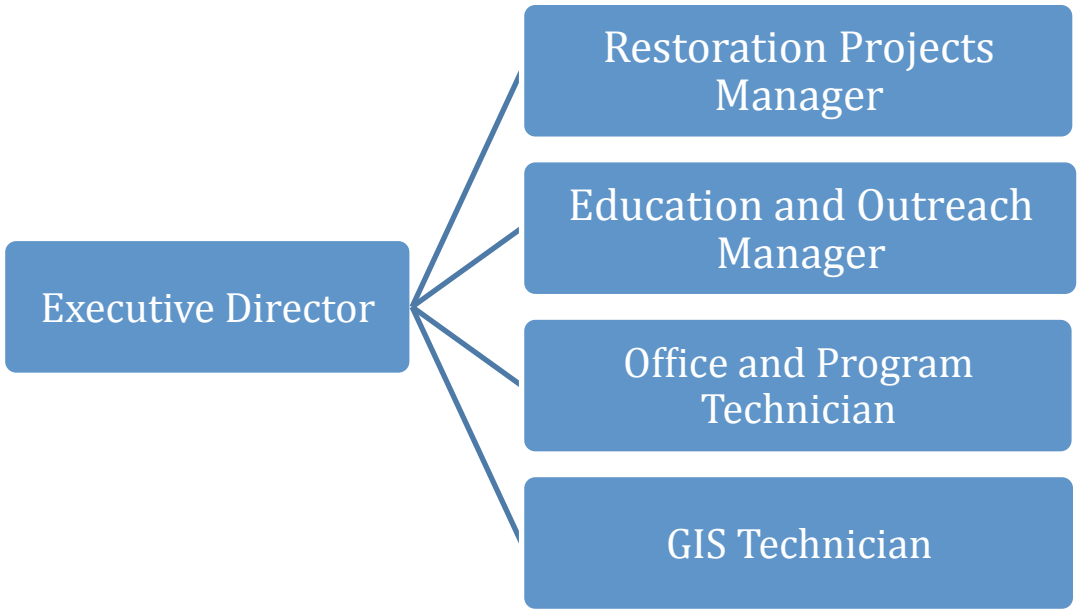
- To delegate to officers and staff the power to incur obligations, withdraw funds, and make payments on behalf of the Council
- To designate a bank in which the Council's funds will be deposited and to apply for, receive, and expend funds from any source
- To interview, select, fix salaries, evaluate performance reviews and terminate if necessary, employees of the council
- To delegate to officers and employees responsibility for day to day operations of the Council
- To transact other business as required that advances the purpose and mission of the Council that is lawful under the statutes of the State of Oregon and the Internal Revenue Code.

SWC may expel a member of the Executive Committee for not complying with the SWC bylaws, not actively participating in Executive Committee activities, missing more than two consecutive meetings without notifying the Committee, or not paying dues on time (SWC Bylaws 2006). The Executive Committee replaces expelled members for the remainder of the term. Resignation is implied when a member misses 3 consecutive meetings unless, through a majority vote, the Executive Committee agrees the member should be retained.

Executive Committee members include a President/Chairperson, Vice-Chairperson, Secretary and Treasurer (SWC Bylaws 2006). The President/Chairperson calls and conducts meetings of the SWC, Leadership Board and Executive Committee. The Chairperson is a spokesperson for SWC, directly supervises the Council's employees, establishes the calendar, supervises elections and coordinates the annual audit of the SWC's books. The Vice-Chaiperson performs duties assigned by the Chairperson and conducts meetings in the absence of the Chairperson. The Secretary issues notice of all SWC meetings, maintains a SWC membership list, and records and distributes Council meeting minutes. The Treasurer maintains SWC's financial records and collects fees and dues. The Executive Committee supervises the the Executive Director/Coordinator who supervises all other SWC staff.

The Leadership Board appoints *Technical Advisory Committees* as needed to develop projects and provide recommendations to the Executive Committee and Leadership Board (SWC Bylaws 2006). The Technical Advisory Committees may have knowledge of restoration or resource management and can draw on any needed resources. The Leadership Board prescribes the duties and responsibilities of the Technical Advisory Teams. An *Educational Subcommittee* to the Technical Advisory Team accomplishes SWC's educational goals (Vollmer-Buhl 2010).

SWC's Staff structure (Siuslaw Watershed Council, 2010):



Liz Vollmer-Buhl has served as the Coordinator and Executive Director of the Siuslaw Watershed Council since 2008 (Vollmer-Buhl 2008). As Executive Director/Coordinator, Vollmer-Buhl supervises all other SWC staff. Vollmer-Buhl has worked for the council since 2004, working in other staff roles before she became the executive director. Additionally, she continues to perform project work. SWC also has a part-time Restoration Project Manager, a part-time Educational Project Manager, an office staff person for office support and some assistance on projects, and a part-time GIS specialist.

The SWC staff, Board of Directors and partners implement SWC's policy decisions (SWC Bylaws 2006). The council and partnership operate under consensus. SWC defines consensus as "members present addressing a particular issue, action, project, or question either agree with, accept, or choose not to block the process or decision" (SWC Bylaws 2006). SWC indicates they include all 26 stakeholders in their decision-making process. It is imperative that key stakeholders needed for a project are present, or informed of the council's decision, and provide input before action is taken.

SWC partners (SWC 2010):

The Landowners and Citizens of the Siuslaw Watershed

Local and Regional Timber Industries

Local and County Governments

Siuslaw Soil and Water Conservation District

Natural Resource Conservation Service

United States Forest Service

Bureau of Land Management

Oregon Department of Fish and Wildlife

Oregon Department of Forestry

Oregon Watershed Enhancement Board

Confederated Tribes of Coos, Lower Umpqua & Siuslaw Indians

Port of Siuslaw

Ecotrust

[illegible]

Meetings

SWC holds monthly Board meetings and monthly Subcommittee meetings as well as an annual meeting (Chen 2009). The Leadership Board or the Executive Committee may call special meetings at any time. All meetings are subject to Oregon open meeting laws. The quorum for SWC's Leadership Board requires nine leadership board members with at least 3 Executive Committee members. A quorum for SWC's Executive Committee requires a simple majority.

Partners

SWC partners with land trusts that acquire land and then SWC conducts restoration projects on those lands (Vollmer-Buhl 2010). EcoTrust of Portland, Oregon is also an important partner. The timber industry is an important partner for SWC because the timber industry owns a large amount of land within the Siuslaw Watershed. The timber companies willingly partners on a significant portion of SWC's restoration projects. SWC also partners with the Siuslaw Institute and Mackenzie River Trust. SWC's stakeholders are sometimes both members of the council and members of other partnering organizations. SWC's technical team includes stakeholders from other partners. They may have multiple roles and give technical input for projects.

One of SWC's most important partners is the Siuslaw National Forest (Vollmer-Buhl 2010). The National Forest is essential to the functioning of SWC and the largest landowner in the watershed. The watershed is 93% forest, with 56% publicly owned by the National Forest and BLM. The National Forest is very willing to partner on restoration projects. SWC secures funds for high priority projects, and the National Forest performs restoration work for projects and supports SWC through technical expertise and by providing office space. The Oregon Department of Fish and Wildlife (ODF&W) gives technical advisory support to SWC as well. SWC is able to secure funds for the ODF&W to implement high priority projects. ODF&W does not have the same land ownership capabilities as the Forest Service. The Local Soil and Water Conservation District began as the fiscal agent and administrative support when SWC was small and just beginning. SWC remains partners with the Local Soil & Water Conservation District.

Photo 17.1: Siuslaw Watershed, Courtesy of Siuslaw Watershed Council.

Scientists and researchers are constantly involved with SWC, especially with the technical advisory team (Vollmer-Buhl 2010). Scientists make presentations during the monthly council meetings and are integrated as much as any other group in the council. The research scientists hail from Oregon State University, University of Oregon, and the Forest Service Pacific Northwest Research Station. There are also agency scientists involved in the collaboration. Independent researchers work as subcontractors or volunteers for the technical advisory team.

During the summer of 2009, the SWC partnered with Oregon Department of Fish and Wildlife (ODF&W), the USDA Forest Service (USFS), the Bureau of Land Management (BLM), and the Port of Coos Bay to survey and prioritize fish passage barriers along the railroad that runs through the Siuslaw Watershed and Coastal Lakes. These culvert replacements will benefit the railroad by replacing failing infrastructure (SWC 2010).

Projects

The Council is involved in aquatic and riparian restoration projects, assessment of waterway health and water quality monitoring, summer camps for kids, and watershed education programs for youth and adults (Vollmer-Buhl 2010). The main issues that the partnership focuses on are watershed health, river, watershed and habitat restoration, improvement of fish passage, improvement of native species passage, riparian restoration, education and outreach on watershed health and related issue, and monitoring to understand those issues. They focus on maintaining water quality and riparian habitat. Water quantity is not an issue since their focus is primarily on the west coast and there are no water diversions in that area.

The Siuslaw Watershed Council facilitates a variety of monitoring projects in the basin. Two of the current projects include: The Siuslaw Volunteer Water Quality Monitoring Program and the Native Plant Distribution Projects (SWC 2010). Trained volunteers in the Siuslaw Volunteer Water Quality Monitoring Program collect and process surface water samples from sites throughout the watershed once per month. The baseline data obtained in the Volunteer Water Quality Monitoring Program helps water quality professionals build an understanding of the "health status" of river and is not used to locate or penalize polluters. Volunteers currently measure the following water quality parameters: clarity; salinity (in the estuary); dissolved oxygen; turbidity; bacteria; temperature; and weather conditions at twelve sites within the Siuslaw Watershed. Another project conducted by SWC is the Native Plant Distribution. Native plants and care directions were distributed to local landowners. Distributed native species include Western red cedar, Douglas fir, Western hemlock, Sitka spruce, Red alder, Big leaf maple, Black cottonwood, Oregon ash, and Sitka willow.

Photo 17.2: Habitat Restoration project in the Siuslaw Watershed, Courtesy of Siuslaw Watershed Council.

Projects planned by SWC through 2013 include (Stone et al. 2008):

- 19 culvert replacements with 2 to 3 culvert replacements per year.
- Distribution of 10,000 free trees to landowners per year.
- Estuary restoration funded through the EPA including tide gate removal, dike removal and riparian planting.
- Managing and monitoring restoration projects and conducting assessments.

As outlined in the SWC Bylaws, SWC affirms respect for private property rights and requires written permission of all landowners before engaging in any of its projects. Landowner commitments in a project are always clearly defined and strictly voluntary.

FUNDING

The Oregon Watershed and Enhancement Board (OWEB) is the primary funder for watershed councils in Oregon (Kolkemo 2007). Between 2001 and 2007, the SWC received $1.5 million in restoration grants mainly for stream restoration and stream enhancement as illustrated in Table 1 (Stone et al. 2008). SWC receives grants from The Oregon Watershed Enhancement Board (OWEB), the USDA Forest Service, Fish and Wildlife Service (FWS) and National Forest Foundation. OWEB is the main funder for SWC providing ongoing support and the necessary funding for SWC to continue to function (Vollmer-Buhl 2010).

Table 1. Siuslaw Watershed Council Restoration Grants 2001-2007 (Stone et al. 2008):

Type of Work	Number	Total Value
Stream Enhancement	7	$211,391
Stream Restoration	15	$1,118,259
Tree Planting	1	$51,577
Wetland Restoration	2	$75,121
Total	33	$1,456,348

SWC receives grants from the Stewardship Fund, and Title 2 (RAC) funds from the National Forest and from BLM for timber dependent counties (Vollmer-Buhl 2010). The Department of Environmental Quality gives SWC training team funds. SWC receives funding from private sources including EcoTrust, National Fish & Wildlife Foundation, and Western Lane Community Foundation. The educational programs are generally funded by local foundations. SWC also collects membership dues of $10 or $25.

Vollmer-Buhl recommends emphasizing the partnership's goals, projects and activities that match the requirements of the funding source when applying for grants (Vollmer-Buhl 2010). She strives to emphasize the aspects of the SWC that fit the funding source and avoiding extraneous details that are not needed by the grant administrator. Fitting into the criteria set by the grant-making agency is essential in securing funding.

SWC solicits donations from watershed residents as in the quote from their 2010 newsletter below.

The SWC is a qualified tax-exempt entity under section 501c(3) of the Internal Revenue Code. This IRS status allows SWC to receive tax deductions for monetary and in-kind gifts. SWC uses the following advertisement in their newsletter (SWC 2010):
"Testamentary gifts, such as outright cash gifts or establishment of a charitable trust, will yield tax benefits to the donator's estate and create a stable source of support for the Council. Such a trust or other giving program can be established while they are living, and it can continue to provide benefits after their death. A charitable trust can provide an income stream to the Council for a period of time, and the remainder be distributed to an heir later on, or vice-versa—provide an income stream to their heirs or other beneficiary, and then be distributed to the Council outright, as a gift. They may also establish an endowment that can continue after their death to fund a specific legacy project in perpetuity. Tax advisors or attorneys can best advise regarding the tax benefits to such a gift, and of course, the overall benefits will depend upon the personal situation and upon the structure for your gift. Addition of a simple charitable gift in favor of the Council to their Will or Trust is not difficult or expensive. If you are one of the persons seeking to escape the Oregon Inheritance Tax (currently imposed on gross estates of $1 million or more, as measured by Federal estate tax rules as of December 31, 2000) charitable giving during your lifetime or at your death is an attractive and socially responsible means to achieve that goal."

CHALLENGES

SWC's biggest challenge is securing enough funding for projects and administration, which is consistent with most other watershed organizations (Vollmer-Buhl 2010). SWC finds it harder to secure general ***funding for functioning and administrative processes*** than project funding. Additionally, SWC has faced challenges in overcoming ***long-standing tensions*** between participants***.*** ***Building trust*** among stakeholders is another challenge. Strong personalities within the collaborative are helpful in reaching goals and finishing projects, but strong personalities can also create conflict. When participants establish a firm commitment to the collaborative, personality conflicts are more easily overcome. Acquiring ***landowner involvement*** is also a challenge for SWC.

Although SWC's ***public credibility*** has grown over time, building further credibility remains a challenge (Vollmer-Buhl 2010). SWC increases their credibility by winning awards and obtaining state grants. In 2000, the Siuslaw Basin Partnership (SBP) won the International River Prize; SWC is a part of the SBP. These awards increase SWC's public visibility. ***Developing an informed constituency*** in the watershed is also a challenge. When Vollmer-Buhl conducts public informational meetings, she defines the meaning of a watershed and a watershed council.

ACCOMPLISHMENTS

In 2009, Cascade Pacific RC&D granted SWC the Project of the Year Award for their Riparian Restoration Project, also known as the Native Plant Distribution Project (Siuslaw News 2010). SWC partners with local nurseries and timber companies to distribute 15,000 native trees, shrubs and plant seedlings annually to landowners for riparian restoration. Each year, 375 landowners participate and 50 acres of riparian corridor are restored. Pam Gardner, District Ranger for the Siuslaw National Forest stated, "We congratulate Siuslaw Watershed Council on this award and the great work they do….The Council helps stretch resources to get more done on the ground that benefit all of us."

SWC has conducted ***restorations projects*** since 1998 (Vollmer-Buhl 2010). Every year they restore 50 riparian acres and include an education component in these restorations. Since 2006, a crew of displaced salmon fishermen has worked with SWC restoring riparian habitat through planting native riparian vegetation. Another big SWC accomplishment is the ***strength and number of partnerships*** they have formed through their collaborative. These partners are able to work together to get projects completed

SWC's successful projects include (Vollmer-Buhl 2010):

- Prioritizing culverts, and addressing highest priority culverts for the initial project implementations.
- Identifying priorities for restoration projects in an estuary.
- Siuslaw Basin Partnership (SBP) won the International River Prize in 2000. SWC is a member of SBP.
- Restoring large parcels of land within an estuary, which are acquired by their partner organizations.

Photo 17.3: Stewardship activities in the Siuslaw River Watershed, Courtesy of Siuslaw Watershed Council.

SWC ***measures success*** by the number and quality of projects implemented (Vollmer-Buhl 2010). SWC accounts for the miles of stream they restored, acres of land they have treated, and the number of fish passage barriers they have opened up. They have been successful in many of the higher priority projects and they can now move on to areas that have not been given as much attention.

PUBLIC AWARENESS AND EDUCATION

One of the main goals of the Siuslaw Watershed Council is to connect with the citizens of the basin (SWC 2010). Through outreach and education, SWC helps people understand the area in which they live and gives them the power to help shape the future of their area. SWC views its education programs and forums as some of their biggest accomplishments. Every

Siuslaw Watershed Exploration Camp Summer 2010 included over 47 volunteers, presenters, and donors including (SWC 2010):

Oregon Watershed Enhancement Board
Morning Glory Farm
Central Coast Water sports
City of Florence
Siuslaw Watershed Council
SWC Staff and Camp Staff
Oregon Department of Environmental Quality
US Forest Service
Bureau of Land Management
Cape Perpetua Visitor Center
Oregon State University Sea Grant
Whiskey Creek Organics
Port of Siuslaw
Paul's Bicycle Way of Life
Rosboro Timber
Honeyman State Park
Mapleton Schools
Siuslaw Schools
REI

council general meeting has a platform for education. They uphold several award-winning education programs, partnerships with schools, water quality monitoring with students, a volunteers program, and a Camp Program for kids in the summer.

SWC conducts cutting edge stewardship restoration and stewardship contracting with the National Forest Service (Vollmer-Buhl 2010). The Siuslaw ***Stream Team Project*** provides an ecologically and watershed focused in-class and on-the-ground learning opportunity to the students of the Siuslaw Watershed. Through partnerships with a broad range of community, watershed, and agency natural resource professionals, students participate in on-the-ground restoration efforts within important watershed habitat systems. The Stream Team conducts water quality monitoring, measures stream flows, conducts biological assessments, and participates in riparian plantings and rearing and releasing Coho salmon. In addition, SWC educates their community about watershed and salmon issues by giving talks on their projects to community and school groups.

The success of SWC's education programs is important for several reasons (SWC 2010). In the past 10 years, the basin has experienced tremendous political, social, and economic changes. Resource extraction careers are no longer available. The Stream Team project provides children with the opportunity to learn about other natural resource employment options available to them. Students learn about their watershed. The students' understanding and appreciation of their watershed gives them a sense of stewardship, which will encourage long-term protection and restoration efforts.

The SWC has never run a public awareness campaign with the intentions of getting a specific message to the public (Vollmer-Buhl 2010). However, public awareness is part of all of their efforts. SWC aims to inform the public about specific projects, and they encourage people to learn about a topic. For instance, when advertising their Ocean Forum, SWC made announcements in all local papers, at public meetings, rotary clubs and on the radio.

Emily Kolkemo conducted a study on SWC's water quality monitoring program of the estuary within the Siuslaw Basin from 2002-2007 (Kolkemo 2007). SWC, the Oregon DEQ, Oregon Department of Fish and Wildlife, USFS, Port of Siuslaw and Siuslaw Soil and Water Conservation District collaborated on this estuary study. Kolkemo conducted public outreach for this project through informational talks, PowerPoint presentations, and informational brochures. The monitoring program was evaluated through changes in program design, goals assessment

and personal observations. The program broadened to include monitoring general water quality throughout the watershed. Continuous school involvement and summer camps strengthen this programs' education for children. Dedicated volunteers regularly assist in monthly monitoring activities and create a sense of stewardship. These volunteers advocate for the monitoring programs with other watershed residents. Student volunteers fulfill state standards during the watershed monitoring and help connect the broader community to the watershed activities. The major strength of this program has been the baseline data collections efforts. Volunteers consistently collected data over five years that will enable SWC to look at trends and changes over time and across seasons.

CONCLUSIONS

Liz Vollmer-Buhl has several recommendations for other watershed collaborative. She states the necessity to engage all the stakeholders of partnership's watershed. By including a diverse array of stakeholders in the collaborative process, more residents will feel like they are included and will be more supportive of the collaborative efforts.

"Work on a consensus basis," states Vollmer-Buhl. Most watershed partnerships make their decisions through consensus, which is generally the most effective way of implementing projects. Consensus is an important way to engage all the stakeholders and find solutions that are amenable to all interests in the partnership.

"Thank everyone and value them. Send thank you notes." states Vollmer-Buhl. Spending time making partners feel appreciated is beneficial for their continued support on future projects.

Overall, what has made SWC successful is a committed effort throughout the organization to make sure all interested stakeholders are present during the decision-making process, according to Vollmer-Buhl. Another essential aspect to SWC's success is building trust with landowners through respecting their private land boundaries.

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APPENDIX

Appendix E. Siuslaw Watershed Council Bylaws

CASE 18. COSUMNES RIVER PROJECT AND PRESERVE

Location: Northern California
Prepared By: Kathleen McIntyre

The Cosumnes River Project and Preserve, established in 1987, is a patchwork of more than 46,000 acres of habitat and agricultural land managed and owned by seven land-owning partners including The Nature Conservancy, Ducks Unlimited, Bureau of Land Management, etc. "The Project" refers to the partnership and "the Preserve" is what the partnership works to protect. The Preserve is located in Northern California between Sacramento and Stockton. It is dedicated to:

> "*Safeguarding and restoring the finest remaining example of California's valley oak woodland and riparian (streamside) forest and their surrounding native habitats, restoring and creating freshwater wetlands to increase the Pacific Flyway's populations of migratory water birds, and demonstrating the compatibility of human uses- particularly agriculture, recreation, and education- with the natural environment."*

Through conservation easements, fee titles, and various restoration and land management activities, the Cosumnes River Preserve and resulting partnership have been very successful at protecting critical habitat.

The Cosumnes River Preserve is an excellent example of how land acquisition through fee titles and conservation easements can promote protection, restoration goals, and a functional relationship with community members. The partnership has exhibited the ability to work effectively to establish a preserve in a conservative, agricultural area. Their management model- of each partner participating within their field of expertise- has proven efficient and successful for creating a stable, long-lasting partnership able to achieve goals.

BACKGROUND

The Cosumnes River is a small, low-grade river that originates in Eldorado National Forest. It flows through Northern California including Southern Sacramento and Northern Joaquin Counties. It is 80 miles long with three forks that join together; the North, Middle, and South Forks. The flow is derived primarily from winter rains and snowmelt. The Cosumnes River is the only remaining unregulated river on the western slope of the Sierra Nevada, with no major hydroelectric dams. There is one small reservoir (capacity of 40000 acre feet), Sly Park Reservoir, located on a tributary of the Cosumnes (Swenson, Whitener and Eaton 2003). The Cosumnes River watershed encompasses roughly 1300 square miles and has retained much of its natural processes including riverbank cutting, meandering, and sediment transport. Historically,

the river wandered back and forth across the landscape, occupying several channels. However, the lower river is extensively leveed for flood control, which has contributed to incision of the channel upstream of Highway 99 (Swenson, Whitener and Eaton 2003). The Cosumnes merges with the Mokelumne River, and the lower regions of the Cosumnes are heavily affected by ocean tides that push freshwater back up the river (Cosumnes River Preserve Website 2010).

The Cosumnes River watershed encompasses a diverse array of habitats and land cover. The western part of the watershed is characterized by lowland delta and valley habitat including vegetation such as tule, sedge, riparian forests, and freshwater marshes. The lower floodplain has rare and unique valley oak riparian forests. The eastern part of the watershed is coniferous forests and the developed areas of Galt and Elk Grove. The middle portion of the watershed consists of blue oak woodlands, vernal pool grasslands, vineyards, and rangelands. A generalized description of the habitat from upper watershed to lower is: coniferous forests in the upper, oak woodlands in the foothills, and vernal pool grasslands and riparian forest in the valley (Cosumnes River Preserve Management Plan 2008).

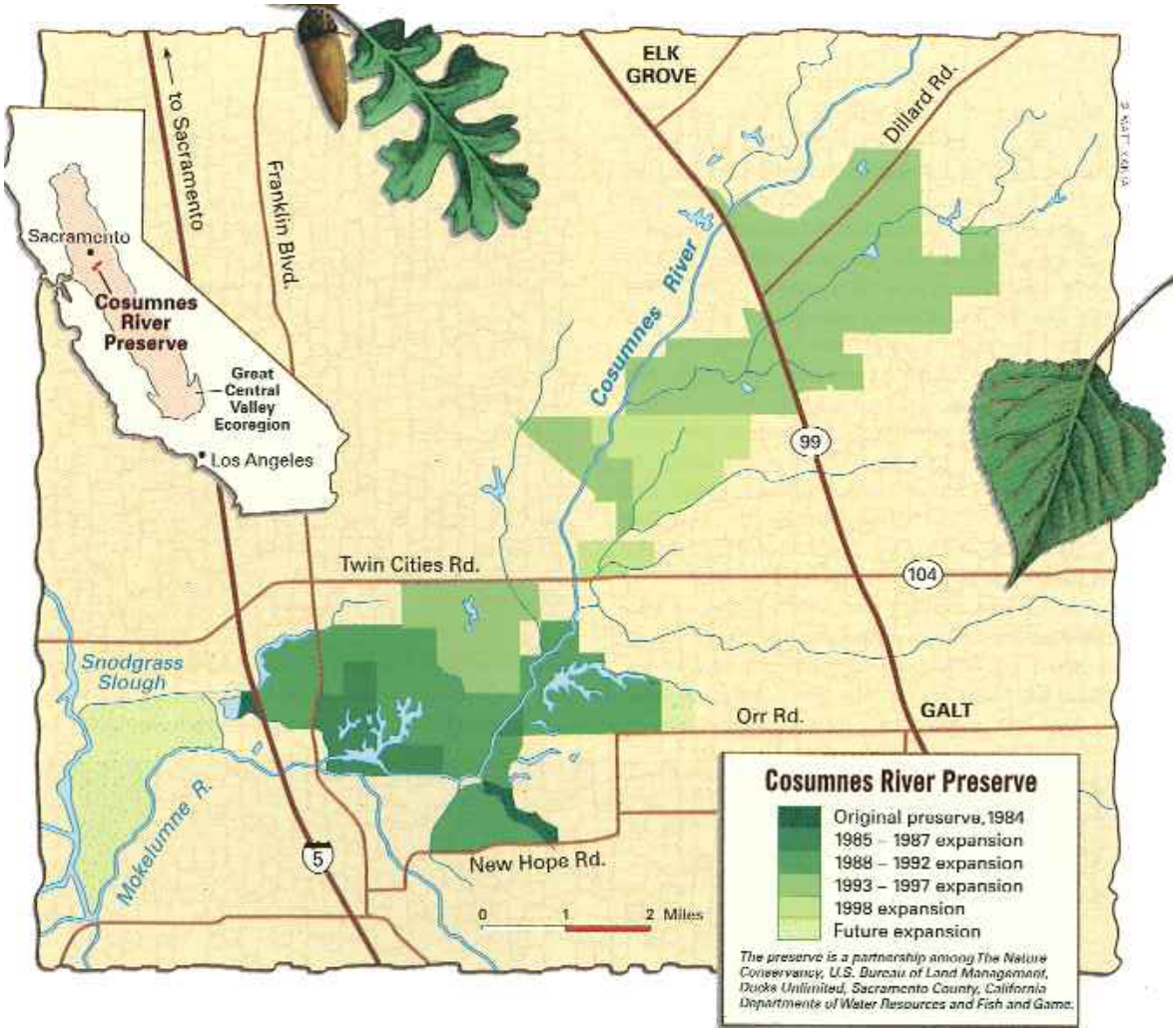

Figure 18.1: Map of Cosumnes River Preserve, Courtesy of Cosumnes River Preserve and Project.

The Cosumnes River Preserve, created in 1987, is now more than 46,000 acres of habitat and agricultural land that has been purchased by several partners and managed collaboratively. Roughly 25,000 acres or 54% is held in fee title, while 21,000 acres or 46% are held in conservation easements. Fee title means that the Preserve owns the land, while conservation easement means someone else owns the land but there are restrictions on development activities. The Preserve is centrally located, roughly 20 miles from the Sacramento metro area, and is a patchwork of 60 properties. It contains 2000 linear miles of natural waterways, and protects two rare communities both of which are less than 4% left in the state: riparian forest and freshwater marsh. There are 11 miles of trail systems and 2 highways pass through the preserve. 976 acres of ponds are managed for waterfowl and sandhill cranes (Cosumnes River Preserve Management Plan 2008).

Photo 18.1: Aerial View of the Cosumnes River Preserve, Courtesy of Cosumnes River Preserve and Project.

The climate of this region is best described as Mediterranean with hot dry summers and temperate, wet winters. The majority of precipitation falls between November and April, with averages between 22 inches and 60 inches. The region is frost-free 360 days per year, which lends itself to the heavy agriculture predominant in the area (Cosumnes River Preserve Management Plan 2008).

Photo 18.2: Sandhill Cranes, Courtesy of Cosumnes River Preserve and Project.

The Cosumnes River and Preserve harbor many species including several only found within this region. Wetland mammals include otters, beavers, and muskrats. The marshes support the endangered Giant Garter Snake, while riparian areas foster raccoons, the black tailed mule deer, and mink. However, what the preserve and river are most known for is their high biodiversity of bird species as they function as a stopover and wintering area for migratory birds. More than 250 species of birds have been recorded at the Preserve including Swainson's Hawks, sandhill cranes, Tundra Swans, Blue Herons, and several species of ducks (Cosumnes

River Preserve General Brochure 2010). The lower river supports Chinook salmon, which migrate up the river to spawn. The upper river supports native rainbow trout, non-native brook trout, and brown trout (Swenson, Whitener and Eaton 2003).

The central valley of California contained large expanses of forest and wetland habitat, however, the rich soil of the region also made it good for farming, and today only small sections of valley oak riparian forest remain. Remaining valley oak groves cover only 1500 acres. With population growth and increasing demand to live in California, much of the prime agricultural land has gone to suburban sprawl creating issues for the watershed and the Preserve. The Preserve faces urban interface issues with the rapid growth of the central valley where population increased over 50% between 1980 and 1995. There is high demand for Ranchette development, low-density rural development on 2 to 20 acre parcels. Negative impacts on the Cosumnes River and Preserve due to development include increased impervious surface, increased habitat loss, bird collisions with power lines, introduction of non-native species, and inability to use habitat management tools such as prescribed burns. Similarly, this development has created increased demand for water, specifically groundwater. Withdrawals have resulted in localized overdrafts in the water table north and south of the river, leading to plant community shifts and altered river flows (Cosumnes River Preserve Management Plan 2008). Ground water pumping for agriculture and urban development has dropped water table levels by up to 60 feet (Swenson, Whitener and Eaton 2003). Not only is ground water over-used, surface water diversion rights exceed average month flows in some months (Swenson, Whitener and Eaton 2003). This increased groundwater and surface water reliance has had negative effects on Chinook salmon and their fall migrations.

PARTNERSHIP'S BEGINNING

The Cosumnes River Preserve began as a response by The Nature Conservancy to California's urbanization and habitat loss. In 1987, the Conservancy was in search of the last stands of valley oak in California, a rare natural community. They found pockets of valley oak near the lower Cosumnes River and obtained 800 acres that quickly became the initial makings of the Preserve (Wicinas 1998). Rich Reiner, the lead ecologist for The Nature Conservancy in California in 1987, remembers, "This is a pretty special place, really from the undammed river and the natural hydrology came the valley oak forest and biodiversity aspects". In order to begin building the mosaic that is the Cosumnes River Preserve, the Conservancy developed a plan that prioritized lands and created a restoration vision. They purchased the keystone piece of property and then began looking for partners that might be interested in collaborative management and willing to contribute money. The Conservancy positioned partners to purchase properties that would suit their specialty. This allowed the Conservancy to ensure that partners would be fulfilling their mission by participating in the preserve (Reiner 2010).

In 1988, Ducks Unlimited joined as a partner with the joint goal to protect and restore two natural communities that had once been abundant; valley oak and freshwater seasonal wetlands. Partners began to sign on and add land to the preserve in a broad-based effort to restore and guard the unique landscape. The Bureau of Land Management became a partner in 1988 with the purchase and dedication/donation to the Preserve of 150 acres. California Department of Fish and Game joined in 1990 with the purchase and dedication of 840 acres. Sacramento County Department of Regional Parks became a partner in 1993, and the Department of Water Resources became a partner in 1996 (Cosumnes River Preserve 2010). Today, the list of partners has grown significantly and is divided into two sub-categories: those that have signed the Cooperative Management Agreement and those that have not. Partners of the Cosumnes River Preserve who have signed the Cooperative Management Agreement include (Cosumnes River Preserve 2010):

1) Bureau of Land Management
2) The Nature Conservancy
3) Sacramento County Department of Regional Parks
4) California Department of Fish and Game
5) Ducks Unlimited
6) Department of Water Resources
7) State Lands Commission
8) Natural Resource Conservation Service
9) Galt Joint Union Elementary School District

Partners that have not signed the Cooperative Management Agreement:

1) Private land owners
2) National Fish and Wildlife Foundation
3) Bureau of Reclamation
4) US Fish and Wildlife Service
5) Wildlife Conservation Board
6) Central Valley Joint Venture
7) Elk Grove Unified School District
8) Point Reyes Bird Observatory
9) US Environmental Protection Agency
10) CALFED Bay-Delta Program

Motivations for participating in the collaboration vary, and are tied to organizational missions. For example, Sacramento County Department of Regional Parks became involved because of their mission to provide recreational opportunities to Sacramento County citizens, the Nature Conservancy wanted to protect the rare valley oak stands and habitat, and Ducks Unlimited was interested in protecting waterfowl habitat and migratory stopovers (Reiner 2010). The BLM also felt this was a great opportunity to be part of a partnership. They currently oversee the management of several of the partners' lands, including non-traditional partners like the City of Elk Grove lands, which owns land that is under conservation easement as part of the Preserve. The Galt Joint Union Elementary School District joined because they have an environmental educator that wanted to be involved with the partnership (McQuillen 2010). Good relationships

and common goals exist between the partners, and every partner is active in some form of operations and management for the Preserve.

There were many aspects of the partnership that led to its inevitable success in formation. Mike Eaton, project director for The Nature Conservancy in 1995, suggests that The Nature Conservancy's interest in this property established credibility for the landscape and partnership. From 1984 to 1990 the Cosumnes River and Preserve rose from a casual investment to a top priority. Harry McQuillen, current Cosumnes River Preserve Manager, believes one of the most helpful contributions was "the vision of what could be created. As it became more and more successful it took on a life of its own." Rick Cooper, the BLM Preserve Manager during formation, believes that the most helpful aspect in getting the partnership started was the people selected to participate as the coordinating group. The people selected had "strong convictions for their organizations, but also understood other organizations and their roles and missions." Rich Reiner, an ecologist with The Nature Conservancy at inception of the Preserve, agrees with Rick Cooper and points to the unique array of partners, " One of the driving forces of why this has been successful was we allowed and brought in partners that didn't necessarily have the same focus." This differing focus, allowed partners to assume individual roles in the management and operations of the Preserve; each partner could do what they did best.

Initial credibility of the collaborative process is an imperative aspect of any successful organization. Rich Reiner points out that it was critical to put someone on the ground because of the rural nature of this community. He states "You really can't work remotely; you need someone on the ground with a face." Similarly, he mentions that the Cosumnes River Preserve did face a lot of suspicion at the beginning. However, one of the best ways to build credibility in a rural, agricultural community is to own land. He says, "if you don't own land you don't have a seat at the table." Likewise, Rick Cooper suggested the work with local farmers as critical to building the Preserve's credibility. Partners needed to show them the Preserve was working with farmers and not trying to eliminate agriculture; that the Preserve was fostering a working landscape. After these initial credibility hurdles, Mike Eaton says the Preserve became extremely popular, even though there was no public relations campaign. They got key politicians and media out to the Preserve to show them new projects and progress being made; as he says, "they let the site speak for itself."

PARTNERSHIP'S EVOLUTION

The Cosumnes Preserve has grown in number of partners and number of acres protected, which has increased its authority and influence over land management within the region. Early efforts at the Preserve concentrated on active habitat restoration activities including wetland construction and hand planting of trees. In 1988, the Preserve initiated its first large scale replanting of valley oak forest, which evolved in 1995 to natural valley oak regeneration through established flooding (Swenson, Whitener and Eaton 2003). Not only did management efforts evolve, but geographic locations of land acquisition shifted upward. From 1987-1999 acquisitions of land were focused on the lower floodplain, but in 1999 The Nature Conservancy purchased a 12,300-acre ranch that protected a large portion of the upper watershed and high quality habitat (Cosumnes River Preserve Fact Sheet 2010).

The geographic focus and scope of the preserve's mission has expanded considerably. The initial geographic focus was small-scale habitat preservation, specifically riparian forest and migratory waterfowl conservation. The original mission was to protect and restore the valley oak woodland ecosystem, and now the mission includes all Central Valley habitats and wildlife (Cosumnes River Preserve 2010). This expansion in part was due to the realization that to preserve and expand the oak forests the partners would need to flood areas and manage the entire landscape (Wicinas 1998).

Photo 18.3: Recreation in the Preserve, Courtesy of Cosumnes River Preserve and Project.

Harry McQuillen discusses the evolution of staffing throughout the organization. For many years The Nature Conservancy was prevalent at the preserve with a majority of staff involved in research and land acquisition. However, as the Preserve evolved from acquisitions to long-term management, there has been recent pullback by the Conservancy as agencies like the BLM and the California Department of Fish and Game (CDFG) take on more responsibility. McQuillen says "Now it's about management so it makes sense to have land management agencies like the BLM and CDFG as the lead agencies."

All interviewees stated one of the biggest changes through time for the organization has been the issues focused on by the Preserve. Sara Sweet, a Cosumnes River Preserve ecologist, says "initially it was just wetlands and riparian areas, and now it's much more including wildlife-friendly farming, ranching, education/outreach, and recreational opportunities." Mike Eaton points to the ever-growing urban areas surrounding the Preserve as a catalyst for heightening tensions over groundwater and urban encroachment. He says the urban sprawl issue has changed markedly over time, and arose more quickly than they anticipated. Harry McQuillen notes that today the focus is on issues of management such as invasive exotic species, monitoring easements, and threatened ecological functions.

ORGANIZATIONAL STRUCTURE

The mission statement of the Cosumnes River Preserve is,

"safeguarding and restoring the finest remaining example of California's valley oak woodland and riparian forest and their surrounding native habitats. Restoring and creating freshwater wetlands to increase the Pacific Flyway's populations of migratory water birds. Demonstrating

the compatibility of human use-particularly agriculture, recreation, and education- with the natural environment."

In order to meet this mission, goals for each partner are laid out in the Cooperative Management Agreement, created in 1994. This agreement defines an administrative process and facilitates cooperation among partners. It defines goals, roles, and responsibilities of signatories for managing and administering all portions of land owned by partners in the vicinity of the Cosumnes River. According to the Agreement, the overriding goal of the Cosumnes Preserve and Project is to cooperatively manage preserve lands as a single ecological unit for protection, restoration, and maintenance of Valley oak riparian forest and freshwater seasonal wetlands. This includes managing grasslands, vernal pools, permanent wetlands, and mixed riparian forest and is best accomplished by integrating management of wildlife areas with human and economic pursuits. The Preserve as a whole is managed to maximize habitat needs of threatened/ endangered species. A secondary goal is to accommodate and facilitate research, study and appreciation, and education without detrimental impacts to the ecological integrity of the landscape. Roles defined within the Agreement match each partner's specialty. For example, The Nature Conservancy focuses on science, land deals, and planning/policy, while the BLM and the CDFG focus on long-term management and maintenance. The Cooperative Management Agreement is reviewed and amended every five years (Cosumnes River Preserve Management Plan 2008).

Another key document to the organizational structure of the Preserve is the Management Plan, created in 2008. To create this plan the steering committee, a committee of all partner representation, met quarterly for nearly two years. The purpose of the plan is to "document existing conditions, identify and prioritize needs, and describe future desired conditions for the Cosumnes River Preserve over the next 10 years." This plan was originally developed to (Cosumnes River Preserve Management Plan 2008):

1) Maintain continuity of mission and vision
2) Agree upon priorities and goals
3) Organize information
4) Gain consensus
5) Incorporate a broad range of input on issues through public workshops

The Management Plan was developed with two overarching goals that define long-term aspirations. These goals are (Cosumnes River Preserve Management Plan 2008):

1) Native biological communities and the resident and migratory species dependent on them are restored and maintained to sustainable conditions and population levels
2) Compatible uses improve stewardship of the Cosumnes River Watershed. The plan is to be implemented by partners as they make decisions regarding management of the Preserve, and it is reviewed every five years.

The structure of the Cosumnes River Preserve management process is loose and organic. According to Harry McQuillen, current preserve manager, there are no power struggles between partners. McQuillen makes the day-to-day operational decisions on every partner's land, and has the ability to check with the owner, which is often unlikely and unnecessary. Decisions affecting other partners' land can be made as long as they do not go against the Management Plan since the Partners have already agreed in concept to the actions described in the Management Plan. Almost all decisions are made without consultation of partners, but McQuillen keeps the partners informed of activities concerning their properties. All of the partners meet twice a year or more as needed. These meetings are organized by McQuillen and offer a time for partners to give progress reports, updates, and opinions. There are no sub-working groups. Instead, when an issue or project arises, the preserve manager goes to the partners' staff members that are most suitable for the project.

Partners participate in a variety of ways including providing staff or providing funding through grants, direct payments, or leases on lands. This participation is used to fuel a variety of projects, opportunities, and activities at the Preserve. Recreational opportunities on the Preserve include bird watching, photography, nature studies, hiking, hunting, fishing, and paddling. Recreational opportunities were designed with biological resources in mind (Cosumnes River Preserve Website 2010). There is a wide array of volunteer activities including habitat restoration teams that plant native vegetation, habitat monitoring, and invasive species removal. There are volunteer opportunities to take biological inventories of birds and butterflies. These recreational and volunteer activities help to educate and inform the public while increasing the visibility of the Preserve on a local and state level (Cosumnes River Preserve General Brochure 2010).

Photo 18.4: Aerial view of flooded fields, Courtesy of Cosumnes Rivers Preserve and Project.

Management and restoration activities are equally diverse. Sustainable farming, specifically corn and rice farming and grazing, are allowed on sections of the preserve. Farming highlights the connectedness of humans with the natural landscape and that human activities can be environmentally compatible. The Preserve has built an unusual relationship with local rice farmers who are allowed to farm the land and then flood it in winter for the birds. The Preserve gets money from leasing the land, and the farmer gets money from selling his crop (Reiner 2010). Also, there are great ecological benefits for ducks and sand hill cranes from farming.

Another interesting restoration activity taking place at the Cosumnes River Preserve is the purposeful breaking of levees. Historically, a levee broke and flooded a neighboring farm with

silt and water. The farmer did not remove the sediment, and within a few years a valley oak riparian forest community began to grow. The Preserve adopted this unique technique of environmental restoration and habitat planning, over their traditional acorn plantings. However, it is still a very controversial technique and has only been done a few times (Swenson, Whitener and Eaton 2003). It also represents a limitation to authority. In California damages of constructing a levee do not need to be covered, but damages from breaking a levee do.

The Cosumnes River Preserve is relatively independent. They own much of their property in fee so they have considerable leeway in management activity. Likewise, they have federal, state, and local government involvement as well as non-profit conservation groups. This array of key players affords them governmental and influential power on multiple levels, as well as a wide knowledge base (McQuillen 2010). The one limit to this authority is restrictions on conservation easements, but that does not seem to have inhibited the preserve.

An organizational limitation is the challenge the preserve manager faces in keeping all partners focused and getting resources on the ground. There are several different budgets and initiatives depending on the partner, and many times it is hard to keep them committed to their specific projects (Cooper 2010).

FUNDING

There is a diverse array of funding opportunities that the Cosumnes River Preserve receives. Each partner organization covers a portion of their staff's salaries and contributes resources to support the operations (McQuillen 2010). The Preserve also receives private monetary and in-kind donations made by visitors to the Preserve Visitor Center as well as people who utilize the trails and properties (Sweet 2010). Similar to many non-profits, much of their funding comes from state and federal grants as well as portions of state, federal, and county budgets from taxes and bonds.

Photo 18.5: Sustainable farming on the Preserve, Courtesy of Cosumnes Preserve and Project.

Interestingly, a large portion of funds originate from the leasing of land for farming and ranching. According to Harry McQuillen, preserve manager, the agriculture program generates thousands of dollars for the Preserve. The program charges $20-22 per Animal Unit Month (AUM) to graze, and $30-135 per acre to farm. However, they will not lease the land to a farmer unless the agriculture supports the Preserve's natural resource goals.

CHALLENGES

The Preserve faces many of the typical challenges of non-profits and collaborations including funding and occasional staff turnover. However, there are two challenges particularly unique to the Cosumnes River Preserve due to its geographic location and demographic composition. The Preserve consistently faces **urban encroachment** issues due to its proximity to Sacramento, Galt, Elk Grove, and Stockton, which are regions with a propensity for **population growth** and suburban sprawl. Issues associated with the interface of suburban and Preserve properties include **trespassing for illegal activities, groundwater and surface water overuse, as well as habitat fragmentation** (McQuillen 2010). For example, there are plans to build an airport right outside the borders of the Preserve. This could have negative effects on migratory patterns of bird species that frequent the Preserve (Sweet 2010). There are not many viable solutions to stop urban growth. Therefore, the Preserve can only utilize their limited resources to hire enforcement officers, purchase more land, and increase their education/outreach efforts.

Photo 18.6: Aerial view of Urban Encroachment, Courtesy of Cosumnes River Project and Preserve.

One of largest challenges the Cosumnes River Preserve has faced and overcome is the challenge of being **welcomed in the neighborhood** as a legitimate and beneficial entity. Mike Eaton remembers there was "a lot of hostility from the neighbors and local farm community, they saw it as interfering with their ability to farm." Rich Reiner agrees with Eaton, "A challenge was working in a **conservative, rural neighborhood**." To overcome this barrier the partnership did several key, innovative things. They patiently worked with neighbors and farmers one by one, reaching out and demonstrating that there was potential to benefit. They hosted fieldtrips to get people excited about the preserve and habitat protection and established a voluntary tree planting project to develop popularity (Reiner 2010). They made sure there was "a face" to go with the Preserve and that staff was seen in the community; not as visitors, but as participating citizens.

ACCOMPLISHMENTS

With a partnership as successful as the Cosumnes River Preserve there are bound to be multiple accomplishments. Quantifiably, the Preserve has:

1) Restored approximately 1,800 acres of high quality riparian and wetland habitat (Cosumnes River Preserve Management Plan 2008)
2) Restored approximately 1,000 acres of agricultural land to freshwater managed wetlands which are seasonally flooded for migratory birds (Cosumnes River Preserve Management Plan 2008)
3) Established conservation easements protecting 11,000 acres of vernal pool grasslands, 4,000 acres of wildlife compatible agricultural land, and 6,300 acres of other habitat (Cosumnes River Preserve Management Plan 2008)
4) Maintained 90% of protected land in compatible agricultural production such as grazing, crops, and organic rice (Cosumnes River Preserve Management Plan 2008)
5) Hosted 10,000 student visits to the preserve every year (Cosumnes River Preserve Website 2010)
6) Host upwards of 60,000 visitors each year (McQuillen 2010)

However, these quantifiable statistics point to bigger successes within the partnership. The Preserve has clearly developed a way to keep grazing lands and agricultural land intact without further development. They are demonstrating that **environment and economic pursuits can co-exist** in a sustainable and successful nature. Their ability to **acquire vast amounts of land, protect, and manage it** successfully is a testament that large-scale collaboration and partnerships are possible.

According to Rick Cooper, the partnership's longevity is due to "the **synergy** that was developed with the group and the success that they had attained. There were very successful NGOs and all levels of government that cross all these boundaries. We had the right entities that would build a coalition that would stick."

PUBLIC AWARENESS AND EDUCATION

Public education and recreation opportunities are strategically aimed at increasing public awareness and support for the project. Activities occur at or around the visitor's center, located on the Preserve. The center has hands-on exhibits, educational and recreational opportunities, and picnic facilities for schools and classes to visit. Teachers are required to attend a teacher's workshop before scheduling a fieldtrip.

Photo 18.7: Cosumnes Preserve Education Center, Courtesy of Cosumnes River Preserve and Project.

Within these workshops, teachers will learn about the Preserve, aspects to point out and focus on, and ways to tailor their trip for their classroom's needs. Similarly, the Cosumnes River Preserve offers environmental curriculum for K-3rd, 4th-6th, and 7th-12th grades, which has been developed with local and state requirements in mind (Cosumnes River Preserve Website 2010).

LESSONS LEARNED

"You had all the right entities that would build a coalition that would stick."

- Rick Cooper, BLM

One of the most interesting and integral parts of the Cosumnes River Preserve and Project was the collection of stakeholders/parties that participate. From local, state, and federal government agencies to environmental non-profits, the partnership covers the array of parties that hold interests, power, and resources within this region. This diverse spectrum offers a plethora of knowledge. Harry McQuillen notes, "We use everyone's expertise to get things done." As noted above, Rich Reiner believes that the diverse participation allowed each partner to assume a unique role. With specialized roles there is less chance to "step on toes", bruise egos, and complicate organizational agendas. This streamlined process lends itself to efficient decision-making.

"We have made progress because of personal relationships."

-Sara Sweet, Cosumnes River Preserve

This sentiment is echoed throughout the entire evolution of the Cosumnes River Preserve and Project. When they were initially securing buy-in from different partners, as Rich Reiner remembers, "The BLM area manager was really enthusiastic about wetland protection and he was friends with folks at Ducks Unlimited. The BLM didn't even own land in the area." This personal connection and network allowed Reiner to suggest to the BLM they invest in Cosumnes lands; which they did. Similarly, multiple interviewees pointed out the necessity of having the Preserve and partnership become part of the community. In order to gain trust and demonstrate economic and environmental synergy, personal relationships needed to be forged with local citizens and farmers. Sara Sweet believes "personal relationships are a huge factor in land deals and cooperative management agreements. It dictates when people will share and how friendly they will be."

"The farming highlights that humans are part of the natural landscape and that our activities can be environmentally compatible."

-General Cosumnes River Preserve Brochure

One important lesson learned from the Cosumnes River Preserve is that economic and environmental interests can occur and be achieved simultaneously. The Preserve provides an appropriate model for developing close relationships with adjacent landowners and incorporating their activities into habitat management and long-term success. Though land is always desired in its natural state, the partners sought alternative uses for agricultural lands. Creativity and the understanding that it was better to have "buffer" habitat than ecologically pristine habitat has allowed the partners to develop an environmentally and economically dynamic landscape.

"Land acquisition has been fundamental to making progress because out of it stems the weight the Preserve has to weigh in on decisions in the region."

-Sara Sweet, Cosumnes River Preserve

The Cosumnes River Preserve is an excellent example of a partnership utilizing fee titles and conservation easements to gain power, authority, and a presence within the community. Their ability to build a cohesive matrix of properties is an effective way to achieve a mission that significantly hinges on land ownership patterns within a region. The partners were able to by-pass many of the jurisdictional barriers associated with trying to gain access to private lands. Similarly through this system of fee titles and conservation easements they were able to decrease the urgency of action; because they own the land they do not need to worry about unforeseen developments and threats appearing. This approach to watershed and habitat protection is appropriate in regions were property rights are highly respected and enforced.

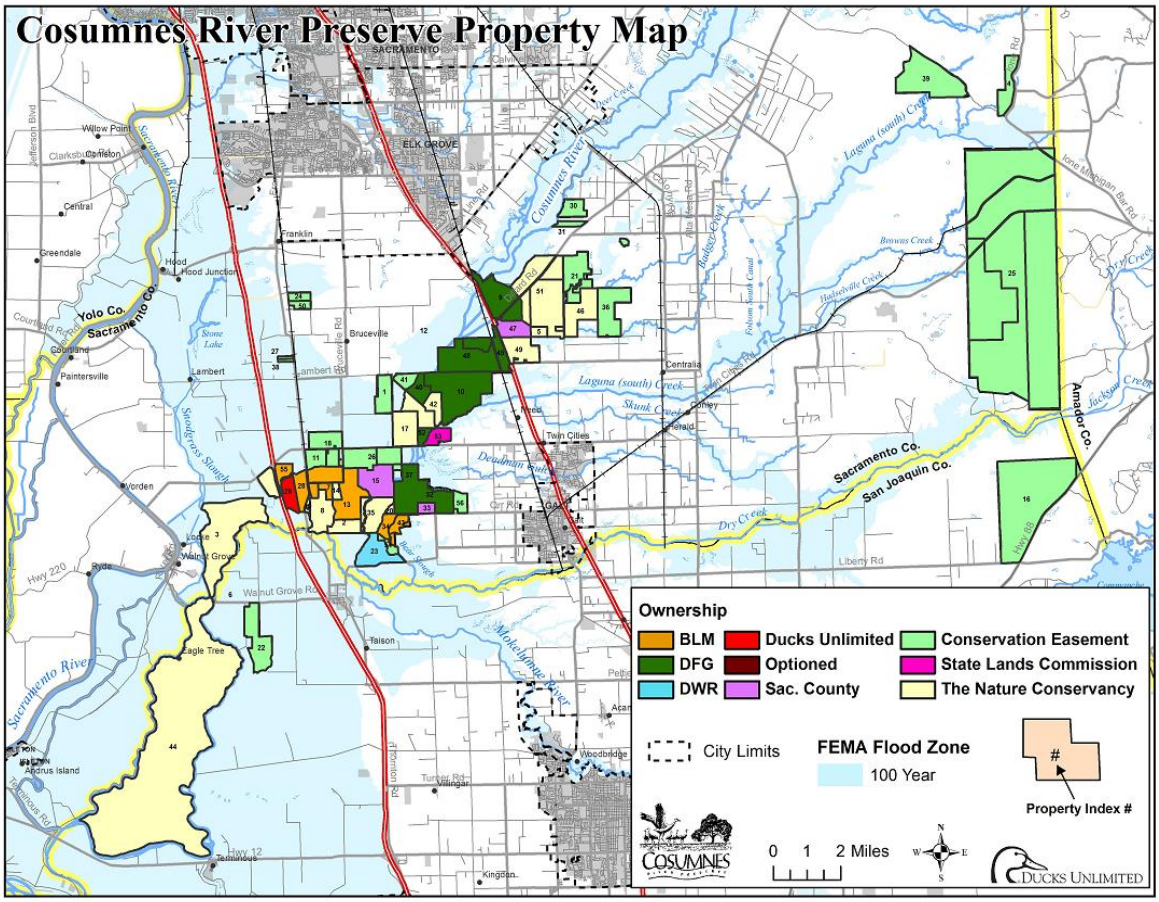

Figure 18.2: Map of Parcel Ownership for the Preserve, Courtesy of Cosumnes River Preserve and Project.

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APPENDIX

Cosumnes River Preserve Management Plan. To view the full management report, please visit: http://www.cosumnes.org/about_crp/managementplan.htm

CASE 19. FEATHER RIVER COORDINATED RESOURCE MANAGEMENT GROUP

Location: Northern California
Prepared by: Kathleen McIntyre

The Upper Feather River Watershed is located in the Sierra Nevada mountain range of Northern California. The Feather River Coordinated Resource Management Group, an ad hoc organization, was established in 1985 with the mission to:

> *"Maintain and enhance ecosystems and community stability in the Feather River Watershed through collaborative landowner participation."*

Through voluntary landowner participation the Feather River CRM has been extremely successful at riparian and meadow habitat restoration, improving water quality, and educating their local community on water quality issues.

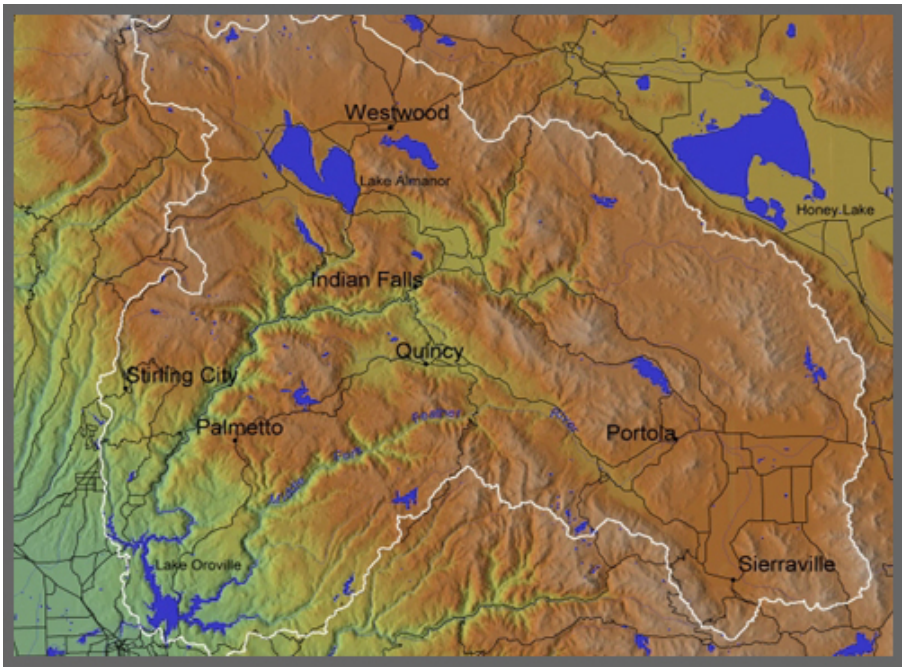


Figure 19.1: Map of Feather River Watershed, Courtesy of FRCRM.

The Upper Feather River Watershed shares similar characteristics to the Roaring Fork Watershed. The Feather River Watershed is 65% public land, a population of roughly 30,000, rural, and encompasses parts of four counties. The Roaring Fork Watershed is 75% public land, population 40,000, rural, and encompasses parts of five counties. This similarity in watersheds makes the Feather River

Coordinated Resource Management Group an interesting template to

examine. They have effectively engaged a constituency very similar to the Roaring Fork Watershed's through voluntary action, trust building, and community ownership.

BACKGROUND

Photo 19.1: Feather River Watershed, Courtesy of FRCRM.

The Feather River contributes to the Sacramento-San Joaquin River Basin. The North, Middle, and South Forks comprise the Upper Feather River Watershed, draining the western slope of Northern Sierra Nevada in North Eastern California (Kenney 1997). The upper Feather River drains 3222 square miles of land above Oroville Reservoir before coalescing with the Yuba and Bear Rivers and ultimately joining the Sacramento River. The watershed encompasses a variety of terrain, climate, riparian uses, flora and fauna. Watershed stream types include alluvial meadow, bedrock, and forest riparian. Vegetation in the Feather River watershed includes mixed conifer and deciduous trees to sage and yellow pine. Elevations range from 2,250 to 10,000 feet, while annual precipitation varies from 70 inches on the wet western slopes to less than 12 inches on the arid eastern slopes (FRCRM 2007). The Upper Feather River Watershed is a major source of water for the California State Water Project, which provides water for roughly 23 million Californians across the state (FRCRM 2010). Lake Oroville, a key part of the State Water Project, is located on the Feather River (Kenney 1997). More than 60% of the watershed is public lands under the jurisdiction of the USDA Forest Service including Plumas National Forest and Lassen National Forest (Bernard 2010). The remaining land area, including alluvial valleys, is predominantly privately owned and used for grazing (FRCRM 2007). With a population of 33,168 people, over 60% of the watershed is degraded due to decades of timber, wildfire, ranching, mining, and water development (FRCRM 2010). In the 1960's, sawmills and timber were mainstays of the Lassen, Plumas, and Butte Counties' economies. Plumas National Forest and Lassen National Forest were once the most productive forests in the country. With the decline of the timber industry due to federal regulations from the Northwest Forest Plan, unemployment soared to 18% and youth fled the counties (Bernard 2010).

Today, jobs in agriculture, forestry, and related occupations continue to comprise 1/3 of the workforce for this area. Golf courses and recreational development threaten the lands of Plumas County (Bernard 2010). The natural resource industry left a devastating scar on the Feather River

Watershed. Soil erosion, loss of riparian habitat, stream channelization, water quality decline, decreased water table, and loss of fish and wildlife have all been due to extensive natural resource exploitation (Kenney 1997). Long term vegetation disturbance and gully erosion has led to a change in the hydrology, reduced summer flows, higher summer water temperatures, and reduced meadow storage. 1.1 million tons of sediment was delivered annually to Rock Creek Dam, run by Pacific Gas & Electric (PG&E), with 80% being attributable to human activities (FRCRM 2007).

PARTNERSHIP'S BEGINNING

Photo 19.2: Restoration project, Courtesy of FRCRM.

The past 120 years of land use impacts to the Feather River Watershed and landscape as well as a decrease in the timber industry has been a stimulus for improved watershed management (Kenney 1997). In 1984, PG&E was worried about the excessive sedimentation along the Feather River's North Fork, which caused decreased reservoir storage and damaged hydroelectric turbines at Rock Creek and Cresta Dams. California Department of Fish and Game also was concerned about the decreased trout fishery, as federal and state agencies began to examine cumulative effects of a century of logging, mining, and grazing (Kenney 1997). Similarly, in the 1980's there was fierce polarization around natural resource use and management within Plumas County leading to gridlock over key decisions and issues. Many residents realized the timber industry would never be the same and that these continued battles would only escalate local problems. Residents viewed cooperation as necessary to encourage creative development of new economic opportunities within Plumas County, with the realization that a loss of local control was not a desirable outcome (Kusel and London 1995).

PG&E recognized the costly effects of soil erosion on their reservoirs and hydropower infrastructure. They were unable to flush sediment downstream legally, and costs to dredge the reservoir were roughly 7 million dollars. In 1985, Leah Wills of the Plumas County Economic Development Agency approached County Supervisor, John Schramel, with an alternative to dredging; she proposed PG&E finance upstream restoration projects (Kusel and London 1995). When asked why Wills got involved she said "When I looked at the watershed, there was so much watershed degradation, there was so much profit taken from the watershed, but there was no reinvestment in the resources."

The goals set out by Wills were in accordance with John Schramel's agenda for county economic development and attracted the original "gang of seven": Terry Benoit (USDA Forest Service),

Richard Flint (California Department of Fish and Game), John Sheehan (County Housing and Development Department), Ray Stine (California Department of Forestry), and Mike Kossow (environmentalist) (Kusel and London 1995). Leah Wills comments that the beginning of the Feather River Coordinated Resource Management Group was economic; PG&E would give them money to stop erosion and keep sediment out of their reservoirs. The California Department of Forestry representative suggested the national/state program of Coordinated Resource Management and Planning (CRMP) as an appropriate approach for developing the group. The group could be instantly recognized and have a better chance of securing funds under this program. Similarly, it would offer an effective avenue for coordination among resource management agencies and a broader membership base. They decided to drop the "P" in "CRMP" because planning was implicit in coordinated resource management and focus on "on the ground" active projects with a strong "results" focus (Benoit 2010).

The first steps in developing the Feather River Coordinated Resource Management Group, FRCRM, were two meetings where the group created a more detailed watershed erosion control plan, designed a formal Memorandum of Understanding (MOU), and established roles and responsibilities for each party. Twelve federal, state, regional, and local entities signed the MOU, which included the following objectives (Kusel and London 1995):

- Identify erosion sources
- Develop cooperative regional erosion control plans
- Design, fund, and implement cost effective control measures
- Work with public and private land owners

The early stages of the FRCRM were kept under the public radar until FRCRM had on-the-ground success to aid in spreading the word and getting public participation (Wills 2010). In 1985, with funding from PG&E and support of other agencies, the FRCRM launched its first pilot project along the Red Clover Creek. With this project, they created small ponds, raised water levels, slowed flows, and decreased sedimentation downstream(Kenney 1997). Leah Wills says, "The first FRCRM project was in-land and kind of redneck. It was on land of someone who owned a casino in Reno; a guy used to gambling and taking risks". Luckily the gambling paid off, and encouraged by the success at Red Clover Creek the group formally became the Feather River Coordinated Resource Management Group (Kenney 1997). Jim Wilcox, project manager for FRCRM, suggests this early success as integral in the FRCRM's start, "Many partners were warring elsewhere. They had to prove to themselves that they could work together. Within six months of the first meeting they had designed and funded and built a project in Red Clover Valley."

Other factors that were helpful in getting the FRCRM started include (Compiled from Interviews):

- Trust amongst parties
- Place-based. Presence and entity within the community
- Having a specific focus and clear problems that needed to be addressed
- Voluntary nature of the projects

- Willingness to go outside the box and be innovative
- Organizations willing to commit money to an unproved process
- Mobile anarchy of constant adaptation
- Catalyst coordinator, person who keeps everyone together and focused, Leah Wills
- Coordinated Resource Management Document signed at federal level in 1980
- On the ground successes

Likewise, there were many road blocks and challenges the young organization faced at its inception. Challenges included (Compiled from Interviews):

- Rural Restoration was unheard of at the time. In rural areas, practicality is a large issue
- The FRCRM and its ideas were all new, with no model or framework to follow
- Everyone working within the FRCRM was new to restoration sciences
- Building trust amongst the community and the partners

Today, the FRCRM is an alliance of 24 groups that recognize restoring watershed function is a major priority in reversing erosion and improving environmental and economic health. Their current focus is reestablishing stability and proper hydrologic function in the headwater meadows by reconnecting channels with historic floodplains (FRCRM 2007). The following is a list of FRCRM member organization, with the federal participants providing a large portion of funds, expertise, labor, and permits (FRCRM 2010) (Kenney 1997).

- California Department of Conservation
- California Department of Fish and Game
- California Department of Forestry and Fire
- California Department of Parks and Recreation
- California Department of Transportation
- California Department of Water Resources
- California Regional Water Quality Control Board
- Farm Services Agency
- Feather River College
- Feather River Resource Conservation District
- USDA- Natural Resource Conservation District
- PG&E
- Plumas Corporation
- Plumas County
- Plumas County Community Development Commission
- USDA- Plumas National Forest
- Plumas Unified School District
- Salmonoid Restoration Federation
- Sierra Valley Resource Conservation District
- Trout Unlimited
- University of California Cooperative Extension
- U.S. Army Corps of Engineers
- USFWS
- Nor Cal-Neva Resource Conservation and Development District

Each participant varied in motivation for participation in the FRCRM. For example, Plumas Corporation was chosen to coordinate the process because it has broad support and is viewed by the community and participants as a neutral party (Kusel and London 1995). The Plumas Corporation is the county's non-profit economic development entity. It has three main services: economic and business development, visitor attraction, and natural resources (Plumas Corporation 2010). It is a locally driven effort compared to other national agencies with presence in the county, which added local ownership to the process. The Plumas Corporation provides staff for the FRCRM. Plumas County and the California DWR are highly involved because the upper Feather River is a source for California Water Project water. The Forest Service participates actively because a large percentage of the watershed land area is national forest. PG&E was more highly involved in the beginning as a major funder of erosion control projects to decrease sedimentation build up and damage in their dams. The California Regional Water Quality Control Board was involved due to concerns over water quality (Heiman 2010).

PARTNERSHIP'S EVOLUTION THROUGH TIME

The scope and focus of the FRCRM has evolved over time. The geographic scope has expanded from just the North Fork to all Forks of the river, while the focus has broadened to include more water quality issues such as ecosystem health, land use practices, and sustainable economic development (Kenney 1997). John Sheehan, a representative of the county housing and development department, points out that the primary goal of the FRCRM has changed from erosion control in the early years, to more all encompassing broad stream/riparian restoration. With a broader focus, including meadows, the FRCRM became involved in other aspects of ecosystem management including monitoring of flows and temperature. Another evolutionary change within the FRCRM is the knowledge base of staff. Over time, more experience is gained and staff has become leaders in restoration science and techniques. Today, they are able to disseminate this expertise and knowledge amongst other watershed groups (Heiman 2010).

The role and emphasis on science has changed considerably since the inception of the organization. Jim Wilcox reflects that for a long time peer researchers and academics would not come to the Feather River Watershed. Wild lands are a "noisy" system to control; there are many factors that can affect outcomes making it difficult to produce the controlled research necessary for academic conclusions. However, by 2000 the staff had developed enough work and records to attract researchers from universities including UC-Davis, Stanford, and Sacramento State (Wilcox 2010).

The number of projects requested and completed per year has changed drastically since the beginning, leading to a re-organization to foster better communication and increased staff capacity. When Jim Wilcox came on board in 1990 the FRCRM was working on 1-2 projects a year. With a small case load a larger staff was not necessary. At the beginning, Leah Wills was the single staff member. However, projects increased significantly as the community gained trust in the process and agency restoration budgets began to decrease. Wills hired Jim Wilcox, and there are currently 5 staff members. With the increased number of projects, steering committee meetings for each became more difficult and the amount of information to process

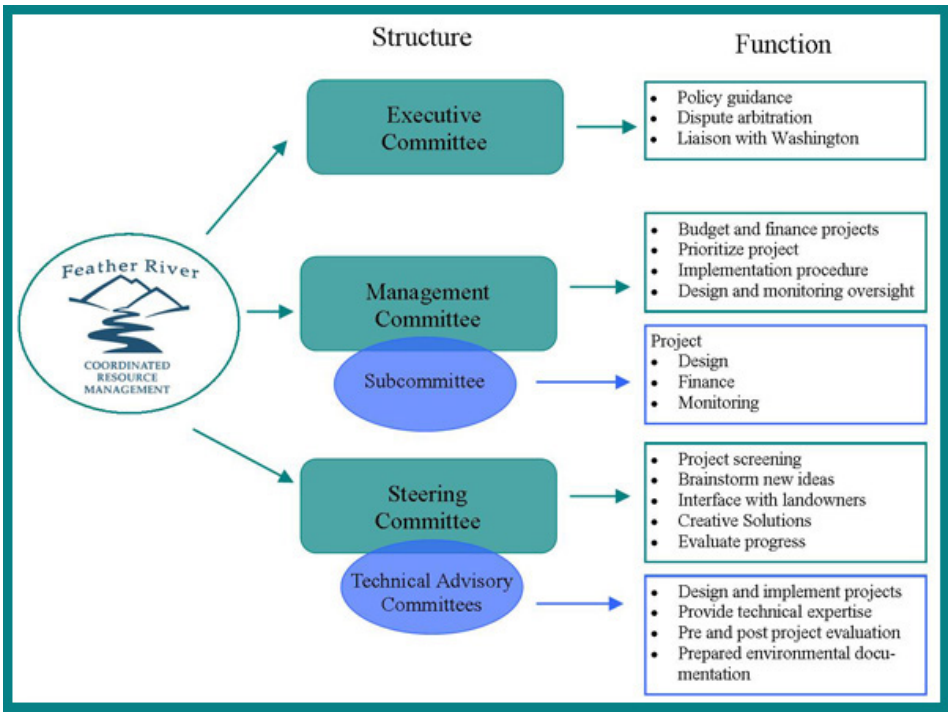
increased dramatically. The FRCRM staff had to begin making decisions without consulting the steering committee, leading many to feel disconnected from the process. In 1995, the FRCRM had a reorganizing meeting where they formalized the steering committee and activated a management committee composed of representatives from agencies that are active members that meets monthly. This re-organization was designed to foster better communication between the larger FRCRM and on the ground FRCRM staff (Wilcox 2010).

The credibility of the process has grown throughout the evolution of the FRCRM. At the beginning, people did not know anything about the organization, its mission, etc. However, as successful projects were completed the FRCRM had clear evidence to refute nay-sayers such as skeptical landowners. The FRCRM has slowly tackled their opponents, demonstrating they can increase forage and red meat production, have less grazing time per acre, more grass, and fewer watershed issues (Benoit 2010). Similarly, the voluntary nature of projects has led to increased credibility as the organization has not forced their mission or restoration activities on landowners or managers who did not request aid.

ORGANIZATIONAL STRUCTURE

The FRCRM staff is housed under the legal umbrella of the Plumas Corporation, but must fully support their work and organization through grants. There are 24 member groups that have varying representation through four committees that operate in a tiered hierarchy: the executive committee, steering committee, management committee, and technical advisory committee (TAC) (Martynn 2010).

The executive committee is a 4-member board that provides policy guidance, dispute resolution, and support in the political arena. This committee establishes the budget, finances, and project ranking procedures. Each member serves staggered two-year terms. The Feather River (formerly Indian-American Valley) Resource Conservation District, Plumas County Board of Supervisors, and Plumas National Forest appoint one person each to the



executive committee. These three appointees select the fourth committee member. This committee meets semi-annually (Coordinated Resource Management Plan 1989).

The steering committee is a broad composition of one person from each signatory to the MOU and representatives of interested community groups. The chairperson for the steering committee is chosen annually by all steering committee members and takes office January 1st. This committee provides continuity for the FRCRM and approves conceptual plans for each project. They meet at least semi-annually (Coordinated Resource Management Plan 2010).

The management committee has a representative from each FRCRM participant. The management committee reports to the steering committee. This committee administers the program, policy and budget decisions, approves new projects, and identifies financial support opportunities. The management committee meets monthly, and loosely acts like a board of directors. It has four subcommittees including finance, projects, education, and monitoring. Subcommittees meet as necessary (FRCRM 2010).

A technical advisory committee (TAC) exists for each project. Each committee is comprised of an interdisciplinary team that provides expertise, field evaluation, and coordination. TACs oversee design and project implementation, providing knowledge as necessary. Members include resource specialists, landowners, and other interested parties. The TACs meet as needed and the chairperson of each is appointed by the steering committee (Coordinated Resource Management Plan 1989).

Another important player in the organizational structure of the FRCRM is the Resource Conservation Districts (RCD). The RCD refers potential projects to the steering committee for assistance and funding, while overseeing the implementation of individual projects (Coordinated Resource Management Plan 1989). They act as representatives for the private landowners in meetings. Landowners are supposed to approach the RCD for assistance, at which point, once assistance is requested the steering committee can accept or decline the project (Benoit 2010). The steering committee will send projects to technical review subcommittees for environmental and technical review, and lastly to the finance subcommittee to secure funding. After it goes through the subcommittees the project proposal is sent back to the steering committee for final review. Lastly, it is forwarded to the executive committee for final approval (Coordinated Resource Management Plan 1989).

Ultimately, the FRCRM staff is the final implementer of a project from start to finish. Jim Wilcox points to the fairly fluid nature of day-to-day implementation, with the staff in charge of tweaking projects and making adjustments in the field. Though the structure was set up for landowners to voluntarily bring projects to the RCD, today, many of the landowners go straight to the FRCRM staff. Also, after building their credibility the FRCRM can now approach landowners and ask for access to land for assessment. The community members have a high level of trust in the FRCRM and rarely feel their landowner rights are being violated. However, it is crucial that staff get an absolute “go” from landowners since restoration efforts are generally impossible to reverse. To ensure 100% commitment by landowners to a project, there is a project agreement signed by land owners, TACs, funders, and project managers. Jim Wilcox reminds,

"it is important to recognize the FRCRM has no formal authority, however, the state uses us as a poster child for this kind of work."

Photo 19.3: Pre-Project in 2004, Courtesy of FRCRM.

Photo 19.4: Post-project in 2008, Courtesy of FRCRM.

The FRCRM has a Memorandum of Understanding that lays out clear goals and objectives for partners. Goals set out in the MOU include:

1) Optimize all beneficial uses of water
2) Emphasize education and prevention over regulation
3) Resolve participants' concerns through proactive involvement in consensus based planning process

These goals are met through a list of objectives that includes:

1) Improve high quality mid-summer to late fall stream flows by restoring groundwater recharge potential in meadows and uplands
2) Reduce erosive power of winter and spring storms and flatten storm run-off peaks by stabilizing stream banks
3) Prioritize water quality and quantity improvements on lands yielding the highest multiple returns to landowner and participants
4) Reduce potential conflicts on more marginal lands by increasing productivity on prime lands.

Ground rules and key concepts for operating within the MOU and FRCRM include:

1) Cooperate on accomplishing shared goals
2) No one is smarter than all participants together
3) Blaming doesn't solve problems- Address WHAT happened instead of WHO did it
4) Consult experts, but make own decisions
5) Common sense is necessary
6) Need consensus
7) Change is inevitable

In order to meet the goals and objectives outlined in the MOU, the FRCRM participates in projects, activities, and programs on 1.5 million acres of watershed in the North and Middle Fork (Coordinated Resource Management Plan 1989). Over 115 watershed projects have been completed, 66 of which were on-the-ground restoration projects that restored 44 miles of stream and approximately 3,900 acres of floodplain/meadow. Other projects have included watershed assessments, monitoring, education, and strategic planning. However, the primary activity of the FRCRM is to plan, implement, and monitor the projects on the ground, particularly meadow areas (FRCRM 2010).

The monitoring program is extremely important in assessing long-term trends of watershed conditions and identifying effects of restoration on watershed conditions. The FRCRM monitors watershed characteristics, birds, meadow carbon, as well as bank and channel stabilization. Volunteer efforts have been helpful in data collection and monitoring with activities including fish surveys, creek clean up, native seed collection, citizen monitoring programs, and weed eradication (FRCRM 2010).

Though there has been long-term success for the Feather River CRM there have been limitations posed by its structure, level of authority, and sphere of influence.

1) Organizational structure limitations: Leah Wills suggests that though the organizational structure has been effective at delivering services, it was not set up to deal with all the varying types of watershed problems. Similarly John Sheehan, director of community development for the county in the 1980's, suggests an organizational limitation in the number of participants; because there are so many it is difficult to produce fast, unilateral action.

2) Level of authority limitations: Jim Wilcox notes that because the FRCRM is not a statutorily authorized entity, they have no legal authority. This fact explains the voluntary nature of the process and why landowners are ultimately in charge. He also believes this is a benefit because people do not feel threatened by the organization. On the other hand, it has been suggested that voluntary involvement can inhibit the creation of long-term, comprehensive plans and leave the process vulnerable to shifting political climates.

3) Sphere of Influence limitations: John Sheehan points to the self limited range for activity within the Feather River watershed above Lake Oroville.

4) However, the biggest challenge to the Feather River CRM appears to be securing adequate, long-term funding, which in turn, affects the FRCRM's ability to overcome other limitations. This will be discussed further in the following funding section.

FUNDING

Original funding for the FRCRM came from PG&E by paying for restoration that kept sediment out of their dams. However, funding has shifted towards grants. Currently, the FRCRM is fully funded by grants including state and federal grants such as the 319-non-point source grant program in the Clean Water Act. Other sources of grants include National Fish and Wildlife Foundation, the USDA Forest Service, the Federal Rural Sierra Schools Act, and California water bonds (Martynn 2010). The financial role of the USDA Forest Service, California Department of Water Resources, and State Water Resource Control Board has grown over time (Sheehan 2010). John Sheehan estimates roughly 5-20% of grants come from private sources, while 40% comes from state funding and 40% comes from federal. He points out that funding continues to be a mix for every activity the FRCRM performs. However, according to Gia Martynn, current watershed coordinator, with the economic downturn state funding has decreased considerably.

Sufficient funding appears to always be a limiting factor. Most interviewees stated "funding" as a major current and future challenge facing the FRCRM. However Dennis Heiman, a representative from the California Regional Water Quality Control Board, is optimistic about the FRCRM's ability to overcome funding challenges, "the program has been more successful in attracting funding from outside than any other" and "for various reasons the Feather River CRM is very competitive. Including their early start, they were the first ones to recognize the power and importance of forming a program like this, and the cumulative successes make them a good investment." Jim Wilcox suggests "when you have no stable source of funding you have to be ready and prepared to write effective and competitive grants" and "You have to know your subject well enough to tell a compelling story. Target grant programs that you will have success with. Don't waste your time."

CHALLENGES

In addition to funding challenges, there are several other barriers facing the Feather River CRM including over allocation of water resources, landowners' fears, technology transfer and refinement, and operating within governmental bureaucracy.

Water in the West is severely over allocated, and resources are continually stressed due to industry and increasing populations. As explained by Leah Wills, often the answer for growing urban areas, such as Southern California, is to get more water from rural areas. These areas have smaller populations and much more water per capita. Plumas County is wholly encompassed by the Feather River watershed and is the smallest state water contractor in the system, but provides the most water to Southern California (Wills 2010). This poses the challenge of how to protect the region's water resources in a time of water stress for other parts of the state.

Another potential challenge that the Feather River CRM has been relatively successful at mitigating is its landowner fears including fear of coercion, loss of control, and forced compromise of values. The FRCRM addresses these (Kusel and London 1995):

1) All projects are done on a voluntary basis
2) Land owners are asked to identify their worst fears during the assessment
3) Pairs agencies that landowners tend to distrust with individuals landowners do trust

Terry Benoit, a founder of the FRCRM, believes one of the challenges is refining the technology to ensure a project lasts and is successful. "You try to understand the project area the best you can and put things in there that will hold together." It is critical that the techniques and technology last to act as references of success for the FRCRM.

Lastly, Jim Wilcox and Gia Martynn both cited the regulatory environment as becoming more onerous and complicated for the FRCRM. According to Wilcox, the original purpose of the FRCRM was to streamline the regulatory process. However, there has been more application of existing statutes to the organization and new regulators have no sense of the FRCRM's history. Martynn points to the inherent difficulty of organizations supported by grants operating in a bureaucratic regulatory framework: "The grants are limited to certain time frames and budgeting can be off. There are new requirements, times have changed, and you don't always have the money. However, we've managed to work through them every time and work with the agencies."

ACCOMPLISHMENTS

The FRCRM has achieved success by crafting a **process that reflects ecological, institutional, and social contexts of the area**, while linking the goals of these three realms (Kusel and London 1995). As Leah Wills points out, from an institutional standpoint the Feather River CRM is unique, "to have something rural and grassroots develop **scientific and political credibility** at the state level." Throughout the interview process several key accomplishments of the FRCRM were mentioned repeatedly including the **longevity**, their **on-the-ground projects and successes**, their **innovative technology and its transfer**, and their **education and outreach program**. The FRCRM has been able to sustain 25 years of collaboration, while implementing successful, on-the-ground projects that exhibit their innovative restoration techniques for dissemination to other watersheds. They have made immense contributions to the realm of watershed restoration science, and more specifically the Feather River Watershed, through their monitoring program and data collection and fostering of academic research. They have made vast improvements in their education and outreach program, educating the watershed community on their activities.

FRCRM struggles with **how to measure success.** There were suggestions that measures of success can be as simple as number of projects implemented, number of dollars acquired and spent by the program, number of linear miles of stream restored, or acres of wetland restored. Another suggestion was even more logical and straightforward: "Is the organization continuing to do effective on-the-ground work?" Recently, the Feather River CRM has looked at various mechanisms to evaluate and quantify watershed health. They selected 6-8 watershed characteristics in an attempt to quantify data trends. However, these efforts are still in their initial stages.

PUBLIC AWARENESS AND EDUCATION

In 2001, Rob Wade, the current K-12 watershed education coordinator for the FRCRM, approached the FRCRM to create an education committee that would address issues of outreach, education, and stewardship (FRCRM 2010). At first it was a challenge to convince the FRCRM of the necessity of an education committee because the FRCRM is a "results" oriented, on-the-ground organization. Eventually the committee was created to implement community and school based education programs throughout the watershed (Wade 2010). The education/outreach program received its seed money from the California Department of Water Resources, roughly $110,000, to fund a K-12 education coordinator (FRCRM 2010). Most funding for the program comes from grants with project specific funding. Several activities/programs covered by the education committee include coordination with high school classes and the Feather River Community College to involve students in restoration projects and experiential learning, presentations in classrooms, Youth Environmental Stewardship Summit, as well as teacher training. They participate in local festivals, storm drain stenciling, write press releases, hold watershed tours, and offer tips to be a watershed steward on the website (FRCRM 2010).

One of their most successful and unparalleled programs is called "Plumas to Pacific". This program is taught during the 6th grade in four local public schools. It is a 15-day program throughout the year that includes 5 days at the beginning of the year with 5 monthly field trips after. It traces a drop of water from Plumas County to the Pacific Ocean. This program promotes awareness and understanding of issues such as watershed management, where water originates and ends, and the State Water Project amongst the 6th grade population. An interview process at the end of the year assesses what the children have learned and how it affects their lives. This program has been very successful as exhibited by the feedback from the community and the enrollment in 6th grade. Many students come from other school districts just for 6th grade to participate in this curriculum (Wade 2010).

Photo 19.5: Student in the Plumas to Pacific, Courtesy of FRCRM.

The education program utilizes many different types of media to communicate with the public and disseminate their message including press releases to the newspaper, flyers, emails, and networks. They have utilized conventional public awareness campaign elements including bumper stickers, decal stickers, temporary tattoos, and informational handouts and sheets (Wade 2010).

LESSONS LEARNED

"Build local capacity."

- Jim Wilcox, FRCRM

The success and longevity of the Feather River CRM hinged upon their ability to build local capacity, credibility, and trust in this rural watershed. As Wilcox notes, "Everyone in the office has roots in the watershed, they aren't going anywhere. Many groups just talk, but don't recognize that they need ownership of things on the ground or else they aren't building that connection with the land and community." It was this connection with the community that has built trust with landowners and allowed for a voluntary process where landowners approach the FRCRM for aid. Also, having a strong presence in the community allows for the FRCRM to know their watershed in-depth and tailor strategies effectively. According to Terry Benoit, "you have got to know your project area and be observant of how things work. Go out and measure, don't just watch. Get a complete picture in your mind."

"If it's not practical it won't get done. Practicality is a big deal."

- Leah Will, co-founder

According to Leah Wills, in rural communities, practicality and on-the-ground results are necessities if an organization plans for long-term success. This was a primary concern in the development of the Feather River CRM and why they decided to cut the "P" from the CRMP process. They wanted to ensure they were very active, and built a portfolio of small successes that acted as examples to garner support from the local community. Part of the practicality of the FRCRM is also the voluntary, hands on nature they adopt when approaching projects. Decisions made on the land are ultimately up to the land owner, and FRCRM staff is present and manage each project from start to finish. There is a sense of personalization and community. Similarly, if the landowner cannot afford to donate any financial aid they often will contribute labor or materials. According to Dennis Heiman many of the landowners are "land rich and cash poor". They do not have the financial resources to waste on planning of projects with no tangible results that will need to be eventually removed or fixed.

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APPENDIX

Appendix. G. Feather River Coordinated Resource Management Group Memorandum of Understanding.

Appendix JJ. Feather River Coordinated Resource Management Group for Red Clover

PART III: PUBLIC AWARENESS CAMPAIGNS & EDUCATIONAL RESOURCES

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INTRODUCTION

The Roaring Fork Watershed Collaborative-Water Committee (RFWC/WC) expressed interest in learning more about successful and innovative public awareness campaigns. They hope to expand their existing outreach capacity and generate new and creative ideas from what others have done. RFWC/WC wanted to learn about the basic techniques and components of a campaign. This section describes several public awareness campaigns targeting a variety of audiences and addressing issues including water quality, water quantity, and riparian land use. The team's objective was to outline cases that promote active participation as well as short-term and long-term support for an organization's respective issues. The public awareness case studies centered predominantly on characteristics shared with the RFWC/WC to provide a list of directly applicable campaigns. These characteristics included geographic location, specific issues addressed, geographic reach of campaign, and whether they target underserved populations.

The public awareness campaigns highlight strategies, methods, and lessons learned from running a campaign around water issues. However, the three cases featured in this section offer approaches for engaging target audiences in watershed issues, steps for developing a successful outreach campaign, and how to implement a xeriscape program. These resources are included because of their potential relevance to RFWC/WC's future education and outreach activities.

Summary of Campaigns:

Campaign 1. Bert the Salmon & Natural Yard Care Campaign – Located in Western Washington, King County and Seattle Public Utilities developed a large advertising campaign to target water conservation, grass clippings, pesticide and fertilizer use. This public awareness campaign evolved into a larger behavior change campaign based on social marketing theory. Their efforts reinforce the importance of monitoring and evaluation to avoid long-term investment in a faulty program.

Campaign 2. The Chesapeake Club & Agriculture Campaign – The Chesapeake Club & Agriculture Campaign is a social marketing campaign launched in the Washington, D.C. metropolitan area to reduce the amount of nonpoint source pollution in the Chesapeake Bay. They targeted culinary messaging instead of the typical environmental message, stressing the importance of water quality for blue crabs, a culinary delicacy of the region.

Campaign 3. Clark Fork Coalition – The Clark Fork Coalition concentrates on education and outreach campaigns in Missoula County, Montana. The Coalition runs several successful campaigns, saturating the market with messaging on billboards, radio, television, print ads, and social media.

Campaign 4. Feather River Coordinated Resource Management Group (FRCRM) – Located in Northern California, the FRCRM runs a public awareness campaign called "Upper Feather River Watershed: Clean Water Starts Here." With a budget of $30,000, they developed educational materials including a watershed map and landowner guide to highlight the importance of the Upper Feather River to the community and entire state.

Campaign 5. Partners for Clean Water – Located in Boise, Idaho, the Partners for Clean Water came together after the U.S. Environmental Protection Agency (EPA) issued a Municipal Separate Storm Sewer System (MS4) NPDES permit. This permit requires Boise to work with the co-permittees to develop and administer permit-wide education and outreach addressing stormwater pollution in Idaho's Treasure Valley.

Campaign 6. Use Only What You Need (Denver Water) – Use Only What You Need is a public awareness campaign for water conservation run by Denver Water, the utility serving customers in Denver, Colorado. The campaign attempts to connect with audiences and create behavior change through clever, humorous messaging incorporated into social marketing.

Campaign 7. Water Use It Wisely – Water Use It Wisely, developed in Mesa, Arizona, is one of America's most widely implemented water conservation programs. It is available for use throughout the country and provides a wide range of promotional tactics and resources for organizations of all sizes.

Summary of Educational Resources:

Educational Resource 1. Keep Tahoe Blue - "Keep Tahoe Blue" highlights interesting aspects of this nationally renowned public awareness campaign. The League to Save Lake Tahoe is the organization that runs the "Keep Tahoe Blue" campaign. The case does not cover the development and deployment of this campaign but instead discusses the importance of a charismatic landscape and the engagement of out-of-basin audiences to support efforts. This case highlights how "Keep Tahoe Blue" effectively overcame a rocky history in the basin opposing their efforts.

Educational Resource 2. The River Network – This case focuses on the strategies suggested by River Network for conducting successful public awareness campaigns. The River Network uses social marketing tactics for campaign development. They stress the need for comprehensive research on target audience and evaluation of the campaign's success. The River Network provides ongoing guidance and suggestions for public outreach and education to watershed collaboratives that are members of their network.

Educational Resource 3. Water Smart Landscape Rebate - Southern Nevada Water Authority's (SNWA) "Water Smart Landscape Rebate," highlights how they have effectively designed and implemented a xeriscape program to conserve water in the Las Vegas Valley. RFWC members have expressed interest in the xeriscape method as a potential conservation strategy in the watershed. This unique approach to water conservation promotes the conversion of water-thirsty grass to a more water-efficient desert landscape. Through the program, SNWA provides a monetary rebate for participants based on the number of acres converted. To date,

there has been 149,616,590 million square feet of grass converted, saving 41,349,261,184 billion gallons of water.

The campaigns are clustered into relevant categories for RFWC/WC to easily reference. Categories include:

- Type of landscape and associated population density: Rural versus Urban
    - Rural: campaigns did not occur in a city
    - Urban: campaigns occur in a city
- How an organization produced campaign materials: In-house versus Out-source
    - In-house: campaign, materials, and ideas were created by the implementing organization
    - Out-source: implementing organization hired an advertising organization or consultant to develop the campaign
- Involved social marketing
    - Social marketing was created in the 1970s, with the understanding that marketing principles could be used to sell ideas, attitudes and behaviors. Social marketing attempts to influence behavior to benefit the target audience or society, not the marketer.[1]
- Issues targeted in the campaign: Water Quality, Water Quantity, Riparian Land Use
    - Water Quality: campaigns that address eutrophication and storm water pollution
    - Water Quantity: campaigns that address conservation of water resources
    - Riparian Land Use: campaigns that address riparian land conservation, restoration, and protection

The Roaring Fork Watershed is sparsely populated with agriculture and forested areas; however there are several population centers within the region. It will be important for RWFC/WC to consider the rural or urban context when designing campaign messages and choosing target audiences. Similarly, future funding to run a public awareness campaign has not been secured. By providing examples of organizations that utilize both in-house and out-sourced campaign development, RFWC/WC will be better able to assess the benefits and costs of each method. Social marketing allows an organization to target specific behavior change goals and can be helpful for RWFC/WC when creating messages to promote desired behavior. Lastly, RFWC/WC wants to educate the watershed community on water quality, water quantity, and riparian land use as outlined in their Watershed Plan.

[1] Weinreich, Nedra Kline. "What is Social Marketing?" Weinreich Communications. 2006. http://www.social-marketing.com/Whatis.html

Case Studies- Public Awareness Campaigns							
	Water Use It Wisely	Use Only What You Need (Denver Water)	Partners for Clean Water	Bert the Salmon & Natural Yard Care Campaign	Clark Fork Coalition	The Chesapeake Club & Agriculture Campaign	Feather River CRM
Rural					X		X
Urban	X	X	X	X		X	
Water Quality			X	X	X	X	X
Water Quantity	X	X			X		X
Riparian Land Use				X		X	X
In-house			X	X	X		X
Out-source	X	X				X	
Social Marketing		X		X		X	

I: PUBLIC AWARENESS CAMPAIGNS

CAMPAIGN 1. BERT THE SALMON & THE NATURAL YARD CARE CAMPAIGN

Location: Western Washington
Prepared by: Angela Michalek

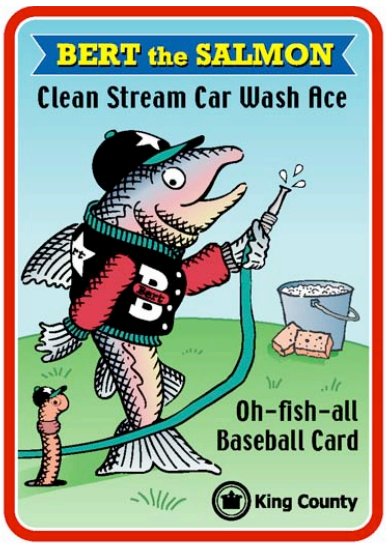

Figure 1.1: Bert the Salmon Baseball Card, Courtesy of King County.

Washington's King County and Seattle Public Utilities developed a large advertising campaign to target water conservation, grass clippings, pesticide and fertilizer use. However, the entities realized this marketing strategy was not meeting their objectives to the degree they had hoped and decided to take a community-based approach. Their experience with environmental messaging demonstrates the difference between public awareness campaigns and behavior change techniques, nuances that the Roaring Fork Valley could consider in large-scale education initiatives. King County's efforts also reinforce the importance of monitoring and evaluation in public education initiatives to avoid making long-term investments in projects with mediocre results. Their repeated assessments also enabled them to make minor modifications, increase the success of their efforts over time and justify future funding. While at first glance, a social marketing campaign may seem beyond the capacity of the Roaring Fork, the scale could be adjusted to the resources available.

BACKGROUND

In the late 1990s, Washington's King County and Seattle Public Utilities (SPU) wanted to create a comprehensive campaign to address water quality, water quantity and waste issues (Rice 2010). While it seems like Seattle would not need to prioritize water conservation given its famously wet winters, residents know that the area experiences summer droughts. Average monthly rainfall in the city hovers around 1 inch in both July and August (Western Regional Climate Center 2006). In response to these conditions, homeowners were increasing their outdoor water use by 30% during the summer, rising to even 100% on hot days (McDonald 1999).

Moreover, in 1997, the City of Seattle and King County collected 81,585 tons of yard waste; 70-88% of which was grass clippings (SPU 1999). The sheer volume of yard waste was overwhelming compost facilities. King County hoped to educate people about the ecological

benefits of leaving grass on lawns. Grass clippings return nutrients to the soil and promote growth without having to use an excessive amount of fertilizer.

Lawn pesticides and fertilizers also run off directly into Puget Sound and were having a substantial impact on the aquatic environment. The state of Washington Department of Ecology found 23 pesticides in streams throughout the state between 1992 and 1994 (McDonald 1999). Suburban homeowners use 5-10 times more fertilizers and pesticides per acre on their lawns than farmers use in their fields (King County 2004). Weed-and-feed products contain both fertilizer and pesticides (McDonald 1999). A 1996 survey of King County residents found that 46% of residents use a weed-and-feed product. King County also estimated that 62% of the fertilizer nutrient, phosphorous, was flowing into Lake Sammamish from suburban residences. At the time, scientists were also beginning to explore the possible linkage between disease risk and pesticide exposure, particularly in children.

Good marketing campaigns, social or not, begin with research (McKenzie-Mohr and Smith 1999; Jain 1999). What is your message? Who is your target audience? Marketing strategists begin by asking these questions and creating an elaborate profile of the target audience when developing a campaign.

The Seattle Public Utilities then conducted a literature review on these behaviors, looking at what other campaigns have done in the past, identifying barriers to change and their target audience (McDonald 1999). The consulting team also polled 400 Seattle area residents to determine their target audience, male homeowners, 25-54 years old with an income over $30,000 (Colehour 2010). The campaign targeted men because men were more likely to be in charge of home lawn care and their research had shown that women had already received their environmental messages (Rice 2010). Their research also indicated that men recall information differently from women (Legato 2005, Rice 2010).

Figure 1.2: Back of Bert the Salmon Baseball Card, Courtesy of King County.

Several divisions within King County's Department of Natural Resources agreed to pool approximately $150,000 for the development of a public awareness campaign. Seattle Public Utilities matched King County's funds. The different divisions and agencies were hoping to take a more holistic approach with their environmental messaging. The agencies hired advertising and marketing consultants to help develop their marketing plan and strategies. However, it took time to settle upon the messaging (Colehour 2010). Each entity had its individual mission and was contributing financially, so they had to ensure that everyone's needs were met while also producing an effective campaign. "One of the biggest problems in my industry is people trying to say too much [in their message] and then they end up saying nothing because no one hears it. People don't end up absorbing anything," said Julie Colehour, one the consultants who contributed to the campaign.

Eventually, the consortium decided upon three themes: 1) water conservation, 2) grasscycling, or leaving clippings on the lawn, and 3) reduced pesticide and fertilizer use. They titled the campaign, "Natural Lawn Care" and came up with the slogan:

When it comes to your lawn, act naturally.

The Natural Lawn Care campaign focused on mass media techniques (Colehour 2010, Rice 2010). The campaign aired radio ads for 2 years, starting in 1997 (Rice 2010). Bert the Salmon was a character for one of the radio advertisements in 1998, but he became a mascot for the entire Natural Lawn Care campaign. Salmon resonate with the Northwest and its identity. Bert the Salmon also evolved at the same time the Chinook salmon had been federally listed as an endangered species in the Northwest (NOAA 2006). Plummeting salmon populations often signify a substantial decrease in water quality or quantity. Consequently, the language was adjusted to not only encourage behaviors that were good for the water, but also for the salmon (Rice 2010). The consortium also received additional monies for emphasizing endangered species protection. They hoped his character would appeal to a large audience, both young and old.

The campaign went strong from 2000-2003 with radio and animated television ads featuring Bert the Salmon, during Mariners baseball games. From 1997-2001, the Natural Lawn Care campaign spent $1,706,666 (Colehour 2010). Besides radio and television, the campaign used print ads, posters on public transportation, bus boards, baseball cards, and community events designed to gain press coverage (Rice 2010). They developed brochures, a website, a gardening hotline, and a Natural Lawn Care video. All print materials were also produced in Spanish.

Rather than protecting their logo, King County and SPU hoped that other agencies, counties and cities promoting water quality and environmental health would use Bert as their "spokesfish" as well (Rice 2010). They also saw their willingness to share creative content as a way to foster relationships with other organizations. Many other entities did make use of Bert with King County and SPU's permission, seeing no need to reinvent the wheel and looking to capitalize on the campaign's success. Once the funding began to wane and departments began to pull out of the campaign, some local governments and direct beneficiaries from the messaging, like carwashes, cooperatively supported some of the television ads for a couple years. SPU and King County did consider copyrighting to control any

Photo 1.1: Bert the Salmon in the classroom, Courtesy of King County.

inappropriate use, but decided the cost outweighed the benefit.

Monitoring and evaluation was also a critical part of their campaign. The plan was to track indicators over time, study them for trends, evaluate existing efforts and make adjustments as needed. The Natural Lawn Care campaign used telephone surveys twice a year to ask a series of questions about what people did with their yards, from 1997 until 2003. However, the campaign had the most funding and support from 1997-2001. While some questions were added at the end, they made sure to ask the same initial questions in the same order. The consulting firms also tracked the level of advertising and media coverage. Over the five-year campaign, there were 162 news stories (Colehour 2010). Such consistent and frequent data collection helped the agencies leverage future funding for public education and outreach. "One of the things that was unique about this campaign was that we were able to do enough surveys for enough years with basically the same questions, so that we know that change happened," said Julie Colehour.

While the Natural Lawn Care campaign only lasted 5 years, Bert the Salmon stayed around and has become a mascot for the Northwest in the same way Smokey the Bear championed forest fire prevention. After Bert the Salmon was animated, he was joined by another character, Phil Dumpster (Rice 2010). They developed children's television ads and ran them during Disney programming over the summer (SPU 2003). The partners also created baseball cards with conservation messages (Rice 2010).

Through the Saving Water Partnership, a coalition of local utilities, Seattle Public Utilities also developed an online game called Bert and Phil's Waterbusters (SPU 2006). In the game, players have to fix water leaks while messages about water conservation flash across the screen. Bert the Salmon television ads increased the overall likelihood King County children would play the Waterbusters game. The television ads ran over the summer and early fall in 2005, during which time the website received 15,000 hits. The web medium was very successful in reaching younger audiences. In 2006, Waterbusters won a conservation award from the American Water Works Association (SPU 2007). To this day, the Bert the Salmon costumes, made for the Natural Lawn Care campaign, are still used for community events.

Bert the Salmon and the Natural Lawn Care campaign was originally designed to motivate behavior change, but King County's assessments found that it was more effective at raising awareness (Rice 2010). "About 70% of the population had at some point seen a talking fish on TV and it was that level of crudeness. You couldn't really get too much more elaborate than that. But the problem was that we really only had 20-30% of the population actually doing the activities. So advertising as a method, is great at creating awareness, but it is not great at creating behavior change," said Doug Rice, Outreach Program Coordinator for King County Water & Land Resources Division.

When King County and SPU probed into why people were not following the Natural Lawn Care advice, they found the answer was simple (Rice 2010). The target audience did not understand how they could avoid using excessive amounts of water or what they could be doing instead of applying fertilizers and pesticides to their lawns.

FROM NATURAL LAWN CARE TO NATURAL YARD CARE

In 1999, Doug McKenzie-Mohr and William Smith had recently published their groundbreaking book, *Fostering Sustainable Behavior: an Introduction to Community-Based Social Marketing* (McKenzie-Mohr and Smith 1999). Nancy Lee, another social marketing luminary, who lives in King County, began attending some of the County's meetings and led a few discussions explaining the concept of social marketing (Rice 2010). County and municipalities had raised the public's awareness around the environmental issues, but wanted to take the program in another direction to encourage behavior change.

They pulled together a group of partners, King County, the City of Seattle, Belleview, Shoreline, among others and tried to go out and actually train residents (Rice 2010). Rather than having a yard program separate from hazardous waste outreach, they decided to combine these messages into one single 5-step program that they would promote at 3 cost-free, neighborhood trainings. Instead of reusing the slogan, Natural Lawn Care, they called the program, Natural Yard Care. The scope of Natural Yard Care goes beyond "lawn care," and describes the dynamic relationships between soil, water, organisms and plants. The five steps are: 1) build healthy soil, through composting or the use of slow-release organic fertilizers 2) plant what is adapted to the climate and soil conditions 3) water only as much and as frequently as needed 4) employ integrated pest management, an environmentally sensitive approach which minimizes pesticide use and 5) leave grass on the lawn.

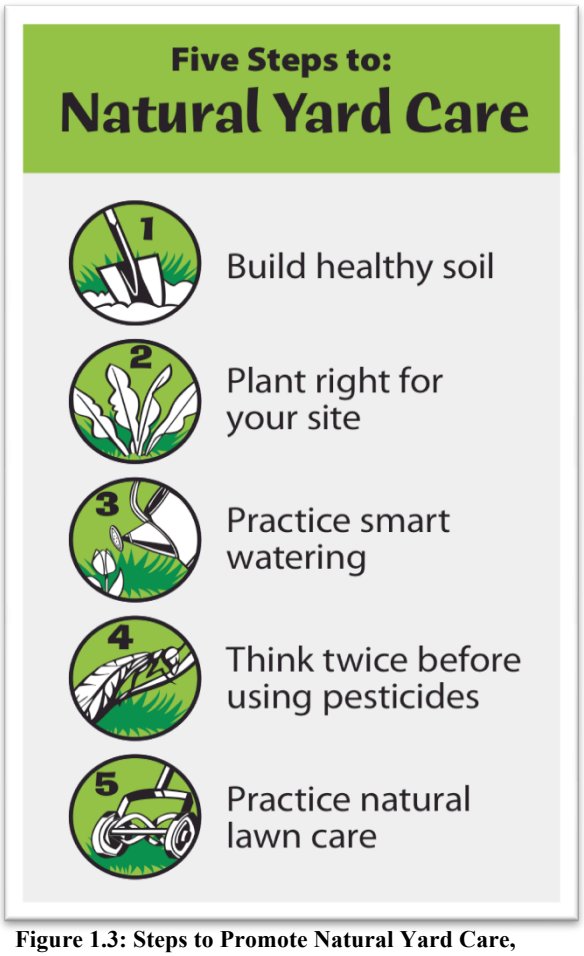

Figure 1.3: Steps to Promote Natural Yard Care, Courtesy of King County.

This Natural Yard Care Neighborhoods Program began in 2000 as a community-based social marketing campaign (Rice 2010). The program used direct mail and door-to-door recruiting, targeting one neighborhood at a time. The recruiter let people know that they were personally being invited and explained what they would gain from the event. Workshops were held once a week in the evening, over three weeks. They piloted the concept in one Seattle neighborhood, Renton, giving each participant a brand new mulch mower. They studied the pilot program and while the approach was effective, the cost of giving everyone mowers precluded large-scale implementation.

The partners expanded the program to a couple of neighborhoods, but decided to provide one mower as a door prize at the last workshop (Rice 2010). King County later concluded, "the reason that people attend isn't to get a mower, it made it a little juicier, they could justify spending the time

on this when they might not otherwise, but that's not really why people do it," Rice explained. By asking people informally why they came, how they found out about the workshops and a little bit about their background, they discovered two main audiences: new homeowners and seniors. New homeowners realized that with the new house came a yard and they struggled to care for this outdoor space. Nowadays, younger generations are also less likely to know how to garden. Seniors also came because they always had an interest in gardening. In their case, they had mature gardens that lacked soil nutrients or non-native plants.

In response to a slimming County budget, the program managers streamlined the staffing and door prizes of the Natural Yard Care program (Rice 2010). They also began to require cities in the target neighborhoods to cost-share the program with the County. In many instances, cities would pay someone to canvas the neighborhood and remind people about the event. They found this increased enrollment by approximately one-third. As city budgets declined, King County has been forced to use grants to keep the program going.

Despite these cutbacks, the program has had similar results at a fraction of the cost (Rice 2010). King County measured the success of the program in 2003 and then again in 2005. They used a baseline survey at the beginning of the first workshop, a control survey for households that did not attend, and 6-month and 18-month follow-up mail surveys (Dethman et al. 2006). Notably, they recruited workshop participants to help administer the surveys and thereby reduced the need for additional staff. "Generally, it tends to be that people, who change their yard care practices tend to do it permanently. They also tend to tell 5-7 other people about it. If they attend one of the trainings, they'll tell 5 people about it. If they attend all 3 trainings, they tend to tell 7 other people and this is very consistent for the two periods of time that we measured," said Doug Rice. These trainings have maintained the awareness levels of the Natural Lawn Care campaign, but have also resulted in behavior change, see Tables 1 and 2. Of those surveyed, over 80% reported being extremely satisfied (Dethman et al. 2006). The more workshops people attended, the more likely they were to change their behavior as well (Rice 2010).

Table 1.1: Top 5 New Behaviors at 18 months, Source: Dethman et al. 2006.

Use organic/slow release fertilizer	28%
Fertilize lawn moderately	27%
Water deeply but infrequently	26%
Check soil moisture before watering	26%
Avoid ""weed and feed"" products	26%

Table 1.2: Top 5 Increased Behaviors at 18 months, Source: Dethman et al. 2006.

Use organic mulch	35%
Add compost to beds	32%
Water deeply but infrequently	32%
Choose native plants	31%
Choose drought tolerant plants	27%

Program manager, Doug Rice, estimates that they have conducted Natural Yard Care trainings in half of King County (Rice 2010); notably, the county is home to nearly 2 million people (US Census Bureau 2009). In 2004, two cottage home communities required natural yard care for all of its residents (Rice 2010). Anytime they felt interest flag, they tried to make adjustments to the program. Participation has always been around 30-40 people per workshop, but recently cities like Kent and Auburn have had over 100 people attend. They have found some participants are returnees. Rice also attributes the rise in participation to the widespread recognition Natural Yard Care now enjoys and its cost, "the word 'free' in today's economy simply means a lot more than it used to."

The program has also benefited by easily incorporating other relevant community messages (Rice 2010). By tweaking its messages, it was able to diversify its funding sources. For example, the state Air Quality Program offered to contribute money if they would promote zero-emission electric mulch mowers. Natural Yard Care's flexibility helps it to respond to any environmental or operational changes. For example, when the City of Seattle instituted curbside compost pickup, the program also reduced its emphasis on backyard composting.

The Natural Yard Care has also diversified its programming by offering 'naturescaping' and yard design classes (Rice 2010). The new emphasis on design has also led to increases in attendance. The design workshops target a broader slice of the public, business owners, landscapers and suburban residents. The Natural Yard Care program is celebrating its 10th anniversary this year, a significant measure of its success for government programming, which tends to ebb and flow.

Northwest Natural Yard Days also began in 1998 as a partnership between the City of Seattle, King County, and over 20 other agencies and private businesses (King County 2009). This incentive program complemented the Natural Yard Care Program. While the number of partners and retail locations fluctuated over the years, the program collaborated with over 15 different retailers at more than 50 locations throughout the Puget Sound region to offer seasonal discounts on natural lawn care products, from April 15th – May 15th. The Coalition sponsored events over the course of the month where residents can recycle old lawnmowers, receive technical advice and purchase discounted eco-friendly products. In anticipation of drought conditions in 2005, Northwest Natural Yard Days also promoted the Natural Yard Care Smart Watering for Dry Times Tool Kit. The Tool Kit was a package of discounted products, including a water timer, weed puller and organic fertilizer. King County also showcases these companies on its website, listing which products are available at each retailer's stores.

The programs also benefited from a federal court decision requiring people to reduce their pesticide use. In January 2004, a federal judge ruled in *Washington Toxics Coalition (WTC) et al vs. EPA* (2004) to establish buffer zones around "salmon supporting waters" in Washington, Oregon and California. In order to protect threatened and endangered salmon and steelhead, certain pesticides could not be used within these buffers. Residents were forced to find other alternatives to pesticides. After 11 years, Northwest Natural Yard Days had its final season this past spring, lacking the funding to continue (King County 2009).

LESSONS LEARNED

"What the Natural Yard Care Neighborhoods program did was actually go grassroots, from a sort of true peer-to-peer, friend-to-friend kind of situation got neighbors together learning about these issues and practicing them together at the neighborhood level, which from a social marketing standpoint is about is good as it gets. One-on-one is always best when you can do it, but my experience is that it's typically cost-prohibitive and that's what tends to throw those tactics out."

– Julie Colehour, Principal for Colehour + Cohen

Many environmental education programs assume that increasing knowledge around a particular subject will promote behavior change (Mc Kenzie-Mohr 2000). However, few environmental problems are technological solutions that require one-time action. Social marketing tools have also been shown to be most effective when interpersonal contact is involved. The positive contact could involve a commitment, training, or product distribution (e.g. low flow shower head to promote conservation). However, many assume these approaches will automatically resonate with the public. Large-scale implementation of an ineffective program is an expensive investment that risks little payoff. Education coordinators should take the time to identify barriers to change, pilot and refine strategies. This methodology will also provide assurances to potential funders of the program's success.

Conclusions

Depending on their message, the Roaring Fork Watershed could consider a social marketing campaign of this nature on a smaller scale. A research driven approach to education would measure effectiveness and allow for adaptation over time. Logically, the scale of the initiative could be reduced to fit the size and characteristics of the Roaring Fork Valley. Survey sample sizes would not need to be as large, since Pitkin and Garfield County have only a combined population of approximately 75,000 people. Such systematic evaluation can also extend the life of a program and justify future funding. Larger public education initiatives in the Roaring Fork Valley could also potentially benefit from the newly established Healthy Rivers and Streams Fund in Pitkin County. Their contribution would allow the implementing organization to leverage other funding sources, both within and outside the watershed.

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APPENDICES

Appendix L. Bert the Salmon & Natural Yard Care Campaign- Five Steps to Natural Yard Care
Appendix CC. Bert the Salmon & Natural Yard Care Campaign Water Quality Survey

CAMPAIGN 2. THE CHESAPEAKE CLUB & AGRICULTURE CAMPAIGN

Location: Chesapeake Bay
Prepared by: Angela Michalek

The Chesapeake Club is a social marketing campaign launched in the Washington DC-area hoping to reduce the amount of nonpoint source pollution in the Chesapeake Bay. The campaign was also replicated in two areas in Virginia, Hampton Roads and Richmond. This case provides another example of a social marketing campaign targeting suburban homeowners and lawn care. The Chesapeake Club used a culinary and status approach to messaging as opposed to an environmental one. The second half of the case outlines a campaign encouraging farmers to participate in Best Management Practice (BMP) cost-share programs in Virginia. The Roaring Fork Conservancy has identified target audiences for education programs in the past, but every effort should be made to understand that audience prior to the campaign. The agriculture campaign outlines key findings from their focus group research and uses these to craft the outreach campaign.

CHESAPEAKE CLUB

The Chesapeake Bay is the largest estuary in North America (CBP [Chesapeake Bay Program] 2010). Blue crabs, *Callinectes sapidus*, are a symbol of the Chesapeake Bay and the Bay's most important and valuable commercial fishery. However, since the early 1990s, this blue crab fishery has been in decline, due largely to the nonpoint source pollution flowing into the shallow estuary. Many people do not realize that the majority of the crabmeat sold in the region is imported from the Gulf of Mexico or Asia. Marketers often use phrases like "Chesapeake flavor" to skirt this issue (Paolisso 2007). The Chesapeake Bay Program was established in 1983 to restore the Bay's ecosystem and is a partnership of citizens advisory groups, the Chesapeake Bay Commission, the Environmental Protection Agency (EPA) and the following states: Delaware, Virginia, Maryland, New York, Pennsylvania, West Virginia and the District of Columbia (EPA 2010). The Bay Program works to protect the Chesapeake Bay through voluntary efforts and agreements. The EPA provides an annual appropriation of approximately $20 million

Photo 2.1: Blue crabs, Courtesy of Andy Johnson.

to the program (CBP 2010), but around 75% of restoration implementation money comes from state governments (GAO 2005). In June 2000, the six Bay Program states signed the Chesapeake 2000 agreement, (CBP 2000). The agreement contains a series of broad objectives for the Bay's restoration and was the first document that incorporated language about engaging citizens of the watershed (Waugh 2010).

Ten years ago, the Chesapeake Bay Program's Communications subcommittee conducted a survey that indicated people were very concerned about their water quality (Waugh 2010). Yet, people did not understand that nonpoint source pollution was the biggest threat to the Chesapeake Bay and that they had a significant role in preventing this type of pollution. The subcommittee began to look for ways to reach a larger audience. Up until that point, their education initiatives included a newspaper, monthly electronic newsletter, an annual restoration report, website, stewardship opportunities, K-12 curriculum, workshops and technical assistance (CBP 2010). However, they did not feel their efforts were having a substantial effect. The Communications subcommittee decided to take a targeted approach, using more traditional marketing methods.

The Chesapeake Bay Program had $1 million per year in funding for special projects that a number of different committees vied for (Waugh 2010). The Communications Subcommittee wrote a proposal for a mass media campaign to address nonpoint source pollution in the Bay. They repeatedly applied for this funding, before they were finally awarded it in 2003. They received $400,000 from the Chesapeake Bay program. The Subcommittee wanted to develop a campaign that would involve all of the Bay partners. While they were hoping the partner states would also add funding to the initiative, an economic downturn precluded most states from contributing. Only Virginia put $250,000 towards the effort, making the total budget $650,000.

In 2004, the Chesapeake Bay program hired the Academy for Educational Development (AED) to develop the Subcommittee's proposed campaign, **Chesapeake Club: Save the Crabs, then Eat 'em** (Kotler and Lee 2008). AED introduced the idea of social marketing to the subcommittee. "The whole concept was to not only show people they had an impact, but show them that there was a tangible benefit to them to lessen that impact. We were doing a pretty good job of speaking to the choir, but we were now trying to speak to those folks who had not shown an interest in water quality or the Chesapeake Bay," said Gary Waugh, Public Relations Manager at the Virginia Department of Conservation & Recreation (DCR). Waugh is also Chairman of the Communications subcommittee. The campaign focused on the residents' taste for blue crabs as opposed to an environmental message (Kotler and Lee 2008). AED also recognized that the public was suffering from message fatigue and saw the culinary emphasis as a unique way to draw attention to the Bay.

The Bay Program and its partners already had education initiatives targeting developers, farmers, wastewater treatment plants and point source polluters (CBP 2010). Consequently, the Communications Subcommittee consulted with various experts and tried to identify sources of water quality pollution that were not being addressed. They decided that lawn care was an issue they needed to address with suburban homeowners. The heavy spring rains wash excess fertilizer from the D.C. area into the Chesapeake Bay. Rather than deterring residents from fertilizing, the campaign encouraged homeowners to fertilize in the fall, when it was less likely to run off into the Bay (Kotler and Lee 2008). They did not want the campaign to be seen as anti-fertilizer; instead they wanted homeowners to use fertilizer properly. They knew they also needed to convey what "using fertilizer properly" means. The idea was to keep the message simple; promote a behavior change that was relatively easy to do, but still had a substantial impact. They decided on the tagline, "spring rains wash excess fertilizer from our area into the Chesapeake Bay, so skip fertilizing until the fall."

They identified their target audiences as (Kotler and Lee 2008):

1) residents who fertilize their lawn
2) lawn care services
3) lawn care product providers and
4) decisionmakers

Given their limited budget, they chose to confine their campaign geographically to the DC market (Waugh 2010). DC's large metro area extends into multiple states and fertilizer reductions there would have a significant impact on the watershed. Suburban homeowners have the largest per capita impact on stormwater quality and flows (Jacob and Lopez 2009).

Lawn care has an element of status and there is often an unwritten competition in neighborhoods about who has the nicest lawn (Waugh 2010). The Chesapeake Club was created to capitalize on this notion of status and create a social norm. The Club would also give people a sense of commitment, a tool often used in social marketing (Kotler and Lee 2008). The

Chesapeake Club website features romantic getaways on the Bay and Blue Crab recipes in addition to lawn care advice. Overall, the website is aesthetically pleasing, purposefully excluding the logo of the Chesapeake Bay Program or any government agencies.

Restaurants were also able to become members of the Chesapeake Club (HR Storm 2008). The campaign gave out free coasters to restaurants, sporting the Chesapeake Club logo on one side and the other side was the tagline, "spring rains wash excess fertilizer from our area into the Chesapeake Bay, so skip fertilizing until the fall." The restaurants were then featured on the website.

The campaign also worked with lawn care service providers to offer the "Chesapeake Club" treatment, a low-nitrogen, phosphorus-free fertilizer application that could be applied in the spring (Waugh 2010, USEPA 2005). AED solicited the involvement of lawn care companies; many were initially skeptical of involvement. AED incentivized their participation by showcasing their companies on the Chesapeake Club website and including them in newspaper advertisements. Color brochures, highlighting the Chesapeake Club treatment, were distributed to the lawn care providers. Customers that used the Chesapeake treatment received window hangers and lawn signs (USEPA 2005).

The campaign was launched by an event that gathered area chefs together to sign a petition urging residents to fertilize in the fall (USEPA 2005). The campaign ran newspaper and television advertisements over a 7-week period beginning in February 2004. The television ads were broadcast over 4 major networks and weekly newspaper ads were in the Washington Post and DC's Express (Kotler and Lee 2008). Many other local papers and media were interested in the campaign's unique approach and wrote stories about it, providing additional free advertising. Signs were also posted on the metro trains and in Union Station (USEPA 2005). Advertising in DC was expensive and took up more than half of the campaign's budget.

With the leftover money from 2004 and $50,000 in additional funds from Virginia's Department of Conservation and Recreation (DCR), the Chesapeake Bay Program was able to run the campaign again in 2005 (Waugh 2010).

A survey was conducted prior to the campaign and again over 2.5 weeks at the end of the campaign, nearly 600 people were surveyed (USEPA 2005). 72% of the respondents said they had heard of the campaign and could identify one of its messages. Many people enjoyed the humor in the new approach; the website received over 100 messages commenting on it, even requesting printed T-shirts. Interestingly, a significant increase occurred in the number of survey respondents who said they would not fertilize at all. 15% in the pre-campaign survey in 2004 said they would not fertilize at all, compared to 34% in the post-campaign survey in 2005. However, survey differences prevented researchers from firmly making any conclusions about any decreases in spring fertilizer use.

The campaign tried to reach out to fertilizer companies like Scott to develop a new spring product to reduce water quality impacts (USEPA 2005). While their efforts to develop a new product were unsuccessful, the company said it would consider adjusting fertilizer packaging to reflect environmental concerns.

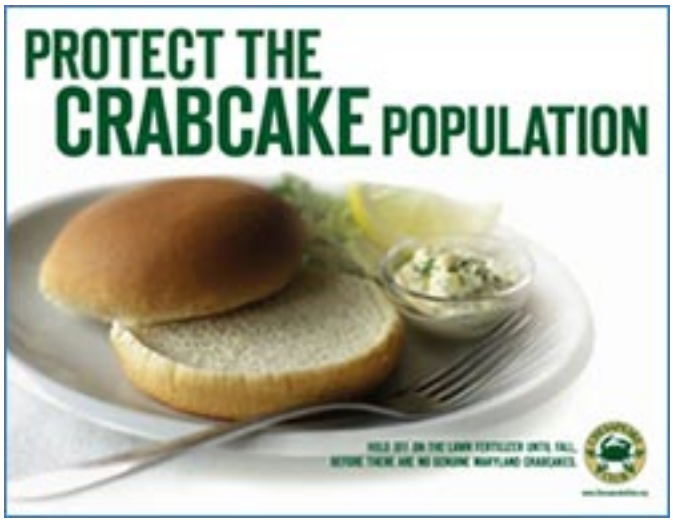
The Chesapeake Bay Program also developed Chesapeake Club Program-in-a-Box Guide to encourage other non-profits and government agencies to implement the same campaign in other areas around the Chesapeake Bay (CBP 2006). The Guidebook describes the process step-by-step and the Bay Program makes all of its materials available to interested agencies, local governments and non-profits.

Hampton Roads & Richmond

In 2006 through 2008, Virginia's Department of Conservation & Recreation (DCR) was able to procure funding from Virginia's Coastal Zone Management Program and the Chesapeake Bay Program to run smaller campaign in two areas in Virginia, Hampton Roads and Richmond (Waugh 2010). Cost precluded the use of AED for the Hampton Roads and Richmond campaigns. Instead, Virginia DCR worked with the local governments to launch the campaign.

The Hampton Roads municipalities hold Municipal Separate Storm Sewer System (MS4) permits, which mandates some form of education and outreach component in the watershed (Waugh 2010). A coalition of 16 local governments formed HR Storm, a stormwater education program that uses local media campaigns to push its targeted messaging (HR Storm 2008). They primarily use television and radio to advertise their campaigns, but local newspapers and websites are secondary sources. In the past, their messages have included pet waste clean-up and household chemical disposal. HR Storm agreed to launch the Chesapeake Club campaign in 2006 and solicited the participation of restaurants and lawn care companies (Waugh 2010). Overall, the restaurants were willing to be involved but the lawn care companies were more reluctant. HR storm partnered with 20 restaurants that helped them distribute more than 50,000 Chesapeake Club coasters and over 1,000 T-shirts (HR Storm Annual Report). HR Storm has also linked the campaign to its BMP messaging. However, Waugh said DCR wants to work closer with the municipalities. DCR hopes to increase future ownership by bringing local communities in earlier in the campaign development process.

DCR hired OpinionWorks to survey residents in the Hampton Roads and Richmond areas in 2008 (OpinionWorks 2008). 600 pre-campaign surveys were conducted in January and February in each of the two markets and 600 post-campaign surveys were done in May, totaling 2,400 interviews. A commercially available phone list was used and participants were screened for eligibility, which was determined by asking if they had a lawn. The surveys asked a series of questions about the campaign and general environmental practices. The surveys revealed (OpinionWorks 2008):



- The lawn's appearance was the most important factor in decision-making for both markets. People

generally determine how much fertilizer to apply by reading the instructions on the package.

- While the campaign targets males, women also identified themselves as lawn care decisionmakers. Women were 52% of the participants in Richmond and 54% in Hampton Roads.
- Approximately 33% of the participants in both Hampton Roads and Richmond said they would use less fertilizer. 25% said they will fertilize fewer times and about one in six said they would change the time of year that they fertilize. The 2008 numbers are lower than those in 2007, indicating that the campaign may have been more effective when it was newer.
- 61% of those surveyed in the Richmond area leave their grass clippings on the lawn, compared to 50% in Hampton Roads.
- The survey asked participants to rate a series of actions on their environmental impact using a scale of 1-10, with 10 being extremely high. Picking up pet waste scored significantly higher in the Hampton Roads area, making it one of the greatest ways residents can improve water quality.

The Next Phase

The Communications subcommittee is starting to prepare for a new campaign. Waugh remarked, "Ideally you would run a message for 2 years and then you would come up with another message, so at some point, you had this whole suite of messages that you can put out and localities can use. So that people will get the sense that all of this is connected and realize, 'These are all impacts that I have'."

The Bay Program received a $500,000 grant from the National Fish & Wildlife Federation to reduce Nitrogen and Phosphorus in the Chesapeake Bay region (Waugh 2010). The state of Virginia provided a $100,000 match. Instead of a financial contribution, the state of Maryland, DC and the Chesapeake Bay Program all agreed to donate staff time and make other in-kind contributions.

The Communications subcommittee recently hired a new agency that has proposed the slogan, "Plant more plants" (Waugh 2010). Based on the firm's research and given the recent economic downturn, Waugh said, "people are just in a totally different place from where they were in 2004/2005 when we came up with the Chesapeake Club." Waugh explained that people are staying at home more instead of going out to restaurants. This new campaign focuses on things people can do at home, personal stormwater management through native plants, rainwater gardens and rain barrels. They are hoping that they will not have to rely upon traditional, expensive media like television and newspaper ads. Instead they would like to employ social media like Twitter and Facebook. Waugh explained DCR's commitment to public outreach campaigns, "We see this as an important tool, educating the people, getting people engaged in what's going on. It's not just a business problem. It's not just a government problem, it's a problem we can all share and we can all be part of the solution. This agency just believes in this approach."

AGRICULTURE CAMPAIGN

Agriculture is arguably the largest source of non-point source pollution flowing into the Chesapeake Bay (Waugh 2010). As a result, the Virginia Department of Conservation & Recreation (DCR) developed another campaign to specifically target farmers and landowners. The DCR was hoping to increase participation in the DCR's Best Management Practices (BMPs) Cost-Share programs. DCR hired the McFadden Clay Marketing Group to research and develop a campaign to meet these objectives (DCR 2006).

In the spring of 2006, the Marketing Group facilitated 12 focus groups throughout Virginia and 84 farmers participated (DCR 2006). Focus groups were also conducted with the Conservation Districts and Natural Resource Conservation Service (NRCS) agents.

The research led to several key findings, a few of which are listed below (DCR 2006):

- Farmers implement BMPs because they would like to be good stewards, there are economic incentives to do so and they BMPs prevent erosion. Farmers respond well to messages that highlight economic benefits and "increase their bottom line."
- While all farmers recognized that water quality problems exist, they feel they are unfairly held responsible for them. They feel that developers and residential homeowners have a greater impact. They also feel that they do not receive any credit when they do implement conservation measures. Notably, farmers said they would be willing to display signs in their fields indicating they are cost-share participants and providing them with some recognition.
- Most of the farmers lease their land and the farms included livestock, poultry, dairy, hogs, agricultural crops and vineyards (DCR 2008).
- Farmers do not implement BMPs for some of the following reasons: 1) farmers do not own the land they cultivate 2) the practices do not fit their farms 3) the BMPs are not cost-effective 4) farmers fear it could exacerbate pest and disease problems, or 5) farmers fear it would introduce government control.
- Many farmers were already practicing no-till because not only does it control erosion, but no-till reduces the farmer's labor and fuel costs.
- While farmers believe that conservation practices improve water quality, they do not understand exactly how.
- Trust and relationships are important to establish when reaching out to farmers. Agricultural Extension Agents already have a good rapport with rural landowners.
- Farmers prefer one-on-one messaging and newsletters from Extension services and Conservations Districts. Demonstration "field days" are also a good way to showcase conservation practices. Farmers are unlikely to respond to direct mail, but do listen to

local radio stations with a farm report and rural weekly newspapers. Farmers were not interested in receiving information via email.

- Using impacts to the "Bay" in the Eastern half of Virginia is a legitimate argument, but in the Western half, any association with the "Bay" does not resonate with farmers. Instead, terms like "local waters" should be used.

- Suburban development is replacing farms and causing them to subdivide their land.

The research helped the marketing firm and DCR identify three messages for the campaign 1) Economic incentives 2) Stewardship and 3) Erosion benefits (DCR 2008). They also identified a suite of 5 Best Management Practices to emphasize: cover crops, conservation tillage, nutrient management, riparian buffers and livestock exclusion.

All of these findings were used to create the marketing and communications plan (DCR n.d.). The program was piloted in the Shenandoah Valley in 2007 and expanded in 2008. The Shenandoah Valley was initially selected because its media costs were low compared to other areas in the state. The advertisements encourage farmers to attend a "Field day demonstration" or to speak with their local Soil & Water Conservation District about BMP cost-share programs.

In 2009, DCR created a suite of materials and templates for Extension agents and the Soil & Water Conservation Districts, including fact sheets, radio scripts, billboards, press releases, and newspaper advertisements (Waugh 2010). These were put together so the campaign could easily be adapted to a locality and used without requiring the funds and resources of the original campaign. DCR hopes the Conservation Districts are using the materials and would like to research how often and where they are used. DCR would also like to monitor the cost-share participation across the state and run the campaign in areas where participation is low, instead of trying to reach out to farmers state-wide.

CONCLUSION

The Roaring Fork Watershed is interested in understanding how research can inform public outreach as well as tools for monitoring and evaluating education efforts. The Chesapeake Club provides an example of monitoring using telephone surveys. An important difference between traditional marketing and social marketing is the emphasis on partnerships. The Chesapeake Bay program represents a number of different states and agencies. Similarly, the Roaring Fork has several organizations involved in education programming that could act synergistically to promote one campaign. In contrast, the Agricultural campaign particularly highlights the significance of market research on the target audience. This data also provides a basis upon which organizations can apply for grants and adds credibility to their efforts. The target audience research also helped Virginia's DCR understand where farmers where coming from and farmers were happy to express their sentiments on the BMPs and the DCR program. Overall, the focus groups sessions helped to improve DCR's image and their relationship with the farmers.

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CAMPAIGN 3. CLARK FORK COALITION

Location: Missoula County, Montana
Prepared by: Bethany Hellmann

The Clark Fork Coalition began in 1985 with a strong advocacy campaign calling for dam removal (CFC 2010). They delivered 10,000 comments to the EPA to remove the dams and restore the confluence to the Clark Fork and Blackfoot rivers. In the last five years they stopped advocating for legislation and ordinances at the city, county and state level because they kept failing due to opposition from property rights advocates.

More recently, the Clark Fork Coalition concentrates on education and outreach campaigns in Missoula County, Montana (Randall 2010). They saturate the market with their messages through billboards, radio, television and print ads, social media and stream care guides. Clark Fork Coalition retains the same messages as used in their advocacy campaigns, but they push for voluntary measures rather than mandatory regulations.

Figure 3.1: Clark Fork Watershed, Courtesy of Clark Fork Coalition.

Sample Messages (Randall 2010)

- 95% of animals use riparian areas and they only make up 2% of land in Montana. That's why they are important. Riparian areas provide filters and buffers so they need protection.
- "We are your voice for the River" and "Care for the River" are two of their taglines.

Action Items

Clark Fork Coalition encourages people to contribute money to help their organization and fund their campaigns (Randall 2010). They always include an easy action item with all of their campaigns. For instance, residents may tear out a postcard from a brochure and send it to the EPA or click on a link to send an email in support of the Coalition's message.

Education Strategies

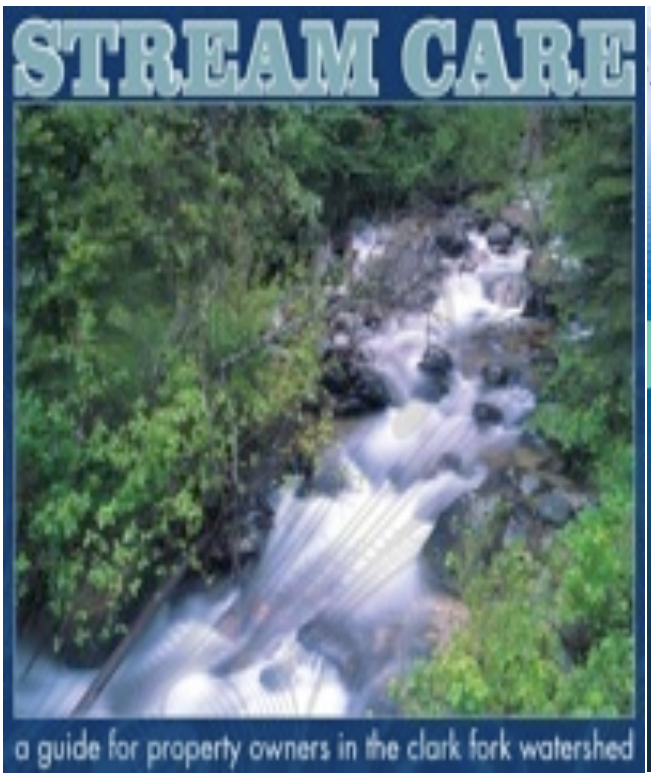

Photo 3.1: Clark Fork Coalition's Stream Care Guide, Courtesy of Clark Fork Coalition.

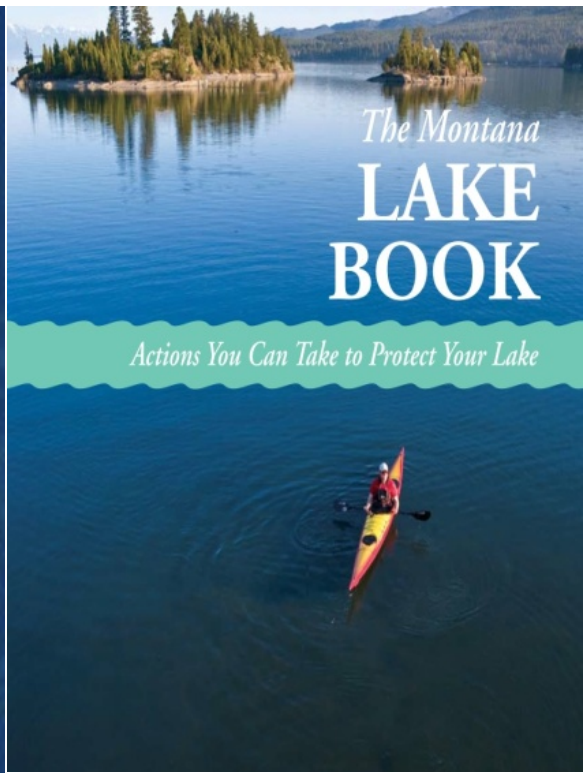

Photo 3.2: The Montana Lake Book, Courtesy of Clark Fork Coalition.

Clark Fork Coalition publishes a "Stream Care Guide" which discusses good stream stewardship (CFC 2010). The stream care guide outlines the benefits of taking care of the rivers and streams including increased property value, erosion prevention, reduced flooding, increased water quality and improved bird, fish and wildlife habitat. Clark Fork Coalition also publishes the "Montana Lake Book", which discusses how lake users can preserve and protect Montana's lake ecosystems. This book discusses aquatic invasive species, pollution and drought and promotes measures to prevent problems and reduce people's negative impact on the lakes. This book targets homeowners and recreationists. Additionally Clark Fork Coalition publishes a "Landowner's Guide to Fixing Streams on Working Lands in the Upper Clark Fork Watershed" that is available in full color text on Clark Fork Coalition's website (CFC 2010). It provides before and after pictures of water restoration projects and discusses what caused the degradation and how it can be fixed.

"I am Clean Water" Campaign

Their "I am Clean Water" campaign is very broad (Randall 2010). They use billboards and radio ads, which reach people in rural areas of Montana. They also send full-page mailers to everyone in the county. They saturate all aspects of the market with the "I am Clean Water" campaign to communicate about water quality and quantity.

"Rivers Rise. Build Back."Campaign

Photo 3.3: Clark Fork River Watershed. Courtesy of Clark Fork Coalition.

The "Rivers Rise. Build Back." campaign is a streamside protection campaign to protect water quality and riparian habitat in the Clark Fork Watershed (Randall 2010). This campaign has been ongoing in some form since 2007. Initially, the Clark Fork Coalition advocated for county ordinances to require people build further back from their streams. However, the people of Missoula County oppose mandatory regulations on their land like those proposed in the county ordinances. After multiple failures, they decided to switch to education and promoting voluntary stream setbacks in 2009. The partners in this campaign are Trout unlimited, Montana Audubon, Montana Smart Growth Coalition, Missoula County planning departments, water quality departments, public health departments, developers and realtors. They also received a grant to work with the media firm "Partners Creative" to generate some of their messages and billboards.

The goals and messages of the "Rivers Rise. Build Back" campaign are to protect the riparian corridors by keeping development, intensive agriculture, livestock, roads and infrastructure development out of the riparian areas (Randall 2010). They primarily used billboards and online videos called "Stream Care Shorts" that are available on YouTube to communicate the messages behind the "Rivers Rise. Build Back" campaign. This campaign targets landowners, land developers and realtors. Property rights advocates were very vocal in their opposition to this campaign, which posed a challenge. This opposition did not want to be told what to do with their land or property. The development and realty community were also opposed because the riparian land is their most economically valuable land and Clark Fork Coalition was telling them they could not build on it. They overcame these challenges by switching from advocacy or law making into the education realm, which allowed them to partner with realtors and developers rather than having them as opponents. They put out stream care videos that explain the problem in a humorous way and they do not point specific fingers at anyone. The Coalition communicates that riparian protection is everyone's responsibility and they refrain from only blaming the land developers for degraded habitat.

Clark Fork Coalition feels this "Rivers Rise. Build Back" campaign has been a great success (Randall 2010). Clark Fork Coalition measures success by recognizing that dozens of realtors attend their continuing education classes on stream care rather than protesting their efforts. Clark Fork Coalition has distributed over 500 stream care guides within their first month of printing. They also keep track of the increasing number of visitors to their videos on Facebook and their website. Additionally, they have seen a shift in the development trends. New subdivision plots in Missoula County have riparian resource areas and/or a common park area on the riparian zone. These development companies advertise the benefits of this riparian zone to potential new residents. This shift shows that the Clark Fork Coalition's efforts to impact land developers is working.

They attribute this success to the fact that people in Montana are much more acceptable of voluntary opportunities to protect their natural resources rather than county or city ordinances (Randall 2010). Brianna Randall, the Water Policy Director for Clark Fork Coalition, states that reminding people they "are living on this beautiful piece of land" and asking them, "Do you want to know how to keep it healthy and beautiful for the long haul? works a lot better. We got the message right but were asking for the wrong thing upfront" by advocating for ordinances and changes to legislation. They also reward the companies that practice watershed friendly development with Stream Care Stewards awards.

Flow Restoration/Water Quantity Education

Since Montana has fewer water diversions and less competition from cities for their water than Colorado, Clark Fork Coalition is able to concentrate more on environmental flow (Randall 2010). They call this movement flow restoration and are part of a coalition in the Northwest of the United States devoted to flow restoration and water leasing in streams. This coalition acquired the Montana Water Trust in 2010.

Photo 3.4: Before and after pictures of stream restoration used on Clark Fork Coalition's website, Courtesy of Clark Fork Coalition.

Using the term "flow restoration" is helpful because people know about restoration (Randall 2010). "Stream restoration is big; people are getting that buzz word," according to Randall. This movement used to be called water leasing, which was not as widely known. Through the flow restoration movement, the Clark Fork Coalition approaches irrigation districts, ranchers and farmers with grant funding to help them improve their water efficiency. They are able to give money to these groups if they use less water, or lease/donate water to instream flow. The flow restoration program centers on one-on-one contact with the landowner or irrigation district. The Coalition also tries to make flow restoration popular in the government by targeting state agencies, water rights managers, the Department of Environmental Quality and legislators to make sure they support the statutes that led to water leasing. They also target messages to the general public that do not understand there is a water quantity issue. They try to communicate to the public the complicated water law provisions that allow farmers to dry up streams and rivers and the need for landowners to put water back into the streams.

Specific goals and messages for flow restoration (Randall 2010):

- Rivers need water.
- Putting water back in the rivers is called flow restoration.
- Everybody needs to balance their water footprint and budget their water use.
- We all use water – how do we get around the fact that we all use water.
- Where does our water come from? Do you know where your water comes from?

For the general public the coalition uses very simple messages like those listed above (Randall 2010). Their messages get more complicated when they are dealing with ranchers. Clark Fork Coalition uses more in depth messages for landowners that include discussing their options for water use and for their water rights. Currently, there are 15 programs to put water back in the streams of the Clark Fork Watershed. It is a very popular program with not enough resources to cover all the desire for it.

The residents of the Clark Fork Watershed have many fears concerning private property regulation (Randall 2010). The residents are very frightened of someone else taking their valuable right to water. They are also afraid that by restoring all stream flows, the agricultural land will become dried up. The Coalition assuages these fears by assuring the landowners that

flow restoration is voluntary and incentive-based. They focus on the fact that it is a "win-win for ranchers and rivers" according to Randall. "Because it is a voluntary tool and we are basically giving people money, it's easy to overcome those fears but we still need to realize they are there," continues Randall.

Clark Fork Coalition plans to put together a simple brochure to explain the complicated concepts behind flow restoration, water rights, how people can restore flows and why streams go dry (Randall 2010). They are continually trying to build trust with the landowners. Clark Fork Coalition attends watershed group meetings and water users' meetings that landowners attend. Additionally, "patience is key. We know these projects take a long time to come together," according to Randall.

Ensuring Success

Clark Fork Coalition believes that by using multiple media outlets to saturate their market, their education campaigns have been successful (Randall 2010). They use written brochures, YouTube videos, Facebook, radio ads and billboards. They try to saturate different markets so it is not the same people hearing the same message. "It's easy to preach to the choir. We make sure we get it out over a wide bandwidth. Seems like it's working," according to Randall. Printed media like fancy brochures is less effective, so they have moved away from that. Voluntary measures rather than regulatory gets a lot more support. "Making it not seem like a hammer but rather a carrot is the main thing. Regulations just don't work for us," admits Randall.

Measuring Success

Clark Fork Coalition uses surveys and polls as much as possible (Randall 2010). They partner with other groups to conduct polls to find out what is most important to their target audiences. The surveys and polls allow the Clark Fork Coalition to monitor social change created by their campaigns. They conducted a poll for their "Quiet Waters Campaign" which promoted removing motorboats off the rivers.

The following questions were used in the "Quiet Waters Campaign" survey (CFC 2010):

- How often did you visit a river near Missoula this summer?
- What are your favorite ways to use the river?
- What do you enjoy most about being on the river?
- Do you think it's appropriate to use high-powered motorboats on the rivers near Missoula? If so, when and where do you think it's appropriate?
- Would you support limiting motorized boat use on the rivers near Missoula during the low-water summer months? If so, what are your suggestions for limiting use?
- Have you had conflicts with other river users? Please describe.

Each of the above survey questions is followed by a text box for participants to write in their answers (CFC 2010). Clark Fork Coalition evaluates these surveys to gauge success of their campaigns and to gather information about their constituents.

Photo 3.5: Clark Fork Watershed residents rafting down the Clark Fork River. Courtesy of Clark Fork Coalition.

Another measure of success has been evident by their annual river clean up (Randall 2010). The amount of trash they pull out of the river now versus ten years ago is a lot less. The amount of people that show up to clean up the river is considerably more. They also note how many times they are asked to present to students in classrooms and how many times they are called by people researching their campaigns. That is a quantifiable way to say water quantity and water quality are important to people.

Sometimes it is necessary to look creatively at how popular water issues are. Downtown Missoula on the Clark Fork was initially designed with all buildings facing away from the river. The channel was lined with riprap and parking lots lined the river. Now people are turning around to face the river and building decks and gardens and walkways and trails along the river. The residents have changed how they view their river. The river has become more than just for floating logs or another economic benefit. The Clark Fork Watershed residents view their river as a recreational and ecological asset.

FUNDING

Clark Fork Coalition receives most of its funding through private foundations (Randall 2010). They are continually trying to attract more members. The Coalition sells merchandise like bags and license plates for a profit. They receive some funding from EPA Clean Water Act grants. This grant money usually goes directly to landowners for land or stream flow restoration.

CHALLENGES

The major challenges to Clark Fork Coalitions' education and outreach are from the opposition (Randall 2010). They identify who their likely opponents are first, so they can frame the message with them in mind. Money is also a challenge because ideally they would like to saturate the whole watershed with their messages on billboards, through TV and radio ads and all other forms of media. Their watershed is 22,000 square miles. They cannot afford to put

billboards everywhere in their watershed. Mailing printed publications are not very effective; they are expensive and people do not read hard copies as much anymore.

Overcoming Challenges

Clark Fork Coalition knows that landowners in Montana do not want to be told what to do and realtors and developers like to build up to the streams because they are perceived to have the highest property value (Randall 2010). Clark Fork Coalition also knows that many residents do not understand why it is detrimental to live right on top of a stream. Clark Fork Coalition develops their messages with these target audiences in mind.

Figure 3.2: Clark Fork Coalition 25 years campaign logo, Courtesy of Clark Fork Coalition.

Clark Fork Coalition has developed a continuing education seminar for realtors (Randall 2010). This seminar discusses the impacts residents have by living near streams. They also print a stream care guide for realtors. To overcome the funding challenge, they find cheaper ways to advertise and educate. Instead of TV spots, they put ads on Montana public radio or NPR that are only 25 or 12 dollars. To overcome the challenge of less effective hard copy mailings, Clark Fork has moved toward social media for all of their campaigns including, Facebook, Twitter, blogs and e-newsletters. Incentives, especially financial incentives are also helpful. The "I am Clean Water" campaign had its 25-year anniversary and $25 membership fee discount in 2010. For 25 dollars, members receive a lanyard and a decal. The Coalition also gives out a considerable amount of free merchandise embossed with their name and logo.

LESSONS LEARNED

Randall's most important advice is to "Know your audience, know your opponents and know what you are asking for before you ever create a message."

Clark Fork Coalition has also learned to spend less money up front on regulatory measures or statewide ordinances. The Coalition realizes that they spent a lot of money on unnecessary mailers for their "Rivers Rise Build Back" campaign. Brianna Randall admits, "If we had a roundtable with our opponents and asked them what they wanted and how they could work together we would have saved a lot of money and time up front." The roundtables would have allowed them to see what their opponents would support or not support for an action item.

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CAMPAIGN 4. FEATHER RIVER COORDINATED RESOURCE MANAGEMENT GROUP: "UPPER FEATHER RIVER WATERSHED: CLEAN WATER STARTS HERE"

Location: Northern California
Prepared by: Kathleen McIntyre

- **Population:** 33,168 people
- **Land Ownership:** 65% public land
- **Area of watershed:** 2.3 million acres
- **Counties:** Plumas, Sierra, Butte, Lassen Counties

The Feather River Coordinated Resource Management group developed a grassroots, locally driven public awareness campaign tailored specifically to their rural population. They did not hire a consulting group to develop their logo, materials, or messages. Every aspect of this campaign was developed by the FRCRM education staff, specifically Kristy Hoffman. Hoffman, the community outreach coordinator, was the lead on this project and used the Education Committee as a "sounding board" for ideas on logos and taglines. The Feather River Coordinated Resource Management Group received approximately $ 30,000 from the Plumas County Watershed Forum in 2005 to develop education materials and a public awareness campaign to educate the community on the Upper Feather River Watershed (Hoffman 2010). A majority of the Feather River CRM's activities involve stream and meadow restoration; however they always wanted to expand their public awareness and education. As Hoffman notes "our restoration efforts don't reach a big audience locally. So we felt we needed an avenue and product for the average citizen to help them grasp watershed stewardship and what the CRM is about."

TAGLINE AND LOGO

The first activity in developing the FRCRM watershed awareness campaign was to create an effective tagline. Through a collaborative effort with the FRCRM Education Committee and Management Committee, the FRCRM developed the tagline "Upper Feather River Watershed: Clean Water Starts Here." Hoffman notes that this tagline has several meanings,

> "It represents the local stewardship, that in order to have clean water, the community needs to start locally. However, it also references the fact the Upper Feather River is the primary headwaters for the State Water Project. A large portion of the state population relies on this area for their clean water."

She suggests the broad nature of the tagline is a benefit for the campaign because the tagline can apply to many different aspects of the watershed and different events, projects, and activities. She calls it "a timeless tagline."

After the development of their tagline it was imperative to create a logo. The Feather River CRM had the innovative idea of soliciting logo art from the local community through a logo contest (Hoffman 2010). They had considered hiring a consultant to create the logo, but felt that involving the community would add local ownership to the campaign and act as another element of public outreach and education. Hoffman suggests,

> "To raise public awareness having a resident design the logo would bring awareness more than hiring a company. There were press releases and we solicited artwork from the public. This in itself was raising awareness."

They had different contest categories for different age groups, and the local community college heavily promoted the contest through their art program. They received roughly twenty entries from community members and students. Though creative, soliciting artwork from the community does herald challenges (Hoffman 2010). Hoffman recalls "A challenge was getting something we really wanted. We set criteria that the FRCRM could alter images in order to create the most effective logo." The FRCRM chose not to have a mascot. They did not feel it was necessary or an effective use of resources (Hoffman 2010).

MATERIALS

Materials and products created for this campaign include bumper stickers, temporary tattoos, a land owner's guide, a watershed map, and a rack card for the visitor's bureau. All products were created with longevity in mind so that once the "official" campaign ended materials could continue to be distributed and used in novel ways. The bumper sticker was created with the

Figure 4.1: Map of Feather River Watershed, Courtesy of FRCRM.

"Keep Tahoe Blue" template in mind. The "Keep Tahoe Blue" bumper sticker has been very successful and is widely recognized across California. It is a simple blue sticker with an outline of Lake Tahoe, beside which is the slogan "Keep Tahoe Blue". The slogan is widely copied and altered by other environmental organizations and companies. The FRCRM wanted something simple, classic and attractive that citizens would put on their cars, computers, or water bottles. The most successful campaign element has been the watershed map, an 18X24 colored, artistic rendition of the watershed with facts and landmarks. The target audience for this map is the 6th graders that participate in the "Plumas to Pacific" program (See Case 19: FRCRM case study for description). The map is used by local teachers in the classroom and FRCRM staff at festivals and events. The FRCRM tries to make the watershed map as interactive as possible, often using it for scavenger hunts with students. It is a great tool for engaging both children and adults in a discussion of their watershed as it captures their attention through colorful artwork while offering educational information (Hoffman 2010).

TARGET POPULATIONS

Materials and messages were created with several target audiences in mind including the 6th grade children and the general public. The FRCRM heavily targets the 6th grade because they participate in the "Plumas to Pacific" program. When targeting the general population it was important to craft messages and materials for a rural community, for example as Hoffman notes "we created a landowner's guide to stream restoration specifically for rural land owners and agricultural producers." This resource is not applicable to a more urban population. However, this rural population has also been a challenge for the public awareness campaign. Rural areas are sparsely populated so messaging is much more difficult. Hoffman suggests "Reaching small landowners has been a challenge. One way to overcome this challenge has been to highlight best management practices for small landowners. This is why we created the brochure for small landowners."

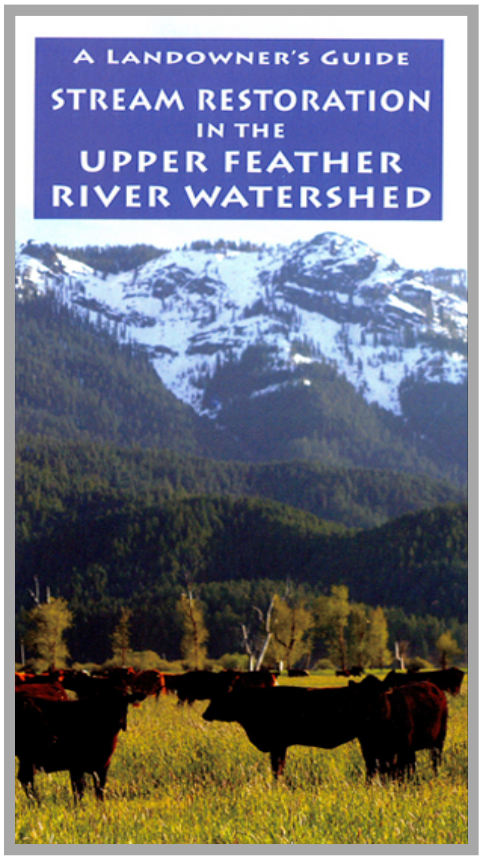

Photo 4.1: Landowner's Guide, Courtesy of FRCRM.

FRCRM has not targeted under-served populations because it is not positioned to attract the funding necessary to target these populations (Hoffman 2010). Hoffman points to other parts of California that have much larger income gaps and more diverse populations than the Upper Feather River Watershed, "compared to urban areas, we don't really have the same level of problems, which makes it very difficult to compete for grants."

MEANS OF DISSEMINATION

FRCRM messages are primarily published in the local newspaper. The logo contest was highly publicized in the local newspaper, which is an effective means of communication and outreach because many residents read the local newspaper. They have not utilized television because there is no local channel and radio is a weak option due to lack of radio stations (Hoffman 2010).

CHALLENGES AND SUCCESSES

One of the main challenges faced by the FRCRM public awareness campaign was the time it took to develop the logo and tagline. Hoffman notes "the time it took to do the whole 'public involvement' section with the artwork was a lot longer than if we had just hired a consulting firm to develop it." She notes that the logo might have been cleaner, more precise, and straightforward. However, the FRCRM is happy with the end result.

As always, funding is a challenge for this campaign as well as the entire education program of the Feather River CRM. Hoffman and Rob Wade, the K-12 watershed education coordinator, must find all their own funding, which has become more difficult in the current stressed economic environment. Lastly, it has been a challenge to engage the small landowners of a rural population (Hoffman 2010).

However, Hoffman suggests several key methods they have used to overcome these challenges. They created the brochure, rack card, and landowner's guide to specifically target the small landowners of the region. Similarly she suggests that word of mouth about on-the-ground projects has been critical to distributing information and continuing success, "It is an expensive word of mouth compared to a brochure, but it is a strong testament to other landowners of the FRCRM's success and necessity."

The public awareness campaign created dynamic products and materials that continue to be in circulation. According to Hoffman, the materials have been well received by the funder, the Plumas County Watershed Forum. Similarly, the products and materials have acted as launching pads for other activities and have been utilized consistently in festivals, events, classrooms, etc. They continue to be used even after the campaign has ended (Hoffman 2010).

LESSONS LEARNED

There are several integral lessons that can be learned from the FRCRM's development and maintenance of their public awareness campaign. They have demonstrated that it is possible to create an effective, targeted campaign without the hiring of a large consulting firm. This is an important example for smaller, rural organizations that might not have the financial resources to hire a firm and develop strategic slogans, logos, and materials.

However, in order for a "home grown" campaign to be effective there needs to be considerable local participation, creativity, and development of "timeless" materials. The FRCRM recognized that the creation of a new logo presented a creative and strategic opportunity to engage the public, spread awareness of watershed issues, and foster a sense of ownership among community members. Their slogan, map, and other materials were created with a broad, timelessness in mind. This has allowed them to really get the most "bang for their buck" as resources are not event specific and can continue to be distributed. Similarly, the broad nature of their materials allows them to integrate other agencies' outreach resources into their work.

The overarching lesson from the FRCRM's "Upper Feather River Watershed: Clean Water Starts Here" campaign is that creativity, ingenuity, and strategic utilization of funds can often be a substitute for a large budget. What other organizations may spend in money, the FRCRM spent in time and energy developing this campaign.

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CAMPAIGN 5. THE PARTNERS FOR CLEAN WATER

Location: Southwest Idaho
Prepared by: Anne Kohl

Mission: The Partners aim to create a conscious and responsible public that knows clean water is good for the environment, business, and our community.

The Partners for Clean Water is composed of three government organizations and three quasi-government organizations in Idaho. They came together in 2000 after the U.S. Environmental Protection Agency (EPA) issued a Municipal Separate Storm Sewer System (MS4) NPDES permit for Boise, Idaho. This permit requires Boise to work with the co-permittees to develop and administer permit-wide education and outreach in the Treasure Valley. This is the area in Western U.S. where the Payette, Boise, Weiser, Malheur, and Owyhee rivers drain into the Snake River. The Valley includes all the lowland areas from Vale, Oregon on the west to Boise, Idaho on the east. The Partners' educational outreach specifically focuses on the impact of pollutants in stormwater and the effect to local waterways.

Figure 5.1: Treasure Valley highlighted, The Full Wiki.

PARTNERSHIP'S BEGINNING

The Clean Water Act requires entities that own and operate public storm sewer systems to obtain a permit to discharge water into local waterways. In 2000, the EPA issued the City of Boise, the City of Garden City, the Ada County Highway District, Boise State University, the Idaho Transportation Department District 3, and Ada County Drainage District 3 a permit (see Appendix PP) for their municipal separate storm sewer system (MS4) under the EPA's National Pollution Discharge Elimination System (NPDES). See Appendix OO for a map of the MS4 permit area. The permit authorized the co-permittees to discharge storm water into the Boise River. Further, the permit stipulated the following:

"The co-permittees shall implement a program to inform the public of the impact of pollutants in stormwater on waters of the United States and how to avoid addition of such pollutants to stormwater runoff."

Before the permit was issued in 2000, there was a Stormwater Advisory Team that was pulled together by Boise City staff to advise the city on how to meet the pending federal requirements to have a public education program. The Advisory Team also looked at other stormwater education programs in the nation to serve as models. So when the permit was issued, some of the recommendations from the Advisory Team were put together in an initial public education planning document that identified the program's goals and objectives. This planning document also identified the certain elements that would be included in order to address the federal permit requirements for public education. The co-permittees also developed a unifying logo and a unifying umbrella organization, and the Partners for Clean Water was born. From there, they set out to "brand themselves" and identified certain components to assist them in doing so (Bell 2010).

Figure 5.1: Stormdrain Marker, Courtesy of Partners for Clean Water.

CAMPAIGN MANAGEMENT AND FUNDING

The MS4 permit requires the six co-permittees to be involved with Partners for Clean Water. The permit also requires a coordination agreement and a cost share agreement (see Appendix QQ) when action is taken to follow a permit requirement by one permittee on behalf of the others. As stated above, Boise City is the lead agency for public education and outreach within Boise City so they cover the majority of the cost and then they invoice their other permittees to cover roughly 35% of the cost. The money to fund Boise City's education programs comes from a fee based utility, however they compete with the Fire and Parks department for funds from the utility fee (Bell 2010).

EDUCATION AND PUBLIC OUTREACH

The Partners for Clean Water conduct a number of general awareness campaigns coupled with specific activities that target critical audiences. Through these programs and activities the Partners work to get across the message that individual actions can hurt the water quality of the Boise River. Their programs and activities are as follows:

Storm Drain Marking

Considered to be one of their most successful programs, the storm drain marking program is a very popular volunteer opportunity for schools, churches, Girls Scouts, Boy Scouts, and various other groups within the Treasure Valley. There are currently 11,080 storm drains within the Partners' jurisdiction and of those 6,680 have been marked with over 1,200 people volunteering at various events. These markers allow for a visual reminder that storm drains are for stormwater only. Due to the quantity of drains marked, this program has served as the Partners' most effective way to increase awareness about the importance of the river and the environment (Bell and Hughes 2010, 2009 Boise Annual Report 2010).

Watershed Outreach

Figure 5.2: Decal, Courtesy of Partners for Clean Water.

Business Partners for Clean Water: This program is designed to keep harmful residential, commercial, and industrial wastewater from being discharged into the Boise River and waterways through storm drains. The program currently focuses on carpet cleaning businesses in Boise and the greater Treasure Valley. The program is voluntary and each business signs a contract saying they will follow the appropriate Best Management Practices (BMPs) for disposing of their wastewater. To promote these businesses, the Partners list them on their website and provide decals to put on their work trucks. Each business is also given postcards to leave with the clients and serves as a survey to fill out and mail back to the Partners. However, the Partners feel that this program has had minimal success with less than ten participating businesses and only receive postcards back from clients from one to two businesses. The Partners are looking to revamp the program by extending this service to landscaping businesses, commercial car washing facilities, and power washing companies (Bell and Hughes 2010, 2009 Boise Annual Report 2010).

Watershed Watch: This one day event kicked off in 2009 and gives volunteers the opportunity to learn more about the health of Boise River through hands on activities. Citizen groups, schools, families, and individuals are invited to participate in monitoring the water quality of the River. The groups take samples which are then tested for flow, temperature, pH, dissolved oxygen, turbidity, bacteria, and macro-invertebrates (2009 Boise Annual Report 2010).

Eddy Trout: Eddy Trout serves as the Partners' mascot and was born on Earth Day 2003. He serves as the "spokesfish" for the Boise River and makes many appearances at events around town as well as in the classroom. He can also be seen on bus ads, public service announcements, and can be heard on radio spots. There is also Eddy's Fin Club, which serves as a way for elementary age children to learn about ways to protect water quality in the Treasure Valley so they can become a "Water Hero" (Partners Website 2010).

Photo 5.1: Eddy Trout, Courtesy of Partners for Clean Water.

Community Curriculum

Boise WaterShed Environmental Education Center (Boise WaterShed): This center is a unique civic/government partnership conceived as a public education project by the Boise Public Works Department staff. Architects determined it was more cost-effective to build a new building rather than renovate and repair an existing building. The prospect of a new building fostered the idea to make the building's focus on public education, with office space as a secondary purpose. In 2005, the city and the non-profit Boise WaterShed Exhibits, Inc (BWE) worked together to establish a volunteer BWE Board of Directors. Its mission was to raise $1 million for the exhibits. In 2007, the goal was met thanks to community leaders, organizations, and corporations. Boise City provided the $2 million for the green building construction of the Boise WaterShed through the Boise City Sewer Enterprise Fund. This fund is funded by user fees from residents and business connected to the sewer system. No tax dollars were used for the Boise WaterShed. See Appendix X for more information about the Boise WaterShed 2010-2011 featured tours and lessons.

In May 2008, the Boise WaterShed opened at a site they share with the West Boise Water Treatment Plant and has since welcomed over 10,000 visitors, including hundreds of students and community groups. The Center promotes water stewardship by teaching people of all ages how to protect and conserve their resources for future generations. There are also volunteer opportunities for people of all ages and staff is always developing new curriculum and lessons to enhance the visitor's experience (2009 Boise Annual Report 2010, Boise Watershed Website 2010).

Water Awareness Week: The Partners participate in a yearly teacher's workshop in conjunction with Idaho Water Awareness Week. This statewide committee brings together various sponsors to help support regional water education events and materials. However, back in 1994, when it was started, Water Awareness Week only focused on Boise City schools. Within a few years the program expanded to what it is today. The theme of 2009's week was the Water/Energy Nexus (2009 Boise Annual Report 2010). They were unable to hold a workshop in 2010 due to lack of teacher registration. However, the Partners are gearing up now to plan for next year's workshop which will continue to focus on the connection between water and energy (Hughes 2010).

Streamlines Newsletter

Streamlines is a quarterly newsletter that was started in April 1999 by the Boise Storm Water Management Program as a way to share information and to increase awareness of Boise's storm water program. The newsletter was started before the MS4 permit, but has remained true to the goal of providing individuals with the latest news and information as it relates to stormwater quality, local Partners, and upcoming events. In April 2002, the Partners took over the development and publication of *Streamlines* once they had developed their logo and tagline for public education activities. The current issue along with back issues is available for download on the Partners' website (Partners Website 2010).

Eddy Approved Fact Sheets

The Partners, with assistance from the Idaho Department of Agriculture and the University of Idaho Cooperative Extension, developed fact sheets about less toxic pest controls. These fact sheets are provided at stores and libraries for residents looking to deal with pests such as, Yellow jackets, Ants, Spiders, Fleas, Mosquitoes, Aphids, Cockroaches, Weeds, and Gophers, in ways that are less toxic than conventional methods. The fact sheets also include what products to avoid and serve as a tool to convey the relation between how residents deal with pests and the health of the Boise River and encourage the reduction of overall chemical use (Bell and Hughes 2010, Partners Website 2010).

Photo 5.2: Eddy Approved Fact Sheets, Courtesy of Partners for Clean Water.

Public Education Materials

In addition to Eddy Trout, the Partners have developed several educational materials with their logo and tagline as a way to identify their program. These include door hangers, stickers, tattoos, magnets, bookmarks, t-shirts, and beverage coasters.

Figure 5.4: Eddy Trout Bus Ad, Courtesy of Partners for Clean Water.

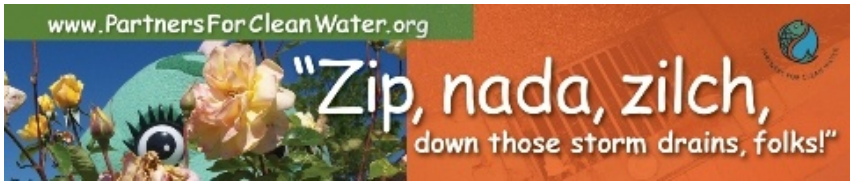

Photo 5.5: Eddy Trout Bus Ad, Courtesy of Partners for Clean Water.

SERVICES

Hazardous Material and Waste Management

One way the Partners promote a clean healthy river is through the Boise Household Hazardous Waste Collection Program. This program consists of mobile collection sites in the cities of Boise, Meridian, Kuna, and Eagle, and a permanent collection facility at the Ada County Hollow Sanitary Landfill. The mobile collection sites are open to residents within the limits of the respective cities, while any Ada County resident can use the permanent collection facility. The mobile collection sites collect the following products:

- All household chemicals, cleaning products, paint and automotive products, lawn and garden chemicals, pool supplies, and used electronics.
- Outdated or unused prescription drugs, except for controlled substances.
- All sizes of propane cylinders and mercury-containing items such as compact fluorescent light bulbs and tubes, thermometers, and thermostats.

There is also homebound service available to elderly and physically challenged residents. This service provides convenient at home pick-up for those who are unable to safely transport or have access to readily available assistance from others. Businesses located within Ada County can take advantage of the Conditionally-Exempt Small Quantity Generator Program (CESQG), which provides an affordable disposal option for businesses that generate small quantities of hazardous waste. The permanent collection facility in Ada also has a re-use area, providing an opportunity for residents to pick up items like paint, wood finishes, automotive fluids, and lawn and garden chemicals that are received through the program free of charge (2009 Boise Annual Report 2010).

Recycling & Composting

Boise City has recycling programs for both residential areas and businesses. Both programs offer a wide array of services and residents who sign up get a discount on their trash bill for both programs. Each participating household is provided with a blue recycling container for no-sort recycling. Customers who do not opt into the program pay $4 more per month than those who recycle. In addition, the city also has free seasonal curbside collection of leaves, garden debris, Christmas trees, and branches for residents. The program is called “Recycle the Fall.” Residents can purchase compost bins at cost through the city. The collected leaves are composted in a designated area of the county landfill and then use on-site during the re-vegetation process. After

Christmas, branches and Christmas trees are collected curbside and chipped for reuse (2009 Boise Annual Report 2010).

CHALLENGES

Finding new and creative ways to reach out to people within the valley is a constant challenge says Johanna Bell, Stormwater Program Coordinator, and Aimee Hughes, Environmental Specialist, from Boise City Department of Public Works Stormwater Program. Another challenge is trying to reach out to new and different people within the Valley, meaning those who are not already familiar with the Partners' work. They are also working on increasing their reach to the Hispanic population by incorporating both Spanish and English on their materials and public service announcements. Bell and Hughes periodically conduct awareness surveys to gauge how well their general awareness programs are hitting the targeted audiences. They also set up focus groups to make sure specific individual messages are understood before unveiling them in a program. Quantitative numbers such as compliance data from their erosion sediment control ordinance, and how many people participate in scheduled educational activities are used to evaluate programs (Bell and Hughes 2010).

Despite all their education and outreach programs, there are still people within Treasure Valley that mistakenly believe that chemicals, oil, paint, and garbage that enter the storm drain system are taken care of at the city's wastewater treatment plant. The Partners encourage residents to call the Stormwater Pollution Prevention hotline if they see someone dumping a substance down a storm drain and to provide the hotline with as much information as possible such as the location and time of incident, and if applicable, any identifying characteristics of the vehicle involved so the problem can be responded to effectively (Partners Website 2010).

CONCLUSION

The Partners for Clean Water provide excellent examples of water quality and pollution prevention education and outreach programs that involve people at all ages. Through the use of their successful branding the Partners has become an organization that people within the Treasure Valley can rely on for the protection of the Boise River. Their saying that, "The Boise River is Closer than You Think" succinctly conveys the message that individuals have a direct effect over the health of the Boise River.

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APPENDIX

Appendix H. Partners for Clean Water Cost Share Memorandum of Understanding
Appendix X. Partners for Clean Water Boise Watershed 2010-2011 Tours and Lessons
Appendix OO. Partners for Clean Water Boundary Map
Appendix PP. Partners for Clean Water Permit
Appendix QQ. Partners for Clean Water MS4 Co-permittees

CAMPAIGN 6. USE ONLY WHAT YOU NEED

A Public Awareness Campaign for Denver Water created by Sukle Advertising and Design advertising agency

Location: Denver, Colorado
Prepared by: Amanda Barker

Use Only What You Need is a successful public awareness campaign for water conservation that was spearheaded by Denver Water, the utility serving customers in the Denver metropolitan area. The program encourages water conservation with humorous and clever marketing. The prominent tactic is to never chastise or lecture customers. Success is measured by reduction in water consumption- approximately 20% reduction of overall water consumption over the past four years (UseOnlyWhatYouNeed.org, 2010). Their nontraditional approach to media and advertising has won awards and recognition worldwide.

BACKGROUND ON DENVER WATER

Denver Water is the oldest and largest water utility in Colorado. This not-for-profit utility serves approximately 1.3 million people in the Denver Metro area. Their service area includes everyone in the City of Denver and nearly 40% of suburban residents (Denver Water 2010). Almost all water coming into Denver originates from snowmelt. The Denver metropolitan area uses about a third of the state's total treated water supply (Chavez 2009).

In 1918, Denver citizens voted in favor of an amendment to the state's constitution to create a Board of Water Commissioners, which has authority over Denver Water. The Mayor of Denver appoints five members to the Board of Water Commissioners to six-year terms. The Board of Water Commissioners then selects a Manager, responsible for the day-to-day operations, also serving as Secretary to the Board. The members then voted to purchase Denver Union Water Company for $14 million, creating the current Denver Water utility in 1918. (Denver Water 2010). From its inception, Denver Water has grappled with the most pressing water issue of the area: inadequate water for the growing population. Additional water sources have been diverted to the area, including trans-mountain diversions through the Continental Divide.

DENVER WATER CONSERVATION PROGRAM

Beginning in the 1970s, Denver Water actively pursued a conservation program for its customers. The drought beginning in 2001 quickened their efforts as Denver residents experienced first-hand evidence of climate change in a semi-arid region. Many emergency water use changes occurred during the three-year drought, but usage crept back to pre-drought usage levels. Denver Water recognized the necessity for long-term behavior changes in water conservation and consumption. Conservation had to be in the everyday vernacular and actions of Denver area citizens.

Due to water shortages and drought conditions, Denver Water chose to take a proactive approach to water conservation for the sustainability of the company. Their initial tactics included a telephone hotline to provide customers with water-saving tips. When the drought receded, Denver Water launched a new public awareness campaign in 2005 to maintain the lower water usage levels (Chavez 2010).

A number of new behaviors were emphasized to their customers during the drought, such as using less to water lawns. Converting short-term changes into long-term behavior changes became the goal of the campaign. The Board of Water Commissioners has supported the advertising campaign from the beginning, recognizing significant financial backing is necessary for its success (Chavez 2010). The budget for conservation strategies has increased four-fold since the pre-drought years.

Within Denver Water's Operating Rules are information, rules, and regulations for the water conservation program. Some components of the conservation program are mandatory, including restrictions on the frequency, duration, and time of day for irrigation. Incorporation of soil analysis on property before a new tap can be set is also mandatory (Denver Water, 2010). During severe conditions, additional mandatory drought restrictions are implemented. Currently, Denver Water provides literature through the customer's bill, additional mailings, and their website for Xeriscaping yards and gardens, installing water-saving fixtures, and summer watering rules and schedules. Xeriscaping is a landscaping technique, which reduces or eliminates irrigation.

USE ONLY WHAT YOU NEED PUBLIC AWARENESS CAMPAIGN

Denver Water started its public awareness campaign Use Only What You Need, in 2005. Denver Water has been targeting its approximately 1.3 million customers over the past five years, using various tactics to decrease water consumption. The campaign focuses on water conservation in the Denver metropolitan area. A multi-point plan aims for successful water conservation and future water supply planning. Denver Water's long-term ability to provide reliable supplies for its customers rests on three strategies for augmenting existing supplies: conservation, recycled water, and developing new supplies.

Photo 7.1: Campaign Billboard, Courtesy of Use Only What You Need.

Within Denver Water, the Public Affairs department houses Community Relations. Terri Chavez, specializing in marketing within the Public Affairs Department, became manager of the Use Only What You Need campaign in 2008, and has been intimately involved since its inception in 2005. This campaign reports their ongoing progress and yearly review of goals and objectives of the program to the Board of Water Commissioners.

The Use Only What You Need campaign uses a public outreach model known as community-based social marketing. This model influences public behavior on a large scale, using marketing principles for the purpose of societal benefit rather than for commercial profit. The expectation is to change the consumer's behavior by blending nontraditional and conventional communication methods. Methodologies utilized by the campaign include:

- Advertising campaign
- Rebates and incentive contracts
- New operating rules for Denver Water, enforcement and fines
- Conservation rates
- Outreach to high-use customers

Prior to the launching of the Use Only What You Need campaign, Denver Water surveyed a large sample of their customer population in order to identify barriers and determine how customers would react to different messages. A primary finding of this research showed their customers equated “conserve” with hardship or self-deprivation. Alternatively, the phrase “don't waste” created positive sentiments, an agreeable statement that residents could support. Using positive messaging became the crux of the campaign, embodied in its title, Use Only What You Need.

The creative talent behind this campaign is the Sukle Advertising and Design advertising firm in Denver, Colorado. They were hired to produce all the media and resources utilized in the campaign. Each year of the Use Only What You Need Campaign had both semi-traditional and non-traditional marketing approaches created by the Sukle Advertising and Design. Additionally, Sukle conducted grass-roots surveys to guide the campaign's initial direction, which underscored Denver Water's findings. When asked what it means to conserve, the average customer responded hardship and sacrifice. When asked if the customer believed in not wasting water, an overwhelming “yes” gave the campaign its focus (Chavez 2010). The following tables reflect Denver Water's desire to incorporate both approaches in the campaign (Chavez 2009, all photo credits: Denver Water 2010):

Year 1 (2005)	
Semi-Traditional Marketing	*Non-Traditional Marketing*
• Billboards	• Taxi
• Print ads	• Yard signs
• Bus ads	• Bench
• Bill stuffers	

Photos 7.2, 7.3, 7.4, and 7.5: Examples of campaign advertisements, Courtesy of Use Only What You Need.

Year 2 (2006)	
Semi-Traditional Marketing	*Non-Traditional Marketing*
• Billboards	• Running Toilet
• Website, useonlywhatyouneed.org (Provide conservation tips and enlist ambassadors with freebies)	• Return of yard signs and taxi
• Pledge	
• TV Spot	

Photos 7.6 and 7.7: Examples of campaign advertisements, Courtesy of Use Only What You Need.

Year 3 (2007)	
Semi-Traditional Marketing	*Non-Traditional Marketing*
• Billboards (with added effects, for example an enormous yard hose tied in a knot with a billboard saying no watering: 10AM-6PM)	• Plant tags
• TV Spot- drunk flowers in Spanish	• Running toilet and taxi
• Online banner ads and e-mail blasts	• Yard signs
• Continuation of website and freebies	• Barrels
	• Conveyor belts in grocery stores
	• Sandwich boards

Conveyor belts were printed with river imagery, so as the groceries move down the belt, it appears they are floating down a river. The divider bars say, "Keep our rivers flowing. Use Only What You Need" (Denver Water 2010)

Photos 7.8, 7.9, and 7.10: Examples of campaign advertisements, Courtesy of Use Only What You Need.

Year 4 (2008)	
Semi-Traditional Marketing	*Non-Traditional Marketing*
• Billboards	• Talk bubble signs to complement yard signs
• Bus ads	• Yard Signs (targeted libraries, schools, housing authority)
• New TV spts	• Return of mobile barrels, running toilet and taxi
• Website: links to controller manuals	
• Target water wasters (metro-Denver map with the most efficient/inefficient neighborhoods)	
• Online banner ads	

FUNDING

The budget for the Use Only What You Need campaign is authorized through the Board of Water Commissioners. Funding is built into Denver Water utility rates, meaning their customers shoulder the cost. In comparison to pre-drought years, this public awareness campaign has experienced a healthy budget. Prior to 2001, Denver Water Conservation campaigns would average around $200,000 annually. The annual budget varies from year to year. In 2010, $800,000 was spent on the campaign and can be viewed as an average spending over the past few years (Chavez 2010). In 2008, the Democratic National Convention was held in Denver, and the Use Only What You Need campaign's budget grew to $1.3 million.

The advertising agency worked with a limited budget from the Board of Water Commissioners, utilizing "guerilla tactics," meaning nontraditional advertising, to get the campaign moving. These nontraditional media buys were produced at a fraction of the cost of traditional media buys (Chavez 2010). This type of advertising also became the "face" of this highly recognizable public awareness campaign.

CHALLENGES

Denver Water has faced one primary challenge over the past few decades when addressing water conservation, and it is most likely an insurmountable challenge. Denver Water's customers have always held the false notion that as water is conserved, water rates should be reduced. This mistaken belief began when Denver Water began its conservation campaign decades ago, and remains amidst the current successful water conservation campaign (Chavez 2010). The water rate cannot go down as water use is reduced. This is not a financially feasible option for the Denver Water business model.

Another challenge Denver Water faces is working with the Denver Parks. Their limited budgets compel the ongoing use of antiquated irrigation systems. For the duration of the Use Only What

You Need campaign, there has been limited progress in getting the parks to water at off-peak hours and repair leaky and broken irrigation heads. Denver Water found that their customers see the Denver Parks as a role model in their water usage practicies. There is a common misconception that Denver Water is part of the Denver city government. (Denver Water 2009). The public does not sense the urgency of the situation, because the park system has not adopted a water conservation strategy. Denver Water is helping the city parks pay for some of their needed upgrades (Chavez 2010), and overcoming this challenge will take many years. Once the Park system integrates stronger water conservation techniques, it is likely that the public will take the campaign more seriously and strive to reduce their own water usage.

ACCOMPLISHMENTS

Early success with the campaign can be partially attributed to the easy messaging that was utilized. Telling customers to reduce waste instead of conserve spun their message into a positive light where easy conservation goals could be met quickly. The campaign has remained lighthearted and simple over its lifetime. There has always been a tongue-in-cheek and humorous element to the advertising. Denver Water's ongoing research for the campaign concludes their customers are more responsive to positive messaging (Denver Water 2009).

The direct advertising in the campaign does not necessarily tell the consumer *how* to reduce waste. Instead, the intent is to get the customer to their website to learn more about ways to reduce (UseOnlyWhatYouNeed.org). The beginning focus of the campaign was general awareness of water issues. Now with a few years behind them, the focus has more specific messaging. For example, 2009 campaign advertising included the specific goal of reducing lawn watering by two minutes (Denver Water 2009). This tactic will be evaluated this year to measure its efficacy, while taking into consideration that Denver experienced slightly higher-than-average precipitation in 2009. Use Only What You Need campaign manager Terri Chavez is hopeful: "We do know that this year [2010] was warmer with more hot days. We're still meeting our conservation goals. We may have made a cultural change with the Denver Water conservation program."

Denver Water has enjoyed notable success from their rebate program to replace older toilets and washing machines with low-flow or high-efficiency models. Initially there were problems with low stocking rates at Home Depot and Lowes hardware stores. These stores have caught up with demand, and the sales team at these stores will push these more costly items, since they will receive a significant commission.

In 2006, the EPA created the voluntary WaterSense program. Products with at least 20 percent higher water efficiency than older models are eligible for the WaterSense label, including toilets, bathroom faucets, flushing urinals, plumbing in new homes, and residential showerheads (EPA 2010). The EPA works with local and regional buyers and hardware store managers to increase stocking rates for high-efficiency machines. The WaterSense program has increased the Denver Water conservation program success by lowering Denver Water customer usage rates (Chavez 2010).

Measures of Success

Denver Water hired a research firm in fall 2007 to gather feedback from customers in order to better estimate the campaign's effectiveness (Chavez 2009). With questions regarding the campaign's effectiveness:

- 82% were aware of the campaign and understood the message of cutting waste
- 70% customers said they have changed their water use behavior during the past few years. The number one reason cited: "conservation is the socially responsible thing to do."

Water Use Reduction (adapted from Chavez, 2009)

- Between 1993 and 2001, Denver Water customers used an average of 211 gpcd (gallons per capita per day).
- During drought years 2002-2004, average water use fell to 169 gpcd, a 20-percent drop.
- With return of more typical weather in 2007, per capita use climbed only to 171 gpcd – 19 percent below pre-drought.
- 2008 = 18 percent below pre-drought
- 2009 = 33 percent below pre-drought

Public Commitment- Total Freebies given away to customers:

- 11,000 yard signs
- 6,000 T-shirts
- 5,000 pin/buttons
- 4,500 canvas totes
- 3,500 stickers
- 5,000 other: magnets, Frisbees, plant tags, tattoos, rubber ducks

Visits to useonlywhatyouneed.org website:

- 2007: 11,300 visitors
- 2008: 15,000 visitors
- 2009: 9,800 visitors

Social Media YouTube:

- Drunk Flowers 12,700 views to date (2010)
- Running Toilet 7,500 views
- Grass is Dumb 4,000 views

These statistics and campaign outcomes are useful to monitor water consumption over the past five years. As seen with other campaigns, success was concurrent with the growing Green Movement. "Denver Water launched the campaign at an ideal time. Being green is becoming cool in Denver, and there was an element of luck to our success, " Chavez speculates.

LESSONS LEARNED

Although Denver Water was tempted to jump into specific messaging when starting its Use Only What You Need campaign, they decided to spend several years on spreading general awareness about water issues to the community of Denver. As the utility expands, Denver Water can now work with specific retailers and manufacturers to meet consumer demand.

Though the Use Only What You Need campaign was tempted to jump into specific messaging, Denver Water decided to spend years with the community on general awareness. In the future, Denver Water plans to work with specific retailers (Lowes, Home Depot), as well as manufacturers (partners with WaterSense) to meet the rising consumer demand.

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CAMPAIGN 7. WATER USE IT WISELY

A Public Awareness Campaign initiated by the Cities of Mesa, Phoenix, and Scottsdale, Arizona, in collaboration with the Arizona Department of Water Resources
Created by Park&Co advertising agency

Location: Arizona
Prepared by: Amanda Barker

Photo 7.1: City of Chandler, Arizona xeriscape garden, Source: Chandler 2010.

Water Use It Wisely is one of America's most widely implemented, branded water conservation programs. Created in 1996, the campaign currently works with over 350 private and public partners, including corporate sponsors such as Lowes and The Home Depot. It utilizes a wide range of promotional tactics and strong partnership development, and is available for use throughout North America. This program can provide small organizations with well-produced products without production costs.

HISTORY

The City of Mesa, Arizona, hired the Park&Co advertising agency in the early 1990s to supplement their water conservation outreach program. At the time, the City of Mesa lacked the financial resources to allow a full-scale program, so Park&Co created a few small-scale programs for the city. In 1996, the advertising agency recommended suspending the campaign. With the City of Mesa's limited financial resources, there would be too small an impact, despite their desire to create a campaign.

However, the City of Mesa wanted to invest in the branding of a large public awareness campaign- something they could use in their long-term planning. The city had three independent studies for Park&Co advertising agency to review consumer-approaches to water management and water conservation. The studies were from the City of Mesa, the City of Phoenix, and the Arizona Municipal Water Users Association. Each of the three entities did their own independent consumer/resident studies, soliciting thoughts on water conservation management and use. The findings were almost identical. The resonating message identified by Park&Co throughout the studies was: "Don't tell me to save water, show me how." "Don't mandate water savings to me, just show me how, and I'll do it myself." In the 1990s, this was a very

independent approach, and one ripe for water conservation messaging. It fit with the Western mindset: "Don't mandate. I'll do it, but just show me what I need to do, and I'll do it on my own."

With this research base, Park&Co created the Water Use it Wisely campaign for the City of Mesa. The initial headline is one that is still used today, though not as prominently: "There are a number of ways to save water, and they all start with you" (Park&Co 2010). The individual person becomes the most important water-saving-device. The advertising agency utilized unusual objects, and then tagged them as a water-saving device. A broom, water-saving-device #15, begs the question, *how can a broom save me water?* The tip goes on to explain: use a broom instead of a hose when you're cleaning your driveway and sidewalks, and you'll save 80 gallons of water each time. A toothbrush, water-saving-device #54 asks *how can a toothbrush conserve water*? The tip explains the toothbrush is an environmental trigger that reminds the consumer to turn the faucet off while brushing teeth.

Photo 7.2: Water-Saving Device Posters, Courtesy of Water Use it Wisely.

These tips were designed to get people to *think*, and the water-saving devices are not necessarily obvious. Instead of focusing on the obvious water-saving device, such as a low-water washing machine, the tip becomes washing only full loads, even with a low-water use washing machine. So a laundry basket in the campaign is identified as a water-saving device.

Currently, there are 111 different indoor and outdoor tips for saving water on the Water Use it Wisely website, the principal educational tool of the campaign (Water Use it Wisely 2010). The tips reflect the consumers' desire: "don't tell me to save water, show me how." The available online literature on *how* to apply the tips has increased considerably over the campaign's lifetime, with additional links to other water conservation and agency websites.

EVOLUTION OF THE WATER USE IT WISELY CAMPAIGN

Over the first couple of years, the campaign produced many resources for the initial version of the website, www.wateruseitwisely.com. In the 1990s, websites were relatively new additions to any campaign or company, especially behavior-changing websites, meaning the website has evolved considerably over time as more information and resources were available. In year four, they recreated the website again, adding more materials to the campaign.

When the campaign first launched, there was up to ten staff at Park&Co, including writers, website and material creators, and account service people. Park Howell, President of Park&Co, spearheaded the undertaking of the campaign. An account executive worked directly below him, as well as an account coordinator to help manage the whole project. The first test bed for the campaign was Arizona. Once they were secure in their belief that the campaign was showing success, they were able to take the campaign nationally, with research to back up the strategy. For several years, they reduced the creative staff, as materials became redundant. Overall, the dedicated staff working on the campaign fluctuated between 10 production staff to two campaign managers.

The organizations that utilize the campaign typically do not need a person dedicated to the project, which was taken into consideration when the campaign went national. Essentially, Park&Co was looking at their local clientele, such as the City of Mesa, with two staff. Most large organizations had only one person working on water conservation. In the past, Park&Co had to handle the majority of campaign materials. Now, clients can pull the materials off line, drop their logos onto materials, and go. Making the campaign more user-friendly was as critical of a barrier to get over as the cost of the program, since only one or two people usually work on the campaign at any given organization (Howell 2010).

Park&Co wants to make the Water Use it Wisely campaign as user-friendly as possible. The campaign is constantly revised to be more accessible and current with research. Arizona continues to be the test-bed for the overall campaign. Park&Co has the majority of control over the Water Use it Wisely campaign in Arizona, handling media purchasing, direction of the campaign, and campaign implementation. Typically when the Water Use it Wisely campaign is purchased outside of Arizona, Park&Co is not part of the process. Another advertising agency, the municipality, or water utility will handle the budget and implement the campaign internally, sometimes leaving Park&Co unsure if the campaign was successful (Howell 2010).

Photo 7.3. Campaign t-shirt, Courtesy of Water Use it Wisely.

FUNDING

Park&Co created a business model around the Water Use it Wisely campaign. A successful campaign would require pooling monetary resources from the City of Mesa, City of Scottsdale, City of Peoria, as well as other major cities around Phoenix, and the state of Arizona. Each entity was operating on limited funds for their conservation messaging. The purpose of producing the business model was to change the focus from a variety of disparate programs to a united, common-themed program, giving better results across the entire state (Howell 2010). Buy-in was quick from local and state entities. Funds were pooled together into a marketing budget to create and produce the campaign. Even with a higher-level buy-in, Park&Co estimated there was not enough money to successfully market the campaign. The advertising agency was concerned their clients would interpret the campaign as overpromising and underdelivering. Beautiful materials would be produced, but money to utilize them would be sparse.

A deal was negotiated between Arizona cities and the Park&Co advertising agency to have the advertising agency share the risk, as well as ownership of the campaign brand. The advertising agency would match the limited funds for conservation messaging (Park Howell, president of Park&Co estimates the funds were actually matched three dollars per dollar) in the production of the campaign. Incentive for the advertising agency was retaining the right to repurpose and resell the campaign around the country, which would also benefit the local partners (Howell 2010). Local partners would benefit in a large-scale campaign at minimal cost.

As other cities and other states were brought in to participate, the new partners would invariably want to produce some of their own materials in a co-branded way. The new materials would then come into the overall marketing tool package that any water partner could use. For instance, if a water conservation calendar were produced for North Carolina, the calendar automatically becomes a resource anybody can use without a development fee.

By collaborating with other partners, ample funds were available to produce the quality materials for a national water conservation campaign. The City of Mesa's original $80,000 budget for the Water Use it Wisely campaign was increased into a $700,000 budget. The local cities had created a library of marketing materials and funding available to run the TV and radio spots, billboards, and an outdoor campaign. A lot of materials were made available to participating cities to utilize on the side of trash trucks, trash bins, banners, and posters.

The revamped campaign was officially launched in 1999 in Arizona, quickly growing regionally and nationally. As of 2010, the Water Use it Wisely campaign has over 400 public and private water partners (Kassirer 2009), from small water departments in the middle of rural Texas to the majority of the state of North Carolina to a consortium on the east coast encompassing Wasington D.C., Lauten County, Virginia, and Newport News, Virginia. There is a clear financial benefit for potential partners to buy into a successful campaign, cobranding any newly created resources into the Water Use it Wisely campaign.

> "If a city has a limited budget, the Water Use It Wisely campaign is wonderful because it allows any city or organization to get involved at a minimum financial level. A lot of the

> campaign has already been developed and these different organizations can tap into what has been developed and use that for a lot less money than what they would have to pay to develop their own campaign." Donna DiFrancesco, City of Mesa (Kassirer 2009).

Each organization comes to the campaign with varying budgets. Sometimes an organization will approach the Water Use it Wisely campaign wanting to use the logo only on printed materials and brochures. Another case might be an organization wanting three TV spots, two radio spots, three print ads, nine billboards and a host of other materials. Depending on size, the campaign is very flexible with the variations of each deal. A group in California included five different water entities wanting to use the campaign. They put together a combined budget, objectives and identified target stakeholders so that Park&Co could recommend how best to utilize the campaign, giving the client the biggest return on their investment. In this case, Park&Co will customize the campaign package. In other cases, there are clients who order a thousand rubber ducks with the Water Use it Wisely campaign logo to hand out at a kids' fair. The idea is that one or two products can be bought and utilized, or activated as an entire campaign.

The Water Use it Wisely campaign's primary budget comes out of the state of Arizona, which has been reduced over time to about $300,000 in 2010. The reduction in the budget comes from both a downsized economy and readily available materials. These factors imply that the budget primarily is allocated to media marketing and public relations work. Around the country, average client budgets buying into the campaign are around $300,000 on media buys and campaign execution, not managed by the Water Use it Wisely campaign (Howell 2010). However, a small version of the campaign has run on only $2,500, the cost of a starter kit and marketing plan (Kassirer 2009).

Grants are an option to enable campaign water partners to afford buy-in to the Water Use it Wisely campaign. As a for-profit entity, Park&Co, and therefore the Water Use it Wisely campaign, does not qualify for the grant cycle. However, Park&Co helps clients obtain grants or with the grant writing process.

CHALLENGES

The largest hurdle for the Water Use it Wisely campaign is to convince potential partners that what works in Arizona will translate across regions. The client's ego compounds the challenge, having a desire to create their own unique campaign (Howell 2010). Park&Co works with clients to understand the cost-savings of cobranding with a campaign that has over a decade of successes. Pushback came early as the campaign began expanding to other regions of the country. Potential clients would acknowledge the campaign working well in Arizona, but were skeptical similar results could be produced in other regions. The campaign created a focus group on current practices of potential partners, which was then compared to the Water Use it Wisely campaign. Focus groups were conducted in Seattle, Virginia, Washington D.C., Atlanta, and New York. Each focus group came back with resounding support for the Water Use it Wisely campaign and its ability to translate into other regions. In some cases, the only change made to make the campaign regionally appropriate was to change the color scheme. For the northwest, more blues and greens were added, on the East coast, more blues, greens, purples and reds were

added, as well as removal of the oranges and yellows, as they were interpreted as too Southwest sun oriented. The campaign can be tailored to any different market or region, without losing the Water Use it Wisely brand equity.

The current state of the economy has been a test and a blessing to the Water Use it Wisely campaign. Municipal and state water departments now have greatly reduced budgets. There currently is little money to invest. However, restricted budgets can make the Water Use it Wisely campaign more appealing (Howell 2010). A partner does not have to find a great deal of money to implement the entire campaign. There is an option to pick and choose a few choice campaign elements.

Park Howell reflects he did not understand how progressive the campaign was with its desire to bring a clear, national message,

"Back in the 90s when the campaign was rolled out, there was nothing quite like it. Since then, some imitators have appeared, not necessarily on a national or international basis, but imitators that are taking advantage of regional water consortiums. They are taking advantage of the desire to create a unique campaign for a specific group, consortium, and region."

ACCOMPLISHMENTS

1. The logo itself is a call to action. It can be powerfully used as a stand-alone image, even if someone does not have the money to invest in the overall campaign. A partner can drop the logo into a website, printed materials or water bill, and it immediately delivers a clear message. The Water Use it Wisely campaign begs the question, *how can I get smarter about water use?* Simply asking this question leads the individual or company back to the 111 water conservation tips on the website. This is all in response to the questionnaire: *don't tell me to save water, show me how.*

2. A universal message has enabled the campaign to enjoy long-term success. The message is still fresh, including the presentation of colorful and interesting water tips over the years. Additionally, the campaign is incredibly easy to use. Partner organizations have access to download high-resolution products from the website, where all they have to insert is their logo.

3. One of the biggest accomplishments was creating the coalition of cities in Arizona and around the country. Initially, there was nothing like it at the time. A private advertising agency owning the campaign made some bureaucrats uneasy, because the utilities and municipalities paid for the campaign, while Park&Co maintained ownership (Howell 2010). The only viable option for a for-profit entity to get involved in a national campaign was to let the agency retain rights to resell it. The business model itself is a unique accomplishment that would be difficult to replicate. Water conservation was a low priority to many municipalities at the beginning of the campaign, but has become a much more visible topic over the course of the campaign.

Similarly, the overall campaign gained traction quickly in Arizona, with buy-in and confidence from water utility companies across Arizona. The Water Use it Wisely campaign ran large amounts of media, creating brand recognition within the first two years (Kassirer, 2009), faster than Park&Co initially believed (Howell 2010). Initial buy-ins attributed to the high visibility of the campaign, as well as being innovative (Kassirer 2009). Clients remain vested in maintaining the campaign, both in time and energy.

The campaign was a pioneer effort of how to talk to customers about the environment and how to solicit behavior change. This was an inadvertant accomplishment, a byproduct of the commissioned work, and necessary for successful campaign implementation. The campaign was fun, educational, and a bit whimsical. It invited the participant to use their brain and connect the dots e.g. How does a toothbrush help me save water? How does a laundry basket help me save water? (Kassirer 2009)

Another partial success for the Water Use it Wisely campaign was working with Home Depot for a state-wide campaign for a month in 2004. Banners were put up with water festivals around water-efficient items they sold. A lack of organization and full commitment by Home Depot hampered the effort. Park&Co did not understand how much of the implementation of the Water Use it Wisely campaign would have to be driven and coordinated by themselves. Park&Co inaccurately assumed that once the planning of the joint campaign was completed, the communications department of Home Depot would take over and drive the campaign at their Arizona stores (Howell 2010). The advertising agency learned important lessons from the collaboration, but ultimately enjoyed only a short-lived collaboration with Home Depot.

A positive outcome of the work with Home Depot occurred when Lowes approached the Water Use it Wisely campaign in 2005. Lowes asked to implement the program in what they felt was a bigger and better way than the work with Home Depot. Lowes has fewer stores in Arizona, so the campaign was easier to manage at the state-wide level. During all of September, Lowes placed an enormous banner of the campaign on store fronts, right below the Lowes' logo. There were a number of vendors who paid into this joint program, resulting in the Water Use it Wisely campaign placing labels, cards, in-store signage, and workshops to identify and educate about low-water use items and practices (MAG 2005). The venture created good media and publicity for the Water Use it Wisely campaign. This was one of the first times in water conservation that Park&Co was able to get a major national retailer like Lowes involved in a water conservation campaign.

Photo 7.4: Campaign with Lowes, Courtesy of Water Use it Wisely.

Another interesting byproduct of the campaign was a venture between Water Use it Wisely campaign and United States Agency for International Development (USAID). Park Howell was approached and hired by USAID to go to the island of Cyprus. A team was taken for a ten-day contract to work with the government on how to create and use a water conservation plan for the island (Howell 2010). A very dry region of the island posed a significant challenge due to water

misuse by tourism. With poor infrastructure, British tourists were known to come to the island and overuse water to dangerous levels. The tourists were simply not paying attention to their water use. The campaign in Cyprus thus became about educating the British tourists about the difference between their native wet climate and the very dry climate they visit.

Measures of Success

In the past, success has been measured in studies primarily through awareness and subjective questions including "Are you using the tips?" These surveys are conducted by the outside clients, municipalities or water utilities at their own expense. It is impossible to attach an absolute gallon savings to the campaign, because water partners and cities all measures their gallons-used and their per capita usage differently. For instance, in Arizona, when a survey asks "if you see the logo, do you know the campaign?" there is an 80% recognition rate. Even the Water Use it Wisely campaign headliner, *There are a number of ways to save water, and they all start with you*, enjoys about a 68% recognition rate, which is noteworthy as a long tagline or campaign theme (Kassirer 2009).

Other clients around the country have tested the campaign independently, periodically sharing the outcomes with Park&Co. The surveys all share the same kind of results, provided the partner ran a *deep campaign*, meaning they have enough expenditures on media, and their own printed materials with the logo. The surveys are looking at reach and awareness, as well as qualifying questions like *which tips do you believe you are enacting, if any, because of information from the Water Use it Wisely Campaign?* Qualifying questions enjoy high recognition and utilization rates.

LESSONS LEARNED AND FUTURE PLANS

Park&Co created an effective campaign, perhaps with a little luck. They felt they "were just throwing darts at the wall, making hunches, following up on them, and then making them work." (Howell 2010) Given the opportunity to do the whole project over again, the campaign would strive to make the materials less expensive for people to buy, such as the TV spots. There were extensive talent fees wrapped up in production, pricing the TV spots out of budget for municipalities that might have participated and benefited from the campaign otherwise. Now the TV spots are animation, avoiding talent fees and producing a product that is less expensive to use.

In 2008, the campaign was "reinvented," including a redesigned website. The first materials from the campaign were very colorful and detailed, with high gloss and varnishing. The materials were not ecofriendly, since producing for a "green" market was not fully understood or cost effective in the 1990s (Kassirer 2009). An ecofriendly approach is reflected in the redesigned materials for the campaign. Instead of four, five, or six colors for a finished material, there now are only one, two or maybe three colors. There are no varnishes on any campaign materials. Everything can be downloaded from the Internet, eliminating shipping costs for campaign participants. The look of the campaign was reinvented to reflect a modern and

ecofriendly face of water conservation. The operations of the campaign were restructured and redistributed as dictated by the reinvented products.

In the future, the social media network will be further incorporated into the Water Use it Wisely campaign. Additionally, sub-campaigns will be created for clients with a more specific scope. For example, currently in Arizona there is a push to educate the general public that 70% of their total water use is outdoor only. This means the campaign will evolve to target specific outdoor messages for a desired result of reduced outdoor water consumption by individuals and families (Howell 2010). Examples of specific outdoor messages include paying attention to outdoor sprinklers, installing drip irrigation, Xeriscaping, and watching for leaks. The campaign expects other sub-campaigns to be created over time for region-specific goals (Water Use it Wisely 2010).

Photo 7.5: Outdoor messages, Courtesy of Water Use it Wisely 2010.

The effectiveness of the Water Use it Wisely campaign is succinctly summarized by Salt River Project's Bruce Halin:

> "The Water Use It Wisely campaign is visually attractive, easily recognizable, and serves to remind the public with simple, concise tips how important and easy it is to conserve our precious water supplies. The campaign has allowed diverse Arizona cities and water organizations to join together in a common goal: to promote the importance of conservation throughout Arizona." (Kassirer 2009)

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II: EDUCATIONAL RESOURCES

EDUCATIONAL RESOURCE 1. THE LEAGUE TO SAVE LAKE TAHOE: "KEEP TAHOE BLUE"

Location: Northern California
Prepared by: Kathleen McIntyre

The largest alpine lake in North America, Lake Tahoe is 1,645 feet deep, 22 miles long, and 12 miles wide. Located on the border between California and Nevada in the Sierra Nevada Mountain Range, Lake Tahoe is known for its impressive scenic beauty; for centuries Lake Tahoe remained undeveloped, and sparsely populated with lake clarity of up to 120 feet. However, in 1859 the discovery of Silver in Virginia City, Nevada created a boom in commerce for the Lake Tahoe Basin. The "silver rush" resulted in large scale deforestation for timber to support mine shafts and for growing development. Nearly, 80% of basin forests were clear cut during this time. Through time, the clarity of Lake Tahoe, the depth to which one can see, has decreased drastically. Clarity is affected by large and small particles/sediment that get into the lake from sewage, road runoff, vehicle emissions, etc. Industry and unfettered development reduced Lake Tahoe's impressive clarity, and today it is roughly 70 feet (The League to Save Lake Tahoe 2010).

Photo 1.1: Lake Tahoe Clarity, Courtesy of the League to Save Lake Tahoe.

Photo 1.2: Lake Tahoe, Courtesy of The League to Save Lake Tahoe.

The early 1900's witnessed the first attempts to preserve Lake Tahoe as a national park, however, all attempts failed and the lake never received "national park" status. Development pressures began to increase in the 1940's and 1950's, which spurred local residents into action. In 1957, the League to Save Lake Tahoe was founded. Originally known as "Tahoe Improvement and Conservation Association," it is the oldest and largest environment advocacy organization in the Lake Tahoe Basin. The League's mission statement states

the League is,

"Dedicated to protecting and restoring, and advocating for ecosystem health and scenic beauty of the Lake Tahoe Basin. The Organization focuses on water quality and clarity for the preservation of a pristine Lake for future generations."

Their primary function is to monitor development and recreation plans as well as work with local, state, and federal lawmakers to spur action to save Lake Tahoe. The League, a 501(c)3 non-profit, acts as a "watchdog" for the basin generally through litigation (The League to Save Lake Tahoe 2010). Major accomplishments for the League include (The League to Save Lake Tahoe 2010):

- Aiding in the creation of the TRPA, Tahoe Regional Planning Agency, a bi-state management agency for the Lake Tahoe Basin.
- Pushing for the export of sewage from the Basin and not into the lake.
- Led the ban on two stroke engines on the lake.
- Promoting boat inspection for invasive species.
- Worked with congressional representatives to create Lake Tahoe Restoration Act and Environmental Improvement Program.

Challenges for the League to Save Lake Tahoe and Lake Tahoe continue to be decreasing clarity, urbanization, traffic congestion, ozone levels, invasive species, and climate change.

EDUCATION AND OUTREACH PROGRAM

The League participates in education/outreach through three avenues: science and education, volunteer events, and education web audiences. The League uses science to keep citizens up-to-date on issues and demonstrate the link between human actions and loss of lake clarity. They also rely heavily on science to inform their advocacy efforts and have worked closely with the University of California-Davis to develop monitoring programs as well as the Tahoe Environmental Research Center. The League donated the first $100,000 dollars to jumpstart fundraising for the Center, which eventually opened in 2004. The Center provides objective scientific information for the restoration and preservation of Lake Tahoe. There are laboratories and educational displays, and the Center hosts field trips for students and visitors (The League to Save Lake Tahoe 2010).

Photo 1. Tahoe Environmental Research Center. Courtesy of The League to Save Lake Tahoe.

The League holds several volunteer events around Lake Tahoe that include Tahoe Forest Stewardship Day, Coastal Cleanup Day, and storm drain stenciling. According to Cozette Savage, operations director for the League to Save Lake Tahoe, the Tahoe Forest Stewardship Day has evolved through time. Originally it started as a way to demonstrate that communities and citizens could act as forest monitors and be involved with forest health. However, the program lacked participation and proved that agency monitoring was necessary. Today, it is a fall event where communities help promote forest health

and fire prevention (Savage 2010). The League co-sponsors the Coastal Cleanup Day for Lake Tahoe and each summer does storm drain stenciling to discourage illegal dumping.

The League has begun to utilize online networking tools such as Facebook. Savage believes using Facebook "has been a great way to link people to what we do. Many of our projects are not highly visible or tangible, so this helps funnel people articles and information about the Basin." The League to Save Lake Tahoe's website is a remarkable resource with history, facts about the lake, news, and tips on how to "Be Blue" and "Keep Tahoe Blue."

The League uses both printed newsletters and e-newsletters updating all members in their database on recent accomplishments, issues, and actions. Members include anyone who is interested in the League's work or who makes a donation. The executive director has done radio interviews, however not frequently (Savage 2010).

KEEP TAHOE BLUE CAMPAIGN

The League is possibly best known for their "Keep Tahoe Blue" campaign. Unlike typical outreach campaigns, Keep Tahoe Blue is a broad, overarching theme highlighted in all League activities. Presently, they do not run a separate "Keep Tahoe Blue" campaign, but rather incorporate it into their education and outreach program. The original logo and tagline were designed by a board member in the 1970's in an effort to draw attention to Tahoe's problems. They chose blue because Tahoe is distinctly bright blue, and there were fears that it would turn green from algae growth due to high nutrient levels (Martens 2010).

The environmental climate at the time of the tagline and logo's creation was very hostile according to Tom Martens, executive director for the League from 1984-1990. He notes,

> "We were not very popular in the community. Tahoe had been badly subdivided into single family lots without attention to erodible slopes and environmental implications. We advocated for the TRPA to buy up these lots. The community saw it as an outside assault. The League was perceived as second homeowners and out-of-towners."

One way Martens overcame the negative backlash to the League's presence and existence was to heavily utilize his connections to major state media outlets including the editorial boards of the Sacramento Bee, Los Angeles Times, and San Francisco Chronicle. He mobilized out-of-basin populations that cared greatly about the Lake and wanted to see it managed properly (Martens 2010). Martens notes that editorials are a great communication channel with legislators, "it is much easier to get editorials into the hands of legislators than a video, documentary, or TV clip."

BUMPER STICKERS

The Keep Tahoe Blue bumper stickers are found throughout the Tahoe Basin, California, and Nevada. The sticker is simply designed yet extremely popular; it contains an outline of Lake Tahoe and says "Keep Tahoe Blue." It is copied by numerous organizations and businesses. Today, the logo and tagline are printed on everything from postcards and children's wear to blankets and water bottles. Cozette Savage suggests that they have tried to choose items that would appeal to people who like the outdoors and will be used while enjoying the lake. By putting the logo and tagline on highly visible and utilized items, it is another form of education and awareness (Savage 2010).

Photo 1.3: Keep Tahoe Blue Bumper sticker, Courtesy of the League to Save Lake Tahoe.

The League distributes bumper stickers to the local businesses, which are then available to the public with a small donation. One way the League measures success is through number of bumper stickers distributed (Savage 2010).

LESSONS LEARNED

Out of Basin Populations

The "Keep Tahoe Blue" Campaign offers an interesting perspective for rallying support towards a cause. The League to Save Lake Tahoe was viewed as "outsiders" and unwelcome within the Basin. They supported anti-development for the Basin, which was counter to residents' wishes and appeared out of touch with citizen concerns. However, the League approached this hostility and lack of support by generating support from out-of-basin communities. They recognized that many powerful and influential decision-makers for Lake Tahoe lived outside the Basin. Instead of connecting with legislators through basin-formed coalitions, the League chose to engage second home owners and visitors to the Lake. They did so through connections the executive director had with editorial boards of major newspapers throughout the state. They ran a large media campaign targeting these out-of-basin audiences that included editorials and news articles.

This is an underutilized form of communication to a population that is often not targeted. However, it is important to not underestimate the power these out-of-watershed groups have over legislation and policy implemented within the watershed. They may have the political and economic resources necessary to effect significant change.

Charismatic Landscapes

One of main reasons for the success of the "Keep Tahoe Blue" campaign is the charismatic landscape it represents. Lake Tahoe is one of the most unique, visually appealing ecosystems in the country, and enjoys thousands of visitors each year that come to discover its summer and

winter recreational activities. Likened to the outpouring of support for charismatic species protection, it is easy to rally support around such an iconic landscape. To many urban dwellers of California and the nation, Lake Tahoe represents environment, nature, and wilderness.

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EDUCATIONAL RESOURCE 2. THE RIVER NETWORK

Location: Portland, Oregon
Prepared by: Bethany Hellmann

Founded in 1988, the River Network is leading a national watershed movement that includes nearly 5,000 state, regional and local grassroots organizations (River Network 2010). More than 600 dues-paying organizations partner with the River Network. Their staff is headquartered in Portland, Oregon, with field offices in Vermont, Maryland, North Carolina, Wisconsin, Utah and Idaho. River Network envisions a future in which every person knows their watershed and is an active caretaker of their local, river, lake, stream or bay. The River Network has a passion for America's rivers, streams and estuaries and they work toward all people having access to clean and plentiful water. The River Network's mission is:

"To empower and unite people and communities to protect and restore rivers and other waters that sustain the health of our country."

River Network advances its work through five core principles (River Network 2010):

1. Lead the network by listening to and empowering their partners.
2. Advance bottom up and top down connections between grassroots advocates and national leaders.
3. Work across political jurisdictions to focus on nature's boundaries and hydrologic cycle.
4. Use sound science to inform model political, social, economic and environmental decisions that can be replicated for larger impact.
5. Amplify the political power of local grassroots groups and alliances for collective action.

Figure 2.1: Logo for Local Watershed Groups, Courtesy of River Network.

River Network does not run the watershed campaigns but is willing to work on developing public awareness campaigns for watershed groups and can be directly contacted by the organization's public outreach coordinator. More information about River Network can be found on their website, and they are very willing to accept more watershed organizations into their membership. The River Network's members receive ongoing access to the resources, services and technical training of the River Network (River Network 2010). The River Network is open to any watershed organization in the United States becoming a member of their organization. River Network members must pay dues and have access to the extensive library of watershed resources owned by the River Network. The River Network's support and recommendations helped many successful watershed organizations form and grow steadily over the past two decades. Many watershed organizations that partner with the River Network have professional staff and hundreds or thousands of active members of their own.

River Network's staff includes talented organizers, fundraisers and technical experts (River Network 2010). The staff helps groups establish clear long-term goals, develop practical short-term plans, secure adequate funding and build strong leadership. They also connect groups with technical and legal assistance. The River Network also links watershed groups together.

Watershed organizations can browse River Network's extensive resource library for helpful online articles about starting a new group and their Clean Water Act Owner's Manual (River Network 2010). The River Network's National River Rally is an annual gathering of more than 500 grassroots leaders and activists that includes more than 70 workshops on an eclectic mix of organizational development and technical topics. They also provide direct training to a limited number of organizations to meet specific, but diverse, needs. The River Network's *River Talk* is a guide for outreach campaigns that has been published for 10 years (Wilson 2010). In this resource there are templates and message materials on a number of topics like muddy water watch, construction storm water, monitoring, nonpoint source pollution and conservation. The River Network also has 2 publications to help watershed organizations successfully achieve their goals: *Starting Up* and *River Voices.*

Figure 2.1: River Voices logo, Courtesy of River Network.

The River Network's citizen monitoring programs, such as peak flows and storm events, are tied to their outreach efforts (Wilson 2010). River Network staff educates volunteers in their monitoring programs by connecting the monitoring program to their goals like protecting water quality and riparian habitat. The citizen monitors are given additional information about their watershed and river habitat. River Network acknowledges that public outreach campaigns can

be as broad as the definition of a watershed, to how pollutants that you put on your yard are impacting a sub-watershed.

River Network has been involved in the following watershed campaigns (Wilson 2010):

1. Chesapeake Bay campaign to save the bay from pollution.
2. Clark Fork Coalition campaign about climate change considerations for water quantity.
3. Idaho Rivers United campaign on xeriscaping and water conservation.

River Network is currently involved with watershed groups doing climate change work, orientation of climate change work in their communities, storm water and nonpoint pollution (Wilson 2010).

Many national, state and local partners work together to achieve River Network's vision (The River Network 2010):

1. A vibrant grassroots movement of citizens, organizations and decision-makers has the capacity to protect the long-term health of rivers and communities
2. Clean, flowing rivers support rich habitat both for a diversity of fish, birds and wildlife both in the water and on the land.
3. Healthy river systems free of pollution provide clean water for everyone to sustain our health, ensure enjoyment of rivers, and stop environmental injustice.
4. Impacts of climate change are reduced and river health improved by more effective and efficient use of water and energy.

CHALLENGES

A major challenge for many watershed organization's public awareness campaigns is an underestimation of the resources necessary to conduct the campaign (Wilson 2010). Working within the budget and limited resources of a watershed organization is a challenge. For example, a watershed group may put out one press release and not have the resources to continue the campaign. Some groups may publish an ad in the newspaper or on the radio and not have enough resources to continue. It is common for watershed groups to start their public awareness campaigns without a clearly defined plan or road map for the campaign. This can be dangerous, leading these organizations to spend a lot of money on a campaign with little success. To avoid these pitfalls, Wilson recommends careful planning for every campaign. She recommends following the guidelines set forth by the River Network and described below.

EDUCATIONAL RESOURCES

The River Network has s series of resources dedicated to public outreach campaigns for watershed organizations (Wilson 2010). One of these resources is "River Talk! Communicating a Watershed Message" by Polly Dement at River Network. "River Talk!" outlines how to identify a campaign's target audience and conduct research to determine their knowledge, values and concerns as they relate to the watershed. This resource also outlines how to develop messages and effectively communicate them to the target audience. The publication's emphasizes that effective communication starts with planning.

DEVELOPING A COMMUNICATIONS PLAN

A communications plan is a road map for the public awareness campaign (River Network 2010). A communications working groups with broad participation from the watershed organization's partners can develop the communications plan. The communications working group may include the watershed organization's Executive Director, a lead communications staff person, staff leaders on development, program and outreach, a board member with communications experience and, if possible, a volunteer participant from a local public relations firm. Development of this plan will build enthusiasm within the watershed partnership.

RESEARCH

The River Network suggests using quantitative research through polling, interviews, focus groups and in-depth surveys to gauge knowledge, beliefs, attitudes and specific behaviors about

Figure 2.3: Advertisement for River Network's 2010 National River Rally, Courtesy of River Network.

the watershed community as a first step in developing a communications plan (River Network 2010). This research will help the watershed organization to determine its target audience for its campaign. Identifying the target audience is crucial for a successful campaign. Watershed organizations do not have the resources to educate and motivate everyone in their community. Therefore, they must target their resources to the people who can make the largest, most immediate positive impact. A low-cost option involves teaming with a professor or practitioner in public opinion research. The research practitioners can design a survey, facilitate focus groups, conduct demographic research and tabulate the results. To further reduce costs, several organizations can combine resources with foundations to commission professional research throughout several watersheds. National and regional surveys also provide a wealth of information about a watershed's community.

Some questions to consider for qualitative research on watershed communities include (River Network 2010):

- What ethnic and cultural constituencies live in the watershed?
- What income levels are represented in the community?
- What is the age range in the community?
- What is the local political history in the community? What is the history of activism in the area?
- What is the community's relationship with politicians?
- Who are the other influential people in the community?
- How is the watershed organization perceived in the community?
- What are the uses of the river? Is the river viewed as an integral part of the community?

Some of the questions above may be answered through visiting the local planning office, reviewing newspaper archives at the library, asking the Chamber of Commerce or economic development entities for economic and demographic data, accessing published sources of demographic data (e.g. U.S. Census Bureau), asking people in other environmental organizations to share or trade research, creating a directory of organizations in the watershed, and talking with people informally.

The River Network has identified eight steps for a successful communications plan (River Network 2010). These steps are closely related to the strategies used in Social Marketing campaigns.

Step One: Identify the campaign's goals
Articulate goals in a simple declarative statement. Prioritize goals. Initially focus on one major goal to prevent spreading resources too thin.

Step Two: Define the campaign's objectives
Determine what specific, measurable achievable outcomes will advance the goals for the watershed. Objectives need to be SMART: Specific, Measurable, Action-oriented, and Related to goals and Time-specific.

Step Three: Identify the campaign's target audience
Identify the decision-makers on key matters affecting the watershed, the influencers who can persuade the decision-makers and potential partners who are not yet engaged. Conduct research to identify these key people.

Step Four: Develop the campaign's message
Decide what messages will change audiences' attitudes and behaviors and move them to take actions that will protect the watershed. Messages are short, simple compelling statements that capture the essence of the watershed initiative. Messages must connect protecting the watershed with something the audience values. Listen to the audiences to learn what they value and make these connections. Develop several core messages and adapt one or more of them for use in communicating direct benefits of watershed protection with different audiences. Messages incorporate a call to action that makes it clear what is necessary for achieving the desired results. Repeat messages in every conceivable form many, many times. Use messages in all outreach material and all media. Repeat these messages so often that journalists use them in articles and elected officials talk about the issues in terms that the watershed organization has defined.

Step Five: Develop communications strategies for moving key audiences
Determine the most effective strategies for connecting with target audiences, informing them, changing their opinions and attitudes and getting them to act on behalf of the watershed. Strategies are used to get people to take actions that will support the campaign's objectives. Central to the communications strategy is how the target audience receives their information. Find out what they read, listen to and watch, to what organizations and institutions they belong, and which sources they trust. Then, put messages into all these outlets over and over again. Have a flexible plan open to innovative media.

Step Six a: Develop an action plan to implement strategies
Decide what activities will best implement the strategies, and yield the most effective results for the time and resources within the timeframe. Develop a timetable and identify deadlines for specific activities. Identify the person who is responsible for getting the activity completed. This helps to prioritize and stay on schedule. Always cultivate the media personally.

Photo 2.1: River Smart Event for the Chicago River, Courtesy of River Network.

Step Six b: Develop materials to support the action plan
Decide what materials are needed to deliver the messages. For instance, to teach the public what a watershed is, design a map of the watershed that incorporates readily identifiable geographic boundaries and highlights towns and other prominent features. Use this map in speeches, testimony, television appearances and presentations. Strengthen the image by developing a logo, symbol or other identifying

element for use on all materials including letterhead, business cards, brochures, flyers, posters, watershed map, bumper stickers and web page. Use graphics and photographs to catch the readers' eyes and don't overburden with too much text or not enough white space. Materials to consider are brochures, information kits, newsletters, letters, announcements and flyers, 10-25 minute slide presentations, bumper stickers, t-shirts or refrigerator magnets.

Step Seven: Develop a budget for the communications program
Developing a budget makes the communications project more tangible. Review every item in the plan that bears cost. Identify necessary quantities of materials and costs of design and printing, staff costs and other direct costs such as postage and refreshments for events. Explore possibilities for reducing costs, such as a local company printing materials on a pro bono basis or an allied organization paying for postage costs.

Step Eight: Measure results
Evaluation needs to be performed at every stage of the communications plan implementation. Quantified results provide essential feedback which shows whether the communications plan is achieving the goals and objectives and if the plan needs more fine-tuning. Deciding what to measure is the key to meaningful evaluation. One measure is to assess how many new members and volunteers the organization has gained as a result of the campaign. Determining media outreach success can include: how often the coverage incorporates the campaign messages; whether the watershed organization is quoted; whether the article or report is favorable to the campaign's goals and objectives. Identify four or five key measures that will be straightforward to track in the communications plan.

MEASURES OF SUCCESS

Photo 2.2: Confluence of the Charley and Yukon Rivers, Courtesy of River Network.

It is crucial for watershed organization's to evaluate and measure the success of their public outreach and education (Wilson 2010). The evaluation allows the organization to assess, which programs are successful and which ones are not effective. The organization can then continue and build upon their successful outreach efforts and discontinue or re-evaluate their unsuccessful efforts. Many watershed organizations do not measure success because it is expensive and time-consuming. Other organizations do not know how to evaluate the success of their programs.

River Network has identified several ways in which watershed organizations can measure the success of their public

outreach. Wendy Wilson, the National Director of Organizational Development for the River Network, comments, "It is much easier to measure success quantitatively if you have specific goals you want to achieve." Wilson works on messaging, campaign development, training material and training for trainers.

One example of measuring success is to calculate the amount of financial contributions given to the organization (Wilson 2010). The campaign to support the Chesapeake Bay Fund measured its success by the amount of money that was raised. Another example of measuring success is to identify the number of people within the target audience that perform the proposed behavior change. For instance, an organization building partnerships with landowners and ranchers wants to gauge the success of the campaign promoting riparian set-backs and other Best Management Practices (BMPs). The organization can measure its success by establishing how many landowners and farmers are currently using BMPs on their land as compared to the number using BMPs before the campaign began. This data can be collected through phone interviews, door-to-door surveys or mailed surveys. The watershed organization may design the interviews and surveys to obtain information about the landowner's attitudes toward the campaign and what the watershed

LESSONS LEARNED

Wendy Wilson, National Director of Organizational Development for the River Network has learned several lessons while working for the River Network. "The biggest lesson learned is it is possible to spend a lot of money not doing very much. You must have clear goals and structure to your campaign" according to Wendy Wilson. "It is important to know why you are running the public awareness campaign and what you are trying to accomplish with your public awareness campaign. Reasons may include getting your name out there and mobilizing people toward specific objectives." Campaigns that are well-planned with clear, succinct messages that follow the guidelines set by River Networks River Talk! publication have a good chance for success. "Public Awareness campaigns can be really expensive. They must be really well targeted to goals and primary audiences. You must tighten your goals and objectives. Concentrate on measurable things you are trying to impact. Have the campaign well messaged and tied to organizational goals" states Wilson. Having a well-planned campaign will also reduce the burden of cost to the watershed organization.

"Have a good goal – one goal, not different goals. Make a campaign that is cost effective, well targeted and well messaged. If the intent is to reduce pollution on a certain water body, you need to target it on the people that have some impact on that. If intent is to change a policy at regional or state wide level then that is a totally different audience. The number one rule is to make sure you know what the goal is and that determines your audience, which in turn determines your message" states Wendy Wilson.

Choosing one specific goal will help facilitate planning and implementation of the public awareness campaign. All resources can focus on this goal. This simplifies and directs the campaign.

"Know when it (the campaign) is over. To say we are starting this at date X and we are finishing it on date Y and therefore be able to evaluate it and adjust it for the next time" states Wendy Wilson. Choosing a start and end date will also help facilitate planning and implementation of the public awareness campaign. Having deadlines and timeframes keeps the education staff on task creating more successful and robust public outreach.

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APPENDICES

Appendix R. River Network 8 Steps to a Successful/Education Campaign
Appendix S. River Network Communications Networking
Appendix T. River Network Communications Planning
Appendix U. River Network Words that Work
Appendix V. River Network Developing a Simple Message
Appendix W. River Network's Increase and Improve Your Group's Online Presence

EDUCATIONAL RESOURCE 3. SOUTHERN NEVADA WATER AUTHORITY - WATER SMART LANDSCAPES REBATE

Location: Las Vegas Valley, Nevada
Prepared by: Anne Kohl

Mission: SNWA's mission is to manage the region's water resources and develop solutions that will ensure adequate future water supplies for the Las Vegas Valley.

A common method for water conservation is xeriscaping (low-water-use landscaping) to replace traditional turf. It is based on seven principles:

- Sound landscape planning and design
- Limitation of turf to appropriate areas
- Use of water-efficient plants
- Efficient Irrigation
- Soil amendments
- Use of mulches
- Appropriate landscape maintenance

Figure 3.1: Map of Nevada, Courtesy of Western Resource Advocates.

This case highlights Southern Nevada Water Authority's (SNWA) xeriscape method as a way to conserve water in an arid environment. In an effort to meet future water demands and help customers save money, they started the Water Smart Landscape rebate program in 1999. Through the program, SNWA helps property owners and businesses convert water-thirsty grass to a more water-efficient desert landscape. As an incentive, SNWA will provide a monetary rebate for participants. The program now serves as a successful model for other western water utilities and organizations.

BACKGROUND

The Southern Nevada Water Authority (SNWA) is a cooperative agency formed in 1991. A seven member Board of Directors comprised of representatives from each member organization governs them. These include:

- Big Bend Water District
- Boulder City
- Clark County Water Reclamation District
- City of Henderson
- Las Vegas
- Las Vegas Valley Water District
- City of North Las Vegas

These member agencies provide water and/or wastewater services to Southern Nevada (Southern Nevada Water Authority 2010).

Responsibilities of SNWA include (Southern Nevada Water Authority 2010):

- Managing all water supplies available to Southern Nevada through an approved water budget
- Managing regional water resource management and conservation programs
- Ensuring regional water quality as determined by state and federal standards
- Allocating and distributing among water purveyors Colorado River water and any other water that becomes available to Southern Nevada
- Long-term water resource planning
- Presenting a unified position on water issues facing Southern Nevada
- Building and operating regional facilities to provide a reliable drinking water delivery system to all member agencies

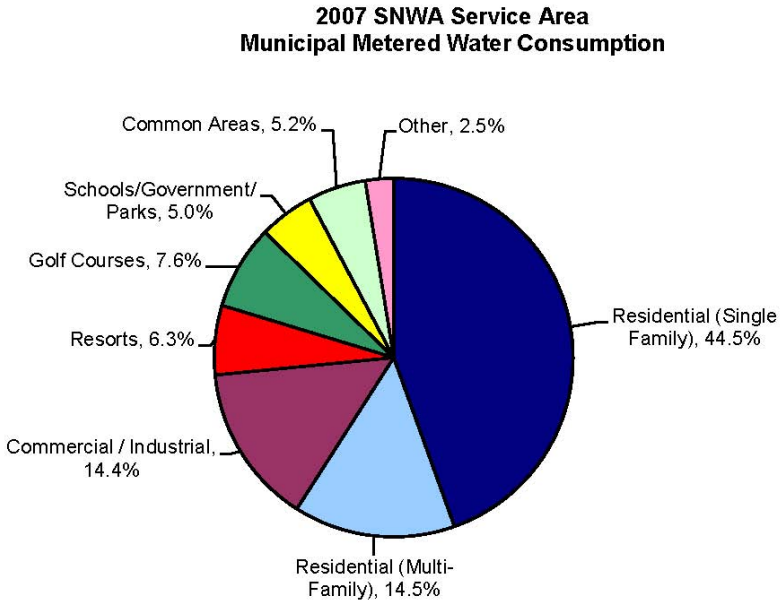

Figure 3.2: 2007 SNWA Service Area, Courtesy of SNWA.

The above graph displays the most recent data available for the SNWA's service area water consumption by sector. Currently, Southern Nevada receives nearly 90 percent of its water from the Colorado River. The other 10 percent is groundwater pumped through existing wells within Clark County (Southern Nevada Water Authority 2010).

The SNWA Board of Directors set a conservation goal of 199 gallons per capita per day (GPCD) by 2035. Their current use is 240 GPCD. To accomplish this goal, SNWA offers a range of resources, services, programs, and information to help meet the goal and to help constituents save money.

How and where Colorado River water is used is governed by a series of documents composed of contracts and regulations, state/federal statutes and compacts, court cases, and a treaty known as the "Law of the River." The state of Nevada is entitled to 300,000 acre feet (AF) per year of water to be diverted from the Colorado River, provided that no more than the state's allotment is used consumptively and the rest is returned to the river. For an entity to divert Colorado River water within a state, they must have a specific contract with the Secretary of the Interior for the water. Since these contracts are in diversion units, not consumptive use units, the sum of the delivery contract volumes within a state can be greater than the state's consumptive use apportionment. However, there must be enough return flows to ensure that the consumptive or net use is within the consumptive-use apportionment. Early in SNWA's formation, they contracted for most of Nevada's river water entitlement (SNWA Resource Plan).

SNWA WATER SMART LANDSCAPES PROGRAM

In 1999, SNWA started the Water Smart Landscape (WSL) Program. This program helps property owners and businesses convert water-consuming grass or turf to more water efficient desert landscaping. They provide customers a rebate for every square foot converted. Initially, the rebate was $0.40 per square foot, but was increased in 2003 to $1 per square foot. In 2008 the rebate increased again and under the current program, customers receive a rebate of $1.50 per square foot of grass removed and replaced with desert landscaping up to the first 5,000 square feet per property, per year. After the first 5,000 feet, customers receive a rebate of $1 per square foot maximum rebate for any property that is $300,000 in a fiscal year (Bennett 2010, Southern Nevada Water Authority 2010). See Appendix GG for the WSL rebate program conditions.

The WSL rebate process is as follows (Southern Nevada Water Authority 2009):

1. **Application** - Single-family property owners must submit a WSL application by mail or internet. Commercial and institutional properties contact a Program Coordinator directly (see Appendix HH).
2. **Pre-conversion site inspection** – Determines if the property meets eligibility requirements and documents existing landscape.
3. **Six month performance period** – After SNWA deems the property eligible, the property owner has up to six months to complete the landscape conversion. Subject to SNWA approval, participants may be granted up to six additional months. Customers whose project is still incomplete receive a reminder notice when there is approximately 30 days remaining in the contract period. The property will enter expired status if this time has elapsed without completion.
4. **Post-conversion site inspection** – Upon notice from the applicant that the conversion is complete, SNWA inspects the landscape to assure it meets minimum requirements and to determine the square footage eligible for rebate. If program requirements are not met, the applicant goes into recheck status and is given an additional 60 days or the remainder of the six-month time period, whichever is greater, to take corrective action.
5. **Rebate Issuance** – Following a successful post-conversion site inspection, a confirmation is mailed to the customer notifying them of the rebate amount. The customer acknowledges the amount by signing the form and returning it. A rebate check is processed and mailed.

Since the WSL program is being funded by the issuance of bonds, landowners must sign a restrictive covenant document. The document prohibits the current and future property owners from ever changing the area back to lawn or water features. The covenant document is attached to the property's title through the Clark County Recorder (2009 Conservation Annual Report and Bennett 2010).

A property is ineligible for the WSL program for any of the following conditions (Southern Nevada Water Authority 2009):

- No Grass: There is no maintained turf grass at the time of the pre-site inspection.
- Not Owner: The applicant is not the property owner on record with the Clark County Assessor's office.
- Post-Conversion Application: The conversion project was completed prior to submission of the WSL application.
- Illegal Turf: The turf to be converted has been determined to be in violation of the local jurisdiction's municipal code.

As of September 15, 2010, SNWA implemented a new program condition which disallows participants who have previously been determined to be ineligible from receiving a rebate. The purpose is to dissuade property owners from re-establishing turf grass after being turned down for lack of maintained turf (Francis 2010).

Participants may request to be dropped from the program at any time and have the option to reapply in the future, subject to the same conditions. Participants who fail to complete the conversion within the allotted timeframe will be dropped from the program. Properties within the jurisdiction of SNWA member agencies are eligible to participate in the WSL program, whether they receive water from the agency, or from a private groundwater well (Southern Nevada Water Authority 2009).

Quality Assurance: Quality assurance (QA) is an important aspect of the WSL program and is performed for all applications and work orders through different stages of the program. QA is done in order, "to ensure that each participant is receiving the highest possible level of performance from SNWA Conservation staff and that the program has exceptional accountability for the work performed and funds expended" (Southern Nevada Water Authority 2009). The QA procedure for single-family residential site visits begins after application processing and is as follows (Southern Nevada Water Authority 2009):

- The file is inspected to ensure that all necessary documents are present. The information contained in the file and on the application is verified with what has been entered into the SNWA Water Efficiency Incentive & Rebate Database (WEIRD). All data fields in WEIRD must match data in the file.
- Both the file and WEIRD are inspected for accuracy of all information after each site visit. After pre-conversion site visits, the folder is checked for the following: a signed application by the property owner and SNWA staff; correct designation of the area to be converted along with property owner initials acknowledging the designated area(s); presence of photos of the turf area(s) to be removed; and correct input of information into WEIRD.
- After post-conversion site inspections, the inspected items include a detailed and accurate ArcGIS drawing, field measurements of the converted area, photographic record of the conversion, specification of the conditions that were either met or not met, completion of plant identification, and correct input of information into WEIRD. In addition, the presence and accuracy of the covenant document is reviewed.
- After a follow-up site visit, the information to be verified may vary, but generally includes a review of the photographs taken onsite, information input into WEIRD, and findings from the inspector as to whether program conditions were met.
- Upon receipt of the executed covenant documents from the client, the signature page is reviewed to ensure that all owners of record have had their signature properly notarized on the document.
- Final QA is performed on each file after reaching "Enrolled" status in WEIRD, signifying a rebate check has been issued. WEIRD is checked to verify that the file contents have been properly archived prior to destruction.

The SNWA staff also performs QA on past conversions each year to ensure the landscape has not been altered outside of program requirements. Generally, a property can expect an inspection to occur three years after the issuance of a rebate check. An inspection entails looking for the removal of desert landscape and the re-installation of turf grass (Francis 2010).

Water Smart Contractors Program: SNWA also works with local landscaping contractors through their *Water Smart Contractors Program*, which was started in 2003. SNWA conservation experts hold water-efficiency trainings where local contractors can learn about water-saving irrigation and landscape design for homes and business. The program requires contractors to complete at least eight hours of SNWA water-efficiency training, maintain good standing with the Nevada State Contractors Board, and be licensed and insured. After becoming certified, the contractors must complete annual refresher training. Through the training, contractors learn about WSL program changes, drought conditions, and potential impacts to the green industry. On SNWA's website, customers can search for landscapers who have completed the training. This service helps to increase professional support of the rebate program and allows for projects to move faster.

Customer Feedback Cards: In order to gain information about all aspects of the WSL program feedback cards are mailed to single-family residential participants. In August 2008, the survey was reformatted to include an evaluation of interactions with contractors, in particular, the *Water Smart Contractor Program*. They are mailed to 10% of participants that have completed a pre-conversion site inspection and 25% that have completed a post-conversion site inspection. The current format involves six questions which ask participants to provide a rating of between 1 and 5, with 1 representing a negative outcome and 5 representing a positive outcome. See Appendix FF for the current survey format sent to customers.

Results: In 2009, there were 4,938 total enrollments where rebates were awarded. A total of 17,099,083 square feet were converted resulting in $22,879,318 rebated. The graph below shows the breakdown of WSL program enrollments by sector (Southern Nevada Water Authority 2009).

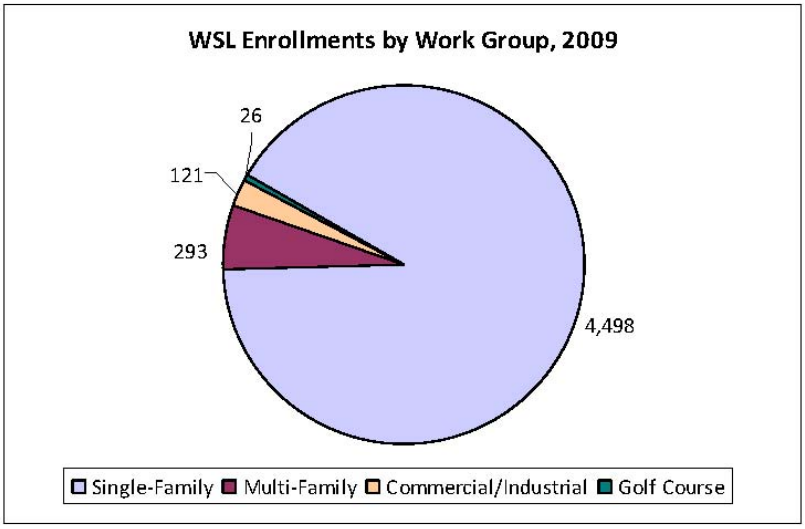

Figure 3. WSL Program Enrollments by Work Group, Courtesy of SNWA.

Single-family residential properties account for the majority of applicants to the WSL program. There were 6,020 applicants to the program in 2009, a decrease compared to 2008. Anecdotal evidence pointed to economic factors as a reason for the decrease. Of the 6,020 applicants, 4,498 were enrolled in the WSL program while the others either dropped from the program, were ineligible, entered expired status, or reached "recheck expired" status. The graph below shows the number of single family enrollments from 2005-2009.

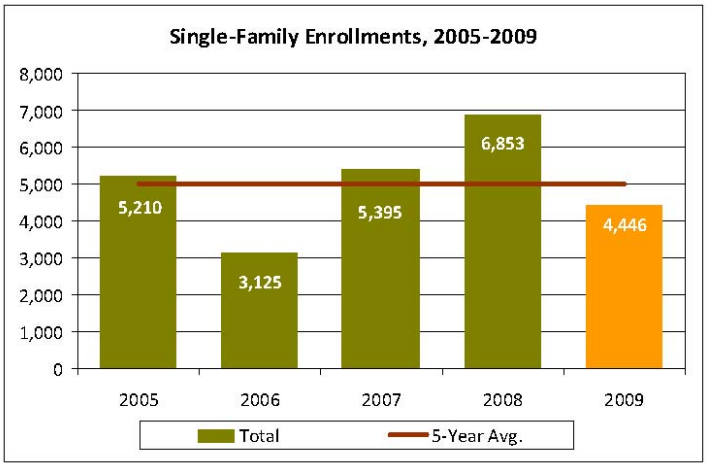

Figure 3.4: Graph of the number of Single Family Enrollments from 2005-2009, Courtesy of SNWA.

Multi-Family/Commercial-Industrial/Green Industry (MFCIGI) comprises a much smaller portion of WSL enrollments. In 2009 there was a total of 476 applications received that resulted in 440 enrollments and 11,581,996 square feet of turf removed. The number of applications received in 2009 was below the average for 2005 through 2009 and is attributed to the economy and deferred capital improvement projects at multi-family complexes, commercial sites, and golf courses. The graph below shows the number of MFCIGI applications received from 2005-2009 (Southern Nevada Water Authority 2009).

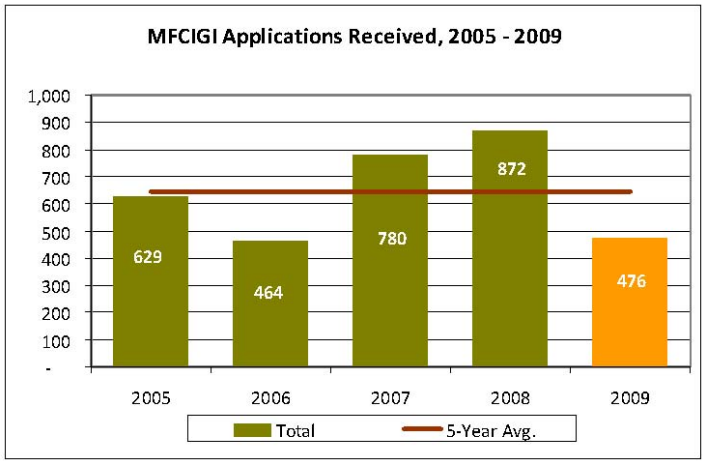

Figure 3.5: Graph of the number of MFCIGI Applications from 2005-2009, Courtesy of SNWA.

BEFORE AND AFTER PHOTOGRAPHS

Photo 3.1: Southern Nevada Home Builders Association Before, Courtesy of SNWA.

Photo 3.2: Southern Nevada Home Builders Association After, Courtesy of SNWA.

Photo 3.3: Private Residence Before, Courtesy of SNWA.

Photo 3.4: Private Residence After, Courtesy of SNWA.

FUNDING

The funding for the WSL Program is primarily through revenues generated by new water connection fees. However, due to the recent decline in new construction projects in the Las Vegas Valley, the funds from connection fees were not enough to sustain the program. The budget for the program grew from $2 million in the beginning to over $10 million now. Beginning in July 2009, any new application to the WSL Program is funded through the issuance of bonds (2009 SNWA Conservation Annual Report). Doug Bennett, Conservation Manager, explains the new process, "Water conservation has become considered to be equivalent to obtaining additional supplies, and therefore, agencies can use bond money to implement capital programs that produce reliable, long-term water savings. These projects are not only akin to obtaining new water; they also reduce expenditures on infrastructure."

Since the WSL program is funded through the issuance of bonds, it is required that restrictive covenants are obtained for each property receiving a rebate. This document prohibits the current and future owners from ever changing the area back to lawn or water features and are attached to the property's title through the Clark County Recorder (Southern Nevada Water Authority 2009, Bennett 2010).

OUTREACH METHODS

SNWA uses several methods to promote the WSL Program such as, newspapers, radio, TV, billboards, flyers, magazines, water bill inserts, Home Owner Association newsletters, and targeted mailings. SNWA also participates in many public events throughout the Las Vegas Valley, including employee fairs for many large casinos and resorts. Bennett also says that word of mouth has been very valuable for getting their message out and promoting the program.

Photo 3.5: One of the ads SNWA ran to promote the WSL program, Courtesy of SNWA.

ACCOMPLISHMENTS

As of November of 2010, there have 61,439 applicants, 42,912 completed projects, and 149.6 million square feet of grass converted to water-smart landscaping by community residents and businesses. The conversions have saved an annual 8.4 billion gallons of water and cumulatively 41.4 billion gallons of water. The amount of grass converted through the program is equivalent to an 18-inch roll of sod stretching nearly halfway around the world at the equator.

CHALLENGES

Bennett says a challenge to get the program started arose from people in the landscaping business, specifically **companies who grow sod**. This sector feared a decrease in business due to SNWA's promotion of removing water intensive grass. To overcome this, Bennett says it was important to talk with these companies during the start-up of the WSL program. SNWA works with landscape companies to help customers find a landscaper for their conversions.

There are also **participation barriers** to the WSL program. Bennett categorizes them as administrative complexity, implementation paralysis, financial constraints, and professional support. The SNWA works to resolve these issues in the following ways (Bennett n.d.):

Administrative Complexity: To minimize administrative complexity and streamline the process, the WSL program has a single page application and SNWA encourages people to apply online. Also, SNWA developed rules and an application process that is the same for all customers. Similarly, there are no complicated design requirements, such as acceptable plant lists.

Reduce Implementation Paralysis: The SNWA helps participants take the next step towards landscape conversion by offering template designs from local landscape architects, free "how-to" classes, illustrated manuals, videos, and PC software. Additionally, there are community demonstration gardens throughout the Las Vegas valley that help educate participants.

Diminish Financial Constraints: SNWA worked to ensure the landscape conversion rebate was a meaningful incentive to foster participation. Once a conversion has been completed, they issue a check instead of water bill credit. They also provide a landscape calculator on their website to show customers how much water they can save. The SNWA partners with local retailers to provide coupons towards the purchase of water efficient household items including removable pool covers, rain sensors, and smart irrigation controllers. They also offer coupons for car wash facilities that have on-site water recycling.

Professional Support: The SNWA has worked to enhance professional support by providing key information to participants via their website. The development of the Water Smart Contractors program has led to over 100 licensed contractors who abide by eleven efficiency requirements for all projects.

CONCLUSION

The western United States is sure to experience increasing water stress due to climate change, population growth, and over allocation of the Colorado River. SNWA's Water Smart Landscape Program is an excellent example of an innovative and creative way to conserve water in arid regions. Keys to their success have been their ability to minimize administrative complexity, provide a sufficient incentive, and an extensive marketing campaign to promote the benefits of the program.

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1. BYLAWS

Appendix A. Applegate Partnership & Watershed Council Bylaws

BYLAWS OF THE APPLEGATE PARTNERSHIP, INC.
Revised and adopted July 24, 2003

Section I
The Applegate Partnership Inc., hereinafter called the Partnership, an Oregon public benefit, non-profit corporation, adopts these bylaws pursuant to the Oregon Non Profit Corporation Act.

Section II
The Applegate Partnership is a community-based organization of industry, conservation groups, research scientists, and residents cooperating to encourage and facilitate the use of natural resource principles that promote ecosystem health and diversity. The purpose of the Partnership is to support, through community involvement and education, management of all lands within the Applegate watershed in a manner that provides a sustainable yield of natural resources and that contributes to economic and community well-being within the Applegate valley. The Partnership seeks to encourage participation of public land management agencies, timber and agricultural industries, local residents and landowners, conservation and environmental groups, forest researchers and scientists in this effort.

Section III
A. The Partnership shall be managed by a Board of Directors consisting of not less than seven (7) and not more than fifteen (15) members. All decisions of the Board shall be made after a full and open discussion by those present at a regular or special meeting. If a quorum is present, the Board may adopt a position on any issue on behalf of the Partnership unless two (2) or more Board members object.

B. The Board shall make every reasonable effort to elect one Board member nominated by any of the following interests:

Local conservation/environmental group
Southern Oregon Timber Industries Association
Soil and Water Conservation District or Farm Bureau
Area College

In addition, the Board shall make every reasonable attempt to nominate and elect a Board member who is a representative from:

Local Forest Products Industry
Little Applegate/Sterling area
Murphy/Wilderville area
Williams area
Middle Applegate area
Upper Applegate area
Ruch area
Stockperson

Section III, continued

C. The membership of the Board shall, at all times, include at least four (4) Board members who reside within the Applegate watershed.

D. All Board members shall serve in that capacity until resignation or removal.

E. Any Board member may resign at any time by delivering a written resignation to the Board. Any Board member who is absent for three (3) consecutive meetings without reasonable cause or excuse may be removed from the Board.

F. At all meetings of the Board a majority of the then constituted Board, but never less than five (5), shall constitute a quorum for the transaction of business.

G. A President shall be elected by the Board at the regular September meeting. The President shall be the principal executive officer of the corporation. The President shall preside at all meetings of the Board, or, may designate another Board member to preside at any meeting. The President shall sign all contracts, resolutions or other legal instruments as directed and authorized by the Board.

H. A secretary shall be appointed to serve on the Board. The secretary shall be responsible for assuring that accurate minutes are taken at each Board meeting, and for providing copies of the minutes to the Board for approval at the next scheduled Board meeting.

I. A treasurer may also be appointed to serve on the Board. The Treasurer shall be responsible for assuring that an accurate and timely account of all financial matters, including expenses, income and financial transactions, is presented to the Board on a monthly basis.

J. All regular Board meetings are open to the public; however, the Board may schedule a special session closed to the public to discuss personal or confidential matters. Any decisions made at a special session will be disclosed in the Board's minutes for that meeting.

K. The Board may appoint committees to manage the affairs of the Partnership as needed. Committee activities, functions, reports and proceedings shall be presented to the Board on a regular basis. At least one Board member shall serve on each management committee.

L. Board members shall serve without salary. However, the Board may authorize reimbursement for the reasonable expenses incurred by Board members in the performance of their duties. This shall not preclude Board members from acting as paid staff to perform duties beyond normal Board duties. The Board or the assigned management committee shall fix salaries and other compensation of the agents and employees of the Partnership.

Section III, continued

M. All funds of the Partnership shall be deposited in such banks or other reliable depositories as the Board determines appropriate. The Board shall have the authority to expressly delegate officers or agents of the Partnership to sign or authorize checks, drafts, endorsements, notes, contracts, or to execute and deliver any instrument in the name of and on behalf of the Partnership.

Section IV

There shall be maintained in the principal office of the Partnership all financial books and records of account, all minutes of Board meetings and committee meetings of the Partnership, and copies of all other material, records, minutes, lists, documents, and contracts, all of which shall be made available for inspection at any reasonable time during usual business hours by any Board member or duly authorized representative thereof, for any lawful purpose.

Section V

Upon leaving office, each Board member, officer or agent of the Partnership shall turn over to the Board, in good order, such monies, books, records, minutes, lists, documents, contracts, or other property of the Partnership as have been in their custody during his or her tenure of office or employment

Section VI

These bylaws may be altered, amended or repealed and new bylaws may be adopted by the Board by the following process:

- Proposal for changes by any Board member at any meeting
- Agreement of three Board members to go forward
- Thirty-day written notice of proposed changes to all Board members.
- Adoption by the Board.

The foregoing bylaws of the Applegate Partnership, Inc. are adopted by the Applegate Partnership Board of Directors on July 24, 2003.

Signed Jack Shipley. Dated: 7-24-03.
Jack Shipley, President
Applegate Partnership, Inc.

Sandy Shaffer. Dated: 7/24/03.
Sandy Shaffer, Secretary,
Applegate Partnership, Inc.

Appendix B. Deschutes River Conservancy Bylaws

SECOND AMENDED BYLAWS

OF

DESCHUTES RIVER CONSERVANCY,

an Oregon nonprofit corporation

ARTICLE 1

NAME

The name of this Corporation is the **DESCHUTES RIVER CONSERVANCY.**

ARTICLE 2

OFFICES

SECTION 2.1 PRINCIPAL OFFICE

The principal office for the transaction of the activities and affairs of the Corporation ("principal office") is located at 700 NW Hill Street, Bend, Oregon 97701. The Board of Directors ("the Board") may change the principal office from one location to another. Any change of location of the principal office shall be noted by the Secretary on these Bylaws opposite this Section, or this Section may be amended to state the new location.

SECTION 2.2 OTHER OFFICES

The Board may at any time establish branch or subordinate offices at any place or places where the Corporation is qualified to conduct its activities.

ARTICLE 3

PURPOSES AND LIMITATIONS

SECTION 3.1 PURPOSES

This Corporation is a public benefit nonprofit corporation and is not organized for the private gain of any person. The Corporation shall not discriminate against any person on the basis of race, color or religion. It is organized under the Oregon Nonprofit Corporation Act exclusively for charitable, religious, educational and scientific purposes, within the meaning of Section 501(c)(3) of the Internal Revenue Code of 1986, as

amended (the "Code"), or corresponding section of any future federal tax code, including but not limited to activities which will restore, protect and enhance the ecosystem of the Deschutes River Basin in Oregon.

ARTICLE 4

MEMBERS, RECORDS AND REPORTS

SECTION 4.1 MEMBERS

The Corporation shall have no members.

SECTION 4.2 RECORDS

The Corporation shall keep at its principal office available for inspection the records set forth in ORS Section 65.771(5).

SECTION 4.3 ANNUAL REPORTS

(a) **Annual Reports**. The Corporation shall, on an annual basis, deliver to the Secretary of State for filing an annual report which complies with the provisions set forth in ORS Section 65.787.

(b) **Annual Statement of Certain Transactions and Indemnifications**. If the Corporation indemnifies or advances expenses to a Director pursuant to ORS Sections 65.391 to 65.401, the Corporation shall no later than 90 days after the first indemnification or advance prepare and mail or deliver to each Director a statement which complies with the requirements of ORS Section 65.784.

ARTICLE 5

DIRECTORS

SECTION 5.1 POWERS

(a) **General Corporate Powers**. Subject to the provisions and limitations of the Oregon Nonprofit Corporation Act and any other applicable laws, and any limitations of the Articles of Incorporation and of these Bylaws, the activities and affairs of the Corporation shall be managed, and all corporate powers enumerated in ORS Section 65.077 shall be exercised, by or under the direction of the Board.

(b) **Emergency Powers**. During an emergency (a condition where a quorum of the Corporation's Directors cannot readily be assembled because of some present or imminent catastrophic event) the Board may: (i) modify lines of succession to accommodate the incapacity of any Director, officer, employee or agent; or (ii) relocate the principal office, designate alternative principal offices or authorize the officers to do so. Further, during an emergency: (i) notice of a meeting of the Board need be given only to those Directors whom it is practicable to reach and may be given in any

practicable manner, including by publication or radio; and (ii) one or more officers of the Corporation present at a meeting of the Board may be deemed to be Directors for purposes of the meeting, in order of the officer's rank, and within the same rank in order of seniority, as necessary to achieve a quorum. Corporate action taken in good faith under this Section to further the affairs of the Corporation during an emergency binds the Corporation. A corporate director, officer, employee or agent shall not be liable for deviation from normal procedures if the conduct was authorized by emergency powers provided herein.

SECTION 5.2 NUMBER, ELECTION AND QUALIFICATIONS OF DIRECTORS

(a) **Number of Directors**. The authorized number of Directors shall be between nineteen and thirty, which shall at least be comprised of the following:

(i) Five Directors associated with private interests, including one each associated with hydroelectric production, livestock grazing, timber, land development, and recreation/tourism;

(ii) Four Directors associated with private interests including two each associated with irrigated agriculture and the environmental community;

(iii) Two Directors from the Confederated Tribes of the Warm Springs Reservation of Oregon;

(iv) Two Directors from federal agencies with the authority and responsibility in the Deschutes River Basin, including one from the Interior Department and one from the Agriculture Department;

(v) Two Directors from State of Oregon agencies with authority and responsibility in the Deschutes River Basin, including one from the Oregon Department of Fish and Wildlife and one from the Oregon Water Resources Department; and

(vi) Four Directors from Deschutes River Basin county and/or city governments, which may include representatives from the Oregon counties of Deschutes, Crook, Jefferson, and Wasco/Sherman.

As used herein, the term "federal agencies" shall mean agencies and departments of the United States, including, but not limited to, the Bureau of Reclamation, Bureau of Indian Affairs, Bureau of Land Management, Fish and Wildlife Service, Forest Service, Natural Resources Conservation Service, Farm Services Agency, the National Fisheries Service, and the Bonneville Power Administration.

(b) **Classes of Directors**. There shall be three classes of Directors to be known as Class I, Class II, and Class III, respectively, with the nine Directors associated with private interests (those specified in subparagraphs (i) and (ii) of paragraph (a) immediately above) comprising Class I and the ten Directors from

governmental interests in the Deschutes Basin (those specified in subparagraphs (iii), (iv), (v) and (vi) of paragraph (a) immediately above) comprising Class II, and up to eleven Class III Directors.

(c) **Qualifications of Directors**. All Directors must be individuals. Further, every person nominated or elected as a Class I or Class II Director shall have as an additional designation the specific interest or agency that said individual is associated with under Section 5.02(a) above.

(d) **Election of Directors**. Except the nine initial Class I Directors named in the Articles of Incorporation, all Class I and Class II Directors shall be elected by the Board as set forth herein.

(i) **Initial Class I and Class II Directors**. The initial nine Class I Directors shall be those named in the Articles of Incorporation. The initial Class II Directors shall be elected by the Class I Directors from the candidate(s) or representative(s) so designated by the applicable governmental agency or entity on or before the 90th day following the date of the designation by the applicable governmental agency or entity.

(ii) **Subsequent Class I Directors**.

a. **Nominating of Committee**. The Board shall appoint a committee to select qualified candidates to serve as Class I Directors at least 60 days before the date of any election of the Directors to fill the class whose term is expiring. This nominating committee shall make its report at least 30 days before the date of the annual meeting at which the term of a class is expiring, or at such other time as the Board of Directors may set, and the Secretary shall forward to each Director, with the notice of annual meeting required by these Bylaws, a list of all candidates nominated by the committee under this Section.

b. **Nominations From the Floor**. At the annual meeting, any Director present at the meeting in person may place names in nomination.

c. **Solicitation of Votes**. The Board shall formulate procedures that allow a reasonable opportunity for a nominee to communicate to Directors the nominee's qualifications and the reasons for the nominee's candidacy, a reasonable opportunity for the nominee to solicit votes, and a reasonable opportunity for all Directors to choose among the nominees.

d. **Use of Corporate Funds to Support Nominee**. No corporate funds may be expended to support a nominee for Director.

(iii) **Subsequent Class II Directors**. At least 90 days prior to the expiration of the term of a Class II director, the Executive Director shall contact the applicable governmental agency or entity to solicit nominations for the expiring position.

(iv) **Class III Directors**. The Board may appoint up to eleven Class III Directors. The Class III Directors are to be elected by the Class I and Class II Directors.

a. **Nominations From the Floor**. At the annual meeting, any Class I or Class II Director present at the meeting in person may place names in nomination.

b. **Solicitation of Votes**. The Board shall formulate procedures that allow a reasonable opportunity for a nominee to communicate to Class I and Class II Directors the nominee's qualifications and the reasons for the nominee's candidacy, a reasonable opportunity for the nominee to solicit votes, and a reasonable opportunity for all Class I and Class II Directors to choose among the nominees.

c. **Use of Corporate Funds to Support Nominee**. No corporate funds may be expended to support a nominee for Director.

SECTION 5.3 TERM OF OFFICE OF DIRECTORS

(a) **Term for Class I and Class II Directors.**

(i) The terms of the first group of Directors comprising the Class I Directors shall expire at the first annual meeting. Thereafter, the terms of the Class I Directors shall expire at the third annual meeting following the annual meeting at which such Class I Directors were elected.

(ii) The term of any Class II Director shall expire on the third anniversary of his or her election to the Board.

(iii) The term of any Class III Director shall expire on the third anniversary of his or her election to the Board.

(b) **Term of Director Filling Vacancy or Elected at Special Meeting**. A person elected to fill a Class I Director vacancy or who is elected at a special meeting to fill a Class I Director vacancy, shall hold office until the expiration of Class I Directors remaining term. A person elected to fill a Class II Director vacancy or who is elected at a special meeting to fill a Class II Director vacancy, shall hold office until the expiration of the term of the Class II Director he or she is replacing. Notwithstanding the expiration of a term, a Class I or Class II Director continues to serve until his or her successor is elected, designated or appointed, and qualifies. A Class III Director's office terminates at the third anniversary of his or her election to the Board, regardless of whether the position is refilled.

SECTION 5.4 VACANCIES

(a) **Events causing vacancy**. A vacancy or vacancies on the Board shall exist on the occurrence of the following: the removal or resignation of any Director.

(b) **Resignations**. Except as provided in this Section, any Director may resign effective upon giving written notice to the Board, the Chairman of the Board, if any, or the Executive Director, if applicable, or the Secretary of the Corporation, unless such notice specified a later time for the resignation to become effective. Once delivered, a notice of resignation is irrevocable unless revocation is permitted by the Board.

(c) **Removal**. A Director elected by the Board may be removed with or without cause by the vote of two-thirds of the Directors then in office.

(d) **Filling Vacancies**. Any vacancy on the Board shall be filled pursuant to the procedures set forth herein relating to the election of a Class I, Class II, or Class III Director, as the case may be.

(e) **No Vacancy on Reduction of Number of Directors**. No reduction of the authorized number of Directors shall have the effect of removing any Director before the Director's term of office expires.

SECTION 5.5 RESERVED

SECTION 5.6 ANNUAL, REGULAR AND SPECIAL MEETINGS

(a) **Annual Meeting**. The Board shall hold an annual meeting in September, October, or November of each year for the purpose of organization, election of officers and the transaction of other business at a place and time as determined by the Board. Notice of the time and place of the annual meetings shall be given to the public by means of a notice contained within a newspaper (or newspapers) whose general circulation includes the Oregon Counties of Crook, Deschutes, Jefferson and Wasco/Sherman, and to any individual or group who requests notice.

(b) **Other Regular Meetings**. Other regular meetings shall be held quarterly (the fall meeting shall also be the annual meeting as set forth above), at the principal office of the Corporation, or at any other place designated from time to time by resolution of the Board. Notice of the time and place of regular meetings shall be given to the public by means of a notice contained within a newspaper (or newspapers) whose general circulation includes the Oregon Counties of Crook, Deschutes, Jefferson and Wasco/Sherman, and to any individual or group who requests notice.

(c) **Special Meetings.**

(i) **Authority To Call**. Special meetings of the Board for any purpose may be called at any time by the Chairman of the Board, if any, the Executive Director, if applicable, or a majority of the Directors.

(ii) **Notice**.

a. **Manner of Giving Notice to Directors**. Notice of the time and place of special meetings shall be given to each Director by one of the following methods:

1. by personal delivery of written notice;

2. by first-call mail, postage prepaid;

3. by telephone, either directly to the Director or to a person at the Director's office who would reasonably be expected to communicate that notice promptly to the Director; or

4. by telegram, charges prepaid.

All such notices shall be given or sent to the Director's address or telephone number as shown on the records of the Corporation.

b. **Time Requirements**. Notices sent by first-class mail shall be deposited in the United States mails at least four days before the time set for the meeting. Notices given by personal delivery, telephone, or telegraph shall be delivered, telephoned, or given to the telegraph company at least 48 hours before the time set for the meeting.

c. **Notice Contents**. The notice shall state the time of the meeting, and the place if the place is other than the principal office of the Corporation. Unless otherwise required by ORS Chapter 65, the notice need not specify the purpose of the meeting.

d. **Manner of Giving Notice to Public**. Notice of the time and place of special meetings shall be given to the public by means of a notice contained within a newspaper (or newspapers) whose general circulation includes the Oregon Counties of Crook, Deschutes, Jefferson and Wasco/Sherman, and to any individual or group who requests notice.

(d) **Meetings by Telephone**. Any meeting of the Board may be held by conference telephone or by any other means of communication by which all participants can hear each other simultaneously during the meeting, and such participation shall constitute presence in person at the meeting. In the event a telephonic meeting is to be held, telephonic facilities shall be made available which will allow the public to listen and participate in the meeting.

(e) **Meetings Open to the Public**. Except for executive sessions of the Board, all meetings of the Corporation shall be open to the public. Executive sessions may include, by way of example only, those matters set forth in ORS Section 192.660. Nothing herein however shall be construed as subjecting the Corporation to the requirements of ORS Chapter 192.

SECTION 5.7 QUORUM AND VOTING

(a) **Quorum**. Eight of the Directors in office immediately before a meeting begins shall constitute a quorum for the transaction of business, except 1) to

adjourn as provided in Section 5.9; and 2) for any decision described in Section 5.7 (b)(i) below, in which case one more than half of those Directors who are appointed and eligible to serve immediately before a meeting shall be required to constitute a valid quorum for voting on such business.

(b) **Voting**. If a quorum is present when a vote is taken, except as set forth herein, the affirmative vote of a majority of the Directors present when the act is taken is the act of the Board. A Director shall be considered present regardless of whether the Director votes or abstains from voting. A meeting at which a quorum is initially present may continue to transact business, notwithstanding the withdrawal of a Directors or Directors, if any action taken is approved by at least a majority of the required quorum for that meeting.

(i) Any decision with respect to an ecological restoration project on federal and nonfederal lands and waters within the Deschutes River Basin shall require unanimous consent of all directors present at a regularly scheduled meeting of the directors at which a quorum is present, or the unanimous consent of all directors as set forth in Section 5.11 below. The funds referred to in (ii) below held in separate trust accounts shall be expended only for the purposes designated herein. When federal lands and/or funds are involved, the expenditure of such fund shall accrue only after approval by the affected federal agency or agencies.

(ii) In addition, any projects which involve federal lands or funds shall be proposed to the Bureau of Reclamation in the Department of the Interior, and any other federal agency with affected land or funds.

SECTION 5.8 WAIVER OF NOTICE

A Director may, at any time, waive any notice required under ORS Chapter 65, the Articles of Incorporation, or these Bylaws. Except as otherwise provided herein, the waiver must be in writing, must be signed by the Director entitled to the notice, must specify the meeting for which notice is waived, and must be filed with the minutes for the corporate records. A Director's attendance at, or participation in, a meeting waives any required notice to the Director of the meeting unless the Director, at the beginning of the meeting, or promptly upon the Director's arrival, objects to holding the meeting or transacting business at the meeting, and does not thereafter vote for or assent to any action taken at the meeting.

SECTION 5.9 ADJOURNMENT

A majority of the Directors present, whether or not a quorum is present, may adjourn any meeting to another time and place.

SECTION 5.10 NOTICE OF ADJOURNED MEETING

Notice of the time and place of holding an adjourned meeting need not be given, unless the original meeting is adjourned for more than 24 hours, in which case notice of

any adjournment to another time and place shall be given before the time of the adjourned meeting to the Directors who were not present at the time of the adjournment.

SECTION 5.11 ACTION WITHOUT MEETING

Any action required or permitted to be taken by the Board may be taken without a meeting, if all Directors of the Board consent in writing to that action. Such action by written consent shall have the same force and effect as any other validly approved action of the Board. Such written consent or consents shall be filed with the minutes of the proceedings of the Board. Any action taken without a meeting is effective when the last Director signs the consent, unless the consent specifies an earlier or later effective date.

ARTICLE 6

COMMITTEES

SECTION 6.1 COMMITTEES OF THE BOARD

(a) The Board, by resolution adopted by a majority of the Directors then in office, may designate two or more Directors to constitute an executive committee, which committee, to the extent provided in such resolution, shall have and may exercise all of the authority of the Board in the management of the Corporation, subject to the limitations set forth herein.

(b) The Board may appoint such other committees as may be necessary from time to time, consisting of such number of its members and having such powers as it may designate consistent with these Bylaws, subject to the limitations set forth herein.

(c) Any committee appointed by the Board shall hold office at the pleasure of the Board and may be removed by the Board whenever, in its judgment, the best interests of the Corporation will be served thereby.

(d) No committee shall have the authority of the Board to:

(i) authorize distributions;

(ii) approve or recommend a dissolution, merger or the sale, pledge or transfer of all or substantially all of the Corporation's assets;

(iii) elect, appoint or remove directors or fill vacancies on the Board or on any of its committees;

(iv) adopt, amend or repeal the Articles of Incorporation or the Bylaws; or

(v) exercise the powers described in Section 5.7 (b) above.

SECTION 6.2 MEETINGS AND ACTIONS OF THE COMMITTEES

Meetings and actions of the committees of the Board shall be governed by, held and taken in accordance with the provisions of Article V of these Bylaws, concerning meetings and other actions of the Board. Minutes shall be kept of each meeting of any committee of the Board and shall be filed with the corporate records. The Board may adopt rules for the governance of any committee not inconsistent with the provisions of ORS Chapter 65, the Articles of Incorporation or these Bylaws, or in the absence of rules adopted by the Board, the committee may adopt such rules.

ARTICLE 7

OFFICERS

SECTION 7.1 OFFICERS

The officers of the Corporation shall include a Chairman of the Board, a Secretary, and a Treasurer. The Corporation may also have, at the Board's discretion, an Executive Director, an assistant Executive Director, a Vice-Chairman of the Board, one or more assistant Secretaries, one or more assistant Treasurers, and such other officers as may be appointed in accordance with Section 7.3 of these Bylaws. The offices of Secretary and Treasurer may be held by the same person.

SECTION 7.2 ELECTION OF OFFICERS

The officers of the Corporation shall be chosen by the Board, and each shall serve at the pleasure of the Board, subject to the rights, if any, of an officer under any contract of employment. A term of service, if any, may be specified by the Board.

SECTION 7.3 REMOVAL OF OFFICERS

Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, with or without cause, by the Board, or, except in case of an officer chosen by the Board, by an officer on whom such power of removal may be conferred by the Board.

SECTION 7.4 RESIGNATION OF OFFICERS

Any officer may resign upon written notice to the Corporation without prejudice to the rights, if any, of the Corporation under any contract to which the officer is a party. A resignation is effective when the notice is effective under ORS Section 65.034, unless the notice specifies a later effective date. Once delivered, a notice of resignation is irrevocable unless revocation is permitted by the Board.

SECTION 7.5 VACANCIES IN OFFICE

A vacancy occurring in any office because of death, resignation, removal or other cause, shall be filled in the manner prescribed in these Bylaws for regular appointment to that office.

SECTION 7.6 STANDARDS OF CONDUCT

An officer shall discharge his or her duties: in good faith; with the care an ordinarily prudent person in a like position would exercise under similar circumstances; and in a manner the officer reasonably believes to be in the best interests of the Corporation.

SECTION 7.7 RESPONSIBILITIES OF OFFICERS

(a) **Chairman of the Board**. If a Chairman of the Board is elected, that person shall preside at meetings of the Board and shall exercise and perform such other powers and duties as the Board may assign from time to time. If there is no Executive Director, the Chairman of the Board shall also be the Executive Director and shall have the powers and duties of the Executive Director of the Corporation prescribed by these Bylaws.

(b) **Vice-Chairman of the Board**. If a Vice-Chairman of the Board is elected, that person shall preside at meetings of the Board in the absence of the Chairman of the Board, and shall exercise such other powers and duties as the Board may assign from time to time.

(c) **Executive Director**. Subject to the control and supervision of the Board, if empowered by the Board to do so, the Executive Director shall be the general manager of the Corporation and shall be the "President" within the meaning of ORS Chapter 65 and shall generally supervise, direct and control the activities and affairs and the officers of the Corporation. The Executive Director, in the absence of the Chairman of the Board, or if there be none, shall preside at all meetings of the Board. The Executive Director shall have such other powers and duties as may be prescribed by the Board or these Bylaws.

(d) **Assistant Executive Director**. In the absence or disability of the Executive Director, the assistant Executive Director, if any, in order of their rank, shall perform all of the duties of the Executive Director, and, when so acting, shall have all the powers of and by subject to all of the restrictions upon the Executive Director. The assistant Executive Director shall have such other powers and perform such other duties as from time to time may be prescribed for them by the Board or the Bylaws.

(e) **Secretary**.

(i) **Book of Minutes**. The Secretary shall keep or cause to be kept, at the principal office or such other place as the Board may direct, a book of minutes of all meetings and actions of the Board and of committees of the Board. The

Secretary shall also keep, or cause to be kept, at the principal office, a copy of the Articles of Incorporation and Bylaws, as amended to date, together with such other documents as may be required pursuant to ORS Section 65.771(5).

(ii) **Notices, Seal and Other Duties**. The Secretary shall give, or cause to be given, notice of all meetings of the Board and of committees of the Board required by these Bylaws to be given. The Secretary shall keep the seal of the Corporation, if any, in safe custody and shall have such other powers and perform such other duties as may be prescribed by the Board or the Bylaws.

(f) **Treasurer**.

(i) **Books of Account**. The Treasurer of the Corporation shall keep or maintain, or cause to be kept or maintained, adequate and correct books and accounts of the properties and transactions of the Corporation, and shall send or cause to be sent to the Directors, such financial statements and reports as are required by law or these Bylaws to be given. The books of account shall be open to inspection by any Director at all reasonable times.

(ii) **Deposit and Disbursement of Money and Valuables**. The Treasurer shall deposit all money and other valuables in the name and to the credit of the Corporation with such depositories as may be designated by the Board, shall disburse the funds of the Corporation as may be ordered by the Board, shall render to the Executive Director or Chairman of the Board, if any, when requested, an account of all transactions as the Treasurer and of the financial condition of the Corporation and shall have other powers to perform such other duties as may be prescribed by the Board or the Bylaws.

(iii) **Bond**. If required by the Board, the Treasurer shall give the Corporation a bond in the amount and with the surety or sureties specified by the Board for faithful performance of the duties of the office and for restoration to the Corporation of all its books, papers, vouchers, money and other property of every kind in the possession or under the control of the Treasurer upon death, resignation, retirement or removal from office.

ARTICLE 8

INDEMNIFICATION AND INSURANCE

SECTION 8.1 INDEMNIFICATION

(a) **Indemnification of Directors, Officers, Employees or Agents.**

(i) The Corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative, investigative, or otherwise (other than an action by or in the right of the Corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the Corporation, or is or

was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding, if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the conduct of the person was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which the person reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that the conduct of the person was unlawful.

(ii) The Corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that the person is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit, if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the Corporation. Such expenses shall be limited to reasonable expenses.

(iii) Except as otherwise provided under the Oregon Nonprofit Corporation Act, no indemnification shall be made in connection with a proceeding by or in the right of the Corporation in which the person shall have been adjudged to be liable to the Corporation, or in connection with any other proceeding charging improper personal benefit to the person in which the person was adjudged liable on the basis that personal benefit was improperly received by the person.

(iv) To the extent that a director, officer, employee or agent of the Corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in subparagraph (i) and (ii) of this Section 8.1, or in defense of any claim, issue or matter therein, the director, officer, employee or agent shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by the director, officer, employee or agent in connection therewith.

(v) Notwithstanding any of the provisions contained herein, a director, officer, employee or agent of the Corporation may not be indemnified until 20 days after the effective date of written notice to the Attorney General of the state of Oregon of the proposed indemnification.

(b) **Determination of Whether to Indemnify.** Any indemnification under subparagraph (i) and (ii) of paragraph (a) above (unless ordered by a court) shall be made by the Corporation only as authorized in the specific case upon a determination that

the indemnification of the director, officer, employee or agent is proper in the circumstances because the director, officer, employee or agent has met the applicable standard of conduct set forth in subparagraphs (i) and (ii) above. The determination shall be made:

(i) by the Board by a majority vote of a quorum consisting of directors who were not parties to the action, suit or proceeding; or

(ii) if a quorum under subparagraph (i) above is not obtainable, by a majority vote of a committee duly designated by the Board, consisting solely of two or more Directors not at the time parties to the action, suit or proceeding; or

(iii) by special legal counsel selected by the Board or its committee in a manner prescribed in subparagraphs (i) or (ii) immediately above, or if a quorum of the Board cannot be obtained under subparagraph (i) immediately above and a committee cannot be designated under subparagraph (ii) immediately above, the special legal counsel shall be selected by majority vote of the full Board, including the Directors who are parties to the action, suit or proceeding.

The authorization of indemnification and the evaluation as to the reasonableness of expenses shall be made in the same manner as the determination that indemnification is permissible, except that if the determination is made by special counsel, authorization of indemnification and evaluation as to the reasonableness of expenses shall be made by those entitled under (iii) above to select counsel.

(c) **Advance Payment of Litigation Expenses**. Expenses incurred in defending any civil or criminal action, suit or proceeding may be paid by the Corporation in advance of the final disposition of such action, suit or proceeding if: (i) the person furnishes the Corporation a written affirmation of the person's good faith that the person has met the standard of conduct set forth in paragraph (a) subparagraphs (i) or (ii) of this Section 8.01; and (ii) the person furnishes the Corporation with a written undertaking, executed personally or on the person's behalf, to repay the advance if it is ultimately determined that the person did not meet the standard of conduct.

(d) **Indemnification Provisions Not Exclusive**. The indemnification provided by this Section 8.1 shall not be deemed exclusive of any other rights to which those indemnified may be entitled under the Corporation's Articles of Incorporation, Bylaws, any agreement or general or specific action of the Board.

SECTION 8.2 INSURANCE

The Corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another Corporation, against any liability asserted against or incurred by the director, officer, employee or agent and incurred by the person in any such capacity or arising out

of the person's status as such, whether or not the Corporation would have the power to indemnify the person against such liability under the provisions of this Section 8.1.

ARTICLE 9

CONSTRUCTION AND DEFINITIONS

Unless the context otherwise requires, the general provisions, rules of construction and definitions in the Oregon Nonprofit Corporation Act shall govern these Bylaws. Without limiting the generality of the above, the masculine gender includes the feminine and neuter, the singular includes the plural, and the plural includes the singular, and the term "person" includes both a legal entity and a natural person.

ARTICLE 10

AMENDMENTS

Subject to the provisions set forth in ORS Section 65.461, these Bylaws may be amended by a majority of the Directors of the Corporation; provided, however, no amendment which conflicts with the express language of Title III, Section 301 of the Oregon Resource Conservation Act of 1996 (the "Act") shall be valid.

ARTICLE 11

OREGON RESOURCE CONSERVATION ACT OF 1996

The Corporation, its directors, officers and employees shall at all times act in accordance with the provisions of the Act.

CERTIFICATE OF SECRETARY

I, the undersigned, certify that I am the presently elected and acting Secretary of **DESCHUTES RIVER CONSERVANCY**, an Oregon nonprofit corporation, and the above Bylaws are the Bylaws adopted by the Board of Directors, effective the ____ day of _____, 2004.

_____

JAMES D. NOTEBOOM, Secretary

Appendix C. Niobrara Council Bylaws

NIOBRARA COUNCIL — Bylaws

ARTICLE I.

1. **NAME:** The name of this organization shall be the Niobrara Council. The Niobrara Council shall be an intergovernmental cooperative body formed under the authority of Sections 72-2001 et seq, Nebraska Revised Statutes, as amended, which became effective July 13, 2000.

   a. The powers of the Niobrara Council shall be as provided in Sections 72-2001 et seq, Nebraska Revised Statutes, as amended, including all subsequent amendments and as determined necessary by the Niobrara Council to manage the Niobrara National Scenic River limited by the Laws of the State of Nebraska and the Federal Wild and Scenic Rivers Act.

   b. The Niobrara Council shall have specific responsibility, effective July 13, 2000, regarding development in the Niobrara Scenic River Corridor and shall serve as the state designated organization for such issues in cooperation with Brown, Cherry, Keya Paha, and Rock Counties. Specific provisions are outlined in Sections 72-2001 et seq, Nebraska Revised Statutes, as amended.

   c. The affairs of the Niobrara Council are to be managed by the officers of the Niobrara Council as hereinafter set forth.

2. **MISSION:** The mission of the Niobrara Council shall be to assist in management of the Niobrara Scenic River pursuant to the designation of the portions of the Niobrara River as a Scenic River under the National Scenic River Designation Act (Public Law 16 USC 1274(a)(117)) and Sections 72-2001 et seq, Nebraska Revised Statutes, as amended, in all aspects thereof, considering and in respect of local and governmental input, public and private landowner rights, to maintain and protect the integrity of the resources associated with the Niobrara National Scenic River.

   a. The Niobrara Council will actively pursue and perform its responsibilities in meeting the purposes as set forth herein.

   b. The Niobrara Council will work to establish partnerships and collaborative efforts to address management issues. The council will also provide recommendations, proposals, and assistance to appropriate governmental entities, including Brown, Rock, Keya Paha and Cherry Counties, the National Park Service, the U.S. Fish and Wildlife Service, local governments, landowners, and such other appropriate entities involved in management of the Niobrara National Scenic River as set forth in these bylaws.

3. **HEADQUARTERS:** The headquarters and principal office of the Niobrara Council shall be located 280 North Main Street, Valentine, Nebraska 69201. The mailing address shall be POB 206, Valentine, Nebraska 69201. The Niobrara Council may have such other offices as may be designated by the Council as herein provided, from time to time, or as the business of the Niobrara Council may require from time to time, which may be established, upon notice and approval of the same as hereinafter provided.

4. **MEMBERSHIP:** Members of the Niobrara Council shall be selected pursuant to Sections 72-2001 et seq, Nebraska Revised Statutes, as amended.

   Membership of the Niobrara Council shall be composed of sixteen members each serving a three-year term from date of appointment until a successor is appointed, qualified, or re-appointed. The council members shall serve at the pleasure of the appointing board or the Governor of the State of Nebraska. As provided in Sections 72-2001 et seq, Nebraska Revised Statutes, as amended, the membership of the Niobrara Council shall be as follows:

   1. One commissioner from Rock County.
   2. One commissioner from Brown County.
   3. One commissioner from Keya Paha County.
   4. One commissioner from Cherry County.
   5. One representative from the Middle Niobrara Natural Resources District.
   6. One representative from the Lower Niobrara Natural Resources District.
   7. One representative from the Nebraska Game and Parks Commission.
   8. One representative from the U.S. Fish and Wildlife Service.
   9. One representative from the National Park Service.
   10. One landowner from Rock County.
   11. One landowner from Brown County.
   12. One landowner from Keya Paha County.
   13. One landowner from Cherry County.
   14. One representative from a recreational business operating within the Niobrara Scenic River corridor.
   15. One representative from the timber industry operating within the Niobrara Scenic River corridor.
   16. One representative from a recognized non-profit environmental, conservation, or wildlife organization.

5. **GOVERNANCE OF THE NIOBRARA COUNCIL:** The Niobrara Council shall be governed by elected principal officers as outlined Sections 72-2001 et seq, Nebraska Revised Statutes, as amended. These officers shall administer, guide, and direct operations, activities and overall direction of the Niobrara Council, including its public meetings. No officer shall have more power than any other member except in these representative functions and capacities. Officers may delegate certain responsibilities to Niobrara Council staff.

6. **PRINCIPAL OFFICERS:** The principal officers of the Niobrara Council shall be a Chair, Vice-Chair, Secretary and Treasurer. All of these officers shall serve a one year term at the pleasure of the members of the Niobrara Council and shall collectively serve as the Executive Committee. No person shall simultaneously hold more than one office of the Niobrara Council.

7. **ELECTION OF OFFICERS:** The election of officers shall occur at the annual organizational meeting of the Niobrara Council except in the first year when officers will be elected at the first meeting following the effective date of Sections 72-2001 et seq, Nebraska Revised Statutes, as amended, and will serve until the annual organizational meeting in January of 2001. Each position shall be nominated and seconded by the membership. The membership shall have one vote per member for each office. Officers will be elected by a simple majority and shall serve a term of one year unless earlier terminated. Any council member may serve consecutive or multiple terms as such officer.

   Officers may be removed by a simple majority vote of members present at a meeting held for such purpose or at a regular meeting upon which an agenda item shall have been established regarding the same.

8. **DUTIES OF OFFICERS:** Responsibilities and duties for the Niobrara Council officers are outlined below. Officers may delegate certain responsibilities and duties to Niobrara Council staff or other Niobrara Council members, as specifically established.

   a. **CHAIR:** The Chair shall preside at all the meetings of the Niobrara Council and shall perform the duties of the Chair as hereinafter established and shall provide for direction of various committees of the Niobrara Council. The Chair shall also be vested with the co-power of check issuance. The Chair shall be the chief executive officer of the Niobrara Council, shall have general charge and supervision over and responsibility of business and affairs of the Niobrara Council unless otherwise directed and determined by the Niobrara Council membership.

   b. **VICE-CHAIR:** The Vice-Chair shall stand in the Chair's stead in the event of the Chair's absence or should the Chair become incapacitated or removed from office by the Niobrara Council, upon which event the Vice-Chair shall replace the Chair and shall serve as acting Chair, pending permanent replacement of the Chair as provided in these Bylaws. When performing as acting Chair, the Vice-Chair shall perform the duties of the Chair, and when so acting, shall possess all the powers and be subject to all restrictions as the Chair would have been in his or her own right. The Vice-Chair shall also be vested with the co-power of check issuance. The Vice-Chair shall also perform such other duties as, from time to time, may be assigned to him or her by the Chair or the Niobrara Council membership.

   c. **SECRETARY:** The Secretary shall take minutes of the Niobrara Council meetings, be responsible for following the open meetings laws of the State of Nebraska and publishing notices of such meetings, and distributing minutes of the meetings as required by law. The Secretary shall also be vested with the co-power of check issuance. Additionally, the Secretary shall maintain an agenda as provided by public meetings laws of the State of Nebraska and shall furthermore direct such monthly reports as may necessarily be required for proper transaction of Niobrara Council business to the necessary entities. The Secretary shall:

      1. Keep the minutes of the proceedings of the Niobrara Council. Provide the same to news media requesting the same. Publish the same as required by law;

      2. Establish and see that all notices are given in accordance with law;

3. Maintain an agenda in accordance with the open meetings laws of the State of Nebraska and post the same at the business office of the Niobrara Council in Valentine, Nebraska, and other public locations that may be deemed appropriate and/or necessary for dissemination of information.

4. Be the custodian of the official records of the Niobrara Council;

5. Keep a register of the phone numbers, post office addresses, and/or other contact information such as e-mail addresses of all persons requesting notice of the meetings of Niobrara Council;

6. Provide copies of documents to be examined at regular and special meetings of the Niobrara Council to interested parties as required by law;

7. Generally perform all duties incident to the office of Secretary and such duties as, from time to time, may be assigned to the Secretary by the Chair or by the Niobrara Council membership.

d. **TREASURER:** The Treasurer shall be responsible as the controller of revenue and expenses and shall provide monthly itemized lists of Niobrara Council expenditures and revenues to the Niobrara Council and the State of Nebraska. The Treasurer shall compile quarterly and annual financial statements and submit to the Niobrara Council and other appropriate entities for review. The Treasurer shall execute, with the concurrence of the Chair and co-execution by any other officer, all checks for the payment of financial obligations. The Treasurer shall furthermore draw and prepare an annual budget for the Niobrara Council and a biennial budget in accordance and consistent with requirements of the State of Nebraska. The Treasurer shall:

1. Have charge and custody and be responsible for all funds of the Niobrara Council in accordance with requirements Sections 72-2001 et seq, Nebraska Revised Statutes, as amended.

2. Receive and give receipts for money due and payable to the Niobrara Council from any source whatsoever and deposit all such money in the appropriate state Niobrara Council fund as Sections 72-2001 et seq, Nebraska Revised Statutes, as amended.

3. Compile and present all claims and expenditures to the Niobrara Council for review at each monthly meeting. Notice shall be made prior to said meetings of these claims and expenditures and a copy provided to council members prior to said meeting. The Revenue and Budget Committee or other committee deemed appropriate shall review all claims prior to final review and approval/denial by the Niobrara Council membership.

4. Coordinate and facilitate an annual audit of the Niobrara Council books with an independent, third party to correspond with the Niobrara Council fiscal year.

9. **FISCAL YEAR OF THE NIOBRARA COUNCIL:** The Niobrara Council fiscal year shall run from July 1 to June 30 of each year in order to correspond with the State of Nebraska fiscal year. Annual financial reports, the annual audit, and the council budget will correspond with the fiscal year.

10. **COMMITTEES OF THE NIOBRARA COUNCIL (Amended February 2006 – Article I, Section 10, this paragraph, addition of Education Committee):** The Niobrara Council shall have eight standing committees which shall include the Executive, Legislative, Revenue and Budget, Personnel and Equipment, Road and Bridge, Resources, Development and Education Committees. At least one member of each committee as hereinafter established, whether regular committees or special committees, shall include one of the county commissioner members of the Niobrara Council. Each committee shall select a chair to provide general guidance, run committee meetings, and serve as a contact point for committee activities. Committees may have members who are not Niobrara Council members and these members may serve in the full capacity of the committee. However, the majority of members of any committee must be Niobrara Council members.

    a. **EXECUTIVE COMMITTEE**. As directed Sections 72-2001 et seq, Nebraska Revised Statutes, as amended, the Executive Committee shall consist of the principal officers of the Niobrara Council. It shall assign the membership of the various other committees and it shall deal with the administrative functions required by the Niobrara Council. The Executive Committee may exercise the power to create various subcommittees, from time to time, as the Executive Committee deems necessary in the proper transaction and implementation of the Niobrara Council's activities and responsibilities.

    b. **LEGISLATIVE COMMITTEE**. The Legislative Committee shall concern itself with the local, state, and federal legislation and regulation which could possibly affect the Niobrara Council and the management of the Niobrara National Scenic River. The Legislative Committee shall also make proposals and recommendations to the State Legislature and other policy making bodies, including the four counties, as may be necessary for proper transaction and implementation of Niobrara Council activities and responsibilities.

    c. **REVENUE AND BUDGET COMMITTEE**. The Revenue and Budget Committee shall concern itself with producing and obtaining revenues, expenditure of funds for the purposes of the Niobrara Council, and development and recommendation of budgets to the full Niobrara Council and the State of Nebraska consistent with state requirements. The Revenue and Budget Committee shall annually review the Niobrara Council budget and shall recommend any modifications for the next fiscal year. In the event that interim action is required, recommendations shall be submitted to the Niobrara Council membership and/or appropriate state authorities for consideration. The Revenue and Budget Committee shall also review and make recommendations on expenditures prior to final review and approval by the Niobrara Council membership.

    d. **PERSONNEL AND EQUIPMENT COMMITTEE**. The Personnel and Equipment Committee shall review staff performance and recommend staff needs and salary levels at the annual meeting and/or the appropriate meeting corresponding with anniversary dates for employment or the beginning of a new fiscal year. This committee will be responsible for hiring and negotiating employment terms for administrative staff. The Personnel and Equipment Committee will also be responsible for development and continuous refinement of an Employee Handbook and associated employee policies and guidelines. This committee will also be responsible for reviewing council equipment needs and requests.

e. ROAD AND BRIDGE COMMITTEE. The Road and Bridge Committee shall review road and bridge conditions and other infrastructure concerns, projects, and proposals within and/or affecting the Niobrara Scenic River Corridor, including public services. The committee shall make recommendations regarding establishment, improvement, and maintenance of the same within and/or affecting the Niobrara Scenic River Corridor, including connecting and access roads. Programs and projects must be consistent with the mission of the Niobrara Council.

f. RESOURCE COMMITTEE. The Resource Committee shall review resource inventory, resource conditions, and resource needs within and/or affecting the Niobrara Scenic River Corridor. The committee shall make recommendations and/or decisions regarding establishment, improvement, restoration, and maintenance of the same and preliminary suggestions regarding needs for development, protection, and improvement of resources within and/or affecting the Niobrara Scenic River Corridor.

g. DEVELOPMENT COMMITTEE. The Development Committee shall review pertinent development and zoning issues, procedures, rules, regulations, and needs within and/or affecting the Niobrara Scenic River Corridor in accordance and with consideration given to pertinent local, state, and federal laws. The committee shall be responsible for development and continued refinement of baseline development/zoning criteria for the scenic river corridor and shall work in conjunction with county zoning administrators and other officials to develop consistent baseline criteria. The committee shall review existing zoning rules and regulations in the corridor for consistency with the National Parks Service General Management Plan (GMP) for the Niobrara National Scenic River and pertinent state and federal laws including the Wild and Scenic Rivers Act. The committee shall review and recommend action on development applications within the Niobrara Scenic River Corridor.

h. EDUCATION COMMITTEE **(Amended February 2006 – Article I, Section 10, Item h).** The Education Committee shall develop and review opportunities for the Niobrara Council's involvement to provide timely and relevant education regarding the Niobrara Scenic River. Activities shall include development of day camps, curriculum for public and private school educational course work, and general Niobrara Scenic River education.

g. AD HOC COMMITTEES. The Chair or council membership may, from time to time, appoint such ad hoc committees, as may be deemed necessary and appropriate. All other rules, regulations and requirements regarding committees, as set forth in these Bylaws shall apply to such ad hoc committees. Ad hoc committees shall be appointed on a temporary basis and shall serve until such time as the committee shall be disbanded or terminated by the Chair or council membership or until the function for which the committee shall have been appointed shall be accomplished.

11. MEETINGS OF THE NIOBRARA COUNCIL:

a. The Niobrara Council shall meet a minimum of six times per year, preferably on the third Thursday of each month in which a meeting is held at the Brown County Courthouse in Ainsworth, Nebraska. The Niobrara Council may meet at places other than the Brown County Courthouse in Ainsworth, Nebraska, and other times provided that a motion is duly made, seconded and carried, and upon proper notification to the public pursuant to and as may be required by the open meetings laws of the State of Nebraska.

b. An agenda of all meetings shall be maintained by the Secretary of the Niobrara Council or his/her designee and shall not be modified later than twenty-four hours prior to the commencement of the meeting. Said notice of agenda shall be as required by Nebraska public meeting laws. Said publication shall take place in publications generally circulated in each of the four counties encompassing the Niobrara Scenic River Corridor including Rock, Brown, Cherry and Keya Paha Counties in Nebraska. A copy of the agenda shall be posted at the business office in Valentine located at 280 N. Main Street in Valentine, Nebraska, for inspection by the public.

c. A simple majority of the council members shall be present at a meeting before any action may be taken by the council. The majority shall be determined from the number of council members who are selected and are serving rather than the number of possible members Sections 72-2001 et seq, Nebraska Revised Statutes, as amended.

d. Any proposed actions on agenda items by the Niobrara Council shall be by motion duly made, seconded, and approved by the Niobrara Council by a simple majority of the members present and serving in a full voting capacity, on a roll call vote, except that any motion to reject or accept zoning regulations or variances shall require a two-thirds vote of all of the council members selected and serving in a voting capacity. A council member may not participate or vote on any matter on which he/she participated or voted as a member of a county board, county planning commission, natural resources board, or other similar capacity, and in such case, the council member shall not be counted for purposes of determining whether vote requirements have been satisfied.

e. Attendance at such meetings shall be mandatory for the members of the Niobrara Council. In the event of the failure of a member or members to attend meetings of the Niobrara Council on a regular basis, the Council may petition the appointing authority for removal and replacement of such member.

f. A special meeting may be called by any member of the Executive Committee or at the request of a simple majority of members of the Niobrara Council selected and serving as voting members. Notice shall be given as provided by law.

g. A member must be present to vote. No proxy votes may be provided or used.

h. All Niobrara Council members will be given a minimum of ten days notice of any meeting in addition to those requirements of notices as provided by law, except for meetings of an emergency nature or special meetings called as provided by law.

i. There shall be an annual organizational meeting of the Niobrara Council held at the first regular meeting of the Niobrara Council of each year, commencing in the year 2001.

j. An agenda of the annual meeting shall be published in January of each year and provided to all members of the Niobrara Council at least ten days prior to the annual organizational meeting of the Council.

k. Regular and special meeting agendas shall be maintained as provided by law.

l. No action may be taken by the Niobrara Council without complying with the requirements as set forth in these bylaws which shall summarily require such action:

1. Be taken at a regular or special meeting.

2. Be based on agenda item.

3. After motion, seconded, and roll call vote at a meeting complying with requirements of quorum and simple majority vote.

m. Emergency meetings. The Niobrara Council may hold such emergency meetings as the open meetings laws of the State of Nebraska shall provide. By these terms, the open meetings laws of the State of Nebraska, particularly Chapter 84, Section 1401, et seq. are adopted and incorporated herein by this reference.

12. **VOTING:**

a. Each member shall have one and only one vote.

b. Each member must be present in order to vote, except in the case of emergency meetings as provided by law.

c. There shall be no vote by proxy allowed.

d. **(Amended October 2005 – Article I, Section 12, Item d)** For all votes of the Niobrara Council on issues of amendment or termination or other modification of existing conservation easements held by the Niobrara Council, no amendment, modification or termination of an existing conservation easement shall be allowed except by affirmative vote of 3/4 of all voting members of the Niobrara Council.

13. **QUORUM:** For purpose of meetings of the Niobrara Council, a quorum shall consist of a simple majority of the members duly selected and serving on the Niobrara Council in a full voting capacity as outlined in Sections 72-2001 et seq, Nebraska Revised Statutes, as amended. A quorum shall be necessary in order to conduct any business of the Niobrara Council at any meeting.

14. **RESIGNATION OF OFFICERS:** A council member may resign from his or her position as an officer on the Niobrara Council by submitting his or her written resignation to the Chair of the Niobrara Council or in the case that the Chair resigns, to the Vice-Chair. Said member shall continue to remain as an officer until such time as his or her resignation shall be accepted by the full Niobrara and his or her replacement is duly appointed and qualified.

The Niobrara Council, in its absolute discretion, may fill all officer vacancies regardless of the cause of such vacancy, for the remainder of the term of said office. Said vacancy to shall be filled as herein provided. Vacancies may be filled by selection from the existing

members on motion to nominate, seconded, and roll call vote by a simple majority vote of members present and serving in a full voting capacity at any regular or special meeting held for such purpose or for which the same has been noted as an agenda item.

15. **RESIGNATION OF COUNCIL MEMBER:** A member may resign from his or her position as a member of the Niobrara Council by tendering said resignation to the Niobrara Council Executive Committee and the body originally appointing the said member and charged with responsibility for appointment of said members as provided in Sections 72-2001 et seq, Nebraska Revised Statutes, as amended. Said member shall continue to remain as a member until such time as his or her resignation shall be accepted by the full Niobrara Council and his or her replacement is duly appointed and qualified by the respective appointing organization or the Governor of Nebraska as provided Sections 72-2001 et seq, Nebraska Revised Statutes, as amended.

    In the event of the vacancy of a member of the Council, for any reason whatsoever, selection of replacement member shall be made by the body originally appointing the said member and charged with responsibility for appointment of said member or the Governor of Nebraska as provided in Sections 72-2001 et seq, Nebraska Revised Statutes, as amended.

16. **PLACEMENT OF ITEMS ON MEETING AGENDAS (Amended October 2005 – Article I, Section 16):** Any member of the Niobrara Council may cause an item to be placed on the agenda for the next regular or special meeting of the Niobrara Council. The Executive Director of the Niobrara Council may place an item on any agenda for any regular or special meeting of the Niobrara Council. Placement of agenda items shall comply with public meetings laws of the State of Nebraska and Article I, Section 8, paragraph C (3) of these bylaws.

    Any item placed on any agenda as provided herein, shall be removed from the agenda for the next regular or special meeting of the Niobrara Council, upon any one of the following occurrences:

    a. Action, whether approval or denial, by the Niobrara Council on the agenda item;

    b. Majority approval by the Executive Committee of the Niobrara Council for removal of any previously placed agenda item.

ARTICLE II.

1. **REVENUE:** The Niobrara Council shall itemize and account for all revenues received during the Niobrara Council's fiscal year. It shall be the responsibility of the Revenue & Budget Committee to identify all possible new sources of revenue for the Niobrara Council. Periodic financial reports shall be provided to the Niobrara Council membership.

    As required by Sections 72-2001 et seq, Nebraska Revised Statutes, as amended, all existing Niobrara Council funds and future funds including legislative appropriations shall be submitted to the State of Nebraska, State Treasurer for deposit in the appropriate state Niobrara Council Fund, created by Sections 72-2001 et seq, Nebraska Revised Statutes, as amended. Any money in the fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

The Niobrara Council may also affiliate with the Nebraska Community Foundation or other similar community foundations and establish a Niobrara Council Foundation fund or funds in order to accept tax deductible donations, grants, and other assets. These funds shall be governed by the Niobrara Council's Nebraska Community Foundation Committee or other similar committee and shall be monitored by the Niobrara Council Treasurer.

2. **SPENDING AUTHORITY AND PROCEDURE OF THE COUNCIL:** The Niobrara Council shall have the authority to spend and administer all monies received by the Niobrara Council and deposited in the Niobrara Council Fund and/or any foundation fund or similar depository at any time for any and all purposes deemed necessary to manage the Niobrara National Scenic River and as established by the State of Nebraska and other applicable state laws. This is to include, but not limited to, development of contracts, implementation of programs and projects, hiring of office staff, acquisition of necessary equipment, supplies, and facilities, securing of professional services, and any and all reasonable expenditures deemed necessary by the Niobrara Council to fulfill its mission.

   All Niobrara Council members are eligible to make recommendations and vote on expenditures as outlined in Article II, Section 2, and paragraph 1 of these Bylaws. Said expenditures shall be approved by a simple majority vote of the Niobrara Council membership. Allowance or disallowance of such claims shall be based upon criteria for appropriate expenditures as outlined Sections 72-2001 et seq, Nebraska Revised Statutes, as amended, these Bylaws, and at the discretion of the Niobrara Council membership. All expenses shall be listed, itemized, and distributed to each Niobrara Council member and reviewed by the Revenue and Budget Committee prior to each meeting.

   The Niobrara Council shall issue checks drawn upon a designated financial institution, as determined by the Niobrara Council, to satisfy financial obligations. An invoice log, attached expenditure summary sheet, and other necessary and pertinent information and reports shall be submitted to the State of Nebraska Game & Parks Commission, serving as the agent of the state, or other designated state organizational agent for reimbursement to the Niobrara Council's designated local financial institution account.

   (Amended October 2005 – Article II, Section 2, this paragraph) In the event of the failure or inability of the Niobrara Council to have a meeting, whether regular or special, at which meeting an agenda item for approval of claims has previously been listed, then in that event, the Executive Committee may approve and pay, subject to notification of the full Niobrara Council at its next regular meeting, and approval thereof by said Council at said meeting, payment of all essential, recurring obligations of the Council, which items are specifically limited to those expenditures that are necessary for the continued operation of the Council and all of its activities, including wages, sanitation expenses, insurance, motor vehicle licensing, motor vehicle insurance, and other essential, recurring obligations.

   (Amended October 2005 – Article II, Section 2, this paragraph) Upon approval by the Executive Committee of claims as set forth herein, the officers of the Niobrara Council may execute such checks, warrants or other documents of payment necessary to pay the same in a timely fashion.

3. **FISCAL YEAR & BUDGET:** The fiscal year for the Niobrara Council shall run from July 1st to June 30th, which is consistent with the fiscal year the State of Nebraska. The Treasurer and Budget and Revenue Committee shall furthermore draw and prepare an annual budget for the Niobrara Council and a biennial budget in accordance with and consistent with requirements of the State of Nebraska for discussion, modification, and approval by the Niobrara Council membership. The Treasurer and Revenue and Budget Committee shall annually review the Niobrara Council budget and expenditures and shall recommend any modifications for the next fiscal year. In the event that interim action is required, recommendations shall be submitted to the Niobrara Council membership and appropriate state authorities, if necessary, for consideration.

4. **VOTING ON SPENDING (Amended October 2005 – Article II, Section 4, "Except...bylaws,"):** Except as provided in Article II, Section 2, of these bylaws, any vote on spending shall require a simple majority of the Niobrara Council members present and serving in a full voting capacity as provided Sections 72-2001 et seq, Nebraska Revised Statutes, as amended. All Niobrara Council members serving in a full voting capacity are eligible to vote on spending.

5. **FINANCIAL INSTITUTIONS:** At the annual organizational meeting, the Niobrara Council shall select by resolution, financial institutions or other fund depositories, except in the first year when this shall be accomplished by resolution at the first meeting following the effective Sections 72-2001 et seq, Nebraska Revised Statutes, as amended. All deposits and depositories shall be in compliance with the requirements of the State of Nebraska and the Nebraska Revised Statues as amended.

6. **AUTHORITY TO CONTRACT:** The Niobrara Council shall have the authority to contract with local, state, and federal governmental agencies, private entities and individuals. All contracts made by the Niobrara Council shall require approval of a simple majority of the Niobrara Council members or, if agreed upon by the Niobrara Council membership, other appropriate governing bodies such as committees, and shall be for the purposes of the Niobrara Council as outlined in Sections 72-2001 et seq, Nebraska Revised Statutes, as amended.

7. **COUNCIL MEMBER COMPENSATION:** Members of the Niobrara Council shall be compensated for actual and necessary expenses incurred in carrying out duties of the council as provided in Section 81-1174 to Section 81-1177 and Sections 72-2001 et seq, Nebraska Revised Statutes and any amendments thereto, for attending meetings, both regular, annual, special and other necessary council meetings, including emergency meetings and committee meetings, and for performing the responsibilities and duties of the Niobrara Council.

8. **BOND:** All officers and the Executive Director shall be bonded in an amount of sufficient surety as the Council shall, from time to time, determine appropriate, or as provided by state statute.

ARTICLE III.

1. **CONFORMATION WITH ALL APPLICABLE LAWS, FEDERAL, STATE AND LOCAL**: The Niobrara Council hereby adopts, certifies, and agrees to the policy that in the transaction of the Niobrara Council's business, the Niobrara Council shall adhere to all applicable laws, regulations, and ordinances whether federal, state, or local.

2. **AMERICANS WITH DISABILITIES ACT RESOLUTION**: The Niobrara Council hereby expressly adopts, certifies, and agrees to the provisions set forth in the Americans with Disabilities Act. The Niobrara Council's adoption of the Americans with Disabilities Act and the Niobrara Council's specific policy is attached and marked Addendum 1.

3. **ADOPTION OF DRUG FREE WORK PLACE RESOLUTION**: The Niobrara Council hereby expressly adopts, certifies, and agrees to the provisions set forth in the Drug Free Work Place Act. The Niobrara Council's adoption of the Drug Free Work Place Act and the Niobrara Council's specific policy is attached and marked Addendum 2.

4. **ADOPTION OF DRUG ABUSE POLICY RESOLUTION**: The Niobrara Council hereby expressly adopts, certifies, and agrees to the provisions set forth in the Drug Abuse policy. The Niobrara Council's adoption of the Drug Abuse Policy and the Niobrara Council's specific policy is attached and marked Addendum 3.

5. **EMPLOYEE POLICY HANDBOOK AND THE NIOBRARA COUNCIL PERSONNEL POLICIES AND PROCEDURES MANUAL**: The Niobrara Council hereby expressly adopts, certifies, and agrees to the provisions set forth in the Employee Policy Handbook and the Niobrara Council Personnel Policies and Procedures Manual, if and when developed for the Niobrara Council. The Employee Policy Handbook is attached and marked Addendum 4. When Completed, the Niobrara Council Personnel Policies and Procedures Manual will also be attached as Addendum 4a.

6. **MEDIATION ADOPTION AND PROCEDURE**: The Niobrara Council hereby adopts, certifies, and agrees to abide by the policies and procedures set forth in the Nebraska Mediation Act. If the need for mediation should arise during the transactions of the business of the Niobrara Council, the Niobrara Council shall first refer the matter to the appropriate mediation board, including the Nebraska State Board of Mediation.

ARTICLE IV.

1. **DISSOLUTION OF NIOBRARA COUNCIL AND DISPOSITION OF PROPERTY UPON DISSOLUTION:** The Niobrara Council was created by the State of Nebraska in Sections 72-2001 et seq, Nebraska Revised Statutes, as amended. The procedure for dissolution of the Niobrara Council is governed by Nebraska Statute.

   Upon dissolution, the property owned by the Niobrara Council shall be distributed as provided by Nebraska Statute. Any property loaned to the Niobrara Council shall be returned to the proper owner or owners as documented in the Niobrara Council inventory. An inventory shall be conducted at least twice a year and shall be updated upon receipt or acquisition of additional property or assets.

2. **CONSISTENCY WITH STATE STATUTE**: These bylaws are subject to the provisions of the laws of the State of Nebraska, as may be amended from time to time. In the event that any of these bylaws become inconsistent with provisions in State Statute, the provision of State Statutes shall govern.

ARTICLE V.

AMENDMENTS TO THE BYLAWS: Amendments to these bylaws shall require a simple majority vote by the membership of the Niobrara Council present and serving in a full voting capacity at any legal meeting provided that the amendments are presented by motion duly made, seconded, and approved by the Niobrara Council on a roll call vote.

Original version adopted July 13, 2000

Amended March 21, 2002

Amended October 20, 2005

Amended February 22, 2006

Appendix D. Owl Mountain Partnership Bylaws

BYLAWS OF OWL MOUNTAIN PARTNERSHIP
SECTION I: GENERAL

Mission Statement: The mission of the Owl Mountain Partnership (OMP) is to develop adaptive long-term landscape management programs, policies and practices that ensure ecosystem sustainability while also serving the economic, cultural and social needs of the community.

The Owl Mountain Partnership is a team of public land management agencies, private landowners and other interests formed to provide assistance with natural resource planning and implementation.

Goals: The Owl Mountain Partnership is organized to achieve the following goals:

1. Enhance land health across political, administrative, and ownership boundaries based on identified issues and needs.
2. Participate with community-led planning groups that identify community issues to arrive at reasonable solutions and work together to implement the solutions in a coordinated way.
3. Increase community involvement with OMP.
4. Improve education efforts.
5. Solidify, on a long-term basis, the funding and manpower necessary to keep the OMP vision moving forward.

Area: The Owl Mountain Project Area focus is Jackson County, Colorado and encompasses Grand and Larimer Counties in Colorado and portions of Carbon and Albany Counties, Wyoming. Owl Mountain Partnership administers funds for projects outside this area upon approval of the board. Public lands are administered by the U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, State Board of Land Commissioners, Colorado Division of Wildlife, Colorado State Forest Service, and Colorado Division of Parks and Outdoor Recreation, as well as Wyoming State agencies. Agriculture, logging and recreation (including outfitting and guiding) provide the bulk of the economic stimulus to the project area.

SECTION II: MEETINGS

Meetings: General meetings of the Steering Committee shall be held at least quarterly. A special meeting may be called by any member of the Executive Committee at anytime or upon petition by any general member in good standing. The meeting held prior to December 31 to elect officers when needed and to approve a tentative budget. The final budget will be approved by the Steering Committee by the March meeting of the fiscal year.

Quorums: At any duly called meeting of the Steering Committee, six members shall constitute a quorum.

Notices, Agenda, Minutes: Written or oral notice of all meetings must be given at least five

days in advance unless otherwise stated. Minutes of meetings should be sent out to all committee members within 10 working days.

SECTION III: MEMBERSHIP

Any person, association, corporation, partnership or estate having an interest in the objectives of the project may be considered eligible to apply for membership to the Steering Committee.

Election: Applications for membership may be in writing or by verbal nomination by members of the Owl Mountain Partnership Board of Directors. Approval of new members shall be by vote of current board members.

Termination (Resignation and delinquency): Any member may resign from the Steering Committee upon written or oral request to either chairperson of the Board.

Voting: Although the intent of the Steering Committee is to operate and make all decisions by consensus, in any proceeding in which voting by members is called for, each member in good standing shall be entitled to cast one (1) vote. If there is more than one representative from an agency, that agency shall be entitled to one (1) vote.

Orientation: At regular intervals, orientation on the purposes and activities of the Owl Mountain Partnership shall be conducted for the following groups: new members, sub-committee chairmen, other participating committees and the general public.

SECTION IV: STEERING COMMITTEE

Composition of the Board: The Steering Committee should include a broad representation of landowners; federal, state, and local agencies; members of the environmental community; small landowners and the general public. Specifically, the committee should have, at a minimum, four landowners (or Ranch Managers) from within the project area; one representative from the Bureau of Land Management, U.S. Forest Service, Natural Resources Conservation Service, U.S. Fish and Wildlife Service, Colorado Division of Wildlife, Colorado State Forest Service, State Board of Land Commissioners and Colorado Division of Parks; small landowners and area businessmen within Jackson County and the environmental community.

Executive Committee: The Executive Committee of the Steering Committee shall consist of two co-chairpersons, one secretary/treasurer, one federal agency representative, and one state agency representative. Under emergency circumstances when the full Board cannot be convened, three out of these five will be required to pass a vote.

Vacancies: Vacancies on the Board of Directors should be filled as soon as possible, after discussion with the full membership of the Board. (See election under Section III membership.)

Policy (Statements of position on issues): The Steering Committee is responsible for establishing procedure and formulating policy of the organization. It is also responsible for adopting policies of the organization. These policies shall be reviewed annually and revised as necessary.

Indemnification: The Steering Committee may, by resolution, provide for indemnification by the Board of any and all current or former members and employees against expenses actually and necessarily incurred by them in connection with the defense of any action, suit, or proceeding in which they or any of them are made parties or a party, by reason of having been members or employees of the Board, except in relation to matters as to which such individuals shall be adjudged in such action, suit or proceeding to be liable for negligence or misconduct in the performance of duty and to such matters as shall be settled by agreement predicated on the existence of such liability for negligence or misconduct.

SECTION V: OFFICERS

Determination of Officers: The Steering Committee, at the meeting in November, shall reorganize for the coming year. The Committee shall elect the co-chairperson when there is a vacancy. These officers will be elected from members of the Board. These officers shall take office once elected by the Committee until their resignation. They shall be voting members of the Steering Committee.

Duties of Officers: Co-Chairperson: The Co-Chairperson shall serve as the chief officers of the Owl Mountain Partnership Steering Committee and shall preside at all meetings. In their absence see meetings under Section II meetings. The Co-Chairperson will be responsible for determining that the activities of the steering committee are directed toward achieving project and community needs in the area served by the steering committee.

Project Manager: The Project Manager will develop, coordinate, implement, monitor, supervise and administer an integrated multi-government/private entity prototype partnership program to resolve wildlife/livestock/human interaction conflicts using the ecosystem approach to landscape and community management. He (or she) shall serve as advisor to the Board of Directors on program planning and shall assemble information and data and cause to be prepared special reports as directed by the Board or required by the project. The Project Manager will be a member of the steering committee. With assistance of the chairperson, the Project Manager shall be responsible for administration of the project in accordance with the policies and regulations of the steering committee.

The Project Manager shall be responsible for hiring, discharging, directing and supervising all project employees. With the cooperation of the steering committee, the Project Manager will be responsible for the preparation of an annual operating budget which will cover all day-to-day activities of the project, subject to the approval of the Board. His or her duties will also include: (a) Supervisor of all OMP or shared personnel; (b) Develop new approaches and methods of resolving wildlife/livestock/human use conflicts; (c) Educate and communicate knowledge gained from the project to land management agencies, county entities, landowners and public/private sectors for use on a statewide or nationwide basis; and (d) Aid in the development of research projects to fill knowledge gaps identified by the steering committee.

The Secretary/Treasurer shall be responsible for the safeguarding of all funds received for the project and for their proper disbursement. Checks are to be signed by the Secretary/Treasurer and the Project Manager, or, in the absence of either one, by one of the Co-Chairperson. The

Co-Chairperson shall cause a quarterly financial report to be made to the steering committee. The Secretary/Treasurer will prepare and give a financial report to the steering committee for their approval at each steering committee meeting. Monetary decisions (expenditures) in amounts of up to $500.00 will be made by the Project Manager and Secretary/Treasurer. Projects which will require expenditures greater than $500.00 will require the approval of a majority of those steering committee members in attendance, providing that a quorum is present. All expenditures must be thoroughly documented.

ARTICLE VI: COMMITTEES AND SUB-COMMITTEES

Appointment and Authority: The Co-Chairperson of the Executive committee by and with the approval of said steering committee Board shall appoint all sub-committees and sub-committee chairmen. The Co-Chairperson may appoint such ad hoc committees and their chairperson as deemed necessary to carry out the project. Committee appointments shall be at the will and pleasure of the Co-Chairperson and shall serve concurrent with the term of the appointing Co-Chairperson, unless a different term is approved by the steering committee.

It shall be the function of all committees to make investigations, conduct studies and make recommendations to the steering committee and to carry on such activities as may be delegated to them by the Co-Chairperson.

Limitation of Authority: No action by any member of the steering committee, or employee shall be binding upon, or constitute an expression of the policy of the steering committee until it shall have been approved or ratified by the committee members.

Sub-committees shall be discharged by the Co-Chairperson when their work has been completed and their reports accepted, or when, in the opinion of the steering committee, it is deemed wise to discontinue the sub-committees.

Whenever possible, the steering committee will integrate management efforts with those of private land holders and assist in conserving and restoring the health and productivity of the land. However, the steering committee has no management authority on private lands and will work only with interested land holders. The steering committee will not attempt to dictate private land practices.

Testimony: Once a committee or sub-committee=s action has been approved by the full steering committee, it shall be incumbent upon the committee chairmen, or, in their absence, which they designate as being familiar enough with the issue, to give testimony to, or make presentations before, civic and governmental agencies and the general public.

ARTICLE VII: FINANCES

Funds: All money acquired through the Owl Mountain Partnership shall be placed in a general operating fund. Funds unused from the current year=s budget will be carried over.

Disbursements: The Project Manager and Secretary/Treasurer (or in one of their absences, one of the Co-Chairperson) is authorized to make disbursements on accounts and expenses provided for in the budget without additional approval of the steering committee. Disbursement shall be by check. For expenditures of up to $500.00, the Project Manager and Office Manager must approve; expenditures in excess of $500.00 will require the approval of the majority of members present at a steering committee meeting, provided a quorum has been reached.

Fiscal Year: The fiscal year shall close on December 31st of the current year.

Budget: In December of each calendar year, a preliminary budget will be prepared by the Project Manager and Secretary/Treasurer. The full steering committee shall adopt the budget prior to initiation of the field season, but in no case later than April 30th of the current fiscal year

ARTICLE VIII: AMENDMENTS

Revisions: These bylaws may be amended or altered by six members of the steering committee at any regular or special meeting, providing the notice for the meeting includes the proposals for amendments. Any proposed amendments or alterations shall be submitted to the Board in writing, at least ten (10) days in advance of the meeting at which they are to be acted upon.
Adopted by the Owl Mountain Partnership Board of Directors at their meeting on March 3, 2010.

Cary Lewis, Co-Chairperson	**Date**
Jack Haworth, Co-Chairperson	**Date**

Appendix E. Siuslaw Watershed Council Bylaws

SIUSLAW WATERSHED COUNCIL
BYLAWS
Approved on June 4, 1997 by the Lane County Board of Commissioners
Revisions adopted by the Siuslaw Watershed Council on April 29, 1998 and May 31, 2000
Revised for legal clarity July 13, 2005; adopted January 25, 2006
Revised for geographic update and procedural clarification April 12, 2006; adopted July 26, 2006

I. MISSION

The Siuslaw Watershed Council supports sound economic, social, and environmental uses of natural and human resources in the Siuslaw River basin. The Council encourages cooperation among public and private watershed entities to promote awareness and understanding of watershed functions by adopting and implementing a total watershed approach to natural resource management and production.
Subject to the expressed limitations and restrictions contained in these Bylaws, the Siuslaw Watershed Council, hereafter known as the "Council", may engage in any lawful activity for which such organizations may be organized.

II. GEOGRAPHIC AREA

The geographic covered by the Siuslaw Watershed Council includes all land drained by the Siuslaw River basin and adjoining coastal lakes.

III. STATEMENTOF SHARED VALUES

A total watershed approach means:

- Locally driven planning and action with voluntary participation.
- Action should be based on shared vision and goals, with consideration for individual goals.
- Striving to represent all interests in the basin, being inclusive and recognizing the connections among economics, society, and the environment.
- Assessment, planning, and implementation actions are objective and are available to all landowners in the Siuslaw watershed.
- Considering all natural resources from ridge to ridge.
- Operating through teamwork and cooperative implementation - no single interest or interest groups dominate.
- Actions are valuable to the participants and, where possible, actions lead to measurable outcomes.
- Actions are undertaken with respect for and permission from all landowners involved in any watershed projects or activities.
- The Council operates at a variety of scales, such as the watershed, the sub-basin, and the reach.

IV. GOALS

Provide a basin-wide framework for coordination, cooperation and citizen involvement in improving and maintaining the health of the Siuslaw watershed.
Promote the protection, conservation, restoration and enhancement of fish, wildlife, forests, timberland, cropland, and water quality and quantity in the Siuslaw watershed
Contribute to the social and economic stability and productivity of families and communities within the Siuslaw watershed by supporting and attracting resources for local employment.
Promote monitoring of the biological, physical and social components of the Siuslaw watershed.

V. MEMBERSHIP AND ORGANIZATION

A. General Membership Guidelines

The Siuslaw Watershed Council is part of Oregon's watershed improvement program. The Council formed under HB3441 to address watershed management issues through information, education, and coordination among key interests and stakeholders in the Siuslaw River basin. Membership is open to all people who live in and/or have an interest in participating in the Council and who have paid annual dues.
A Leadership Board, , representing the interests stated in these Bylaws, shall be confirmed by consensus by the members of the Siuslaw Watershed Council annually. Vacant positions may be filled at any general meeting. The Leadership Board is responsible for ratifying policies that promote the goals of the Council.
The Council shall elect **4** officers and **4** at large members to the Executive Committee from the Leadership Board membership annually.
An Executive Committee consisting of-the current officers, the past chairperson, and four members or alternates of the Leadership Board shall conduct the administrative business of the Council.

B. Meetings

The membership of the Siuslaw Watershed Council shall meet regularly according to Oregon open meetings law. The membership will hold at least one (I) annual general meeting per fiscal year. Special meetings can be called by the Leadership Board or the Executive Committee at any time and shall be conducted according to Oregon open meetings law.

C. Quorum
Nine Leadership Board members including at least 3 from the Executive Committee will constitute a quorum of the Leadership Board. A simple majority of the Executive Committee shall constitute a quorum of the Executive Committee.

D. Decision Making
The Siuslaw Watershed Council, including its members, Leadership Board, Executive Committee and officers, operates by consensus. Consensus is defined to mean members present addressing a particular issue, action, project, or question either agree with, accept, or choose not to block the process or decision.

E. Community Representation
The Siuslaw Watershed Council shall consider and respect a broad range of community interests and stakeholders in all of its activities. It is the policy of the Council to encourage the participation of locally active groups and organizations, public and private.

VI. LEADERSHIP BOARD

A. Membership of the Leadership Board:
The Leadership Board shall collectively represent the types of interests, livelihoods, and/or land ownership found on the Siuslaw River basin. The Leadership Board shall include, but not be limited to, the following interest groups. Each interest group shall have one (1) primary representative and may have one (1) alternate representative.

Government/Agency/Organization Representatives*	Interest Group Representatives	Landowner Representatives
• Federal Land Management Agency	• Academic/Scientific	• North Fork Siuslaw
• County Government	• Agriculture/Ranching	• Lower Siuslaw
• Port of Siuslaw	• Commercial Fishing	• Middle Siuslaw
• State Government	• Environmental	• Upper Siuslaw
• City Government	• Industrial Timber	• Deadwood Creek
• Soil & Water Conservation District	• Natural Resource Related Recreation	• Indian Creek
• Confederated Tribes of Coos,	• Public Education, K- 12	• Lake Creek

Lower Umpqua and Siuslaw Indians	• Ecosystem Workers	• Wildcat Creek
• Small Woodlot Owner		• South Coastal Lakes
appointed by the government/ agency/organization body		• North Coastal Lakes • At-Large

Appendix F. Walla Walla Watershed Partnership Bylaws

WALLA WALLA WATERSHED MANAGEMENT PARTNERSHIP BYLAWS

ARTICLE I. NAME These bylaws are for the Water Management Board (Board) in the Walla Walla basin, established as the Walla Walla Watershed Management Partnership.

ARTICLE II. PURPOSES

The purpose and mission of the Board is to implement the pilot local Walla Walla water management program in accordance with the enabling legislation under Ch. 183, 2009 Session Laws created by Second Substitute House Bill 1580. The legislature made findings that the Walla Walla watershed community faces substantial challenges in planning for future water use and meeting the needs of fish, farms, and people, and that the participants in the Walla Walla watershed planning group have demonstrated exceptional cooperation in developing an innovative water management concept that enhances flexibility in water use while protecting ecological functions. The Board having been constituted and empowered by such legislation, hereby and herewith adopts the following bylaws and future amendments to implement the purposes of the enabling legislation in the planning area within Water Resource Inventory Area 32 as described in Attachment A.

ARTICLE III. BOARD COMPOSITION APPOINTMENT: The Board must be composed of nine (9) members appointed in accordance with Ch. 183, 2009 Session Laws, to represent the following:

(a) The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) as the federally recognized tribes within the planning area;
(b) Walla Walla County Board of Commissioners as a county in the planning area;
(c) Columbia County Board of Commissioners as a county in the planning area;
(d) City of Walla Walla Council as the largest Washington city in the planning area;
(e) Gardena Farms Irrigation District #13 Board of Directors (GFID) as the entity or person who uses the greatest quantity of water in the planning area;
(f) Walla Walla County Conservation District Board of Supervisors and the Columbia Conservation District Board of Supervisors as the conservation districts in the planning area jointly appoint one member;
(g) Members appointed in (a) through (f) in this section appoint the remaining three members, who must be residents of the planning area. One member must be a water rights holder in the planning area; one member must represent environmental interests in the planning area, and; one member must be a citizen at large.

ALTERNATE: Each required government or entity appointing a Board member in (a) through (f) in this section may, in accordance with its own procedures, designate an Alternate Board member to represent the government or entity on the Board. An Alternate Board member designated by an appointing government or entity must provide certification of their Alternate

Board member status. In the absence of the Board member, the designated and certified Alternate Board member may act in all lawful ways as the Board member as necessary for full and complete exercise of the Board memberís authority.

REPLACEMENT: In accordance with Ch. 183, 2009 Session Laws, if for any reason one of the required governments or entities to be represented on the Board declines to participate, the remaining Board members may invite another local government within the planning area to join the Board and will notify the government or entity declining to participate

TERM: In accordance with Ch. 183, 2009 Session Laws, each member of the Board shall serve a two-year term and may be reappointed for an additional term. Members may continue to serve on the Board until a new appointment is made.

RESIGNATION: Any Board member may resign at any time by delivering written notice to the Chair or by giving oral or written notice at any meeting of the Board. Any such resignation shall take effect at the time specified therein, or if the time is not specified, upon delivery thereof and, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective. If the resigning member is an appointee of a government or entity, members in (a) through (f) above, the appropriate government or entity will appoint a new member to serve for the unexpired term of the resigning member; provided, if the appropriate government or entity declines to make an appointment or fails to make an appointment within 45 days, the remaining Board members may invite another local government within the planning area to appoint a member to the Board. If the resigning member is one of the three Board members appointed in (g) above, the Board members appointed in (a) through (f) above will appoint a new Board member from the planning area to serve for the unexpired term of the resigning member.

ARTICLE IV. BOARD CHAIR AND BOARD DELEGATION

ELECTION: The Chair to the Board shall be a Board member elected by majority vote of the Board at the annual Board meeting and shall preside over the Board. A Vice Chair of the Board shall be a Board member elected by majority vote of the Board at the annual Board meeting, who shall preside as chair pro-tem in absence of the Chair of the Board. If the Chair and Vice Chair are unable to attend a meeting of the Board, the Chair shall designate another Board member to serve as acting chair.

TERM: The Chair and Vice Chair shall serve a one-year term, with no limitations on future terms. Any Officer may be removed by a majority vote of the Board (excluding the Officer to be removed). Upon the death, removal, resignation, or incapacity of an Officer of the Board, a majority of the Board shall elect a successor.

DELEGATION: The Board may take action by motion to specifically grant to the Chair or Vice Chair the Boardís authority to execute certain contracts and agreements, or conduct any other administrative Board function, including such official Board business as is reasonably related to or contemplated with such authorization.

ARTICLE V. CONDUCT OF BOARD MEMBERS

COMMITMENT: Ch. 183, 2009 Session Laws authorizes the Board with implementing a local pilot water management program in the Walla Walla. This mission can best be accomplished through a local Board comprised of members representing varied and diverse interests. Toward these ends, it is expected that members will commit themselves to the Boardís mission and to understanding each memberís interests and concerns, as well as those expressed by the public; and to using this understanding and sound science to innovatively and effectively implement the program.

PARTICIPATION: The ability of the Board to operative effectively is dependent on the regular and active participation of its members. Board members, at a minimum, are expected to prepare for and participate in regularly scheduled meetings of the Board. They are strongly encouraged to participate in the Boardís various committees as their time allows. It is recognized that unavoidable events or commitments may periodically prevent Board members from attending a regular Board meeting. If a Board member has more than three consecutive absences at regular Board meetings, the Board may request the appropriate appointing authority to replace that Board member or take action to reappoint that citizen member.

ABSENCE: When a member is unable to attend a Board meeting, he or she should make an effort to advise the Chair Staff of any issues which are of concern or of special interest to such member. If the Board memberís government or entity has identified and certified an Alternate Board member, the Alternate Board member may attend and at the roll call shall establish his or her status as the governmentís or entityís Board member to last for the duration of the meeting.

CONFLICTS: In accordance with Ch. 183, 2009 Session Laws, Board members may not engage in any act that is in conflict with the proper discharge of their official duties. Such conflicts of interest include, but are not limited to, holding a financial interest in a matter before the Board. In the event of a conflict of interest, a Board member must identify the conflict and excuse himself or herself from voting or taking any other action on the matter. Board members are bound by and shall comply with the Code of Ethics for Municipal Officers ñ Contract Interests, RCW 42.23. They shall not use their position on the Board for personal gain. Even where no conflict of interest exists under law, Board members are encouraged to disclose ex parte contacts or exposure they have had regarding a matter before the Board and excuse themselves from voting on measures relating to such a matter when they believe that such ex parte contact would prevent them from giving the measure fair consideration or would injure the credibility of the Board.

COMPENSATION: The Board shall receive no compensation for their service as a Board member but may be eligible to receive reimbursement for approved expenditures incurred on behalf of the Board.

ARTICLE VI. QUORUM, CONDUCT, and VOTING

QUORUM: A simple majority of the number of appointed Board members, whether present in person or participating via conference call or other fully audible interface, shall constitute a

quorum at any Board meeting. Members present at a meeting at which a quorum is not present may 1) elect to proceed with the business of the meeting subject to ratification of all action taken whenever a quorum is next present at a meeting, and 2) may elect to adjourn to a definite time and place announced in the open meeting at which a quorum is not present at the time of adjournment.

CONDUCT: The rules of procedure at meetings of the Board and committees of the Board shall be rules contained in Robertsí Rules of Order on Parliamentary Procedure, Newly Revised, so far as applicable and when not inconsistent with these bylaws, state law or any resolution of the Board. Every action of the Board of a permanent nature shall be by resolution. Other actions of the Board may be by motion.

VOTING: All issues shall be decided by a simple majority vote of Board members present at the meetings at which there is a quorum. Normally, voting shall be by voice. However, a roll-call vote may be requested by any member of the Board or may be required for the purposes of the official record. Where Officers are to be elected by the Board, or any changes in the bylaws are to be voted on, or any other action is to be taken whereby a count of the votes of all the Board members may be desired, such election may be conducted by mail or by distribution ballot in such manner as the Officers of the Board shall determine advisable.

ARTICLE VII. MEETINGS OF THE BOARD

REGULAR: The Board shall meet at least monthly on the first Tuesday of the month. Meetings of the Board shall be open to the public and advertised to the extent practicable, and may be held at any place the Chair or a majority of the Board may from time to time select.

SPECIAL: Special meetings of the Board for a specified purpose may be called by the Chair.

ANNUAL: When practicable, the annual meeting of the Board will be held in February of each year. At such meeting, the Board shall elect the Officers of the Board, receive reports on the affairs of the Board, and transact any other business that is within the power of the Board. If an annual meeting has not been called and held within six months after the time designated for it, any Board member may call the annual meeting.

COMMITTEES: Advisory committees, subcommittees and working groups may meet as required.

NOTICE: Notice of each meeting, stating the place, day, and hour of the meeting, shall be given to each Board member of record entitled to vote at the meeting and individuals required to be notified. This notice shall be given at least five (5) days before the date named for the meeting, with the exception of Special Meetings for which 24 hours notice is required.

AGENDA AND ORDER OF BUSINESS: The Chair and Board staff shall be responsible for preparation of the meeting agenda, including Consent Agenda items, and shall establish the order of business for meetings. Any Board member may submit agenda items through the Chair or Board staff. Items for Board consideration shall be scheduled for discussion at least one meeting

prior to any scheduled action thereon; EXCEPT, upon agreement of the Board members an item first presented for discussion may be acted upon at the same meeting. Matters of a routine nature may be acted upon by the Board through use of a Consent Agenda. Any member has a right to remove any item from the Consent Agenda, in which case that item will be transferred to the regular Agenda so that it may be considered and voted on separately.

ARTICLE VIII. ADVISORY COMMITTEES, SUBCOMMITTEES AND WORKING GROUPS

COMMITTEES: The Board must create advisory committees including a policy advisory group and a water resource panel in accordance with Ch. 183, 2009 Session Laws, and shall establish additional subcommittees or working groups as necessary to pursue its stated objectives. Recommendations from advisory committees, subcommittees, and working groups shall be forwarded to the full Board. Members of the Board may attend any advisory committee, subcommittee or working group meeting.

(a) Policy Advisory Group: The Board must invite participation from the Washington State Department of Ecology and the Department of Fish and Wildlife, other affected Washington state agencies, and other interests as appropriate. The Board may also appoint members from local government agencies, academia, watershed and salmon recovery entities, businesses, and agricultural and environmental organizations as the board deems appropriate. The policy advisory group must assist and advise the Board in coordinating and developing water resource-related programs, planning, and activities within the planning area, including the coordination of efforts with all jurisdictions of the planning area and development of the Board's strategic actions.
(b) Water Resource Panel: The Board must appoint members to the water resource panel who have expertise and understanding regarding surface water and groundwater monitoring and hydrological analysis, irrigation management and engineering, water rights, and fisheries habitat and economic development. The Board must invite participation from the Washington State Department of Ecology and the Department of Fish and Wildlife. The water resource panel must provide technical assistance for the development of the local water plans and provide advice to the Board on the criteria for establishment of local water plans and the approval, denial, or modification of the local water plans.
(c) Subcommittees and working groups may be established by the Board and may draw upon membership outside of the Board as needed or appropriate to the subcommittee or working group function. Subcommittee and working group membership may be established by the Board, or at the discretion of the Board, by open public enrollment.

ARTICLE IX. FINANCES

FUNDS: In accordance with Ch. 183, 2009 Session Laws, the Board constitutes an independently funded entity and may provide for its own funding as determined by the Board. The Board may solicit and accept grants, loans, and donations and may adopt fees for services it provides. The Board may distribute available funds as grants or loans to local water plans or other water initiatives and projects that will further the goals of the Board. The Board may acquire, purchase, hold, lease, manage, occupy and sell real and personal property, including

water rights, or any interest in water rights, enter into and perform all necessary contracts, appoint and employ necessary agents and employees, including an executive director and fix their compensation, employ contractors including contracts for professional services, and do all lawful acts required and expedient to carry out the purposes of this chapter. The Board may not impose taxes or acquire property, including water rights, by the exercise of eminent domain.

BUDGET: The Board shall determine its funding needs, approve the operating budget and review expenditures based on monthly and annual financial reports provided at the monthly and annual meetings. All claims presented against the Board by persons furnishing materials, rendering services or performing labor, or for any other contractual or noncontractual purpose shall be approved for payment by the Board or its fiscal agent. Claims may be paid monthly, bi-monthly or in any increment reasonable to the process of the Board or its fiscal agent.

DELEGATION: The Board may take action by motion to empower and entrust the Executive Director to keep accurate accounts of all receipts and disbursements. All funds of the Board shall be disbursed only as approved by the Board provided that the Board may authorize the Executive Director or any other officer, employee or fiscal agent, as is legally permissible, to approve or disapprove reimbursement requests and vouchers for expenses of the Board, arising in the usual and ordinary course of its business and consistent with the approved operating budget, including, but not limited to: expenses incurred by the Board, its committees, or other members and employees in the performance of their duties. Any budget amendment or reallocation of funds among budget lines exceeding 10% of the total operating budget and/or pertaining to salary adjustments must come before the Board for prior approval.

AUDIT: The receipts and disbursements of the Board shall be subject to the audit and accounting procedures established by the State Auditors Office or the Boards fiscal agent. The accounts of the Board shall be open at any reasonable time for inspection to persons authorized by the Board, and duly designated representatives of governments contributing to the Board's support. No member of the Board shall be liable, and no personal liability shall in any event be attached to any Board member in connection with any of the undertakings.

YEAR: The fiscal year of the Board shall be January 1-December 31 of each year.

AVAILABILITY: Ch. 183, 2009 Session Laws identifies that the ability of the Board to fully meet its duties is dependent on the level of funding available to the Board. If sufficient funding is not available to the Board to carry out its duties, the Board may, in consultation with the Washington State Department of Ecology, establish a plan that sets priorities for implementation of the Boardís duties.

ARTICLE X. DIRECTOR AND STAFF

DIRECTOR: The Board as a whole is responsible for developing a job description, appointing and employing through contract or other agreement the Executive Director, and fixing compensation. In accordance with Ch. 183, 2009 Session Laws, Board approved local water plans must be signed by the Executive Director of the Board.

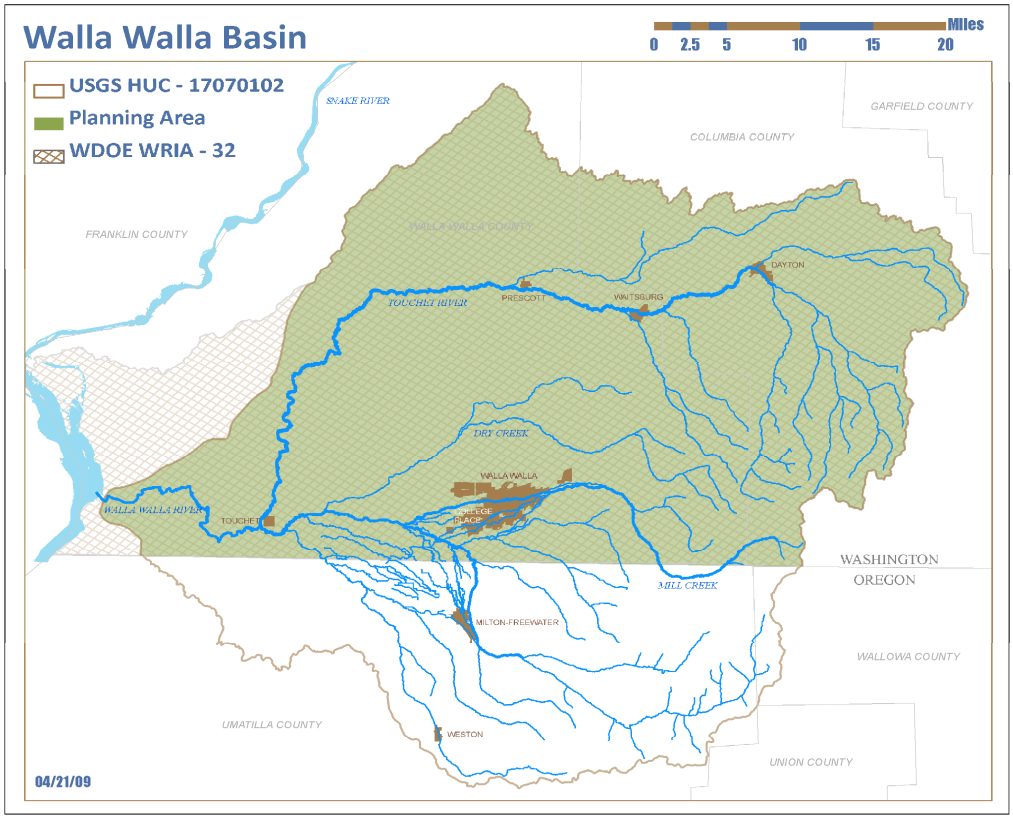
DUTIES: The Executive Director is responsible for appointing and supervising other staff, and has day-to-day responsibility for the Board including carrying out the Boardís goals and Board policy. The Executive Director will attend Board meetings, report on the progress of the Board, and carry out the duties described in the job description. The Board may take action by motion to specifically grant to the Executive Director the Boardís authority to execute certain contracts and agreements, or conduct any other administrative Board function, including such official Board business as is reasonably related to or contemplated with such authorization.

ARTICLE XI. IMMUNE FROM LIABILITY

IMMUNITY: In accordance with Ch. 183, 2009 Session Laws, the Board, and its members and staff, acting in their official capacities, are immune from liability and are not subject to any cause of action or claim for damages arising from acts or omissions engaged in implementing the enabling legislation.

ATTACHMENT A: PLANNING AREA

The Board planning area includes waters in the Walla Walla Basin that drain to the Walla Walla River. The planning area comprises the Washington portion of the Walla Walla watershed, including the mainstem Walla Walla River, Mill Creek, and the Touchet River and their tributaries in parts of Walla Walla and Columbia counties. The Planning Area is defined as the intersection of Water Resource Inventory Area (WRIA) 32 defined by the Washington State Department of Ecology, and the USGS Hyrdological Unit Code (HUC) 17070102. The Planning Area is generally represented by the map below, but any official boundary determinations will be based on a Planning Area GIS file to be maintained by the Board.



2. MEMORANDUM OF UNDERSTANDING

Appendix G. Feather River Coordinated Resource Management Group Memorandum of Understanding

COORDINATED RESOURCE MANAGEMENT PLAN
FOR THE
EAST BRANCH of the NORTH FORK FEATHER RIVER

INTRODUCTION:

The East Branch of the North Fork Feather River (EBNFFR) Coordinated Resource Management (CRM) Plan comprises the 763,600 acre geographical area upstream from confluence of Spanish and Indian Creeks as shown in Figure 1. This land is divided into the following ownership pattern:

National Forest	644,205 Acres	87%
Bureau of Land Management	170 Acres	.02%
Industrial Timber	52,147 Acres	7%
Non-industrial Timber	29,729 Acres	4%
Agricultural	32,236 Acres	4%
Other Private	4,273 Acres	.5%
Other Public	777 Acres	.1%

GOALS & OBJECTIVES:

The CRM Plan objectives are to maintain, protect, and improve, where possible, water quality and quantity in the EBNFFR.

It will be the goal of this CRM Plan to optimize the beneficial uses of the waters of the EBNFFR. These beneficial uses are: domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources.

The CRM will emphasize education to prevent future water quality degradation of the EBNFFR. The CRM Group will cooperatively design and assist with funding for water quality improvement projects to abate water quality degradation in the EBNFFR.

ISSUES & CONCERNS:

The following issues and concerns were identified during the planning process.

Concerns

1. The public and regulatory agencies may confuse erosion *symptoms* with erosion *causes*. The result could be that the public and regulatory agencies would blame today's landowners for one hundred years of cumulative watershed damage.

2. Private lending institutions and public and private grant financing may not keep pace with the rising expectations of the public and regulatory agencies. Landowners could be faced with satisfying raised expectations with no additional resources.
3. Most of the available time, energy, and money will be spent on studies instead of getting work done "on the ground".
4. Consensus agreements forged by this CRM will be used to set precedents or standards that other landowners will be forced to meet without the benefit of this CRM's site specific, cooperative process.
5. Consensus agreements forged by this CRM will become "set in concrete" and later impair the CRM participants' ability to meet unforeseen changes cooperatively.
6. Without the Consensus Rule, the CRM could be used by agencies to regulate private land.
7. Without the Consensus Rule, the CRM could be used by special interests to stop logging and grazing on public lands.
8. Public or private landowners, upstream or downstream, will undo the CRM water quality improvements with poor resource management practices on their lands.
9. Funding agencies and organizations will require water quality solutions so risk-free that landowners will not be able to afford to implement them.

Issues

1. Excessive sedimentation to downstream reservoirs
2. Desertification of riparian, meadow, and range lands
3. Quality of irrigation return flows
4. Alteration of stream morphology
5. Lack of riparian vegetation and unstable streambeds and banks
6. Economic and community stability
7. Overgrazing
8. Degradation of fish and wildlife habitat
9. Walker Mine pollution
10. Landowner rights
11. Gravel extraction from streams
12. Environmental awareness
13. Implementation funds
14. Sufficient knowledge to implement correction measures
15. Access to private land
16. Improved agricultural production
17. Degradation of water quality
18. Loss of agricultural land
19. Recreation
20. Aesthetics

MEMORANDUM OF AGREEMENT (MOA):

The *Memorandum of Agreement* regarding a regional erosion control plan for the EBNFFR watershed, hereto attached as Appendix A, shall become a party of this CRM Plan. The MOA's purposes, objectives, and responsibilities shall become a part, but not necessarily a whole, of the purposes or objectives of this CRM Plan.

MEMORANDUM OF UNDERSTANDING (MOU):

The following MOU's shall be attached to this CRM Plan as references.

Appendix B. Memorandum of Understanding for Coordinated Resource Management as signed by:

Bureau of Land Management
U.S. Forest Service
Science and Education Administration Extension, as endorsed by the National Association of Conservation Districts

Appendix C. Memorandum of Understanding for Coordinated Resource Management in California as signed by:

Bureau of Land Management
Soil Conservation Service
California Association of Conservation Districts
U.C. Cooperative Extension
Department of Conservation
Department of Forestry and Fire Protection
U.S.D.A. Forest Service, Region V
Department of Fish and Game
State Lands Commission
Agricultural Stabilization and Conservation Service
Department of Food and Agriculture
Department of Water Resources

CRM GROUND RULES FOR COORDINATION:

1. It makes sense to cooperate on accomplishing shared goals.
2. *No ONE of us is as smart as ALL of us.*
   Sharing our different experiences is a powerful tool for problem solving. When we disagree, maybe we haven't analyzed the problem and all possible solutions thoroughly - not only from our point of view but from other points of view.
3. *Blaming someone else doesn't solve a problem.*
   It is important to understand the past to understand our future possibilities. We are interested in *what happened* rather than *who did it*. Pointing fingers does not

encourage cooperative win-win solutions to problems.

4. We need to ask the experts, but make our own decisions.
   We need expert advice *plus* a lot of common sense to develop the best solutions for our particular situation.
5. Without consensus by all participants, even win-win solutions may never be implemented.
6. *Change is inevitable.*
   The trust that comes with cooperative problem solving will encourage us to respond positively to future change.

CRM ROLES & MEMBERSHIP:

Executive Committee - provides central guidance, planning, and policies for the CRM; establishes financing, budgeting, and project ranking procedures, as well as project implementation oversight.

The Executive Committee will be made up of four members serving staggered two-year terms. Three members are appointed. The Indian-American Valley Resource Conservation District (IARCD), the Plumas County Board of Supervisors, and the Plumas National Forest each will appoint one person to the Executive Committee. These three Executive Committee members will appoint a member-at-large.

The Executive Committee will meet at least semi-annually.

Steering Committee - provides continuity to the EBNFFR CRM effort from project to project and from year to year; approves the conceptual plan for each project and refers the project to the Finance and Technical Review Subcommittees for design and funding development.

The Steering Committee will be made up of at least one person from each of the signatories of the MOA or their designated representatives, and representatives of interested organizations and community groups. The chairperson of this committee will be chosen annually by the Steering Committee members and take office on January 1.

The Steering Committee will meet at least semi-annually.

Finance Subcommittee - identifies possible funding sources for projects as well as aids in the preparation of funding applications where necessary.

The Finance Subcommittee will be made up of one member each from:

Department of Fish and Game
Department of Forestry and Fire Protection

Department of Water Resources
Indian-American Valley Resource Conservation District
North Cal-Neva Resource Conservation and Development Area
Pacific Gas and Electric Company
Plumas Corporation
Plumas County
Soil Conservation Service
U.S.D.A. Forest Service

The chairperson of this subcommittee will be chosen annually by the subcommittee members.

The Finance Subcommittee will meet as needed.

Technical Review Subcommittees - interdisciplinary teams which provide specific expertise, field evaluation, and coordination; analyzes the information available; identifies and defines objectives and alternatives; arrives at recommendations which are acceptable to the CRM Executive Committee, the Steering Committee, and the participating landowners; prepares required environmental documentation for specific projects when necessary, including cumulative watershed effects analysis.

The chairpersons of these subcommittees will be appointed by the Steering Committee. Members for each subcommittee will be selected by the chairperson of that subcommittee as needed.

The Technical Review Subcommittees will meet as needed.

Indian-American Valley Resource Conservation District (I-ARCD) Directors and Indian Valley, American Valley, Sierra Valley, and Meadow Valley Landowners - identify projects through local contacts. The I-ARCD refers potential projects to the Steering Committee for technical assistance and funding, and oversees the implementation of projects approved by the Executive Committee in a timely manner, meeting project specifications within budget constraints.

Plumas Corporation - provides overall coordination of CRM Plan and Project Coordinator; provides general guidance during implementation of each project.

The Coordinator:
(1) FUNCTIONS AS A CLEARINGHOUSE for griping, blaming, rumors, concerns about hidden motives or agendas, etc. The coordinator can air these issues anonymously so that they are "on the table" with minimum personal risk and repercussions to participants.

(2) PREVENTS "GROUP THINK" by ensuring that new ideas and perspectives continue to challenge the group. "Birds of a feather" do not necessarily make the best decisions.

(3) PREVENTS "GANG WARFARE" by preventing groups from ganging up on individuals or other groups who don't share their views. Ensures that all views on issues have an equal opportunity to be heard and evaluated.

(4) ENSURES THAT THE GROUP IS PROVIDED WITH AS MANY OPTIONS AS POSSIBLE BEFORE A DECISION IS MADE. The more choices the group has, the more possible a win-win, cooperative solution becomes. The coordinator ensures that the group takes the time it needs to make a well informed decision.

(5) COORDINATES LOGISTICS where the group determines that group efforts are more productive and desirable than individual efforts.

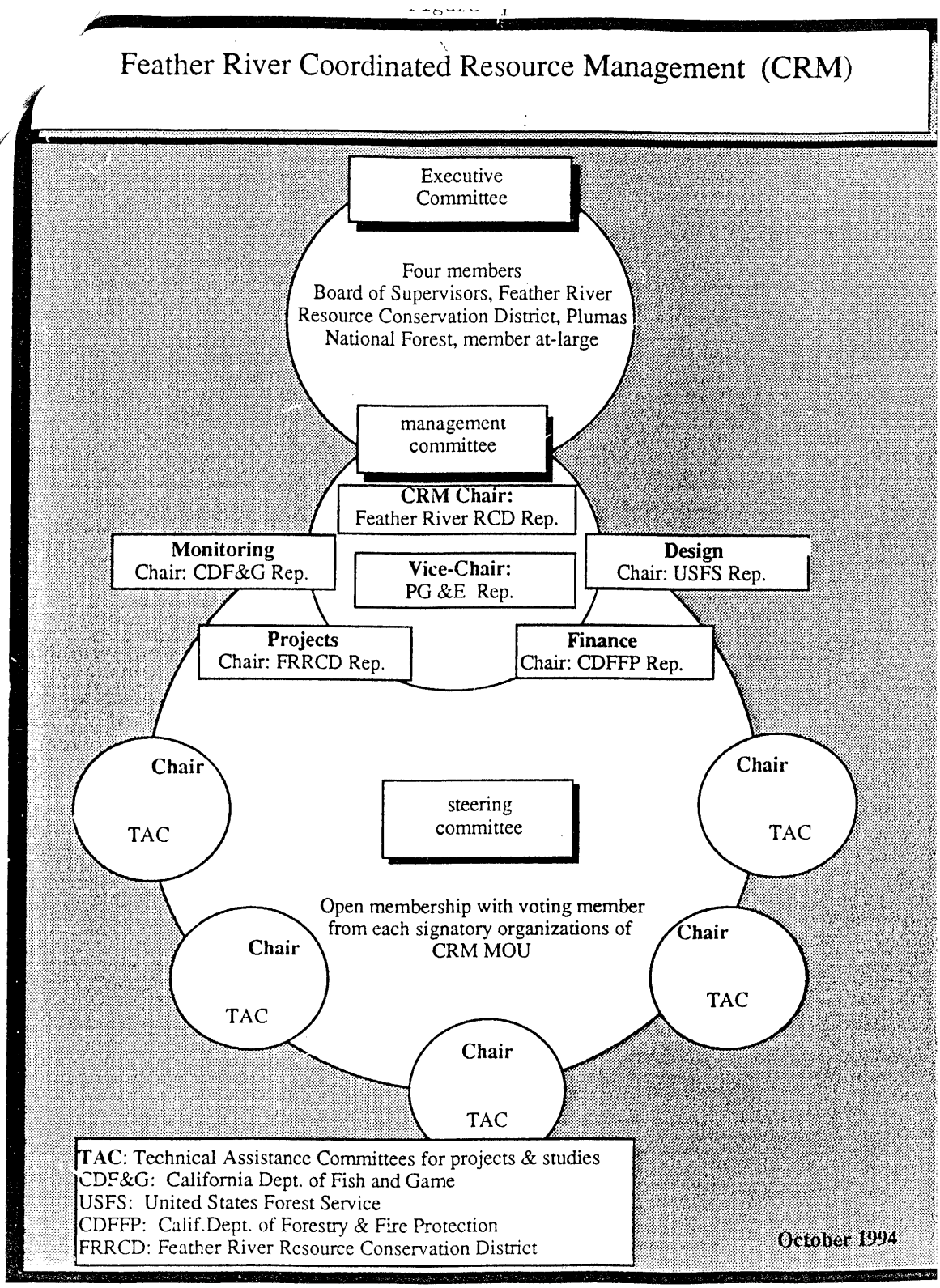
Signatories - The signers of the EBNFFR CRM Plan will be the same as the MOA signatories, except that each organization's signing representative will be an individual who is close to the operational level. At any time during the year, organizations representing local community and special interests may petition the Executive Committee to become signatories to the EBNFFR CRM Plan.

CRM ORGANIZATIONAL STRUCTURE (Figure 2):

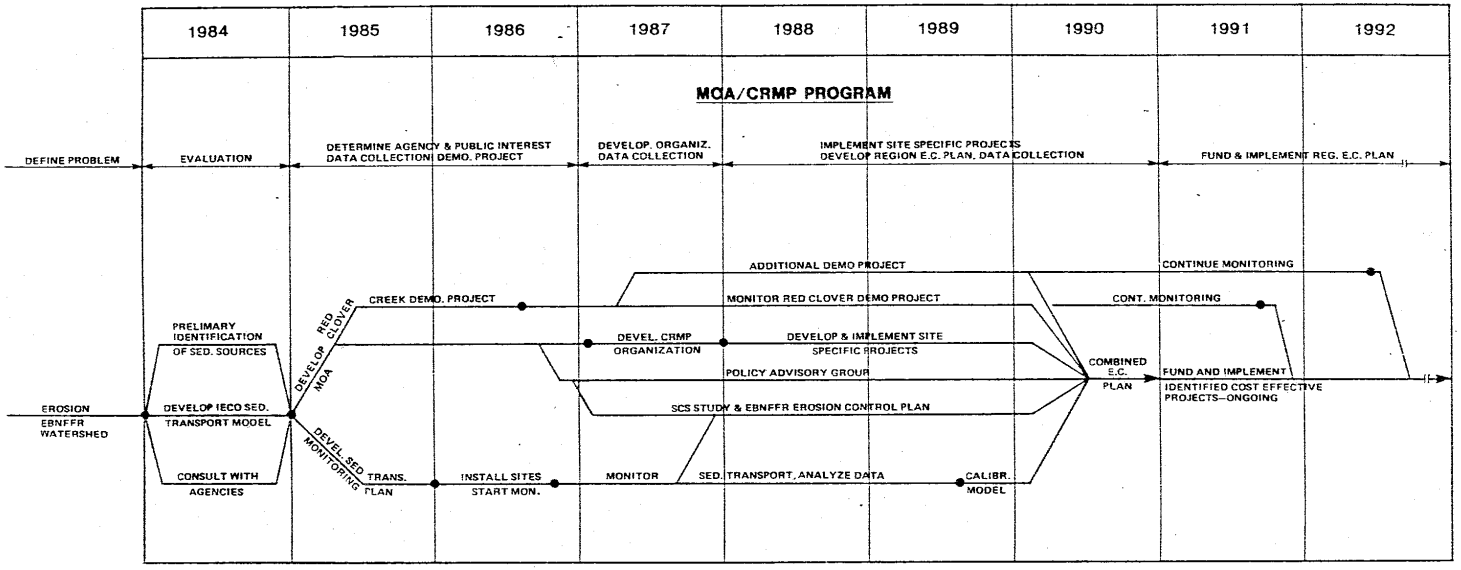
In general, as the projects are identified and developed by the I-ARCD, projects are referred to the Steering Committee for review and funding. During this review process, prospective projects are sent to the Technical Review Subcommittee for environmental and technical review and to the Finance Subcommittee for identification of funding sources.

If funding is available, environmental documents are prepared by the Technical Review Committee. Once the project has cleared both the Technical Review and Finance Subcommittees, it is sent back to the Steering Committee for final review. The Steering Committee forwards the project with its recommendations to the Executive Committee for final approval. The Executive Committee will notify the I-ARCD and the Steering Committee that the project has been approved. It will be the I-ARCD's assignment to implement the project as approved, with assistance from the Steering Committee and overall coordination being provided from Plumas Corporation.

On all levels of the project development process, decisions will be made by unanimous agreement or consensus. Projects failing to achieve consensus will be referred to the Steering Committee and the I-ARCD for revision or deferral until unanimous agreement is reached on all issues and concerns associated with the project.


Feather River Coordinated Resource Management (CRM)
Executive Committee
Four members
Board of Supervisors, Feather River Resource Conservation District, Plumas National Forest, member at-large
management committee
CRM Chair:
Feather River RCD Rep.
Monitoring
Chair: CDF&G Rep.
Vice-Chair:
PG &E Rep.
Design
Chair: USFS Rep.
Projects
Chair: FRRCD Rep.
Finance
Chair: CDFFP Rep.
Chair
TAC
steering committee
Chair
TAC
Open membership with voting member from each signatory organizations of CRM MOU
Chair
TAC
Chair
TAC
Chair
TAC
TAC: Technical Assistance Committees for projects & studies
CDF&G: California Dept. of Fish and Game
USFS: United States Forest Service
CDFFP: Calif.Dept. of Forestry & Fire Protection
FRRCD: Feather River Resource Conservation District
October 1994

EAST BRANCH NF FEATHER RIVER EROSION CONTROL PLAN

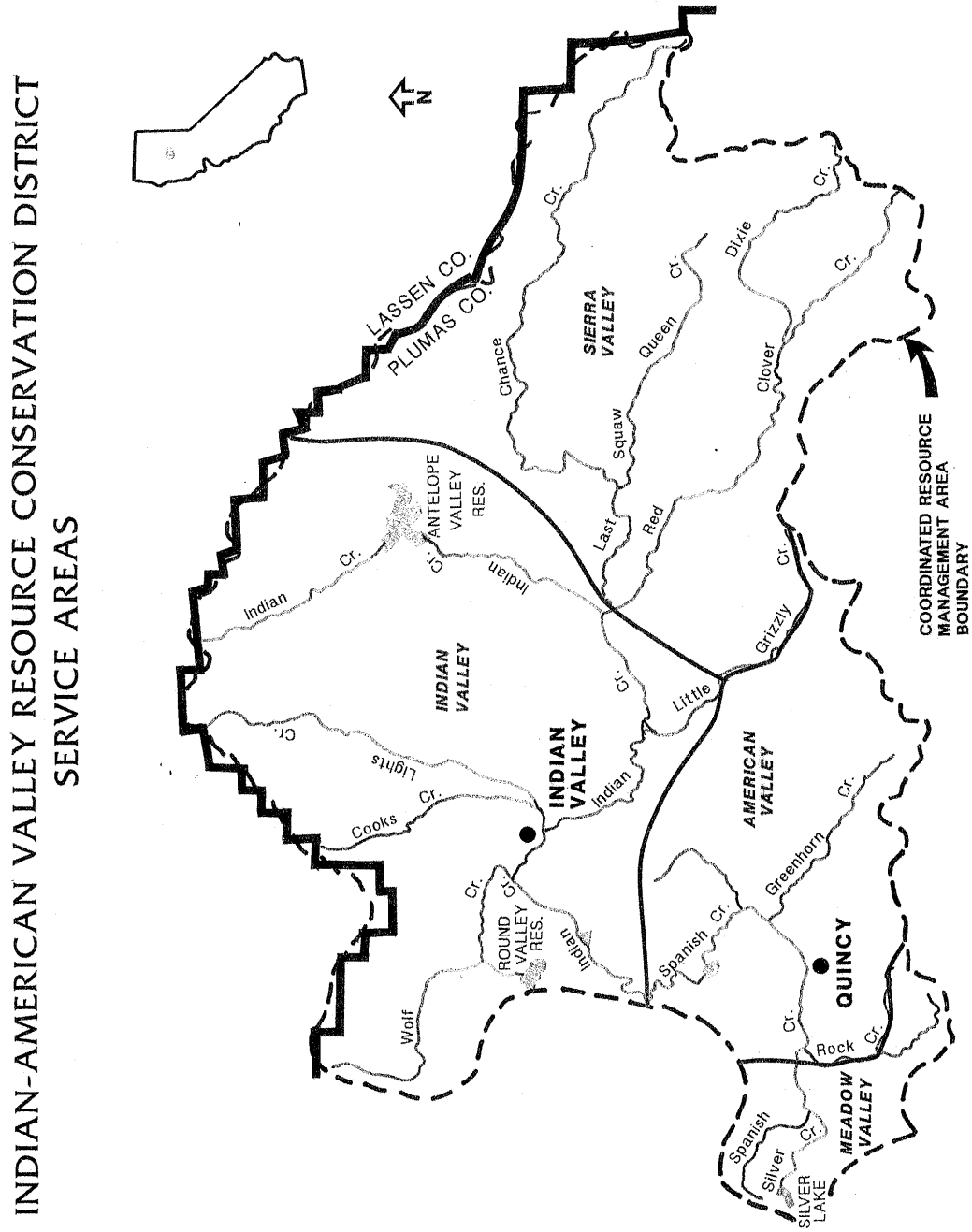


MOA - CRMP PARTICIPANTS

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE
CALIFORNIA DEPARTMENT OF FISH AND GAME
CALIFORNIA DEPARTMENT OF FORESTRY
CALIFORNIA DEPARTMENT OF TRANSPORTATION
CALIFORNIA DEPARTMENT OF WATER RESOURCES
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
INDIAN–AMERICAN VALLEY RESOURCE CONSERVATION DISTRICT
PACIFIC GAS AND ELECTRIC COMPANY
PLUMAS CORPORATION
PLUMAS COUNTY
PLUMAS NATIONAL FOREST
SOIL CONSERVATION SERVICE
U.S. ARMY CORPS OF ENGINEERS
U.S. FISH AND WILDLIFE SERVICE
RANCHERS
LOCAL ORGANIZATIONS
INDIVIDUALS
PROPERTY MANAGERS

BENEFITS OF RESTORED WATERSHED

IMPROVED:
WATER QUALITY
FISHERY
FORAGE
RIPARIAN ZONE
LAND VALUE
RECREATION
AESTHETICS
WATER YIELD
FLOOD CONTROL
SEDIMENT CONTROL
WILDLIFE


INDIAN-AMERICAN VALLEY RESOURCE CONSERVATION DISTRICT
SERVICE AREAS
N
LASSEN CO.
PLUMAS CO.
SIERRA VALLEY
Chance
Cr.
Queen
Cr.
Dixie
Cr.
Squaw
Last
Red
Clover
Cr.
ANTELOPE VALLEY RES.
Indian
Cr.
Indian
Cr.
INDIAN VALLEY
Grizzly
Cr.
Little
Cr.
Lights
Cr.
Cooks
Cr.
INDIAN VALLEY
Indian
AMERICAN VALLEY
Greenhorn
Cr.
Cr.
ROUND VALLEY RES.
Indian
Spanish Cr.
QUINCY
Wolf
Cr.
Rock
Cr.
MEADOW VALLEY
Spanish
Cr.
Silver
SILVER LAKE
COORDINATED RESOURCE MANAGEMENT AREA BOUNDARY

SIGNATURES:

In witness whereof, the parties hereto, by their respective duly authorized officials, have executed this agreement as of the 8th day of August, 1989.

California Department of Fish and Game

By ______________________

By ______________________

California Department of Transportation

By ______________________ 7-18-89
FOR District Director

California Department of Water Resources

By ______________________, District Chief

Indian-American Valley Resource Conservation District

By ______________________

North Cal-Neva Resource Conservation and Development Area

By ______________________

Pacific Gas and Electric Company

By _____ March 10, 1989
Manager-Hydro Generation Department

Plumas Corporation

By Harold L Beatty president

Plumas County

By Donald A. Woodhall

U.S.D.A. Forest Service, Plumas National Forest

By John Palmer

U.S.D.A. Soil Conservation Service

By Gene Andreuccetti 3/3/89

APPENDIX A

MEMORANDUM OF AGREEMENT

BETWEEN

AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE,

CALIFORNIA DEPARTMENT OF FISH AND GAME,

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION,

CALIFORNIA DEPARTMENT OF TRANSPORTATION,

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, CENTRAL VALLEY REGION,

INDIAN-AMERICAN VALLEY RESOURCE CONSERVATION DISTRICT,

PACIFIC GAS AND ELECTRIC COMPANY,

PLUMAS CORPORATION,

PLUMAS COUNTY,

PLUMAS NATIONAL FOREST, UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE,

SOIL CONSERVATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE,

U.S. ARMY CORPS OF ENGINEERS, AND

U.S. FISH AND WILDLIFE SERVICE

REGARDING

A REGIONAL EROSION CONTROL PLAN

FOR THE EAST BRANCH NORTH FORK FEATHER RIVER WATERSHED

I. PARTICIPANTS

This is a Memorandum of Agreement, by and between Agricultural Stabilization and Conservation Service, hereinafter referred to as "ASCS"; California Department of Fish and Game, hereinafter referred to as "CDFandG"; California Department of Forestry and Fire Protection, hereinafter referred to as "CDF"; California Department of Transportation, hereinafter referred to as "Caltrans"; California Regional Water Quality Control Board, Central Valley Region, hereinafter referred to as "CRWQCB"; Indian-American Valley Resource Conservation District, hereinafter referred to as "I-A RCD"; Pacific Gas and Electric Company, a California corporation, hereinafter referred to as "PGandE"; Plumas Corporation; Plumas County, hereinafter referred to as "County"; the Plumas National Forest, United States Department of Agriculture, Forest Service, hereinafter referred to as "USFS"; Soil Conservation Service, United States Department of Agriculture, hereinafter referred to as "SCS"; U.S. Army Corps of Engineers, hereinafter referred to as "Corps"; and U.S. Fish and Wildlife Service, hereinafter referred to as "USF&WS."

II. PURPOSE

The purpose of this Memorandum of Agreement (MOA) is to establish guidelines for coordinated resource management and planning (CRMP) among the participants in an effort to reduce erosion in the East Branch North Fork Feather River (NFFR) watershed.

III. RECITALS

A. Erosion in the East Branch NFFR watershed is adversely impacting natural resources, land values, agricultural production, and hydroelectric resources.

B. The Rock Creek and Cresta Reservoirs of PGandE's Rock Creek-Cresta hydroelectric development (FERC Project No. 1962) on the NFFR have accumulated an estimated 6-7 million cubic yards of sediments since their completion in 1950, resulting in operational and environmental concerns.

C. The accumulation of sediment in the Rock Creek and Cresta Reservoirs is largely a result of both natural and man-induced erosion in the East Branch NFFR watershed.

D. There is a consensus among land and resource management agencies whose jurisdiction extends to management of erosion within the 1,000 square mile East Branch NFFR watershed that there is a need for a comprehensive erosion control plan in this basin.

IV. OBJECTIVES

The objectives of the parties signing this MOA are:

A. Identify sources of erosion in the East Branch NFFR watershed that are resulting in the degradation of the watershed.

B. Develop a cooperative regional erosion control plan for the East Branch NFFR watershed.

C. Design, fund, and implement erosion control measures where cost-effective.

D. Accomplish the above in a manner that will protect natural resources, environmental values, agricultural productivity, and land values.

E. Coordinate the necessary studies and implementation of plans with public agencies and private landowners and organizations, and obtain their cooperation and participation as appropriate.

F. Assure that planned erosion control projects are cost-effective for the contributors funding the projects.

V. RESPONSIBILITIES

The parties agree to the following responsibilities in order to achieve the above objectives:

A. Agricultural Stabilization and Conservation Service

1. Provide cost-shared funds to private landowners on erosion and sediment control practices and water conservation through Agricultural Conservation Practices, Long-Term Agreements, and the Forestry Incentives Program, if feasible.

B. California Department of Fish and Game

1. Provide results of previous studies on sedimentation in the East Branch NFFR watershed.

2. Conduct or participate in additional sedimentation studies, when feasible.

3. Provide funding sources for stream restoration and erosion control on Federal lands within the watershed through the Sykes Act and the Dingle-Johnson Stream and Lake Improvement Act, if feasible.

4. Participate in analyzing and developing possible stream restoration activities, including the siting, design, and layout of structures.

5. Assist in seeking potential labor sources, including the California Conservation Corps, conservation camp crews administered by

the California Youth Authority and California Department of Corrections, and heavy equipment operation by California National Guard Engineering Battalions.

6. Provide input to the development of a Regional Erosion Control Plan.

7. Participate in evaluating fish populations before and after implementation of erosion control projects.

8. Enforce provisions of the Regional Erosion Control Plan where authorized in the Fish and Game Code, including Section 5650 dealing with pollutants, including sediment under certain circumstances, and Section 1603 dealing with streambed alterations, such as gravel extraction, dam construction, etc.

9. Expedite the issuance of CDFandG permits as necessary for erosion control projects.

10. Participate in follow-up studies to monitor the effects of erosion control projects on aquatic and terrestrial resources.

C. California Department of Forestry

1. Provide cost-sharing funding, if feasible, through the California Forest Improvement Program for practices on private lands, including site preparation and planting of trees on understocked land due to such things as wildfires; and forestland conservation, including erosion control, revegetation, road closure and stabilization of abandoned roadbeds, and improvement of drainage facilities for the purpose of reducing soil erosion and sedimentation.

2. Assist in raising private landowners' interest in applying for funding under the above cost-sharing program.

3. Regulate logging activities resulting in erosion on private lands under the provisions of the Z'berg/Negedly Forest Practices Act of 1973.

D. California Department of Transportation

1. Provide input to the development of a Regional Erosion Control Plan.

2. Ensure that state road construction and maintenance practices will consider, where reasonable and practical, the provisions of the Regional Erosion Control Plan.

E. California Water Quality Control Board

1. Provide results of studies on erosion and sedimentation in the East Branch NFFR watershed.

2. Provide input to the development of a Regional Erosion Control Plan.

3. Provide for regulation of point and non-point source discharges as appropriate.

F. Indian-American Valley Resource Conservation District

1. Prioritize SCS time and resources toward watershed study and implementation.

2. Provide input to the development of a Regional Erosion Control Plan.

G. Pacific Gas and Electric Company

1. Develop a study plan to gather information needed to develop a long term Regional Erosion Control Plan, including:

   - Identification of the sources of sediments in the Rock Creek Reservoir.

   - Surveys to determine the volume of sediments in the Rock Creek and other downstream reservoirs.

   - Sampling and analysis of the physical and chemical characteristics of the sediments.

   - Development of a computer model of the sediment transport for the East Branch NFFR watershed to identify sources of sediments and to forecast the sediment volumes to be expected in the future.

   - Implement a sampling and monitoring program for the East Branch NFFR watershed to provide streamflow and sediment transport data in order to verify the computer model and measure the effectiveness of erosion control efforts.

2. Participate with the parties of the MOA in the planning, design, cost evaluation, and funding of erosion control projects where cost effective benefits in reduction of the volume of sediments impacting PGandE's hydroelectric facilities downstream can be demonstrated, and where such participation is not inconsistent with PGandE's federal hydroelectric licenses.

H. Plumas Corporation

1. Formulate proposals for erosion control projects.

2. Seek funding for erosion control projects.

3. Coordinate the design and implementation of erosion control projects.

4. Award and administer contracts for erosion control projects, including construction, bonding, insurance, and documentation.

5. Enlist support from local landowners for erosion control projects, including acquisition of rights-of-entry.

6. Acquire all necessary permits for erosion control projects.

I. Plumas County

1. Provide funding through the Plumas County Flood Control and Water Conservation District, if feasible.

2. Participate in the development, implementation, and enforcement of the Regional Erosion Control Plan.

3. Enlist participation by private landowners in the development and implementation of erosion control projects.

4. Enlist support from "Plumas Corporation" to provide resources for erosion control project development, management, and implementation in Plumas County.

5. Seek resources for erosion control projects through the Community Development Commission, including California Conservation Corps crew.

J. The Forest Service

1. Provide results of previous studies on sedimentation in the East Branch NFFR watershed.

2. Conduct or participate in additional sedimentation studies, when feasible.

3. Provide funding for erosion control projects on National Forest land, when available.

4. Provide input to the development and monitoring of demonstration erosion control projects.

5. Provide technical advice on sediment sampling/analysis.

6. Conduct condition surveys, as feasible, and in cooperation with other agency surveys, for the watersheds of the East Branch NFFR, and integrate the survey information into erosion control programs.

7. Assist on erosion control projects on private lands within the East Branch NFFR watershed.

8. Provide technical assistance on design and placement of structures, use of materials, and sources of riprap or other materials.

9. Provide input to the development of a Regional Erosion Control Plan.

10. Enforce provisions of the Regional Erosion Control Plan on National Forest lands.

11. Expedite the issuance of USFS permits as necessary for erosion control projects on National Forest lands.

12. Participate in follow-up studies to evaluate the effectiveness of erosion control projects.

K. Soil Conservation Service

1. Provide results of previous studies on erosion and sedimentation in the East Branch NFFR watershed.

2. Conduct or participate in additional erosion and sedimentation studies, when feasible.

3. Participate in the identification of sources of sediments in the watershed.

4. Provide technical assistance to private landowners on erosion and sediment control practices.

5. Provide assistance in obtaining cost-shared funds for private landowners through Public Law 566 and/or the Resource Conservation and Development Program.

6. Provide qualified technical personnel from the state, area, and field offices to assist with the development and implementation of erosion control projects and a Regional Erosion Control Plan.

7. Participate in follow-up studies to evaluate the effectiveness of erosion control projects on private lands.

8. Participate in this MOA to the extent annually approved by the I-A RCD.

L. U.S. Army Corps of Engineers

1. Provide input to the development of a Regional Erosion Control Plan.

2. Expedite the processing of Corps permits as necessary for the construction of erosion control facilities in waters of the United States under Section 404 of the Clean Water Act.

M. U.S. Fish and Wildlife Service

1. Provide input to the development of a Regional Erosion Control Plan.

2. Assist in the development and implementation, as USF&WS funding and manpower allows, of monitoring studies to evaluate the effects of erosion control projects on aquatic and terrestrial resources.

VI. GENERAL PROVISIONS

A. Each and every provision of this Memorandum of Agreement is subject to all applicable Federal and State laws and regulations.

B. Nothing in this Memorandum of Agreement shall be construed as obligating any party to the expenditure of funds in excess of available appropriations.

C. Parties shall not be required to provide any information that they consider to be proprietary.

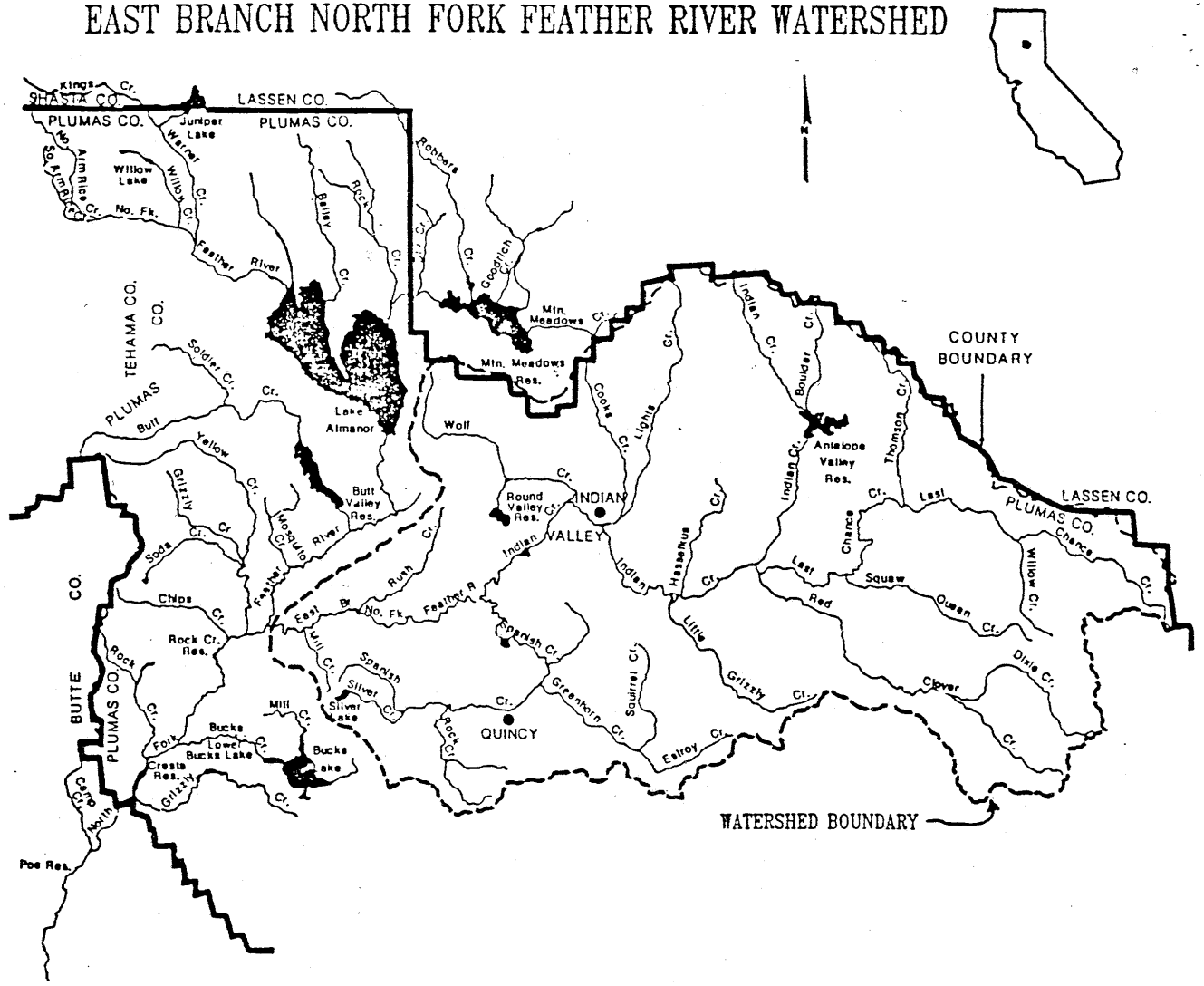
D. Any amendment hereto or to the plans agreed to hereunder, shall be in writing, may be proposed by any party, and shall become effective upon approval by all parties to the specific plan.

E. Any party may propose the termination of this agreement by providing 60 days written notice to the other parties. Such termination shall become effective upon mutual agreement by all parties.

F. Any party may withdraw from this agreement by providing written notice to all the other parties of the intent to withdraw 60 days in advance of the effective withdrawal date. The withdrawal of one or more parties does not alter the effectiveness of this agreement for the remaining parties.

G. Parties may be added to this agreement by their signature hereunder indicating their commitment to the objectives of the Memorandum of Agreement and agreement with the General Provisions.

EAST BRANCH NORTH FORK FEATHER RIVER WATERSHED



IN WITNESS WHEREOF, the parties hereto, by their respective duly authorized officials, have executed this agreement as of the _____ day of _____, 19 _____.

Agricultural Stabilization and Conservation Service

By _____
District Director

California Department of Fish and Game

By _____
For Acting Director

California Department of Forestry and Fire Protection

By _____
Ranger-In-Charge, Lassen/Modoc Ranger Unit

California Department of Transportation

By _____ 8-5-87
District Director

California Regional Water Quality Control Board, Central Valley Region

By _____

Indian-American Valley Resource Conservation District

By _____

Pacific Gas and Electric Company

By _____
Vice President, Power Generation

Appendix B

MEMORANDUM OF UNDERSTANDING
Between
EXTENSION SERVICE, SOIL CONSERVATION SERVICE, AND THE FOREST SERVICE,
UNITED STATES DEPARTMENT OF AGRICULTURE
And
THE BUREAU OF LAND MANAGEMENT
UNITED STATES DEPARTMENT OF THE INTERIOR

I. PURPOSE

This Memorandum of Understanding establishes policy and general guidelines for use by the Bureau of Land Management (BLM), Soil Conservation Service (SCS), Forest Service (FS), and Extension Service (ES) in coordinating their resource planning, management, and educational activities directed toward working with State and local agencies, private landowners and others in developing and implementing sound resource management and conservation programs. These activities generally will relate to Coordinated Resource Management (CRM).

CRM is an approach for reaching decisions and resolving resource conflicts. It can complement any planning or management situation where mixed land ownerships or multiple resource management uses are involved. Some of the elements common to the CRM approach are:

Cooperation and equitable voluntary participation of all affected interests using a "Team" approach.

Open communications among all participants.

Availability of technical expertise.

Strong and effective local leadership.

Agreement by consensus of the team.

Commitment to monitoring, review and revision of plans, agreements and projects to insure objectives are met.

II POLICY

The BLM, FS, SCS, and ES will cooperate to foster CRM where appropriate on intermingled or adjacent public and private lands. Techniques and procedures developed through the Experimental Stewardship Program may be implemented through CRM where statutory authority, resource needs, public support and financial capability exists.

In implementing the provisions of this memorandum, each agency's participation will vary depending upon the land ownership and the land use and administration within the area. The signatory agencies will cooperate with

all owners, managers and users of land and resources within each specific area, including States, counties, and private landowners. Other persons, agencies and organizations with interest in the CRM area will be involved as appropriate.

III AUTHORITY

BLM, ES, SCS, and FS, operate under separate legislative authorities and departmental policies including, but not limited to, the following:

A. The Act of April 27, 1935 (16 U.S.C. 590a-f).

B. The Act of May 8, 1914 (Smith-Lever Act, 7 U.S.C. 341-349); Section 1444 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (7 U.S.C. 3221).

C. Title III, Bankhead-Jones Farm Tenant Act of July 22, 1937 7 U.S.C. 1010-1012.

D. The Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 1600-1614).

E. The Federal Land Policy and Management Act of 1976, as amended by the Public Rangelands Improvement Act of 1978 (43 U.S.C. 1701 et seq.).

F. The Renewable Resources Extension Act of 1978 (16 U.S.C. 1671 et seq.)

G. The National Forest Management Act of 1976 (90 Stat. 2949).

H. The Cooperative Forestry Assistance Act of 1978 (16 U.S.C. 2101 et seq.)

IV RESPONSIBILITIES

A. The BLM and FS plan and implement multiple-use resource management and conservation programs on public lands under their jurisdiction. The FS also has responsibilities to demonstrate and promote sound grassland agriculture and land management practices on the National Grasslands and areas of which they are a part.

B. The SCS provides technical assistance to conservation district cooperators and USDA cost-share participants for planning and applying conservation programs on private and other non-federal lands.

C. ES, in cooperation with State Cooperative Extension Services, conducts educational activities at the national, regional, State and local level, which complement research, management, and assistance programs.

V RELATIONSHIP TO PLANNING ON PUBLIC LANDS

Public land management agency land use plans establish general management direction and multiple use objectives for a planning area.

CRM is an approach that provides for interaction among interested and affected agencies, organizations, individuals, and the planning agency to determine mutually acceptable management practices and multiple use objectives at the local level.

VI OBJECTIVES

The objectives of CRM are:

A. Improve management of land and resources while promoting cooperation between the agencies, landowners, groups, and individuals, responsible for or interested in these resources.

B. Develop and implement resource management programs and activities to achieve compatible resource uses based on sound ecologic and economic relationships.

C. Achieve optimum sustained production of food, fiber, and other goods, services, and benefits from such lands; while at the same time, protecting and enhancing environmental quality.

D. Increase efficiency and reduce resource management costs of public agencies, private landowners, communities and the general public.

E. Improve communications among those interested in and affected by land and resource management decisions.

VII. GENERAL CONSIDERATIONS

A. No interagency reimbursement will be required for activities conducted under this memorandum.

B. BLM and FS will, when implementing the memorandum, contact users of the BLM & FS lands and those affected by its use in planning areas under their jurisdictions to assure that consultation concerning management programs is accomplished and will retain responsibility for meeting all requirements of the laws and regulations pertaining to the use and management of these lands.

C. Cooperator contacts and followup assistance will normally be made by the agency having primary responsibility for management, technical services or education as mutually agreed upon in the CRM plan.

D. Appropriate authorization will be obtained from the landowner or land managing agency before any practices, structures or projects are applied to or installed upon the land.

E. Management objectives and priorities for BLM and FS administered lands will be determined through the responsible agency's planning system and, to the extent possible, will be consistent with State and local land use plans.

F. Conservation Districts (CDs) will be encouraged to enter into memoranda of understanding with BLM, FS and/or other appropriate agencies at the local level. When invited by the CD, the BLM, SCS, and FS, as appropriate, will present reviews of proposed resource activities of concern to the CD. Other agencies involved in CRM will be encouraged to do the same. CDs will be encouraged to give consideration to such activities when developing long-range programs and assigning priorities and work schedules for inclusion in their annual work plans.

G. When requested by the administering agency, SCS may provide technical assistance on public lands when results would benefit intermingled or adjoining private lands.

H. Cooperative Extension Service participation at the State and local level will be covered by separate memoranda of understanding to which the appropriate State Cooperative Extension Service is a party.

I. Where State and private forests and related lands are involved, the FS will discharge its responsibilities through the appropriate State organization.

VIII STATE AND LOCAL COORDINATION

A. STATE EXECUTIVE GROUP - The State Director, BLM; State Conservationist, SCS; Regional Forester and/or Area Director, FS; will be included in this group. The State Director and/or Administrator, Cooperative Extension Service; a representative of the State Conservation and State Forestry Agency; and administrators of other appropriate State and Federal agencies; will be invited and encouraged to become members. This group

will develop and put into effect supplemental agreements, as needed, to meet the objectives of this memorandum, including procedure for specific programs to achieve agency coordination and cooperation throughout the State.

B. STATE TASK GROUP - This group, appointed by the State Executive Group members will implement and monitor CRM in the State. It shall include appointed representatives of BLM, FS, and SCS as appropriate as well as the Cooperative Extension Service and other appropriate State and Federal organizations.

C LOCAL COORDINATION - Local CRM committees or steering groups may be established in accordance with procedures developed by the State Executive Group. Conservation Districts are encouraged to be local convenors or coordinators.

IX INITIATING, IMPLEMENTING AND SCHEDULING

A. INITIATION - The State Executive Group will acquaint field personnel with this memorandum to assure mutual understanding and interpretation. Joint training, under leadership of the State Task Group, is encouraged.

B. IMPLEMENTING - Active participation in the CRM approach by all key participants is essential. The local committee should include representatives from all landowner, interest groups and resource administering agencies within the defined management area. Where full-time participation of one or more parties is not warranted, suitable arrangements should be made to ensure that CRM can proceed with a reasonable assurance that results will be acceptable to all.

C. SCHEDULING - Each agency and group has its own program of activities for which priorities are established. CRM should be compatible and complementary with each agency's activity schedule. This requires a reasonable amount of negotiation between agencies, Conservation Districts and others in selecting requests and assigning priorities. The State Executive Group will prepare guidelines, useful at the county and local levels, for determining priorities, assigning responsibilities, and scheduling needed assistance. Followup schedules should be developed to monitor and evaluate implemented programs.

X **MODIFICATION**

This memorandum shall take effect when it is approved by all of the parties in writing and shall remain in force until it is expressly abrogated in writing by any of the parties. The agreement, executed on November 26, 1980, shall be deemed superceded upon the effective date hereof.

APPROVALS

2/2/87
ADMINISTRATOR, EXTENSION SERVICE

6/3/87
CHIEF, FOREST SERVICE

7/2/87
DIRECTOR, BUREAU OF LAND MANAGEMENT

5/14/87
CHIEF, SOIL CONSERVATION SERVICE

APPENDIX C

MEMORANDUM OF UNDERSTANDING

FOR

COORDINATED RESOURCE MANAGEMENT IN CALIFORNIA

MEMORANDUM OF UNDERSTANDING
FOR
COORDINATED RESOURCE MANAGEMENT AND PLANNING
IN CALIFORNIA

I. Purpose. The purpose of this memorandum of understanding is to define the organizational structure and establish guidelines for interagency coordinated resource management and planning California.

II. Coordinated Planning. Coordinated resource management planning is a process designed to achieve compatibility between the uses being made of natural resources, energy and mineral resources, livestock production, watershed, wildlife habitat, wood products, and recreation; and that such resources are improved if necessary, and perpetuated in a condition of high quality for future generations. A coordinated resource management plan affects all ownerships of the planned area. All major uses of the area are considered and coordinated to avoid unacceptable and unnecessary conflicts. Each plan should become a coordinated management program administered by the principal owners, managers and users of the resources addressed by the planning process.

III. Policy. The signatory parties agree to develop and apply coordinated resource management plans on operating units, allotments, sub-watershed, and other appropriate resource areas which may include Federal, State and private ownership or administration. The agencies or organizations involved in a particular plan will depend on the land ownership within the area and the uses to be made of the resources. The signatory agencies will seek to cooperate with the resource owners or managers within each specific planned area. Other agencies, organizations, and individuals will be asked to participate as appropriate.

IV. Authority. Authority for the Federal agencies is contained in a national Memorandum of Understanding for Coordinated Resource Management and Planning between the Forest Service, Bureau of Land Management (BLM), the Soil Conservation Service (SCS), and Science and Education Administration signed by the heads of each agency in November 1980. This Memorandum supersedes the original 1971 agreement between the BLM and SCS, and the January 21, 1975 Agreement between SCS, BLM and Forest Service. Authority for agencies involved to participate in this effort is covered by existing Federal or State statutes or delegations of authority.

V. General Considerations. This Memorandum does not modify or supersede other existing agreements and/or memoranda of understanding.

A. The resource management agencies whose lands or resource responsibilities are included in a particular planning area will retain the primary responsibility for meeting all requirements of law and regulation pertaining to the use and management of the lands or resources under their respective jurisdictions.

B. The agency or organization having primary planning responsibility, as mutually agreed, will serve as the "lead agency" for the purposes of contact and follow up assistance with other agencies cooperating in a plan.

C. When any land treatment practices, structures or projects are to be applied to, or installed upon public lands under the jurisdiction of a public agency, authorization must be obtained from the appropriate agency prior to initiation of the action.

D. The priorities and management objectives for Federal or State lands will be determined primarily by the agency responsible, by law, for

the administration of such lands. However, every effort will be made to coordinate resource management planning activities with agencies having related jurisdictions.

E. Individual Resource Conservation Districts will be encouraged to have memoranda of understanding with appropriate Federal, State and other land and resource agencies.

F. The Soil Conservation Service may provide technical assistance on public lands included in a coordinated resource management plan when private lands also benefit from that assistance.

VI. Organization at State Level

A. Executive Council - The Executive Council is comprised of: Regional Forester, Pacific Southwest Region, USDA Forest Service; California State Director, Bureau of Land Management; President, California Association of Resource Conservation Districts; State Conservationist, USDA Soil Conservation Service; Assistant Vice President--Director of Cooperative Extension, University of California; Executive Officer, California State Lands Commission; Director, California Department of Fish and Game; Director, California Department of Conservation; Director, California Department of Forestry; Director, California Department of Water Resources; State Director, California Agricultural Stabilization and Conservation Service; Director, California Department of Food and Agriculture. The Executive Council will direct interagency coordinated resource management planning activities in California, review progress and problems and facilitate this program by

providing for training and scheduling of personnel, establish guidelines for determining priorities for planning, and otherwise achieve agency cooperation and coordination throughout the State. They will meet at least annually to conduct these functions. The chair of this group will rotate bi-annually. Representatives of other appropriate State and Federal agencies or organizations will be invited to participate in the meetings of this group.

B. Technical Advisory Council - The Technical Advisory Council will consist of a technical representative of each signatory agency. This group will promote coordinated resource management planning, provide training and guidance in operating procedures to field personnel, review selected plans, monitor effectiveness, follow up on plans, identify and resolve field problems, and carry out specific assignments received from the Executive Council. The Technical Advisory Council will meet as needed but not less than twice annually to conduct the above functions, and prepare and submit progress reports to the Executive Council. The Technical Advisory Council Chair will be the representative of the Executive Council Chair.

VII. Organization at Local Level

A. The Executive Council will arrange for distribution of this memorandum and its discussion in field locations of signatory agencies to assure mutual understanding and interpretation.

B. Any local planning team should include representatives from all landowners and resource administering agencies and other appropriate organizations which are significantly involved with an area selected for a coordinated planning effort. These

representatives should have authority to make decisions for the agency or group they represent. The local group should encourage full participation of organizations who have land use planning responsibilities. A moderator to lead the planning process should be selected by the local group for each coordinated plan. Land ownership patterns, location of the area, time and costs involved in the effort, may be considered in the selection of the moderator. Where full time participation of a particular agency or group is not necessary to the planning process, suitable local arrangements should be made so that interagency coordinated planning can proceed with reasonable assurance that the final plan will be acceptable to all. Active participation by all key participants, from inception to completion of the planning process, is essential. Plans should provide for annual review for the first two or three years and be scheduled periodically thereafter as needed or as requested by a key participant. Plans should identify agency with lead responsibiity for review and follow up.

C. Each agency and group has its own program of activities for which priorities are established. The development of each coordinated resource management plan should be dovetailed into each agency's activity schedule. This requires cooperation between agencies, groups, and individual land managers in the selection and assignment of priority to requests for coordinated plans.

D. At the request of local organizations, representatives of agencies and organizations engaged in coordinated resource planning and management will present information about on-going and proposed resource activities of local concern. Technical Advisory Council members will be available, when appropriate, to assist.

VIII. Modification. This agreement shall remain in effect until modified by the parties in writing; it is renegotiable at the option of any one of the parties or may be terminated upon giving 90 days written notice to all parties.

Ed Hastey
California State Director
Bureau of Land Management

for Zane G. Smith, Jr.
Regional Forester--Pacific
Southwest Region, USDA Forest Service

Eugene Andreuccetti
State Conservationist
USDA Soil Conservation Service

Jack C. Parnell
Director
Department of Fish and Game

Roy E. Rutz
President--California Association
of Resource Conservation Districts

Claire Dedrick
Executive Officer
State [illegible] Commission

Jerome B. Siebert
Assistant Vice President--Director
of Cooperative Extension, U.C.

Kenneth E. Frick
State Executive Director--Agricultural
Stabilization & Conservation Service

Randall M. Ward
Director
Department of Conservation

Clare L. Berryhill
Director
Department of Food and Agriculture

Gerald Partain
Director
Department of Forestry

David Kennedy
Director
Department of Water Resources

Appendix H. Partners for Clean Water Memorandum of Understanding

STW 016
6.4

RETURN TO CITY CLERK

RESOLUTION NO. 16744

BY THE COUNCIL: BAKER, FORNEY, MAPP, MASON, TERTELING-PAYNE AND WETHERELL

A RESOLUTION APPROVING AN INTERGOVERNMENTAL AGREEMENT FOR ROLES AND RESPONSIBILITIES UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM MUNICIPAL STORMWATER PERMIT ("NPDES PERMIT") BETWEEN THE CITY OF BOISE, THE ADA COUNTY HIGHWAY DISTRICT, CITY OF GARDEN CITY, BOISE STATE UNIVERSITY, THE IDAHO TRANSPORTATION DEPARTMENT, DISTRICT #3, THE ADA COUNTY DRAINAGE #3 COLLECTIVELY THE "CO-PERMITTEES" DEFINING THE RESPECTIVE OBLIGATIONS OF THE CO-PERMITTEES TO ENSURE COMPLIANCE WITH THE NPDES MUNICIPAL STORMWATER REQUIREMENTS PURSUANT TO THE CLEAN WATER ACT; AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE SAID AGREEMENT ON BEHALF OF BOISE CITY; AND PROVIDING AN EFFECTIVE DATE.

BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF BOISE CITY, IDAHO:

Section 1. That the Mayor and City Clerk be, and are hereby authorized to execute and attest, respectively, on behalf of Boise City, an Intergovernmental Agreement for Roles and Responsibilities under the NPDES Municipal Storm Water Permit between the City of Boise, the Ada County Highway District ("ACHD"), the City of Garden City, Boise State University (BSU), the Idaho Transportation Department, District #3 (ITD), the Ada County Drainage #3 (DD3) collectively the "Co-Permittees" defining the respective obligations of the Co-Permittees to ensure compliance with the NPDES Municipal Stormwater requirements pursuant to the Clean Water Act, which is attached hereto and by reference made a part of this Resolution.

Section 2. That this Resolution shall be in full force and effect immediately upon its adoption and approval.

ADOPTED by the Council of the City of Boise City, Idaho, this 16th day of October, 2001.

APPROVED by the Mayor of the City of Boise City, Idaho, this 16th day of October, 2001.

APPROVED:

MAYOR

ATTEST:

CITY CLERK

INTERGOVERNMENTAL AGREEMENT
FOR ROLES AND RESPONSIBILITIES UNDER THE NPDES MUNICIPAL STORMWATER PERMIT (Permit #IDS-02756-1)

This Intergovernmental Agreement entered into this 16th day of October, 2001, by and among the Ada County Highway District (ACHD), the City of Boise (Boise City), City of Garden City (Garden City), Boise State University (BSU), the Idaho Transportation Department, District #3 (ITD), and Ada County Drainage District #3 (DD3), collectively the "Co-Permittees", is made for the purpose of complying with the Federal National Pollution Discharge Elimination System Municipal Stormwater Permit ("NPDES Permit").

RECITALS

WHEREAS, Congress in 1987 amended Section 402 of the Federal Clean Water Act (33 U.S.C.A. section 1342(p)) to require the Federal Environmental Protection Agency (EPA) to promulgate regulations ("Regulations") for applications for permits for stormwater discharges; and

WHEREAS, the Regulations are designed to control pollutants associated with stormwater discharges through the use of the NPDES Permit system which allows the lawful discharge of stormwater into the waters of the United States; and

WHEREAS, the Regulations are designed to require NPDES Permits for discharges from Municipal Separate Storm Sewer Systems (MS4s) from a system-wide or jurisdiction wide basis; and

WHEREAS, the Co-Permittees have received a NPDES Permit, effective November 29, 2000; and

WHEREAS, it is necessary to provide a basis for defining the Co-Permittees' primary intentions, relationships, responsibilities and obligations for ensuring compliance with the NPDES Municipal Stormwater requirements.

WHEREAS, NPDES Permit requires this Agreement to define respective obligations of the Co-Permittees; and

NOW, THEREFORE, the foregoing sets forth the Agreement by and among the named Co-Permittees.

AGREEMENT

1. PURPOSE OF AGREEMENT.

The purpose of this Agreement is to detail the duties, roles and responsibilities to be provided by the Co-Permittees with respect to compliance with Federal NPDES Stormwater rules, regulations and requirements and the commitments set forth in the NPDES Permit issued by EPA. Each Co-Permittee shall be individually obligated (and the remaining Co-Permittees shall not be obligated) to comply with those terms or conditions of the NPDES Permit which relate exclusively to discharge from portions of the MS4 owned or operated solely by that Co-Permittee; are identified in the NPDES Permit as being the obligation of a single, named Co-Permittee; or have been identified in Table III.A or this Agreement approved by EPA under Part II.F. of the NPDES Permit as being the responsibility of that Co-Permittee. The balance of the obligations and conditions shall be joint and several.

2. GENERAL PROVISIONS.

A) ACHD, Boise City, Garden City, BSU, ITD and DD3 are Co-Permittees in the Permit as provided in 40 CFR 122.26(v)(2).

B) Each Co-Permittee will be responsible for complying with any and all Permit conditions relating to discharges from those parts of the MS4 that it continues to operate and maintain.

C) The Co-Permittees will utilize available monitoring and enforcement mechanisms, in full cooperation with other Co-Permittees, to control the contribution of pollutants from one MS4 to another.

D) Each Co-Permittee to this Agreement shall assign at least one representative to the Co-Permittee group.

3. STORM WATER MANAGEMENT PROGRAM ROLES AND RESPONSIBILITIES.

The roles and responsibilities of each Co-Permittee are as established in Table III.A of the NPDES Permit. Table III.A is attached and by this reference incorporated herein.

4. APPORTIONMENT OF COSTS.

A) Program Administration and Management.

The Stormwater Management Program shall be administered by ACHD as the lead agency. The estimated costs of Program administration for the first permit year are $55,000. The Co-

Permittees shall reimburse ACHD for their share of the Program Administration costs in the following amounts:

ACHD:	65.3% of the total Program Administration Cost
Boise City:	15.3% of the total Program Administration Cost
Garden City:	7.7% of the total Program Administration Cost
BSU:	3.9% of the total Program Administration Cost
ITD:	3.9% of the total Program Administration Cost
DD3:	3.9% of the total Program Administration Cost

B) Monitoring Program.

Monitoring to be conducted by ACHD or its contractor as the lead agency pursuant to this Agreement is estimated to cost $150,000 for the first permit year. The Co-Permittees shall reimburse ACHD for their share of the Monitoring costs in the following amounts:

ACHD:	65.3% of the total Program Cost
Boise City:	15.3% of the total Program Cost
Garden City:	7.7% of the total Program Cost
BSU:	3.9% of the total Program Cost
ITD:	3.9% of the total Program Cost
DD3:	3.9% of the total Program Cost

C) Public Education Program

Boise City will be the lead agency pursuant to this Agreement. Public education is estimated to cost $60,000 for the first permit year. Will include the development of unified education outreach program.

Boise City:	65.3% of the total Program Cost
Garden City:	15.3% of the total Program Cost
ACHD:	7.7% of the total Program Cost
BSU:	3.9 % of the total Program Cost
ITD:	3.9 % of the total Program Cost
DD3:	3.9 % of the total Program Cost

D) Timely Payments.

All amounts due and owing for the costs of Program Administration, Monitoring and Public Education shall be paid within 45 days of invoice date by the lead agency.

E) Annual Review

The allocated percentages of the Co-Permittees' charge shall be reviewed upon an annual basis and if necessary modified.

5. TERMINATION AND MODIFICATION.

Each Co-Permittee shall have the right to withdraw from and terminate its responsibilities under this Agreement at any time by serving upon all other Co-Permittees 30 days advance written notice of withdrawal. Any Co-Permittee withdrawing from this Agreement shall pay its proportionate share of any work performed pursuant to this Agreement up to the effective date of withdrawal.

Notwithstanding the right of a Co-Permittee to withdraw from this Agreement, any responsibilities set out in the NPDES with regard to the withdrawing Co-Permittee shall not be affected by Co-Permittee's withdrawal from this Agreement.

This Agreement may be modified or amended in writing and effective when executed by all Co-Permittees and approved by EPA.

Should any Co-Permittee to this Agreement be determined by EPA not to be an operator of an MS4 requiring participation in the Permit, that Co-Permittee shall be allowed to immediately withdraw from this Agreement at no cost beyond those costs billed to the date of withdrawal.

6. ATTORNEY FEES.

Should any Co-Permittee find it necessary to employ an attorney for representation in any action seeking enforcement of any of the provisions of this Agreement, or to protect its interest in any matter arising under this Agreement, or to recover damages for the breach of this Agreement, or to resolve any disagreement in interpretation of this Agreement, the unsuccessful Co-Permittee(s) in any final judgment entered therein agrees to reimburse the prevailing party or parties for all reasonable costs, charges and expenses, including attorneys' fees expended or incurred by the prevailing party or parties in connection therewith and in connection with any appeal, and the same may be included in such judgment.

7. NOTICES.

Any and all notices required to be given by any of the Co-Permittees hereto shall be in writing and deemed delivered when either: (i) delivered personally, or (ii) sent by fax to the other parties at the fax telephone number as set forth; or (iii) deposited in the United States Mail, certified,

return receipt requested, postage prepaid, addressed to the other Co-Permittees at the address as set forth, or such other fax telephone number or mailing address as may be provided by written notice of such change given to the others in the same manner as above provided.

CONTACTS.

For the purpose of this Agreement and to provide notice as required, the following is the contacts and address of each representative designated by each Co-Permittee:

Ada County Highway District:
Stormwater Quality Coordinator
Ada County Highway District
318 E. 37th St.
Garden City, Id. 83714
(Fax): 387-6391

City of Boise:
Stormwater Program Coordinator
City of Boise
P.O. Box 500
Boise, Id. 83701-0500
(Fax): 395-7841

City of Garden City:
Director of Public Works
City of Garden City
201 E. 50th St.
Garden City, Id. 83714
(Fax): 472-2998

Boise State University:
Environmental Health Officer
Boise State University
1910 University Dr.
Boise, Id. 83714
(Fax): 426-4411

Idaho Transportation Department, District #3:
Environmental Planner, Senior
Idaho Transportation Dept. District #
8150 Chinden Blvd.
Boise, Id. 83714
(Fax): 334-8917

Ada County Drainage District #3:
Counsel for Drainage District #3
Elam & Burke
P.O. Box 1539
Boise, Id. 83701
(Fax): 384-5844

9. ENTIRE AGREEMENT.

Except as provided otherwise herein, this instrument and any attachments hereto constitute the entire Agreement between the Co-Permittees concerning the subject matter hereof.

IN WITNESS WHEREOF, the Co-Permittees hereto have caused this Agreement to be duly executed as of the day and year first above written.

ADA COUNTY HIGHWAY DISTRICT

By: Judy M. Peavey-Derr
Judy Peavey-Derr
President, ACHD Commission

William J. Schwerdtfeger
Attest: ACHD Director

CITY OF BOISE CITY

By: H. Brent Coles
H. Brent Coles, Mayor

Jeanette P. Mooney
Attest: City Clerk

CITY OF GARDEN CITY

By: Ted E. Ellis
Ted E. Ellis, Mayor

Attest: City Clerk

BOISE STATE UNIVERSITY

By: Harry E. Neel
Harry E. Neel. Jr.,
Vice President, Finance and Administration

IDAHO TRANSPORTATION DEPARTMENT,
DISTRICT #3

By: _____
Pamela Lowe, District Engineer

ADA COUNTY DRAINAGE DISTRICT No. 3

By: _____
Pat Tate, Chair

State of Idaho)
)ss
County of Ada)

On this 25th day of October, 2001, before me, Susan K. Slaughter, a Notary Public in and for the state of Idaho, personally appeared JUDY PEAVEY-DERR and WILLIAM J. SCHWEITZER, known or identified to me to be the President and Director of Ada county Highway District who executed this instrument, and acknowledged to me that Ada County Highway District executed the same.

SUSAN K. SLAUGHTER NOTARY PUBLIC STATE OF IDAHO

_____
Notary Public for Idaho
Residing at: Boise, Idaho
Commission expires: 4-8-2003

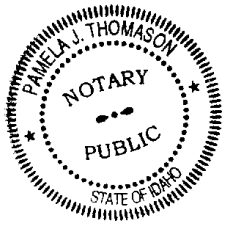
State of Idaho)
)ss
County of Ada)

On this 16 day of Oct, 2001, before me, Wendy L. Burrows, a Notary Public in and for the state of Idaho, personally appeared H. BRENT COLES and ANNETTE MOONEY, known or identified to me to be the Mayor and City Clerk of City of Boise who executed this instrument, and acknowledged to me that City of Boise executed the same.

Wendy L. Burrows
Notary Public for Idaho
Residing at: Nampa, Idaho
Commission expires: 6-14-05

State of Idaho)
)ss
County of Ada)

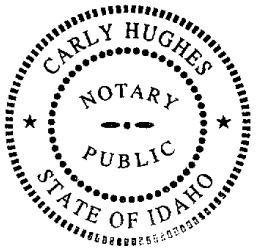
On this 1st day of November, 2001, before me, Pamela J Thomason, a Notary Public in and for the state of Idaho, personally appeared TED E. ELLIS and _____, known or identified to me to be the Mayor and City Clerk of Garden City who executed this instrument, and acknowledged to me that Garden City executed the same.



Pamela J. Thomason
Notary Public for Idaho
Residing at: Eagle Id
Commission expires: 9/17/2005

State of Idaho)
)ss
County of Ada)

On this 31 day of October, 2001, before me, Carly Hughes, a Notary Public in and for the state of Idaho, personally appeared Harry E. Neel. Jr., known or identified to me to be the Vice President, Finance and Administration, of Boise State University, who executed this instrument, and acknowledged to me that Boise State University executed the same.



Carly Hughes
Notary Public for Idaho
Residing at: Boise, Idaho
Commission expires: 12/14/06

State of Idaho)
)ss
County of Ada)

On this 8th day of NOVEMBER, 2001, before me, BARBARA A. WAITE, a Notary Public in and for the state of Idaho, personally appeared PAMELA LOWE, known or identified to me to be the DISTRICT 3 ENGINEER, of Idaho Department of Transportation, who executed this instrument, and acknowledged to me that Idaho Department of Transportation executed the same.

BARBARA A. WAITE NOTARY PUBLIC STATE OF IDAHO

Barbara A. Waite
Notary Public for Idaho
Residing at: BOISE
Commission Expires: 9.16.2005

State of Idaho)
)ss
County of Ada)

On this 6 day of November, 2001, before me, Kendall Martinez, a Notary Public in and for the state of Idaho, personally appeared Robert D. Mays, known or identified to me to be the Secretary-Treasurer of Ada County Drainage District #3, who executed this instrument, and acknowledged to me that Ada County Drainage District #3 executed the same.

KENDALL M. MARTINEZ NOTARY PUBLIC STATE OF IDAHO

Kendall Martinez
Notary Public for Idaho
Residing at: Ada
Commission Expires: 2007

3. CHARTERS

Appendix I. Henry's Fork Watershed Council Charter

LEGISLATURE OF THE STATE OF IDAHO

Fifty-second Legislature — Second Regular Session -- 1994

IN THE HOUSE OF REPRESENTATIVES

HOUSE CONCURRENT RESOLUTION NO. 52

BY REVENUE AND TAXATION COMMITTEE

A CONCURRENT RESOLUTION

STATING LEGISLATIVE FINDINGS AND RECOGNIZING THE LEGISLATIVE CHARTER OF THE HENRYS FORK WATERSHED COUNCIL.

Be It Resolved by the Legislature of the State of Idaho:

WHEREAS, the Legislature finds that as interests in the Henrys Fork Basin have diversified, the Henrys Fork and its tributaries have sustained increasing pressure to satisfy demands for irrigation, hydroelectricity and instream flow needs for fisheries and recreation; and

WHEREAS, since passage of the "Comprehensive State Water Plan: Henrys Fork Basin" in 1993, new developments such as dams, diversions and hydroprojects have been restricted on one hundred ninety-five miles of the Henrys Fork and tributary streams; and that additional recommendations in the Plan have not yet been fully addressed by the twenty-three federal, state and local agencies with management or regulatory jurisdiction in the Basin; and

WHEREAS, the Legislature also finds that in view of the high resource values at stake in the Henrys Fork Basin, an innovative, consensus-building process is needed to provide for sound watershed management.

NOW, THEREFORE, BE IT RESOLVED by the members of the Second Regular Session of the Fifty-second Idaho Legislature, the House of Representatives and the Senate concurring therein, that the Legislature authorizes state agencies to participate in the Henrys Fork Watershed Council which is a forum to identify watershed issues and to facilitate long-term solutions.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Legislature recognizes and commends the Henrys Fork mission statement, definitions, duties, facilitation role, and its policy on finances as follows:

(1) MISSION STATEMENT. The Henrys Fork Watershed Council is a grassroots, community forum which uses a nonadversarial, consensus-based approach to problem solving and conflict resolution among citizens, scientists and agencies with varied perspectives. The Council is taking the initiative to better appreciate the complex watershed relationships in the Henrys Fork Basin, to restore and enhance watershed resources where needed, and to maintain a sustainable watershed resource base for future generations. In addressing social, economic and environmental concerns in the Basin, Council members will respectfully cooperate and coordinate with one another and abide by federal, state and local laws and regulations.

(2) DEFINITIONS:

(a) "Basin" means the Idaho portions of the Henrys Fork watershed as defined in the "Comprehensive State Water Plan: Henrys Fork Basin," including over three thousand miles of rivers and streams, two million acres of public and private lands and underlying ground water resources.

(b) "Council" means the Henrys Fork Watershed Council.

(3) MEMBERSHIP. The Council shall be comprised of citizens, scientists and agency representatives who reside, recreate, make a living and/or have legal responsibilities in the Basin, thus ensuring a more collaborative

approach to resource decision-making. The Council shall not be limited in the number of participants, with members organized into the following three component groups:

(a) Citizens Advisory Group - Members of the public with commodity, conservation and/or community development interests will have an integral role in Council affairs through the Citizens Advisory Group. The Group shall review agency proposals and plans for their relevance to local needs and whether all interests are treated equitably.

(b) Technical Team - The Team shall be composed of scientists and technicians from government, academia and the private sector. They will coordinate and monitor research projects, serving as catalysts for launching needed studies and as peer reviewers for ongoing work in the Basin. Duplication of research will be minimized through Technical Team guidance, and results of research shall be integrated into Council discussions.

(c) Agency Roundtable - The Roundtable shall have representatives of all local, state and federal entities with rights or responsibilities in the Basin, including the Shoshone-Bannock Tribes. The agencies will work to align their policies and management to watershed resource concerns and needs. Discussions shall seek to ensure close coordination and problem solving among agencies.

(4) DUTIES OF COUNCIL. Citizens, scientists and agencies on the Council shall dedicate themselves to:

(a) Cooperate in resource studies and planning that transcend jurisdictional boundaries, still respecting the mission, roles, water and other rights of each entity.

(b) Review and critique proposed watershed projects and Basin Plan recommendations, suggesting priorities for their implementation by appropriate agencies.

(c) Identify and coordinate funding sources for research, planning, implementation and long-term monitoring programs, with financing derived from both public and private sectors.

(d) Serve as an educational resource to the Legislature and the general public, communicating the Council's progress through regular reports, media forums and other presentations.

(5) FACILITATION. The Council shall operate on a consensus basis and select two representative citizen organizations in the Basin to cofacilitate its meetings. (The Fremont-Madison Irrigation District and the Henrys Fork Foundation, Inc. currently are serving in this capacity at the request of the Council.) The cofacilitators shall attend to administrative and logistical needs of the Council, coordinate its public information activities, and submit an annual report of its progress to the Legislature.

(6) FINANCES. The Council shall appoint a Finance Committee with equal representation from the three component groups and the cofacilitating organizations to identify potential sources of funds and to coordinate the funding of priority projects and administrative needs. The following state fund shall be among the private and public sources available to implement the Council's recommendations:

Henrys Fork Watershed Fund. This Division of Environmental Quality fund already exists and may receive dedicated moneys from private and public sources to fund projects in the Henrys Fork Basin and to defray Council administrative expenses.

Appendix J. Walla Walla Watershed Partnership Charter

Walla Walla Watershed Management Partnership

500 Tausick Way • Walla Walla, WA 99362
wallawallawatershed.org • (509) 524 5216 • Fax: (509) 524 5209

Water Resource Panel Charter

Mission

The Water Resource Panel (WRP) will provide technical assistance for the development of the local water plans and provide advice to the Walla Walla Watershed Management Partnership Board on the criteria for establishment of local water plans and the approval, denial, or modification of the local water plans. (HB 1580 - Section 4[3]d)

Vision

The Walla Walla Watershed Management Partnership implements successful Local Water Plans that provide "flow from flexibility" supported by the WRP's technical assistance.

Goals / Desired Outcomes

- Provide technical review of proposed local water plans.
- Draft recommendations on approval/modification of Local Water Plans for each reviewed plan.
- In conjunction with the Policy Advisory Group, provide assistance and advice to the Partnership Board in implementing of HB 1580 (Chapter 183, 2009 Session Laws).

Membership

The WRP will be comprised of participants with expertise in the following subject areas as prescribed by HB 1580 (Chapter 183, Session Laws of 2009):

Surface water and groundwater monitoring and hydrological analysis
Irrigation Management and Engineering
Water Rights
Fisheries Habitat
Economic Development

The Partnership Board must invite participation in the WRP from the Washington State Department of Ecology and Department of Fish and Wildlife. The Board will appoint membership by resolution for a renewable term of two-years.

A designated member of the Partnership Board staff will chair the committee as a non-voting member. Additional WRP members may be appointed by the Partnership Board to provide expertise as deemed appropriate.

Meeting Schedule and Process

The WRP will be convened as necessary and requested by the Partnership Board. Partnership Board staff will facilitate meetings and establish meeting agendas. The WRP will operate based on consensus whenever possible, but may determine a process for majority-decision making so long as a minority report is included. All meetings will be open to the public.

Water Resource Panel	
Mandated "expertise's"	**Current Membership**
Irrigation Management and Engineering	Jerry Anhorn
Surface water and groundwater monitoring and hydrological analysis	Bob Bower
Irrigation Management and Engineering	Greg Kinsinger
Water Rights	Victoria Leuba
Irrigation Management and Engineering / Water Rights	Jack Myrick
Fisheries Habitat	TBD (CTUIR?)
Economic Development	TBD

*Additionally WDFW, and ECY must be invited (completed 9/2009)

Walla Walla Watershed Management Partnership

500 Tausick Way • Walla Walla, WA 99362
wallawallawatershed.org • (509) 524 5216 • Fax: (509) 524 5209

Policy Advisory Group Charter

Mission

The Policy Advisory Group (PAG) will assist and advise the Walla Walla Watershed Management Partnership Board in coordinating and developing water resource-related programs, planning, and activities within the planning area, including the coordination of efforts with all jurisdictions of the planning area and development of the board's strategic actions. (HB 1580 - Section 4[3]b)

Vision

Communications among the Walla Walla Watershed Management Partnership Board and entities or individuals working on issues relevant to the Partnership Board are efficient and effective, with the PAG providing informed and innovative solutions to policy questions in response to requests by the Partnership Board.

Goals / Desired Outcomes

- Provide a forum for discussion of issues relevant to the Partnership Board.
- In conjunction with the Water Resource Panel, provide assistance and advice to the Partnership Board in the implementation of HB 1580 (Chapter 183, 2009 Session Laws).
- Develop suggestions for updates to the Partnership Board's strategic actions.
- Assist the Partnership Board in making policy related decisions.

Membership

The Policy Advisory Group will be comprised of participants as prescribed by HB 1580 (Chapter 183, Session Laws of 2009):

WA Dept of Ecology
WA Dept of Fish and Wildlife
Affected State Agencies
Other appropriate interests

The Partnership Board must invite participation in the PAG from the Washington State Department of Ecology, Department of Fish and Wildlife and other affected state agencies. The Board will appoint membership from other appropriate interests by resolution for a renewable term of two-years.
A member of the PAG will be selected to serve as chair by vote of PAG members. Partnership staff will facilitate meetings of the PAG. Additional members may be added by the Partnership Board as deemed appropriate.

Meeting Schedule and Process

The PAG will be convened as necessary and requested by the Partnership Board, but will meet no less than quarterly. Partnership staff will facilitate meetings and establish agendas. The PAG will operate based on consensus whenever possible, but may determine a process for majority-decision making so long as a minority report is included. Outcomes of the PAG will be communicated to the Board by the Chair. All meetings will be open to the public.

4. STATUTES

Appendix K. Niobrara Council Statute

ARTICLE 20

NIOBRARA RIVER CORRIDOR

Section
72-2001. Repealed. Laws 2000, LB 1234, § 24.
72-2002. Repealed. Laws 2000, LB 1234, § 24.
72-2003. Repealed. Laws 2000, LB 1234, § 24.
72-2004. Repealed. Laws 2000, LB 1234, § 24.
72-2004.01. Act, how cited.
72-2005. Legislative findings.
72-2006. Niobrara scenic river corridor, defined.
72-2007. Niobrara Council; created; members; terms; meetings; expenses.
72-2008. Niobrara Council; powers and duties.
72-2009. Niobrara Council Fund; created; use; investment.
72-2010. Niobrara Council; zoning duties.
72-2011. Activities within corridor; limitations.
72-2012. Niobrara Council; zoning jurisdiction.

72-2001 Repealed. Laws 2000, LB 1234, § 24.

72-2002 Repealed. Laws 2000, LB 1234, § 24.

72-2003 Repealed. Laws 2000, LB 1234, § 24.

72-2004 Repealed. Laws 2000, LB 1234, § 24.

72-2004.01 Act, how cited.

Sections 72-2004.01 to 72-2012 shall be known and may be cited as the Niobrara Scenic River Act.

Source: Laws 2002, LB 1003, § 47.

72-2005 Legislative findings.

As a result of the recent federal court ruling in National Parks and Conservation Association v. National Park Service and in order to maintain an aspect of local control over the Niobrara scenic river corridor, the Legislature finds that there is a need to reconstitute the existing Niobrara Council with the express authority and responsibility to manage the Niobrara scenic river corridor in conjunction with the National Park Service. The purpose of the Niobrara Scenic River Act is to effectuate changes in the council necessary to ensure the continuation of the cooperative management relationship between the Niobrara Council and the National Park Service so that local participation and control over this valuable natural resource can be maintained.

Source: Laws 2000, LB 1234, § 1; Laws 2002, LB 1003, § 42.

72-2006 Niobrara scenic river corridor, defined.

For purposes of the Niobrara Scenic River Act, Niobrara scenic river corridor means the area designated as a national scenic river and a part of the national wild and scenic rivers system under 16 U.S.C. 1274(a)(117), as such section existed on May 24, 1991, and described in the 1996 Niobrara National Scenic River General Management Plan/Environmental Impact Statement.

Source: Laws 2000, LB 1234, § 2; Laws 2002, LB 1003, § 43.

72-2007 Niobrara Council; created; members; terms; meetings; expenses.

(1) The Niobrara Council is created. The council membership shall include:

(a) A representative of each of the county boards of Brown, Cherry, Keya Paha, and Rock counties chosen by the county board of the respective county;

(b) A representative of the Middle Niobrara Natural Resources District and the Lower Niobrara Natural Resources District chosen by the board of the respective district;

(c) The secretary of the Game and Parks Commission or his or her designee;

(d) A representative of the United States Fish and Wildlife Service and a representative of the National Park Service chosen by the Governor from lists of at least three individuals, or fewer if there are not at least three qualified individuals, submitted by the federal services. The appointments under this subdivision shall be nonvoting members unless and until the agencies represented by these appointees formally authorize such appointees to vote on all matters before the council;

(e) An individual from each of Brown, Cherry, Keya Paha, and Rock counties who resides in the Niobrara River drainage area and owns land in the Niobrara scenic river corridor chosen by the Governor from a list of at least three individuals, or fewer if there are not at least three qualified individuals, from each county submitted by the county board representatives on the council;

(f) A representative from a recreational business operating within the Niobrara scenic river corridor chosen by the Governor from a list of at least three individuals, or fewer if there are not at least three qualified individuals, submitted by the county board representatives on the council;

(g) A timber industry representative operating within the Niobrara scenic river corridor chosen by the Governor from a list of at least three individuals, or fewer if there are not at least three qualified individuals, submitted by the county board representatives on the council; and

(h) A representative of a recognized, nonprofit environmental, conservation, or wildlife organization chosen by the Governor from a list of at least three individuals, or fewer if there are not at least three qualified individuals, submitted by the county board representatives on the council.

The council members shall be selected within ninety days after July 13, 2000. The council members shall hold office for three-year terms and until a successor is appointed and qualified. The council members shall serve at the pleasure of the appointing board or the Governor.

(2) The council shall elect a chairperson, a vice-chairperson, a secretary, and a treasurer who shall jointly serve as the executive committee for the council. The council shall meet on a regular basis, preferably once a month, with a minimum of six meetings per year. Special meetings may be called by any member of the executive committee or at the request of a simple majority of the members of the council.

(3) A quorum shall be present at a meeting before any action may be taken by the council. A quorum shall be a majority of the members who are selected and serving and who vote on issues before the council. All actions of the council require a majority vote of the quorum present at any meeting, except that any vote to reject or adopt any zoning regulation or variance under section 72-2010 requires a vote of two-thirds of all the council members who are selected and serving and who vote on issues before the council. A council member may not participate or vote on any matter on which he or she participated or voted as a member of a county board, county planning commission, or natural resources district board, and in such a case such council member shall not be counted for purposes of determining whether quorum or vote requirements have been satisfied.

(4) Members shall be reimbursed for actual and necessary expenses incurred in carrying out their duties on the council as provided in sections 81-1174 to 81-1177.

Source: Laws 2000, LB 1234, § 3; Laws 2001, LB 182, § 1.

72-2008 Niobrara Council; powers and duties.

The mission of the Niobrara Council is to assist in all aspects of the management of the Niobrara scenic river corridor since portions of the Niobrara River have been designated as a national scenic river under 16 U.S.C. 1274(a)(117), as such section existed on May 24, 1991, giving consideration and respect to local and governmental input and private landowner rights, and to maintain and protect the integrity of the resources associated with the Niobrara scenic river corridor. The council shall perform management functions related to the Niobrara scenic river corridor, including, but not limited to, those authorized and delegated to it by the National Park Service. The council may promulgate its own rules and internal policies to carry out the purposes of the Niobrara Scenic River Act. The Game and Parks Commission may provide administrative support when requested by the council to carry out its duties. This support shall not exceed fifty thousand dollars in any calendar year. In the Niobrara scenic river corridor, the council may hold title to real estate in the name of the council. The council may purchase, accept gifts of, or trade real estate and may obtain conservation easements as provided in the Conservation and Preservation Easements Act. Acquisition of conservation easements outside the boundaries of the Niobrara scenic river corridor shall require the approval of the appropriate governing body as provided in section 76-2,112.

Source: Laws 2000, LB 1234, § 4; Laws 2002, LB 1003, § 44.

Cross References

Conservation and Preservation Easements Act, see section 76-2,118.

72-2009 Niobrara Council Fund; created; use; investment.

The Niobrara Council Fund is created. The fund shall be administered by the Niobrara Council. The council may accept any private or public funds to carry out its work and such funds shall be remitted to the State Treasurer for credit to the fund. The fund shall consist of such funds and legislative appropriations made to the council. Any money in the fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

Source: Laws 2000, LB 1234, § 5.

Cross References

Nebraska Capital Expansion Act, see section 72-1269.
Nebraska State Funds Investment Act, see section 72-1260.

72-2010 Niobrara Council; zoning duties.

The Niobrara Council shall review and approve or reject all zoning regulations, including existing regulations, new regulations, proposed regulations, and variances of any type including variances for use and location, which affect land in the Niobrara scenic river corridor that is not incorporated within the boundaries of a municipality. If the council rejects a zoning regulation or variance, the governing body enacting the regulation or variance has six months to present an alternative to the council. If no alternative is proposed or if the alternative is also rejected, the council may adopt zoning regulations for such area. In counties without zoning the council may develop and enforce zoning regulations within the Niobrara scenic river corridor under the guidance of the federal Wild and Scenic Rivers Act or under the guidance of the general management plan as written by the National Park Service. The council shall follow the requirements for zoning regulations in sections 23-114 to 23-114.05 and 23-164 to 23-174.10, except that no separate planning commission is required and the council shall fulfill the duties of both the county board and the planning commission in such sections.

Source: Laws 2000, LB 1234, § 6; Laws 2002, LB 1003, § 45.

72-2011 Activities within corridor; limitations.

(1) Any state or state-assisted activity or undertaking proposed within the Niobrara scenic river corridor shall be consistent with the purpose of the scenic river designation, including the scenic river's free-flowing condition and scenic, geological, biological, agricultural, historic, and prehistoric resources.

(2) The head of any state or local agency having direct or indirect jurisdiction over a proposed state or state-assisted undertaking within the Niobrara scenic river corridor and the head of any agency having authority to license or permit any undertaking in such area shall prepare a detailed proposal and submit it to the Niobrara Council for its review.

(3) The council shall review the proposal and consult with the agency. The council has ninety days after the date that the proposal is received to make a determination of whether or not the proposed action is consistent with the purposes of this section. If the council determines that the proposal is not consistent with the purposes of this section, the council shall so notify the agency and the agency shall not proceed with the action until after a justification for the action has been submitted to the Governor and approved by the Governor in writing. The justification shall include the following elements: The anticipated current, future, and cumulative effects on the scenic and natural resources of the designated scenic river corridor; the social and economic necessity for the proposed action; all possible alternatives to the proposed action including a no-action alternative; the comparative benefits of proposed alternative actions; and the mitigation measures outlined in the proposed action.

Source: Laws 2000, LB 1234, § 7; Laws 2002, LB 1003, § 46.

72-2012 Niobrara Council; zoning jurisdiction.

The Niobrara Council shall not have zoning jurisdiction outside the boundaries of the Niobrara scenic river corridor.

Source: Laws 2000, LB 1234, § 8.

5. EDUCATIONAL RESOURCES

Appendix L. Bert the Salmon & Natural Yard Care Campaign– Five Steps to Natural Yard Care

Five Steps to: Natural Yard Care

1. Build healthy soil
2. Plant right for your site
3. Practice smart watering
4. Think twice before using pesticides
5. Practice natural lawn care

To learn more about Natural Yard Care, call the Natural Lawn and Garden Hotline at 206-633-0224 or email info@lawngardenhotline.org.

King County

City of Seattle

Washington State Department of Ecology

1202 M Printed on recycled paper – April 07

Natural Yard Care Buyer's Guide

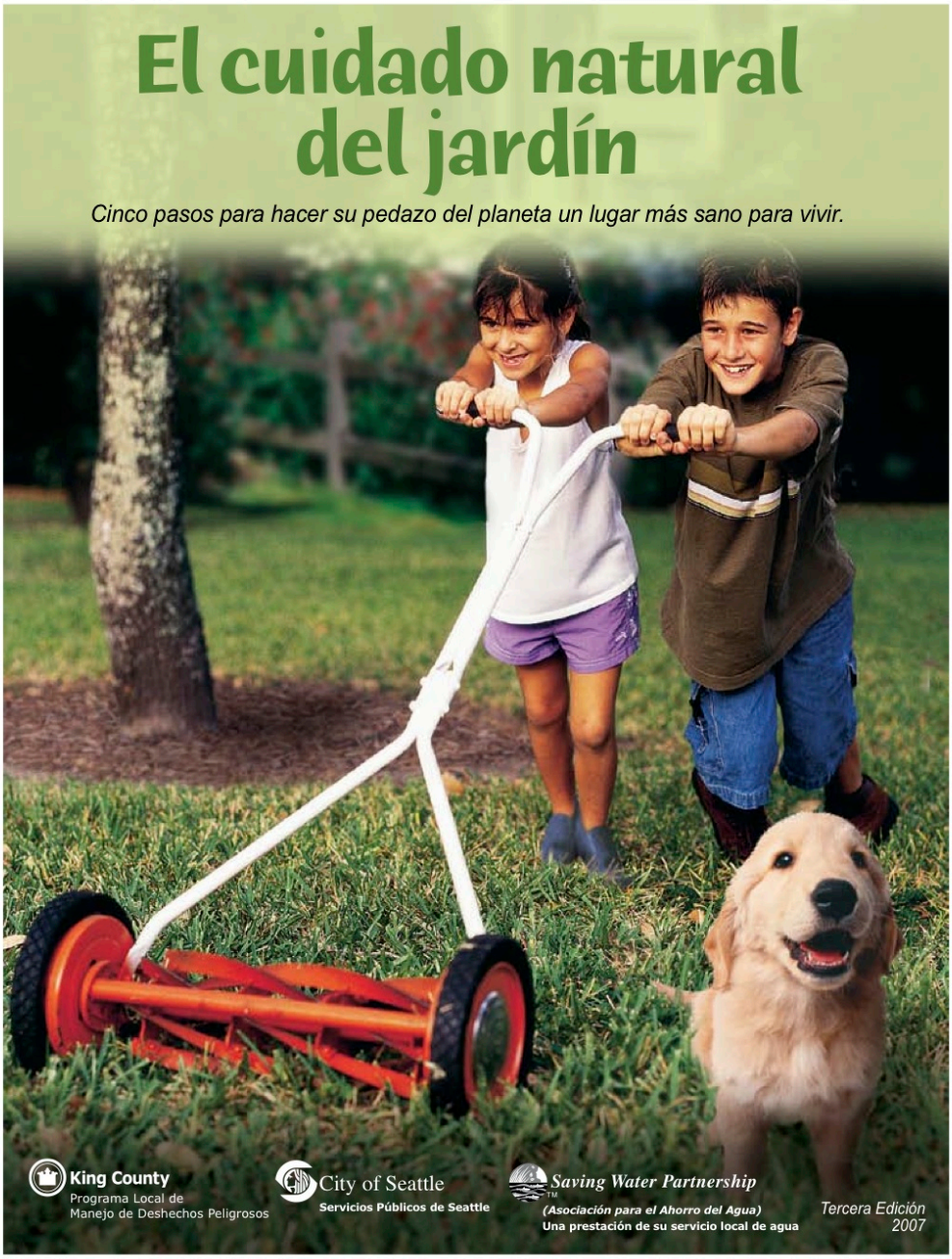
King County
Department of
Natural Resources and Parks
Solid Waste Division

Natural Yard Care Buyer's Guide

Natural products will help create a beautiful yard while protecting the environment and conserving resources. This guide offers natural care alternatives that get the job done in a safe and healthy way.

Goal	Traditional Approach	Natural Solution	Benefits of Going Natural
Healthy, Vibrant Lawn	• Weed & feed • Quick release fertilizer • Insecticide • Herbicide • Collect lawn clippings	• Electric mulching mower or push reel mower • Deep watering, less often • Regulate water usage with water timer • Organic or slow release fertilizer	• Clippings provide free nutrients • Less fertilizer needed • Release nutrients over time • Protect kids and pets • Use less water
Conserve Water	• Frequent, shallow watering	• Deep watering, less often • Water timers and wands • Rain gauge • Soaker hoses or drip irrigation • Low water-use plants • Bark mulch • Compost • Electric mulching mower or push reel mower	• Use shared resource efficiently • Deep watering promotes healthy plants • Use less water • Minimize evaporation • Build healthy soil • Preserve a finite resource
Thriving Plants	• Quick release fertilizer	• Organic or slow release fertilizer • Compost • Plants suited to the Northwest and yard conditions	• Release nutrients over time • Healthy, attractive plants • Less plant maintenance
Moss-Free Lawn	• Fertilizer with moss control	• Aeration • Compost • Mulch mowing	• Moss less likely to occur when lawn is healthy
Healthy Soil	• Quick release fertilizer	• Organic or slow release fertilizer • Compost • Mulch with grass clippings • Mulch mowing	• Release nutrients over time • Improve soil health • Grow healthy plants • Clippings provide free nutrients • Fewer weeds
Weed-Free Beds	• Weed killers	• Compost mulch • Bark mulch • Hand weeding tools	• Suppress weeds • Provide nutrients • Promote healthy plants • Protect kids and pets
Pest-Free Yard	• Insecticide	• Insecticidal soap • Ladybugs, other beneficial organisms • Less toxic slug bait	• Safer for kids and pets • Won't kill beneficial insects • Protect birds and wildlife
No Crane Fly Damage	• Insecticide	• Compost • Mulch mowing • Aeration • Monitor for damage	• Healthy, vibrant lawn will outgrow any damage • Safer for kids and pets

This material will be provided in alternate formats upon request by contacting the King County Solid Waste Division at 206-296-4466, 1-800-325-6165, ext. 6-4466, TTY Relay: 711, www.kingcounty.gov/solidwaste


El cuidado natural del jardín
Cinco pasos para hacer su pedazo del planeta un lugar más sano para vivir.
King County
Programa Local de
Manejo de Deshechos Peligrosos
City of Seattle
Servicios Públicos de Seattle
Saving Water Partnership
(Asociación para el Ahorro del Agua)
Una prestación de su servicio local de agua
Tercera Edición
2007

¿Por qué hacerlo a lo natural?

Nuestros jardines son nuestro hogar al aire libre: lindos y divertidos, son espacios buenísimos en donde relajarnos. Pero al cuidarlos, a menudo utilizamos el agua de manera ineficaz, producimos muchos desechos y sobreusamos productos químicos, que son malos para el ambiente y para la salud de nuestras familias.

Sin embargo, las buenas noticias son que haciendo algunos cambios sencillos en cómo cuidamos nuestros jardines podemos:

Ahorrar dinero en el agua, la eliminación de desechos y los productos químicos.

Ahorrar tiempo, ya que trabajar con la naturaleza, a largo plazo, es más fácil.

Proteger la salud de nuestras familias, al reducir el contacto con los productos químicos.

Proteger el ambiente

- Conservando nuestros preciados suministros de agua y dejando más agua en los ríos para los salmones.
- Manteniendo nuestros lagos y riachuelos limpios, al reducir la necesidad de utilizar productos químicos.
- Reciclando los recortes del jardín, volviéndolos un fertilizante gratis.

Ponga a la naturaleza a trabajar en su jardín

La naturaleza no malgasta nada. En paisajes naturales, los organismos del suelo reciclan las plantas muertas, convirtiéndolas en alimento para el crecimiento nuevo de las plantas. Las plantas se adaptan al agua, al sol y al suelo disponible en su terreno. Además, la gran variedad de plantas, organismos del suelo, insectos y animales logra mantener la mayoría de las plagas y enfermedades bajo control.

Trabajando con la naturaleza en su jardín, Usted puede tener un jardín que se ve fantástico y es más fácil de cuidar, y más sano para las familias, los animales domésticos, la fauna y nuestro magnífico medioambiente en el noroeste.

¿Cómo? Es fácil...

Empiece con estos 5 pasos:

1 Cultive un suelo sano

2 Plante lo adecuado para su terreno

3 Riegue de forma inteligente

4 Piense dos veces antes de usar pesticidas

5 Cuide el césped de forma natural

Si tiene preguntas o quiere más información, comuníquese con los expertos de la **Línea de respuestas para un jardín y césped natural llamando al 206-633-0224** (pida atención en español), mande un email a ***info@lawnandgardenhotline.org*** o vea la lista de recursos al final de esta guía.

Un mensaje de City of Seattle, King County y Saving Water Partnership.

Appendix M. Belle Fourche River Watershed Partnership Radio Script

Belle Fourche River Watershed Partnership Radio Script – April 2009

Of the 2.2 million acres 84% of the land in the Belle Fourche River Watershed in South Dakota is native rangelands primarily mixed grass prairie. Grasses and other plants found here are the base of a food chain that supports hundreds of species of wildlife as well as livestock in western SD. Grasses make their own food and energy. Grasslands are a renewable resource, when they are managed properly. Well managed rangelands play a huge role in the economy of Western SD that is so reliant on the livestock industry. Well managed rangelands… save money, increase productivity of the land, protect water quality, promote open spaces and wildlife habitat, enriches livestock production, improves property values, assures family health and safety, and satisfies responsibility to care for the land.

Did you know the rangelands of Western SD evolved under disturbances including large animal grazing and fire? Native plant communities function best under intermediate disturbance and modern proper grazing practices protect the integrity of our rangeland ecosystems while in turn produce food for the public. The BFRWP promotes healthy rangelands by providing technical and financial assistance, and sponsoring public outreach activities to educate ranchers and the general public on proper grazing management. Come check out what we have going on at www.bellefourchewatershed.org

Rangeland health and soil quality are interdependent. Proper management of rangelands leads to healthy soils which in turn increase the amount of water from rainfall and snowmelt that is available for plant growth, reduce runoff and the potential for erosion and act as a filter to protect water and air quality.

Forest lands comprise 3% of the Belle Fourche Watershed in South Dakota. Although a relatively small portion of the watershed compared to native rangelands, management on forest lands can cause huge impacts to the overall watershed health. Activities on forested lands include mining, logging, recreational use, grazing, and urban development. Much care must be used when planning these activities to assure integrity of the natural system. Improper planning can cause detrimental effects on wildlife, ground and surface water and erosion. The BFRWP supports active and proper land use on our forested lands in the watershed. Come check us out at…

Crop ground is extremely vulnerable to excess soil loss from wind and water erosion. Improved tillage practices, cover crops and irrigation improvements help reduce the amount of sediments reaching the river due to runoff. The Belle Fourche River Watershed Partnership has lead an active role in automation projects in the irrigation district improving water delivery to farmers and has cost shared on improved flood irrigation systems and replacing flood systems with center pivots. Check out our website at…

Noxious weeds threaten wild lands and economic health of the watershed. Weeds take over that land reducing healthy forage production for livestock and wildlife and produce both environmental and economic burdens. Not only to they harm healthy plant communities reducing forage production they are very expensive to control and can be toxic to livestock. Weeds are carried across the landscape by the wind, water, wildlife, people and vehicles. The BFRWP supports noxious weed management. Come check us out at…

Appendix N. Coos Watershed Alliance Coffee Klatch Invitation

Coos Watershed Association
P.O. Box 5860
Charleston, OR 97420
phone: (541) 888-5922
fax: (541) 888-6111
www.cooswatershed.org

October 10, 2006

Dear Thomas & Marilyn Agar, Trustees,

Greetings! You are invited to a neighborhood "coffee klatch" with other landowners in the "Heads of Tide" area of the lower Millicoma and South Fork Coos Rivers (see map of assessment streams on back). The Coos Watershed Association (CoosWA) would like to hear your interests and concerns about conditions in the watershed, and have a conversation about the work that we do in your area. The meeting will be held at the **Millicoma Intermediate School cafeteria**, **260 Second Ave. in Eastside past the Fire Station, 7:00 p.m., October 23th, 2006.** Refreshments will be provided.

The CoosWA is a non-profit, non-governmental group. The CoosWA was formed to create a mechanism through which the people of the Coos watershed can work together to achieve both environmental integrity and economic stability. As you may be aware, we have conducted various types of surveys in the "Heads of Tide" area over the past few years. Information from these surveys is being compiled into a watershed assessment that will be used to identify and prioritize potential land and stream stewardship projects with willing landowners. Please note: we work only on a voluntary basis with landowners to provide incentives for good stewardship – we have no regulatory role and do not provide information to government agencies for regulatory purposes.

The main objective of this first coffee klatch is to help us better understand the resources of the Heads of Tide sub-basins by learning about your concerns and what you would or wouldn't like to see happen in your area. This feedback will be incorporated into the Heads of Tide assessment and will help guide future efforts of the CoosWA. We will also have available summarized samples of field data already collected. We expect that this coffee klatch will be the first of a three-part series of meetings in your neighborhood as we continue to develop the assessment.

Please keep in mind, whether you own property on a creek or wetland, property with no surface water, and / or property on top of a hill you are still an important influence in the watershed.

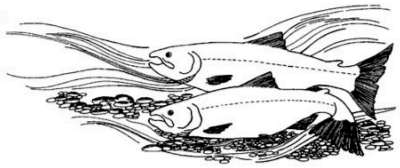
LOCATION: Millicoma Intermediate School cafeteria, **260 Second Ave. in Eastside past the Fire Station,**

TIME: 7:00 p.m., Monday, October 23, 2006.

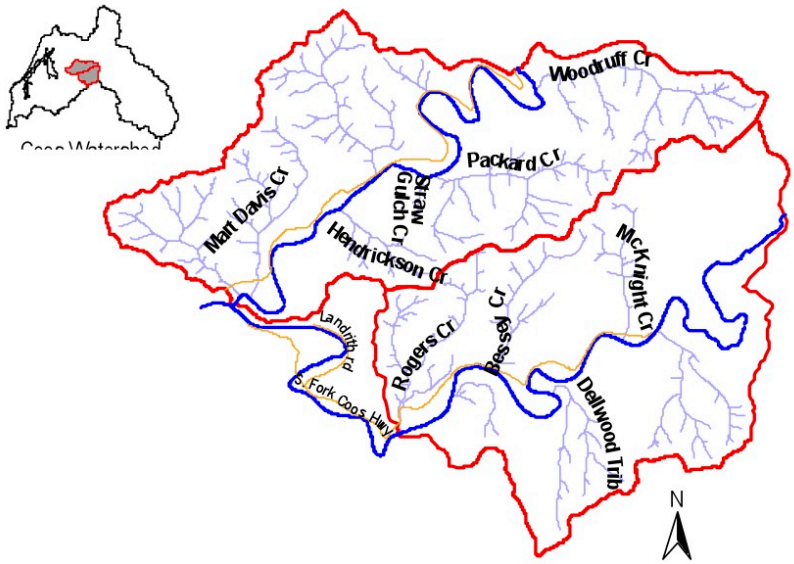
Please contact the CoosWA if you have any questions.

Sincerely,

Bessie Joyce
Assessment & Outreach Coordinator
Email: bjoyce@cooswatershed.org
Cell: 404-6965



Heads of Tide Assessment Area



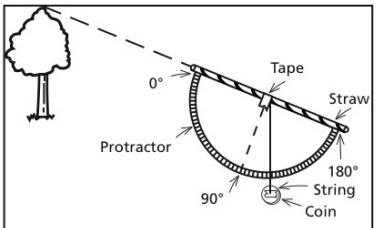
Appendix O. Coalition for the Upper South Platte Forest Measurement Guide

Student Page

Forest Measurement Guide

MEASURING TREE DIAMETER

Once you have identified the various tree species in your adopted area, measure a good sample of each type (for example, five trees per species). Use a tape measure to measure the circumference of the tree at a standard height from the ground. Foresters use the measurement dbh—diameter at breast height, which is about 4.5 feet (1.4m) above ground—as standard. With the circumference data in hand, the conversion to diameter is simple:
circumference in inches divided by 3.14 (π)=diameter in inches



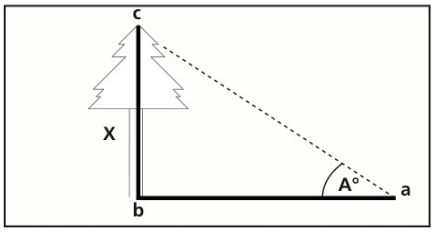
Attach the straw to the protractor with tape. Attach the string to the straw. Place a weight on the end of the string using tape.

MEASURING TREE HEIGHT

Measuring height is somewhat difficult in a dense forest. But you can estimate tree heights where you can see the tree's crown by using a ***clinometer***. You may want to ask a forester to show your students how to use a professional clinometer. Or you can make your own clinometer by using a protractor, a straw, some string, and a small weight. (See diagram).

To use the instrument, (a) find a tree on fairly level ground and stand far enough away from it to see the top of the tree looking through the straw, (b) have a partner steady the weight and string against the protractor and read the number where the string crosses the protractor, (c) obtain "A," the angle of elevation, by subtracting 90 from the number read on the protractor, and (d) have your partner measure in feet the horizontal distance "ab" from where you are to the base of the tree.

Note: the protractor should be held with the 180° mark next to the person's eye.



Notes:

1. These directions assume that you are lying down on flat ground (eye level with the base of the tree) and looking through the straw. If you are standing, you will have to add your height to the final calculation to get a more accurate estimation of the tree's height.
2. The tangent of 45° is 1. Hence, if you are measuring a tree that happens to have a 45° angle of elevation, the height of the tree will be equal to the distance between a and b.
3. As the height of the tree increases, so does the angle of elevation. (The greater the angle of elevation, the greater the tangent.)
4. Before you try this in the field, you may want to practice by measuring heights of buildings or other tall objects near your school.

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Student Page

Forest Measurement Guide

By using the formula ***ab x Tangent A = X***, we can determine the height of the tree, where:

ab = the distance from the tree
A = the angle of elevation
X = the height of the tree

Tangents are determined by using tangent charts (See the chart below.)

Example 1:
if ab = 35 feet, and A = 34°, then the tangent of A = 0.6745
35 x 0.6745 = X
23.61 = X (the height is approximately 24 feet, or 7.3 m)

Example 2:
if ab = 35 feet and A = 60°, then the tangent of A = 1.7321
35 x 1.7321 = X
60.6235 = X (the height is approximately 61 feet, or 18.6 m)

TANGENT CHART (A = angle)

A	Tangent	A	Tangent	A	Tangent	A	Tangent
1°	0.0175	24°	0.4452	47°	1.0724	70°	2.7475
2°	0.0349	25°	0.4663	48°	1.1106	71°	2.9042
3°	0.0524	26°	0.4877	49°	1.1204	72°	2.0777
4°	0.699	27°	0.5095	50°	1.1918	73°	2.2709
5°	0.0875	28°	0.5317	51°	1.2349	74°	3.4874
6°	0.1051	29°	0.5543	52°	1.2799	75°	3.7321
7°	0.1228	30°	0.5774	53°	1.3270	76°	4.0108
8°	0.1405	31°	0.6009	54°	1.3764	77°	4.3315
9°	0.1584	32°	0.6249	55°	1.4281	78°	4.7046
10°	0.1763	33°	0.6494	56°	1.4826	79°	5.1446
11°	0.1944	34°	0.6745	57°	1.5399	80°	5.6713
12°	0.2126	35°	0.7002	58°	1.6003	81°	6.3138
13°	0.2309	36°	0.7265	59°	1.6643	82°	7.1154
14°	0.2493	37°	0.7536	60°	1.7321	83°	8.1443
15°	0.2679	38°	0.7813	61°	1.8040	84°	9.5144
16°	0.2867	39°	0.8098	62°	1.8807	85°	11.4301
17°	0.3057	40°	0.8391	63°	1.9626	86°	14.3007
18°	0.3249	41°	0.8093	64°	2.0503	87°	19.0811
19°	0.3443	42°	0.9004	65°	2.1445	88°	28.6363
20°	0.3640	43°	0.9325	66°	2.2460	89°	57.2900
21°	0.3839	44°	0.9657	67°	2.3559	90°	undefined
22°	0.4040	45°	1.0000	68°	2.4751		
23°	0.4245	46°	1.0335	69°	2.6051		

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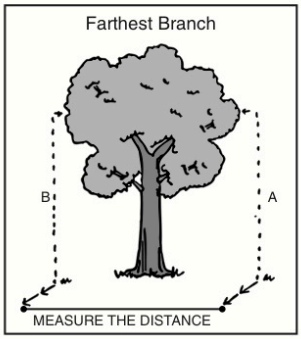
Student Page

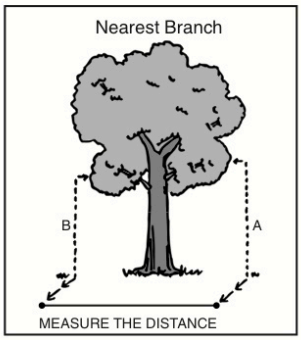
Forest Measurement Guide

MEASURING THE CROWN SPREAD



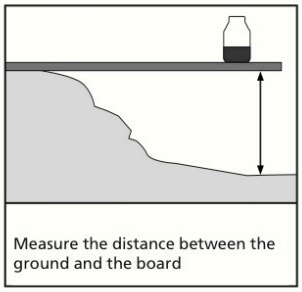
To measure the tree's crown or the crown spread (how far the branches spread away from the trunk), use an average. Find the branch that sticks out the farthest and have team member A stand under it. On the other side of the tree, find the branch that sticks out the farthest and have student B stand under it. Have students step in front of the trunk so the measurement across can be taken. Have a team member measure the distance between the two students. This is crown spread at the widest point.

Next, find the two branches on each side that end nearest to the tree and repeat the same procedure as before. Determine the average of these two distances to find the crown measurement.



DETERMINING SLOPE

To measure slope, use a board 25 inches (62.5 cm) long. Place one end against the slope to be measured, holding it level. Next, place a small jar with water in it (about half full) on the other end of the board, lowering and raising until it is level (if you have a level you can use it in place of the jar).



Measure the distance from the ground to the end of the board with the jar on it. This distance (in inches) is then multiplied by the conversion factor of 4, which gives you the slope of the area in percent. Repeat this procedure in each forested plot. This calculation gives the average of the slope within the forest.

MEASURING MICROFAUNA

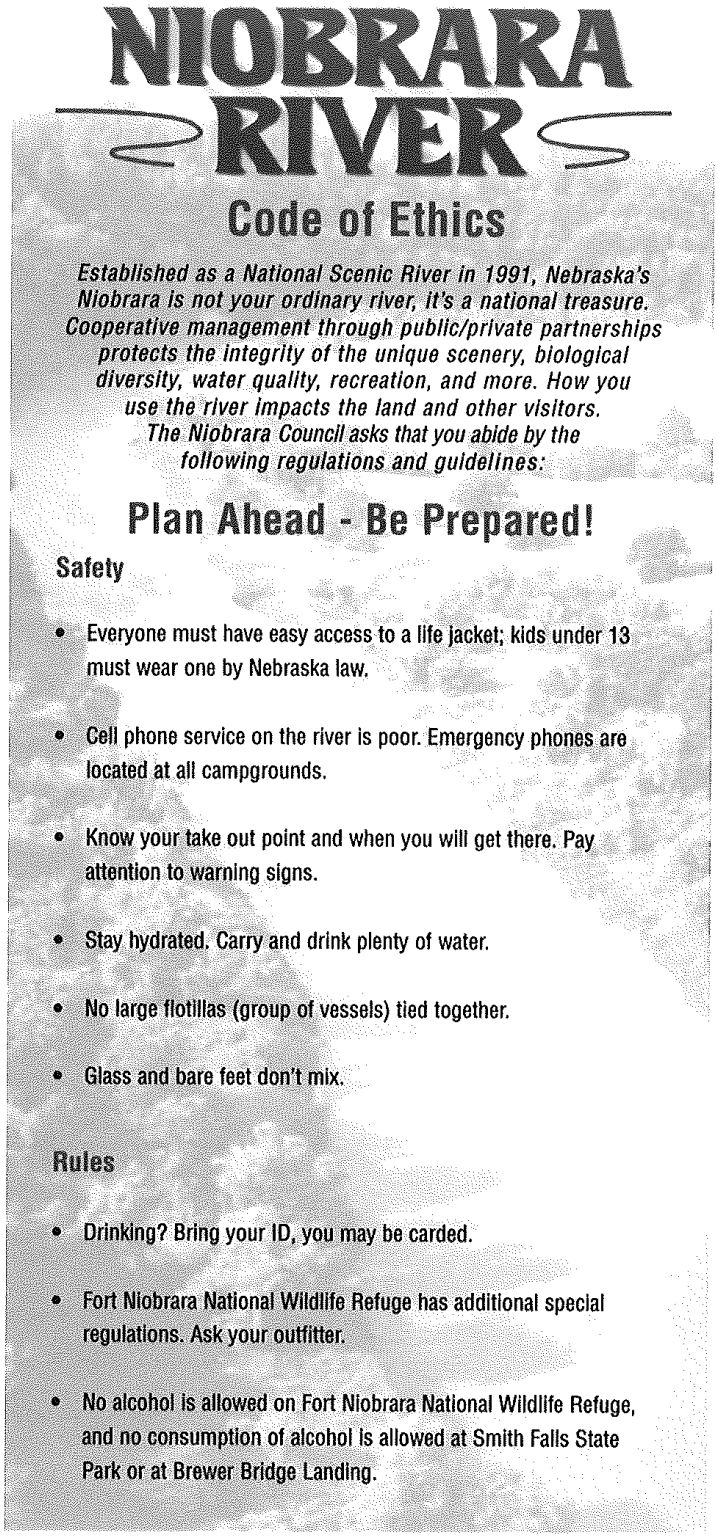
Gather white pieces of cardboard 1 foot (30 cm) square (the number of pieces will depend on how many teams there are). Place the cardboard under a shrub and gently shake and rub the branches so that organisms can fall below to the cardboard. Identify different species, and replace organisms on the forest floor. Repeat the procedure for low-lying branches on trees and for small plants. For measuring microorganisms in the soil, see the Student Page "Soil Studies."

Appendix P. Coalition for the Upper South Platte Student Presentation Rubric

Coalition for the Upper South Platte - Student Presentation Scoring Rubrics

Category	*10*	*9*	*8*	*7*	*6*
Presentation	Well rehearsed with a smooth delivery that holds the audiences attention.	Checks notes with a smooth delivery that holds the audiences attention most of the time.	Reads from notes, maintains audience interest most of the time.	Stumbles through notes does not know the information, loses audience.	Unable to demonstrate any mastery of the material and keep the audience's attention.
Requirements	The guide was followed, all questions answered including the challenge question.	The guide was followed all questions were answered. but not the challenge question	The guide was followed but incomplete answers.	Most of the guide has been followed.	Less than half of the guide questions were answered.
Content Accuracy	All content throughout the presentation is accurate. There are no factual errors.	Most of the content is accurate, but there might be one piece that is not.	The content is accurate, but there are some pieces of information that are clearly inaccurate.	Effort was made, but guide requirements were clearly missed or editorialized without facts.	No effort was made to obtain accurate information.
Sources	Source information collected for all graphics, facts and quotes are cited in notes or in the last slide.	Source information for all facts and quotes are cited.	Most sources are cited.	At least one source is cited	No sources cited
Content, beginning slide(s)	Your name, title and what you are going to tell them. Bullets or special effects. Very nice.	Your name, title, summarize what you are going to tell them. Bullets or special effects. Too much special effects etc	One of the three (name, title and what you are going to tell them) is missing.	Two out of three (name, title and what you a re going to tell them) is missing	nothing
Content, body of the presentation.	Pictures on slides correlate to topic, limited text on slides. Excellent use of graphics.	Pictures on slides generally pertain to topic, good use of graphics limited text.	Pictures on slides generally pertain to topic. Text two or more slides	More text than pictures.	Poor presentation. Information obviously cut and pasted, with full text per slide.
Content, closing slide (s)	Conclusion, summaries what you have told them. Make reference to where your sources are cited at, (notes or on the slides)	Conclusion, tell them what you have told them. Reference to where sources are sited missing.	Conclusion, an important piece of what you have told them is missing. Reference is made to where sources are cited	Conclusion, an important piece of what you have told them is missing. Reference to where sources are cited is missing.	Poor conclusion. Information missing.

Appendix Q. Niobrara Code of Ethics



- Fishing, hunting or trapping requires a valid Nebraska license and landowner permission.

Behave Yourself

- Stay off private property without permission. Public access areas are signed.
- Respect other river users; don't spoil it for others (no noise, nudity, profanity or harassment).
- Public restrooms are located at Fort Niobrara National Wildlife Refuge, Berry Bridge, Smith Falls State Park, Brewer Bridge, Stan's and Rocky Ford landings.
- There is no excuse for littering, pack out your garbage. Leave Styrofoam and glass containers at home.
- Secure your gear to your vessel.

Look for National Park Service rangers along the river and at landings. They can answer questions and assist with safety or law enforcement concerns.

NIOBRARA COUNCIL

THE NIOBRARA COUNCIL
280 N. Main Street / P.O. Box 206
Valentine, NE 69201
Phone: 402-376-2793
Fax: 402-376-1331
email: info@niobraracouncil.org
www.niobraracouncil.org

Providing a local voice in management of the Niobrara National Scenic River.

Appendix R. River Network 8 Steps for Education Campaign

8 Steps to a Successful Outreach/Education Campaign*

GET ORGANIZED: Evaluate your coalition or organization's resources (time, people and money). Organize leadership in an education/outreach campaign.

SET OUTREACH GOALS: Determine what you want to communicate. What's the problem you are trying to convey and how do you establish your credibility?

SET MEASUREMENTS FOR SUCCESS: Determine what you want your campaign to accomplish (i.e. what will constitute success?).

TARGET AUDIENCES: Determine your target audience, identify them and listen to them.

SHAPE MESSAGE: Set the values, politics and tone you wish to convey. Develop your message to match your audience and to move them. What do people hear and what words work?

ASSESS RESOURCES: Determine best methods to get your message out and determine costs of various mediums involved.

CHOOSE VARIETY OF METHODS: Cultivate relationships with local media.

DEVELOP TIMELINE: Complete your outreach work plan (i.e. what are your group's next steps?)

IMPLEMENT/EVALUATE/RE-DIRECT PLAN: Fold outreach efforts into the rest of the organization's activities. Track successes and failures: keep clippings file and note anecdotal results. Make changes to the workplan, message and methods as needed.
*used with permission of Scott Denman

Appendix S. River Network Communications Networking

Community Networking and Visibility (abbreviated version)

WORK OUTREACH AND EDUCATION INTO YOUR REGULAR ACTIVITIES: Within each of an organization's regular programs and activities, there is a logical publicity element that needs to be included. It is important to ask within each program, "What is the public relation component of this work?" The outreach needs to be thought out in advance as part of the strategic plan and annual work plan to determine how, when and to whom to send written materials, press releases, brochures and research papers so that one is times and coordinated to build on another.

GETTING YOUR ORGANIZATION'S MESSAGES OUT TO THE PUBLIC: Use the same "look" including font, logo and colors for general messages. Send items out regularly, use language you have developed for your organization such as mission statement. Come up with "sound bites" that are highly quotable. Be sure to craft your message to your target audience whether it be the general public, a special interest group or decision maker. Determine how that group gets its information and use that medium, if possible. Knowing existing public attitudes will help to set the tone and complexity of the message. Also, use language that the group will "hear" and avoid language that will raise red flags with them.

DEVELOPING A MEDIA PLAN: Establish a good working relationship with local media. Treat them with professional respect and get them on the river to know both the pristine areas worth protecting and the problem areas. Get information to them in a timely manner being respectful of their deadlines and in a format that is easy for them. Give them background information and exclusives when appropriate. Meet with editorial boards to give your group's perspective on "hot topics."

NETWORKING WITH OTHER ORGANIZATIONS: Successful organizations will look for opportunities to collaborate with others. Communicate regularly with other groups to build trust and a broader credibility in the region. Network proactively by determining when and how to work with other organizations and evaluate your strengths to determine what each group should do in the collaborative efforts. When working on controversial issue, reach a consensus ahead of time when working with other groups.
*developed by Suzi Wilkins Berl

Appendix T. River Network Communications Planning

NEXT STEPS: Communications Planning Summary Discussions

1. On what topic should we develop an outreach effort or communications plan?
2. Who will be on the committee?
3. When will they report to the full group?
4. Who else should we enlist to become involved in our outreach work?
5. How would we measure success for this effort?
6. What is our primary target audience?
7. What is our secondary target audience?
8. How should we attempt to gain information about our target audiences?
9. Who can help us with gathering this information?
10. What are the main messages we want to get out to the target audiences?
11. How can we integrate this effort into the rest of our individual organizations?
12. What are our next steps?

Appendix U. River Network Words that Work

Words that Work

What we know about Americans:

- They care about water and expect government to protect the environment
- Trust scientists and government more than environmental groups
- Get most of their information from the mainstream media
- Read newspapers and watch the news less every year
- Have a low sense of confidence that they are getting the real story
- Don't follow our "shop talk"
- Have a low "watershed IQ"
- Think "water quality" means how the water tastes

GOOD WORDS

- Care About: Nature protection, pollution control, enough clean water, wildlife conservation
- Consequences: Future generations, healthy, family and children, safe, trends
- Take Action: Make a difference, It affects you, What you can do, Working together, Save money
- Take a Side: Accountability, choice, fair, balance, planning ahead, responsible, freedom, investment, law

BAD WORDS: Words with Documented Shortcomings

- Conservation Easement: Many people don't understand this term or may call to mind power lines, gas pipelines and other intrusions. Use Voluntary Land Preservation Agreement.
- Open Space: This term evokes an image of land that will be soon developed, a blighted or vacant lot. Use Natural Area.
- Recreation: The public does not view recreation as a big economic force and has overtones triviality. Use Family Activities.
- Run out of Water: The public perceives this term as absolute, far-fetched and unbelievable. Use Chronic Shortage.
- Sustainable: The public has little familiarity with this term and offer different definitions. Use Responsible, Planning Ahead, or Environmentally-Friendly.
- Water Conservation: The public does not associate this term with long term, institutional scale efforts. Associated with personal sacrifices that are temporary emergency measures but not a solution to a long term problem. Use Waste Prevention or Efficiency Measures.
- Watershed: The public largely does not understand this term. Use Valley, Area or Region.

Words with Suspected Shortcomings:

- Riparian: Public not familiar with this term. Use Along the river, On the shore, or the Riverbank.
- Water Quality: Many people think of this in terms of taste. Use Clean water or Polluted water.

Appendix V. River Network Developing a Simple Message

Developing a Simple Message *

Introduce Concept with Hook, Line and Sinker.
Hook: short, attention-getting statement that grabs the audience.
Line: elaborates, explains and reinforces the point through relevant statistics, a credible source, etc.
Sinker: anticipates the opposition's perspective and blocks it.
*Used with permission from Scott Denman

How to Cultivate Relationships with Local Media

Establish Credibility
- Meet with the person face to face so they will remember who you are
- Don't exaggerate. Media person needs to know they can get a straight answer from you
- Be accessible
- Don't assume they know the basics of your issue

Be considerate when providing information
-Use the acceptable format of a press release
- Be aware of their deadlines
- Give additional background material to reinforce/back up your info such as scientists, references maps and charts

Get it right
-who's the appropriate person, spell their name right, get their title correct, keep the media contacts up to date

Go the extra step
-give free tickets to your conference, annual meetings. Tour them around, take them out on the river, to the pollution sites.
-Take time to sit down with them face to face to explain a complex issue and your viewpoint
-give them contact information of other experts who share your perspectives and contacts for the opposition
-provide them with a periodic heads up

Who to Contact?
-At a newspaper, work several persons. In a daily paper – the environmental reporter, the outdoor writer, the editorial board
-Working with a small weekly, then how can you expand coverage. Get a larger city paper to do a feature article on your issue
-For a TV station, the general manager or news director
-For a radio station, use the community relations person of the news manager

Forms of your contact
-Email press releases, phone calls, face-to-face meetings, printed press release, meeting with editorial board, press conference, press outing/river trip

Appendix W. River Network Increase and Improve Online Presence

Increase and Improve Your Group's Online Presence

An easy way to increase the organization's availability is online. More than 90% of reporters research their stories through the Internet and the general public regularly uses the internet to access its information. In order to ensure an effective presence online, use the following tips:

1. Create an online pressroom: this is an area on the website that provides pertinent information for reporters, visitors to the site and your supporters. This is an online version of your press kit.

- Create a direct link from your homepage
- Include the following information: clear contact information for person within your organization that reporters should call, recent press releases, background information on your organization, content to accompany a reporter's story, including photos, videos and MP3's, a calendar of upcoming events, details about your organization's issues and campaigns
- Keep it current. Update information on a regular basis
- Two great examples of press-rooms:
    - The Dogwood Alliance: http://www.dogwoodalliance.org
    - Ogeechee Canoochee Riverkeeper: http://www.ogeecheecanoocheeriverkeeper.org

2. Use additional resources to increase the appeal of your website:

- Create a blog through Blogger (http://www.blogger.com/start) or Typepad (http://www.typepad.com)
- Display photos using a photo-sharing site such as Flickr (http://www.flickr.com)
- Post videos to sites such as YouTube (www.Youtube.com) or Google Video (video.google.com)
- Use an RSS reader so site visitors can keep up with the newly updated content on your website. Common Craft explains what an RSS reader is at www.commoncraft.com/rss_plain_english
- Add tags to the relevant content on your website
- Create an e-newsletter to provide supporters with essential information about your organization, campaigns and events. Create an easy sign-up form on your website. A great example is Frogloop (www.Frogloop.com/subscribe)
- Monitor the coverage your organization receives of the issues it covers through Google News Alerts (www.google.com/alerts)
- Create profiles on social networking sites such as Facebook, MySpace and Change.org. Several ways in which your organization can use facebook can be found at http://eweinb04.blogspot.com/2006/11/how-nonprofits-can-use-facebook.html

Additional Online Resources to enhance your online presence include:
The Communications Network, which outlines questions, you should ask before starting a website redesign: www.comnetwork.org
FeedBurner is a free tool that lets web content publishers manage RSS feeds and has usage tracking capabilities: www.feedburner.com

Green Media Toolshed Media Training Center has tips on creating a press release, building a targeted media list and more: www.greenmediatoolshed.org/training
Journalist Feedback on Online Newsrooms surveys what reporters look for when visitng an organizations website: www.tekgroup.com/artical_download.cfm?article_id=122
NetSquared is a project of TechWoup that helps nonprofits build their online, social web: www.netsquared.org
Wikipedia is an online encyclopedia on which you can add information about your organization. More than a third of adult online users consult this site according to Pews Internet 2007 Survey: www.wikipedia.org

Another possibility is to create a ringtone with a specific message about your organization. For instance, the Center for Biological Diversity offers croaks, howls and roars from endangered species as ringtones to call attention to the creatures and since December 2006, about 60,000 ringtones have been downloaded. The World Wildlife Fund offers animal calls as ringtones along with wallpapers and games. A ringtone allows people to show their support, similar to a bumper sticker. They are a good way to reach small audiences with a message that everyone within a small distance will hear when the phone rings for a short ten second message about your organization. Their uniqueness draws attention from the people that hear the message and from the media. To create your own unique ringtone go to the online Myxer site at: www.myxertones.com or to combine several audio clips in your ringtone use Audacity at http://audacity.sourceforge.net. To promote these ringtones, make them available on your website, create an online form that people must fill out before they can download a ringtone including name and address to get information aobut the people who download your ringtones. Also, advertise the availability of your ringtone through your other media sources and send out a press release. Using ringtones for social change campaigns is a new area and learning experiences are posted on www.mobileactive.org.

Another online capability is to record voicemail messages from your supporters and publish them online. You must get verbal or written consent from the caller to publish their message. One service that converts voicemail messages to usable mp3 format is GranCentral.com

Appendix X. Partners for Clean Water Boise Watershed 2010-2011 Tours and Lessons

Boise WaterShed
Where technology meets education

Located at the West Boise Wastewater Treatment Plant, the Boise WaterShed Environmental Education Center promotes water stewardship by teaching people of all ages how to protect and conserve our precious resource for future generations. The exhibit hall features high-tech, hands-on exhibits that use humor to entertain, science to amaze, and visuals that are sure to make a splash! The LEED-certified building also features a library, a theater, and amazing artwork.

Tours and lessons are designed to engage students in hands-on activities, demonstrations, science experiments, and outdoor education at the Boise River. Outreach programs are also offered in your classroom at no charge. To schedule a FREE lesson or tour, groups of 10 or more people should call 489-1284 at least two weeks in advance. In addition to the individual tour and lesson listings below, you may also speak with a Boise WaterShed staff member to take advantage of our recommended day-trip and multi-visit tour and lesson packages customized for your grade level, schedule and educational needs.

SCHEDULE A TOUR OR LESSON
www.BoiseEnvironmentalEducation.org
489-1284 (TTY 800-377-3529)
boisewatershed@cityofboise.org

TOURS

EXHIBIT HALL TOUR
GRADES: PRE-K–12 / 30–60 MINUTES / BOISE WATERSHED
Students will be introduced to the term "watershed" using the Boise River watershed wall map and explore touch-screen exhibits about water in the interactive exhibit hall to learn how to protect and conserve our precious resources. The 60-minute lesson may also include a scavenger hunt.

WASTEWATER TREATMENT PLANT TOUR
GRADES: 4–12 / 60 OR 90 MINUTES / BOISE WATERSHED
During this popular outdoor walking tour, students will learn the difference between wastewater and stormwater treatment, see and smell the step-by-step treatment process, and learn how to help protect our water quality. Sustainable processes from the microorganisms to the methane and biosolids farm will be presented. Come see why we're #1 in treating #2! Closed-toe shoes required. The 90-minute lesson also includes a short wastewater video, a trip through the Dewatering Building to view biosolids processing (Monday–Thursday only), or a trek to see where treated wastewater is released into the Boise River.

WATER QUALITY LAB TOUR
GRADES: 8–12 / 30–60 MINUTES / BOISE WATERSHED
Spark your students' interest in science with an in-depth look at Boise City's Water Quality Laboratory. After watching a brief video, students will see and learn about water quality analysis and the instrumentation used. Tours can be tailored to the audience. Topics include environmental impacts, public health, water careers and wastewater treatment. Limit 10 students per tour.

LESSONS

DECOMPOSERS: NATURE'S ROTTEN RECYCLERS — NEW!
GRADES: 4–6 / 60 OR 90 MINUTES / YOUR PLACE OR OURS
Students will discover the different types of decomposers and their importance in the environment. Several experiments will help students

understand what types of material decompose, factors that promote decomposition, and the role of decomposition in the food web. Additionally, students will find out how decomposition is a central role of wastewater treatment and what ultimately happens after they flush the toilet!

EXPLORE YOUR WATERSHED

GRADES: 3–6 / 60 MINUTES / YOUR PLACE OR OURS

Students will discover that we all live in a watershed by participating in a mapping activity. Then using a model, we'll demonstrate sources of pollution specific to the Boise River and how our actions can affect those who live downstream. Students will take home helpful tips for protecting our watershed.

FISHING FOR FUN

GRADE: PRE-K / 45 MINUTES / YOUR PLACE OR OURS

Based upon Project WILD for Early Learners curriculum, students will discover who lives in the Boise River! Students will learn the parts of a fish while making a fish craft, hear a story about salmon, and become salmon in an interactive game as they use their noses to find their way home.

GET IN TOUCH WITH NATURE

GRADES: PRE-K–3 / 45–60 MINUTES / BOISE WATERSHED

Pick up the sights, sounds and smells around the center and outdoor garden and draw a comparison with the riparian areas along the Boise River. Walking a half-mile to the river from the center, students will discover how colors help with camouflage, touch and examine stones, leaves, plants and look out for signs of wildlife. Play interactive games and participate in hands-on activities involving touching, observing and smelling the great outdoors. Note: Pre-K–1st grade will only explore the grounds and garden around the center. Offered March–October.

THE H2O BELOW

GRADES: 4–8 / 60 MINUTES / YOUR PLACE OR OURS

Get to know groundwater and its important role in our water supply. Students will work in teams to build a model aquifer to understand the types of substrate that water moves through. They'll discover how the water cycle cousins, groundwater and surface water, interact as students infiltrate water and "pollution" through an aquifer model. Students will learn how to protect our groundwater and prevent pollution.

HYDRO HEROES — NEW!

GRADE: PRE-K / 45 MINUTES / YOUR PLACE OR OURS

Students will learn about water conservation and the importance of water to everyone in the community through an interactive water user activity. Children will learn ways to save water in their home and why it is important.

MICROORGANISMS: WHAT'S THE BIG IDEA? — NEW!

GRADES: 4–12 / 60 OR 90 MINUTES / YOUR PLACE OR OURS

Microbes: we take them for granted, but they are essential to our life. Students will be introduced to the various types of microorganisms using PowerPoint. Then students will make agar plates and find out how easy it is to grow microorganisms from virtually any surface. Younger students will try to guess the relative size of different microbes and explore how we use microbes to make important products and to improve our lives. Older students explore how microbes use enzymes to break down their food and the role they play in the environment. Using microscopes, students can identify some of the microbes that are put to work during the wastewater treatment process.

RAIN OR SHINE — NEW!

GRADE: PRE-K / 45 MINUTES / YOUR PLACE OR OURS

Students will describe today's weather and participate in a felt board activity to see how people dress for the weather. A story will introduce students to the four seasons. Children will learn a song, create a craft, and match animal adaptations to the appropriate season.

WASTEWATER: WE TREAT IT RIGHT!

GRADES: 4–8 / 60 OR 90 MINUTES / YOUR PLACE OR OURS

Learn the process of wastewater treatment through hands-on fun! Students will work in teams as wastewater engineers to clean up a sample of simulated wastewater. Together they will test and analyze several treatment methods in an attempt to make it clean. The 90-minute lesson also includes an up-close look at sludge and treated biosolids and a discussion about the "secret weapon" for treating wastewater: microorganisms.
Recommended: Follow-up tour of the wastewater treatment plant.

WATER CONSERVATION: EVERY DROP COUNTS

GRADES: K–8 / 60 MINUTES / YOUR PLACE OR OURS

This lesson will be modified for your grade level. Beginning with an activity that demonstrates how little fresh water is on the blue planet, students will understand how precious water is. Students will learn how water is used around homes, schools and communities, as well as how to save water during daily activities such as taking a shower or washing the dishes. Younger students will participate in a water-saving demonstration, and older students will learn about water management in Idaho through an interactive activity.

WATER IN MOTION — NEW!

GRADE: PRE-K / 45 MINUTES / BOISE WATERHSED

Students will learn about the three different forms of water (solid, liquid, and gas) in fun and colorful ways at the "Water Laboratory." This fun lesson uses experimentation to investigate the different properties and states of water.

WATER QUALITY FIELD EXPERIENCE

GRADES: 4–12 / 90–120 MINUTES / YOUR PLACE OR OURS

Hike to the Boise River (.5 mile walk) to learn about natural and human impacts to water quality. Using water quality testing kits, students will analyze the temperature, dissolved oxygen, turbidity, and pH of the water above and below the effluent outfall. Students will learn about bioassessment as they examine and identify aquatic macroinvertebrates (water bugs). In the end, they will have a snapshot of the Boise River's health. Offered March–October. **Note:** If the river level is too high, students will compare the water quality between two ponds located at the wastewater treatment plant.

WONDERFUL WATER CYCLE

GRADE: PRE-K / 45 MINUTES / YOUR PLACE OR OURS

Students will listen to story time to introduce water, participate in a visual demonstration of water's three basic forms, and interact using a water cycle felt board where students become part of the water cycle and learn how water moves around Earth. Students will make a craft and finish the by dancing to the "Water Cycle Boogie!"

WONDERFUL WATER CYCLE

GRADES: K–3 / 45–60 MINUTES / YOUR PLACE OR OURS

Students discover how water moves around the world through a fun skit, complete with costumes and props. Moving like water drops, they'll play a game traveling to glaciers, rivers, lakes, soil and more. For the final act, students show their enthusiasm for water by dancing to "Water Cycle Boogie."

LIBRARY RESOURCE CENTER

The Micron Technology Inc. Foundation Library and Resource Center contains books, videos, DVDs, educational software, music CDs, curriculum books, and kits that educators can reserve for their use. Call to reserve resources for a two-week period. See our complete list of available resources online.

THE FOLLOWING CLASSROOM KITS ARE AVAILABLE:

GROUNDWATER MODEL

Students learn about groundwater and sources of pollution.

TABLETOP STORMWATER AND WASTEWATER / DRINKING WATER MODELS

Students set up the landscape, create pollution or waste and watch what happens when it "rains."

MACROINVERTEBRATE PACK

Students use magnifiers, ID cards and tools to examine water bugs up close in a river, stream, or pond.

INCREDIBLE JOURNEY DICE GAME

In this popular Project WET activity, students travel as water drops around the earth with the roll of a die.

EVENTS

The Boise WaterShed offers several all-ages special events throughout the year in addition to our regular education programs. Visit BoiseEnvironmentalEducation.org for dates and information about upcoming events.

WATERSHED WEEKENDS

Go with the flow every third Saturday of each month with special themed programs the whole family can enjoy! Activities and crafts take place from 10AM–1PM, followed by a wastewater treatment plant tour from 1PM–2PM Free admission! No pre-registration required unless indicated. Note: For safety reasons, closed-toe shoes are required for the wastewater tour; tours will be canceled if snow or ice is on the ground.

DROP-IN PROGRAMS DURING SCHOOL BREAKS

Drop in to fun children's programs offered on school break days! Check our web site for dates. In addition to the exhibit hall, special activities and crafts will take place from 10AM–12PM, with a wastewater treatment plant tour at 12PM. Tour limited to 40 people, closed-toe shoes required, no strollers. FREE admission! Community groups, home schools and Mom's clubs welcome! No pre-registration required. **NEW: Video podcast tours of the amazing artwork are available!**

Appendix Y. Southern Nevada Water Alliance Advertisement

Earn about $3,000 toward an average residential conversion.

Don't let your grass just lie there, make it work for you. Replace your lawn with water-smart landscaping and earn thousands of dollars from the Southern Nevada Water Authority.* Save even more—about $200 on your annual water bill once your landscape conversion is complete.

But don't just sit there watching the grass grow—it's a limited time double-rebate offer. Enroll online at **snwa.com** or call **258-SAVE**.

*$2 per sq. ft. for the first 1,500 sq. ft. and $1 per sq. ft. in excess of 1,500 sq. ft.

It's a desert out there. Be WATER SMART

Appendix Z. Walla Walla Watershed Partnership Newsletter

Walla Walla Watershed Management Partnership

For Fish. For Farms. For Everyone.

VOLUME 8
ISSUE 3
JULY, 2010

STRATEGIC PLAN TO FOCUS PARTNERSHIP VISION AND FUTURE ACTIONS

Since March 2010, the Walla Walla Watershed Management Partnership's Policy Advisory Group (PAG) has been leading the effort to develop the Partnership's strategic plan. The seven-month process is providing focus for Partnership efforts, with identification of a vision statement, goals and objectives, and draft strategic actions. Under RCW 90.92, the development of strategic actions within a planning framework is among the responsibilities of the Partnership. The draft strategic plan will be distributed for public comment in July 2010, and final Partnership Board approval is slated to occur in September 2010. For more information contact Cathy Schaeffer, Executive Director, at: cathy.schaeffer@wwcc.edu.

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VISION STATEMENT:

The Partnership envisions the Walla Walla river basin as a place where water is managed locally as a means to achieve and sustain a healthy river system where human and natural communities can thrive and flourish.

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RETURN TO THE RIVER – AUGUST 28, 2010

The 2nd Annual "Return to the River" celebrating the homecoming of Salmon to the Walla Walla Basin is scheduled for Saturday, August 28, 2010 beginning at 10am at the William A. Grant Water and Environmental Center. The free event is sponsored by the Confederated Tribes of the Umatilla Indian Reservation and Walla Walla Community College, and will feature watershed booths and children's activities, a salmon viewing field trip, and watershed symposium on education and research projects. A barbecue salmon luncheon will be available for purchase (pre-registration suggested), and special highlights will include tribal dancing demonstrations and a 25-foot interactive salmon display. For more information, contact Karen Lennon, Environmental Education Coordinator, at: 509.524.5237.

WATER BANK NOW ACCRUING BENEFITS FOR FARMS AND FISH

The Walla Walla Watershed Management Partnership water bank is now solidly established and accruing benefits for farms and fish. The water banking program is enrolling water right holders who are interested in banking a portion or all of their water right for instream flow and relief from "use it or lose it." For more information on how you can participate in water banking, contact Water Management Program Director Matt Rajnus at: matt.rajnus@wwcc.edu or 509.524.5217.

COMMUNITY FORUMS ON WATER IN THE WALLA WALLA BASIN

The Confederated Tribes of the Umatilla Indian Reservation, Washington State Department of Ecology, and US Army Corps of Engineers sponsored two "Community Forums" on water in the Walla Walla basin on June 17 and 18, 2010.

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The focus of these public meetings was to discuss the federal-sponsored water supply project, the Corps of Engineers Walla Walla Stream Flow Enhancement Project, and proposed settlement of the reserved Tribal instream flow water rights.

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The two "Community Forums" were held at the Walla Walla Community College Water and Environmental Center with distinguished guests including Ecology Director Ted Sturdevant, CTUIR Board of Trustees Chairman Elwood Patawa, 16th District Representatives Maureen Walsh and Terry Nealey, and other agency and local government representatives. Presentations on the project and settlement were provided in an open setting, and attendees were invited to dialogue with the panelists with questions and answers provided by those most closely involved with the project. Outcomes from the meetings included plans to host small groups to provide design suggestions to address the project costs, and additional coordination in outreach and communications on the project and settlement. Over 100 local participants attended, and future public forums will occur as progress is made. Anyone with questions is encouraged to contact Hedia Adelsman (Ecology) at: Hedia.Adelsman@ecy.wa.gov or Rick George (CTUIR) at rickgeorge@ctuir.com.

SNAKE RIVER SALMON RECOVERY BOARD FIELD TOURS, JUNE 16-17, 2010

The Snake River Salmon Recovery Board hosted a two-day field tour in the Walla Walla Watershed on June 16 and 17, 2010, providing an opportunity to see first-hand some of the local salmon habitat project proposals being considered for 11th Round Grant Funding from the Salmon Recovery Funding Board. This year's tour of WRIA 32 proposal sites took participants to locations across the watershed, including projects proposed for Mill Creek diversion screens, a levee setback assessment on the Walla Walla River, instream projects and conservation easements for restoration and protection of riparian habitat in various locations, a sediment reduction project on Coppeii Creek, reach restoration on the Touchet River, and other sites in the field. Tour participants benefited from field presentations on-site by the implementers proposing the projects. Representatives from the Regional Technical Team, Recreation and Conservation Office, and Salmon Recovery Board provided feedback on project proposals in the field, and will convene on July 13th in Dayton for pre-scoring of the funding applications. By September 2010, the highest ranked regional projects will become eligible to receive a share of the approximately $1.6 million regional Salmon Recovery Funding Board grant allocation for local recovery projects. For more information, contact Kris Buelow at: kris@snkakeriveboard.org or 509.382.4115.

Photo: Snake River Salmon Recover Board Field Tour - June 16-17, 2010

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Field tour participants benefited from field presentations on-site by the implementers proposing the projects.

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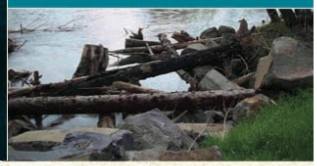
Photo: Easement and Restoration Projects



HISTORIC OPENING OF TRIBAL CHINOOK FISHERY ON THE WALLA WALLA RIVER

After nearly a century without spring Chinook Salmon fishing in the Walla Walla River, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) recently opened an historic fishing opportunity for tribal members. A Tribal Chinook fishery opened initially beginning on June 18, 2010 for three-days, with plans to remain open for additional time periods depending on numbers of fish caught. CTUIR has been a leader in sponsoring and implementing water and fish restoration projects in the Walla Walla Basin. The Tribes began releasing spring Chinook in the basin in 2000 and adult returns from these efforts began in 2004.

Annual Chinook returns have rapidly increased from about 200 in 2004 to over 1,100 as of June 2010.

For more information, contact Gary James, Fisheries Program Manager, at: 541.429.7285.

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UPCOMING MEETINGS AND EVENTS

AUGUST 3, 2010
7:00pm
Walla Walla Watershed Management Partnership Board Meeting
Water & Environmental Center

AUGUST 28, 2010
10:00am to 2:00pm
Return to the River Salmon Festival
Water & Environmental Center

SEPTEMBER 7, 2010
7:00 p.m.
Walla Walla Watershed Management Partnership Board Meeting
Water & Environmental Center

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Articles, photographs and funding support provided by the : Snake River Salmon Recovery Board, Washington State Department of Ecology, Walla Walla Community College, and the Walla Walla Watershed Management Partnership.

JUNE 24TH, 2010 - GROUNDBREAKING FOR THE WATER & ENVIRONMENTAL CENTER EXPANSION

The groundbreaking ceremony for the expansion of the William A. Grant Water and Environmental Center was held on June 24, 2010 on the Walla Walla Community College Campus. Funded by a $3 million grant from the Economic Development Administration, as well as financial support from the Washington State Capital Construction account, Department of Commerce, Walla Walla County, Port of Walla Walla and private sources, this project enhances the local efforts dedicated to water and the environment through education and partnerships with the Confederated Tribes of the Umatilla Indian Reservation, the Department of Ecology, Walla Walla Watershed Management Partnership, Sustainable Living Center and others. For more information on WWCC Water & Environmental Center programs, contact Karen Lennon, Environmental Education Coordinator, at: 509.524.5237.

Photo: Artist Rendering of Expansion, ALSC Architects.

Walla Walla Watershed Management Partnership
Water & Environmental Center
p. 509.524.5216 • f. 509.524.5209
500 Tausick Way • Walla Walla, WA 99362
wallawallawatershed.org

6. MANAGEMENT PLANS

Appendix AA. Cimarron Watershed Alliance Core Work Plan

Attachment A

CIMARRON WATERSHED ALLIANCE
CORE WORKPLAN
FY03-K

Introduction

In order for the NMED SWQB WPS to get better results, implement BMPs on targeted TMDL reaches, and have more control of expenditures, the WPS is proposing to spend $649,843 of federal Clean Water Act 319(h) FY03 monies to target specific stream segments on the Cimarron watershed where TMDLs have been developed and approved by EPA. These monies will address specific sources of NPS pollution thus attempting to remove treated reaches from the 303(d) list.

The Cimarron watershed is a sub-watershed of the Canadian watershed and is located in northeastern New Mexico. This 1032 square mile watershed ranges from around 12,000 feet in the headwaters located in the Valle Vidal Unit of the Carson National Forest to just under 6000 feet where the Cimarron River feeds into the Canadian River below the town of Springer. The watershed is dominated by forestland in the upper reaches except for the Moreno valley along Cieneguilla Creek, and rangeland in the lower reaches. (See figure 2)

Land ownership in the watershed is primarily private. Ranching is probably the predominant land use in the watershed. The Moreno valley has seen tremendous growth in the last decade with the development of areas around the Village of Angel Fire. Recreational attractions in the Moreno valley include the State owned Eagle Nest Lake, the Angel Fire Ski Area, and the Angel Fire Golf Course. The Carson National Forest and the New Mexico Game and Fish Department also own and manage portions of the land within the western-forested areas of the watershed. A small area of State-owned lands managed by the State Land Office is also found along southern portions of the watershed. (See figure 1)

Eagle Nest Lake Dam which is located at the mouth of the Cimarron River serves as a man-made watershed division for the streams feeding Eagle Nest Lake and then the Cimarron River and all other the rivers and streams feeding into it below the dam. The major rivers and streams above Eagle Nest Dam and the Lake are: Moreno Creek, Six-mile Creek and Cieneguilla Creek. The major streams and rivers below Eagle Next Dam are: the Cimarron River, Ute Creek, North Ponil Creek, middle Ponil Creek, Ponil Creek, and Rayado Creek.

Cimarron Watershed Alliance

The Cimarron Watershed Alliance (CWA) is made up of volunteers from both the incorporated and unincorporated areas of Colfax County. Volunteers include public officials, agency personnel, civic groups, ranchers, business people, and private citizens

all with the common interest of maintaining and improving water quality and quantity within the Cimarron Watershed.

The Alliance's mission is "to strive for and maintain a healthy watershed for all residents through collaborative community activities involving all stakeholders with an interest in water." The overarching goal of the CWA is to strive for and maintain a 'healthy' watershed. The objective of the CWA are:

1. To restore, maintain and/or preserve surface and groundwater quality, aquatic resources, and water supplies.

2. Serve as a resource on watershed issues and information.

3. To protect and restore, maintain and natural resources (land, water, forest and wildlife) in the watershed.

The CWA was created as a result of a watershed study done by the New Mexico Environment Department, as a result of a consent decree reached with NMED and the Forest Guardians in 1997. This study resulted in the adoption of several Total Maximum Daily Load (TMDL) reports that identified certain problems in creeks and rivers within the Cimarron Watershed.

The CWA was formed to help address these problems at the local level with local input. A list of concerns and possible actions where identified by the CWA members. However, the CWA recognized that to be effective it must limit its efforts to a finite number of these issues at any one time. Therefore, the member's first step was to categorize their objectives into long-term and short-term solutions. These categories were then narrowed to what the members believed to be the most critical for the future health of the watershed. These included: replanting riparian areas, reducing forest biomass, and improving wastewater management throughout the County. The draft WRAS has been developed using these initial guidelines and further identifying sources and solutions to address stream bottom deposits, temperature, turbidity, fecal coliform, and aluminum.

The CWA has been meeting monthly since November 2001. The development of this watershed group by Meridian Institute has been funded by a 319 FY-00 project, " The Collaborative Watershed Project – Supporting TMDL implementation in Northern New Mexico" The project contract ends 6/30/04(give dates and the project number which funded the project as reference. The group has moved forward in addressing the issues of wastewater pollution and poor forest and watershed health. There is some frustration within the group that there is not enough on-the-ground action.

Total Maximum Daily Loads

The following is the list of completed Total Maximum Daily Loads (TMDLs) for the Cimarron watershed. The pollutants of concern identified by the TMDLs are Turbidity,

Stream Bottom Deposits, Temperature, Fecal Coliform, Metals (chronic aluminum), and Total Phosphorus. These TMDLs have been developed by NMED's Surface Water Quality Bureau. adopted by the Water Quality Control Commission and formally approved by EPA Region 6. The TMDLs include potential sources of pollutants and possible implementation activities for addressing the sources.

SIX-MILE CREEK from the inflow to Eagle Nest Lake to the headwaters.
Turbidity The TMDL states that the main source of impairment on Six-Mile Creek is" streambank destabilization…impairment is most likely due to removal of over 95% of the riparian vegetation (except for short grass) and the extensive grazing of rangeland along this reach."

Fecal Coliform The TMDL states that the primary land-use in the affected watersheds is grazing with almost 90% of the land being privately held. Cattle have full access to the stream for most of the full length of each stream. Wildlife such as elk, deer and any other warm-blooded mammals could also be a source.

MORENO CREEK from the inflow to Eagle Nest Lake to the headwaters.
Turbidity The TMDL states that Moreno Creek "is predominantly impaired due to streambank destabilization as well as an unknown source." There is also discussion of a gravel operation that might need 401/404 permitting.

Fecal Coliform The TMDL states that the primary land-use in the affected watersheds is grazing with almost 90% of the land being privately held. Cattle have full access to the stream for most of the full length of each stream. Wildlife such as elk, deer and any other warm-blooded mammals could also be a source.

CIENIEGUILLA CREEK from the inflow to Eagle Nest Lake to the headwaters.
Turbidity and Stream Bottom Deposits, The TMDL states that for turbidity on Cieneguilla Creek, "The main source of impairment appears to be the improper installation and maintenance of culverts which have led to streambank destabilization and alteration of the stream geomorphology near roads". Staff of the Watershed Protection Staff (WPS), however, concur with Tom Moody, of Natural Channel Designs that the culverts are not the problem. Rather, land management practices in the past and present including grazing, roads and recreational uses have resulted in the incision and erosion seen along sections of La Cieneguilla Creek. Erosion from development in the area including erosion from ski slopes, parking areas, road construction and maintenance, and land developments is also considered to be a source of sediment.

Fecal Coliform, The TMDL states that the primary land-use in the affected watersheds is grazing with almost 90% of the land being privately held. Cattle have full access to the stream for most of the full length of each stream. Wildlife such as elk, deer and any other warm-blooded mammals could also be a source.

Metals (chronic aluminum) Since aluminum is naturally occurring in soil, it is assumed that aluminum is associated with sediment being carried in. It is speculated that any activities that help prevent turbidity and sedimentation will also lessen aluminum.

NORTH PONIL CREEK from the confluence with South Ponil Creek to the mouth of McCrystal Creek.

Turbidity, Stream Bottom Deposits, Although the TMDL states that the removal of a fishing pond caused serious streambank destabilization on North Ponil Creek, WPS staff do not believe this to be a source of impairment. Furthermore, The USFS has worked on remediation of this issue.

Total Phosphorus, there is no longer a standard for total phosphorus.

Temperature Temperature exceedences are most often attributed to the loss of riparian vegetation and resulting loss of shading and/or to channel widening.

MIDDLE PONIL CREEK from the confluence with South Ponil Creek to the headwaters.

Turbidity The TMDL states, "The primary sources of impairment along Middle Ponil Creek are streambank destabilization, removal of riparian vegetation, rangeland activities, recreation, and road maintenance. New Mexico 204, the unpaved road to the Philmont Boy Scout Ranch runs parallel to Middle Ponil Creek and may provide a conduit in places for sediment into the creek. Just above the confluence between Middle Ponil Creek and South Ponil Creek is a road crossing that is used by both animals and vehicles. Along the creek are various animal holding areas and animals graze with full access to the stream. In places, streambanks are void of vegetation and are collapsing into the creek. The land surrounding this creek is predominantly privately owned, with some lands managed by the Forest Service or State Game and Fish."

Temperature Temperature exceedences are most often attributed to the loss of riparian vegetation and resulting loss of shading and/or to channel widening.

PONIL CREEK from the mouth on the Cimarron River to the confluence of North Ponil and South Ponil Creeks.

Turbidity The TMDL states that the impairment of Ponil Creek is possibly impaired due in part to upstream influences from North and Middle Ponil Creeks. The primary sources of impairment along the reach are streambank destabilization, removal of riparian vegetation, and road maintenance. This reach has been historically impacted by irritated agriculture, rangeland, and runoff from roads.

Metals (chronic aluminum) Since aluminum is naturally occurring in soil, it is assumed that aluminum is associated with sediment being carried in. It is speculated that any activities that help prevent turbidity and sedimentation will also lessen aluminum.

Temperature Temperature exceedences are most often attributed to the loss of riparian vegetation and resulting loss of shading and/or to channel widening.

RAYADO CREEK from the mouth on the Cimarron River to Miami Lake diversion.
Stream Bottom Deposits The TMDL states that the primary sources of impairment on Rayado Creek are streambank destabilization and removal of riparian vegetation. This reach has been historically impacted by irrigated agriculture, rangeland, and runoff from roads.

CIMARRON RIVER from the mouth on the Canadian River to Turkey Creek.
Metals (chronic aluminum) Since aluminum is naturally occurring in soil, it is assumed that aluminum is associated with sediment being carried in. It is speculated that any activities that help prevent turbidity and sedimentation will also lessen aluminum

Forest Fire Impacts

Since the TMDL process was completed, there has been a development in the watershed that has impacted and will continue to impact water quality in the watershed.
The Ponil Complex Fire, which burned a portion of the Ponil Watershed in 2002, is the largest fire known to have burned in New Mexico. The fire has and will cause a whole new set of water quality problems which are not addressed in the TMDLs, in the affected streams and rivers including the Cimarron River downstream. Although no water quality monitoring has occurred since the fire, it can be expected that sedimentation will increase both from runoff from the burned areas but also from river banks that do not have a sufficiently healthy riparian area to protect the streams stability from the much larger flows that can be expected from snowmelts and precipitation events. Turbidity can also be expected to increase with ash which generally stays suspended in the water column for a longer time than sediment. The fire retardant materials dropped from the air onto forest fires also have the potential to affect aquatic life due to the cyanide and ammonia that are found in some of the retardants.

TASKS

1.) **Prioritize NPS pollution sources**: Identify nonpoint source pollution (NPS) sources for fecal coliform, stream bottom deposits, turbidity, temperature, and aluminum for TMDL reaches within the Cimarron Watershed. A Project Quality Assurance Plan (PQAP) will outline locations where monitoring will be performed. The CWA will develop sample parameters and locations along TMDL reaches to more closely define the sources of these pollutants. **Deliverable:** PQAP that will include a sampling plan that will be developed by the CWA and approved by EPA before sampling will begin. Monitoring data will be provided to the CWA as it becomes available by NMED/SWQB for decision making on how to implement and execute BMPs to improve water quality. **Schedule:** Fall 2003 through Fall 2004. **Cost:** $75,000. **Match:** $50,000 (CWA members time in field locating additional sites to monitor, getting landowner approvals for monitoring, assisting in monitoring in addition to the NMED/SWQB match using State Laboratory Division Work Units.
2.) **Develop MOU**. CWA and participating municipalities for pass-thru of monies and office space and materials for part-time watershed coordinator. **Deliverables:**

MOU identifying pass-thru office and office space and equipment for coordinator. **Schedule:** February 1, 2004. **Costs:** $60,000 – administrative costs. $10,000 equip and supplies for coordinator (computer, flyers, etc.) **Match:** $40,000 – office facilities, phones, development of MOU by CWA members, rent, utilities.

3.) **Watershed Coordinator**. CWA will develop plan of duties and responsibilities, advertise, interview and hire a part time coordinator. **Deliverable:** watershed coordinator. **Schedule:** February 1, 2004. **Costs:** $48,000 – coordinator salary part-time for 3 years. **Match:** $32,000 – CWA meeting attendees. Technical speakers, Field training, on-going BMP implementation by landowners within watershed.

4.) **Develop BMPS and BMP costs:** Using information developed from monitoring efforts in Task #1 s and develop BMPs and costs of BMPs to address prioritized list. CWA will develop this with the assistance of technical input from SWQB staff and technical volunteers. **Deliverable:** Specific stream reach workplan to address prioritized list. Maps of reaches and project locations. Estimated loading reductions as a result of BMPs. A defined budget developed for the BMP implementation projects. **Schedule:** May 1, 2004. **Costs:** any costs covered under coordinators salary in task #3. **Match:** $10,000 – technical volunteer expertise. CWA member time in developing list and BMPs and helping coordinator research costs of materials, equipment, etc for BMP implementation (subcommittee).

5.) **Implement stream reach BMPS: Deliverables:** completed projects with photo documentation, river geomorphology monitoring if applicable, and limited chemical monitoring. **Schedule:** Ongoing from May 2004 through May 2007 **Costs:** $466,843 – equipment lease, contracts (equipment operation, river restoration planning and/or implementation), materials, supplies. **Match:** $301,229 – landowner time and equipment, other volunteer time, other projects in watershed that are addressing water quality issues including wastewater treatment development, thinning activities, fish habitat development, grazing management, recreational area improvements, fire rehabilitation efforts

MEASUREMENTS OF SUCCESS

1.) List of identified sources of NPS pollution on TMDL reaches to focus money and efforts on.
2.) Workplan with prioritized sources and costs to address.
3.) MOU with CWA and municipalities.
4.) Part-time watershed coordinator and job description
5.) Successful completion of project implementation of at least 4 projects per year.
6.) Shown success of projects utilizing photo-documentation, river geomorphology measurements and limited chemical monitoring.
7.) Use of the TRI "Outcome Framework" methodologies to assure that all proposals and ensuing projects are "results" oriented.

LIST OF STAKEHOLDERS:

- Flying Horse Ranch
- CS Ranch
- Village of Angel Fire
- Village of Eagle Nest
- Village of Springer
- Village of Cimarron
- Ute Park Property Owners Association
- Colfax County
- NRCS
- Philmont Scout Ranch
- Express Ranch
- New Mexico State Parks
- New Mexico State Game and Fish Department
- Miami Water Users Association
- Cimarron and Rayado Water Master
- Carson National Forest
- New Mexico Forestry Division
- George Parker
- Cimarron Public Schools
- Chase Ranch
- New Mexico Transportation Department
- New Mexico Environment Department

7. PROTOCOLS AND FORMS

Appendix BB. Applegate Partnership & Watershed Council Protocols

APPLEGATE PARTNERSHIP & WATERSHED COUNCIL
PROTOCOLS, CREATED 11/26/07

The following rules and procedures shall govern the conduct of the meetings and affairs of the Applegate Partnership & Watershed Council (APWC).

1. The Board of Directors shall meet on the fourth Thursday of each month at a place to be decided at the previous meeting.

2. The Chairperson may appoint a facilitator to preside at the meetings. The facilitator shall keep the meeting focused, on agenda and on time.

3. The Secretary of the corporation shall insure basic minutes of each APWC Board meeting are created that reflect attendance, motions and action items and will see that such minutes are distributed in a timely manner.

4. The activities, projects and business matters of the Board will be conducted by the following standing committees: The Executive Committee (made up of the Chair, Vice-Chair, Secretary, Treasurer and one "at-large" Board member), the Finance Committee (made up of the Chair of each committee), the Education and Outreach Committee, the Agriculture Committee, the Aquatic and Riparian Committee, and the Forestry Committee. Each of the committees will be populated by at least two Board members at any given time.

5. Additional ad hoc committees may be appointed by the Board; the authority of such ad-hoc committee shall be in writing and approved by the Board. Ad-hoc committees, upon formation, shall submit to the Board a draft of the purposes for their formation together with a request for the powers they will need to accomplish their purpose, and the authority to exercise these powers.

6. Each Board member shall participate in at least one standing committee.

7. Standing and ad-hoc committees shall report to the Board at monthly meetings and shall submit a brief digital summary for the APWC web site.

8. A Board member shall be removed from the Board after three consecutive unexcused failures to attend a Board meeting. The Chairperson shall notify the member of their removal in writing. Any member who is a candidate for removal may submit to the Board a reason for non-attendance. The Board may reject such reasons or accept and reinstate the member.

9. Board meetings shall be conducted in accordance with Robert's Rules of Order in the absence of agreement to do otherwise.

10. A special meeting of the APWC Board can be called at any time by any member of the Board who shall give 14 days written notice thereof to all members of the Board, which notice shall contain a statement of the purpose for calling the meeting.

Appendix CC. Bert the Salmon & Natural Yard Care Campaign Water Quality Survey

King County Department of Natural Resources
Water Quality Survey

November 18 -27, 2001
N=800, ±3.5 points
EMC 01-2534

SEX

Male	48%
Female	52%

Hello, my name is _____ and I'm conducting a survey for the Evans/McDonough Research Company. We're not selling anything, we're just trying to find out how the people in King County feel about some of the issues facing them. I'd like to ask you a few questions on a strictly confidential and scientific basis.

---

1. For the survey, I need to speak with an adult 18 years of age or older. Would that be you?
Yes----------→**CONTINUE** **100%**
No----------→**(ASK FOR SOMEONE WHO IS, IF NONE AVAILABLE; TERMINATE)**

2. And just to make sure that we're calling the right area do you live in King County?
Yes----------→ **CONTINUE** **100%**
No/Don't know----------→ **TERMINATE**

3. And what is your zip code? (FIVE DIGITS)

4. What do you think is the most important environmental issue facing our region today? (ONE RESPONSE)

Water pollution/quality	23
Air pollution	20
Growth/Population growth	16
Traffic/Transportation	7
Salmon	5
Global warming/Ozone	3
Deforestation	3
Toxic waste	2
Anthrax	1
War/terrorism	1
None	2
Other	5
Don't know/Refused	12

[BEGIN FORM A]
[FORM A: Local agency/organization asked here, N=400]

When you think of local agencies that provide regional environmental services, which agencies or organizations come to mind? (ONE RESPONSE)

EPA	20
Greenpeace	4
Fish and Wildlife	3
Sierra Club	3
Washpirg	2
Department of Ecology	2
King County Water Dept.	1
Nature Conservancy	1
Metro	1
Other	8
None	15
Don't know/Refused	40

[END FORM A]

5. On a scale of 1 to 7, where 1 means not at all important and 7 means extremely important, how important do you think protecting water quality in King County is?

SCALE:	1	2	3	4	5	6	7	8	Mean
	No at all important						**Extremely important**	**|(Don't Know)**	
2001	1	0	2	3	13	15	65	1	6.31
2000	2	1	2	1	10	18	67	1	6.41
1999	2	1	2	2	6	11	74	2	6.46

For each of the following statements please tell me if you strongly agree, somewhat agree, somewhat disagree or strongly disagree with the statement. If you do not have an opinion one way or the other, please just say so.

SCALE: 1. Strongly Agree 2. Somewhat Agree
3. Somewhat Disagree 4. Strongly Disagree 5. No Opinion/DK

(ROTATE Q6-Q9)

	1	2	3	4	5
6.	Water quality is improving in King County lakes, rivers, and streams				
2001	15	35	18	8	23
2000	12	37	14	8	30
1999	28	30	10	9	24
7.	The water quality in Puget Sound is improving				
2001	14	34	17	9	26
2000	9	36	20	10	26
1999	21	29	14	14	24
8.	Educating school children about water quality is a good use of public money				
2001	57	27	9	5	2
2000	55	32	6	5	3
1999	64	22	5	7	4
9.	Water quality directly affects salmon in our streams, lakes, and Puget Sound				
2001	74	17	3	2	4
2000	77	16	2	3	2
1999	80	12	2	2	5

(END ROTATE)

10. Using a scale of excellent, good, only fair, or poor, how would you rate the job King County does protecting water quality?

	1999	2000	2001
Excellent	5	6	4
Good	43 =>48	47=>53	37=>41
Only fair	35	30	39
Poor	7=>42 7=>46	6=>36	
(Don't know)	11	2	13

11. How could King County improve its efforts to protect water quality throughout the county? (ONE RESPONSE)

Education/Awareness	18
Better enforcement of laws	14
Limit development	11
Tougher environmental laws	9
Spend more money/higher priority	6
More research	5
Doing a good job now	4
Protect/cover reservoir	1
Hire more people	1
Nothing	1
Other	3
Don't know/Refused	27

For each of the following, please tell me whether you think King County provides that service. Please just say yes or no.
SCALE: 1. Yes 2. No 3. (Don't know)
(ROTATE Q12-Q18)

		Yes	No	DK
12.	Garbage disposal services	80	14	5
13.	Recycling services and education	87	9	5
14.	Hazardous waste services and education	72	15	12
15.	Sewage treatment services	81	9	10
16.	Water quality, stormwater, and groundwater management	77	11	12
17.	Salmon and habitat protection	77	13	10
18.	Air quality services	55	25	20

(END ROTATE)

19. Do you think that garbage disposal, sewage treatment, recycling services and stormwater management help to protect our environment?

Yes	90
No	6
(Don't know)	4

[BEGIN FORM B]
[FORM B: Local agency/organization asked here, N=400]

When you think of local agencies that provide regional environmental services, which agencies or organizations come to mind? (ONE RESPONSE)

EPA	31
Fish and Wildlife	14
Greenpeace	4
Sierra Club	4
Washpirg	3
City of Seattle	2
King County	2
Metro	2
Department of Ecology	1
Puget Soundkeepers	1
Waste Management/Hazardous Waste Division	1
Other	3
None	13
Don't know/Refused	19

[END FORM B]

21. Which of the following three definitions best describes a watershed?

A shed that contains water pumps	4
A facility where water is purified	16
An area of land that drains water to a common outlet	72
(Don't know)	7

22. As you may know, a watershed is an area of land that drains water to a central outlet. Can you tell us what watershed you live in? (ONE RESPONSE)

Cedar/Cedar River	12
Tolt River	3
Green River	3
Lake Young	2
Piper Creek	2
Puget Sound	1
Redmond	1
Seattle	1
Soos Creek	1
Thornton Creek	1
King County	1
Lake Washington	1
Sammamish	1
Don't live in a watershed	3
Other	8
Don't know	59

23. On a scale of 1 to 7, where 1 means not at all at risk and 7 means extremely at risk, how at risk do you think salmon populations in our region are?

SCALE:	1 Not at all at risk	2	3	4	5	6	7 Extremely at risk |	8 (Don't Know)	Mean
2001	5	3	7	18	26	17	20	4	4.92

24. As you may know, the bull trout and some species of salmon are currently listed as endangered. Knowing this, would you say King County government is doing too little, too much or the right amount to bring salmon and bull trout back from endangerment?

too little	44
too much	7
right amount	32
(Don't know)	18

25. Have you ever seen or heard of a cartoon fish named Bert the Salmon who communicates environmental messages?

Yes	26
No/(Don't know)	74

(IF Q25 = 2, SKIP TO Qxx)

26. Where do you recall seeing or hearing about Bert the Salmon? (ONE RESPONSE)

	N=496
Television	19
Radio	5
Newspaper	2
School	2
Billboard	2
Sports event	1
Flyer	1
Salmon Days	1
Don't know	67

27. What environmental messages do you remember from Bert the Salmon? (ONE RESPONSE)

	N=496
Do not use chemical fertilizers on lawn	7
Don't dump oil down the drains	5
Don't pollute the water	4
Conserve water	4
Don't put anything down storm drains	3
Don't over water your yard	2
Recycle yard waste	1
Tips on ecology	1
Others	3
Don't know	70

(RESUME ASKING EVERYONE)

28. Do you receive a sewer bill, or pay sewer costs as part of your rent?

Yes	56
No	41
(Don't know)	3

29. Improving water quality in our region makes our waters safe and enjoyable for people, fish and wildlife. Knowing this, would you be willing to pay more in sewer rates to further protect water quality in our region?

Yes	57
No	31
(Don't know)	12

30. Discovering and reducing pollution sources, preventing erosion, reclaiming water and educating the public are ways to improve water quality and would also help restore salmon runs. Knowing this would you be willing to pay more in sewer rates to further protect water quality in our region?

Yes	61
No	30
(Don't know)	9

(IF Q30 = 2, SKIP TO Q32)

31. In the range of one to five dollars per month, how much more in sewer rates do you think you would be willing to pay to further protect water quality in our region? (RECORD ACTUAL AMOUNT)

	2000	2001
$1	15	12
$2	19	20
$3	20	24
$4	7	7
$5	40	37

(RESUME ASKING EVERYONE)

32. Are you aware that King County is going to run out of Sewage Treatment capacity in the near future?

Yes	26
No/(Don't know)	74

33. Are you aware that King County is planning for future sewage treatment facilities and the pipes and pump stations to support them?

Yes	28
No/(Don't know)	72

Now I'd like to ask you a few questions for statistical purposes only.

34. Do you own or rent your apartment or home?

Own/buying	72
Rent	27
(DK/Refused)	1

35. How long have you lived in King County?

<2 yrs	8
2-5 yrs	12
6-10 yrs	10
10-20 yrs	16
>20 yrs	52
(DK/Ref)	1

36. Do any children under the age of 18 live in your household?

Yes	32
No/(Refused)	68

37. What is the last grade you completed in school?

Some high school	5
Graduated High School	18
Technical/Vocational	3
Some College	24
Graduated College	31
Graduate/Professional	17
(Don't Know/Refused)	1

38. In terms of your job status, are you employed, unemployed but looking for work, retired, a homemaker or a student?

	1999	**2000**	**2001**
Employed	63	63	62
Unemployed	5	5	6
Retired	23	20	20
Student	3	4	4
Homemaker	5	7	6
Other	2	0	2

39. What is your age? (READ CODES IF NECESSARY)

	1999	2000	2001
18-24	8	10	8
25-29	6	9	10
30-34	9	10	8
35-39	10	11	8
40-44	13	12	12
45-49	14	10	9
50-54	8	12	11
55-59	7	6	7
60-64	5	6	5
65+	18	13	18
(Refused)	3	3	3

40. What race or ethnic background would you classify yourself as-- African-American, White, Hispanic, Asian or something else:

	1999	2000	2001
Afr-Amer/Black	4	5	5
White/Caucasian	84	77	80
Hispanic/Latin-Am	1	3	2
Asian/Asian-Am	4	5	5
Native American	3	1	2
(Other/Refused)	10	10	7

41. Having completed this survey with us, is there anything that you would like to add about the topics we talked about – the environment, water quality, or the government's role in managing natural resources? (ONE RESPONSE)

Educate the public on environmental issues	5
County should account for money spent	5
Cover reservoir	3
Government should provide more money/raise taxes	2
Do more to protect the salmon and whales	2
Everyone need to do their part	1
Responsible parties need accountability	1
Others	8
No/Don't know/Refused	63

Appendix DD. Cimarron Watershed Alliance Project Selection Criteria

CWA Project Selection Criteria

Criteria for Selection of the Project Site & Problem	Ranking
1. Importance: What is the level of importance of this project in the watershed? • Is this one of the sites creating the most problems? • Is this causing a high level environmental concern? • Visual analysis indicates it is a problem? • Does analysis of water or soil indicate a problem? • Note: This project may be important for the watershed but not in the initial 319 grant.	1 2 3 4 5 6 7 8 9 10
2. Relation to TMDL's and Grant • Does this project fit within the 319 grant? • Does the project address TMDL constituents? The project may address none, some, or all. • What is the availability of matching funds for this project?	1 2 3 4 5 6 7 8 9 10
3. Ease of completion of the project - "Bang for the buck" • What is the ratio of area treated per dollar spent? • Is this project "low hanging fruit"? Is it quick and easy to complete? • How difficult will it be to obtain permits? • How readily can you get on the site? • What challenges will you encounter when you get on the site (e.g. one owner vs. multiple owners)?	1 2 3 4 5 6 7 8 9 10
4. Time Frame, Urgency • Is this project for the short term (next 6 months), mid term (1 year), or long term (beyond 1 year)? • Is there a time frame limitation for the project (eg. before spring runoff, timing of availability of resources)?	1 2 3 4 5 6 7 8 9 10
Criteria for Selection & Evaluation of the Solution	
5. Does this solution provide lasting change? • Is this management or only a bandaid? • Is the solution a Structural BMP or a Management BMP ?	1 2 3 4 5 6 7 8 9 10
6. Cause vs. Effect • Does the project address the root cause of the problem or are we focusing on a symptom of the root cause?	1 2 3 4 5 6 7 8 9 10
7. Sustainable solution • Is this a sustainable solution? • Will the solution provide the land owner with more	1 2 3 4 5 6 7 8 9 10

management options and/or long-term flexibility than before?	
8. Leverage • Will the award of this money leverage other money?	1 2 3 4 5 6 7 8 9 10
Total Ranking (Add total score; maximum 70 points) **Part of the 319 Grant? _____ Time Frame: _____**	Rank:_____

Appendix EE. Cimarron Watershed Alliance Project Selection Process

CWA PROJECT SELECTION PROCESS

1. Watershed stakeholder: Create the project proposal
    1. Please use the Project Proposal Template to create the proposal
    2. Chris can help on permitting; Hoot has offered to help on costing.
2. Project Initiator: Submit the proposal to the Planning Committee (PC)
    1. Give to any member of the PC; Please submit softcopy and paper copy if possible; We will post this on the website and make paper copies for anyone who wants one.
    2. Timing: The PC will always receive proposals. If the PC has specific deadlines, these will be announced at the regularly scheduled CWA meetings.
3. Planning Committee: Rank the project using the Project Selection Criteria
    1. Review the project, discuss project with the project team, and make modifications to the project proposal as needed.
    2. Evaluate the project using the criteria and rank it against other projects
    3. See attached Project Selection Criteria
    4. Any member or stakeholder can sit in on the PC meetings as desired; the committee will request assistance from other CWA members when a project requires additional expertise or points of view.
    5. Timing: The goal for timing is that the PC will review the projects and be prepared to present the recommendation at the next CWA meeting.
4. Planning Committee and Project Team: Present the proposal recommendation to the overall group and Board of Directors
    1. Note: Don't forget to announce any meetings of the Board of Directors as required as a 501(c)(3); Normally the Board of directors meeting will be the last hour of a regular meeting.
    2. Timing: This presentation begins a minimum of a 30 day comment period from all CWA members and stakeholders
5. CWA members and Board of Directors: Comment period
    1. As soon as possible in the comment period, give feedback on the proposal and recommendations to the PC
    2. Timing: Aim to get comments within the month between meetings (not all on the day of the meeting).
6. Board of Directors: Make the final decision on the project
    1. Aim for agreement (agree to agree);
    2. Per by-laws: At least 2/3rds of the board must be present to vote (at least 9 people) and at least 2/3rds of those present + 1 are required to pass (at least 7). Note that decisions cannot be amended.
    3. Must have a response from each Board Member; silence is not equal to agreement
    4. Timing: Aim for 30 days (the next CWA meeting) to get decision from the board
7. Present the final decision to the project team & project team begns work!
8. Follow up and report to the state and back to the group on progress and dollars.
    1. The state must have an update every 6 months but quarterly is better.
    2. Use reporting follow-up form provided by the state.

Appendix FF. Southern Nevada Water Alliance Customer Survey

Water Smart Landscapes Customer Survey

Your feedback is important

The Southern Nevada Water Authority appreciates your participation in the Water Smart Landscapes (WSL) rebate program.

Please take a moment to complete and return the attached, postage-paid survey and tell us about your experiences with the WSL rebate program. Your feedback will help us to provide high levels of customer service.

Please rate our service:	1-Strongly disagree	2-Disagree	3-Neutral/ Undecided	4-Agree	5-Strongly agree
It was easy to apply to the WSL rebate program.	1	2	3	4	5
Program requirements were clear and easy for me/my contractor to understand.	1	2	3	4	5
The SNWA inspector at my site visit(s) was knowledgeable.	1	2	3	4	5
It was easy to schedule my site inspection(s).	1	2	3	4	5
I was pleased with the amount of my landscape rebate.	1	2	3	4	5
Overall I was satisfied with my experience in the rebate program.	1	2	3	4	5

How did you complete the work? ❑ Yourself ❑ Hired a contractor (Contractor name: _____)

If you used a contractor, did you use the Water Smart Contractor search feature on snwa.com? ❑ Yes ❑ No ❑ N/A

Would you recommend this contractor to a friend? ❑ Yes ❑ No ❑ N/A

Additional Comments: _____

_____

Optional: May we contact you regarding your comments? ❑ Yes ❑ No

Name: _____ **Address:** _____

Phone: _____ **E-mail:** _____

Please re-seal this page by removing the adhesive strip below and facing the "Business Reply Mail" side outward for mailing.

Office use only - Assisted by: _____ Reference #_____

SOUTHERN NEVADA WATER AUTHORITY

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Appendix GG. Southern Nevada Water Alliance Program Conditions

I.	Pre-conversion Eligibility
A.	**Authorization to Proceed:** Before removing any lawn or water features, the application must be submitted to SNWA and the applicant must participate in an SNWA pre-conversion site review. Starting without SNWA approval will make the conservation ineligible.
B.	**Customer Eligibility:** Areas to be converted must use water from an SNWA water agency or groundwater well within the Las Vegas Valley Groundwater Basin. The applicant's water and/or groundwater account(s) must be in good standing.
C.	**Qualifying Areas:** Areas to be converted must be maintained lawn or permanently-installed outdoor surface of water. Conversions necessary to comply with any governmental code, law or policy relating to landscape design standards are ineligible. Project areas previously declared ineligible by SNWA will not be reconsidered.
D.	**Minimum Project Size:** At least 400 square feet of lawn and/or water surface must be converted. Smaller projects are accepted if they completely eliminate a lawn or water feature on a commercial, institutional or multifamily property or eliminate the front or back lawn of a single-family home.

II.	Landscaping Requirements for the Converted Area
A.	**50% Living Plant Cover:** At completion, converted areas must contain enough plants to create at least 50 percent living plant cover at maturity. The SNWA provides a list of plant cover values to be used regardless of the size of the plants at the time of inspection. In a single family residential project, you may instead request SNWA to determine whether the requirement is met by considering the entire plantable area of the front or back yard where the conversion occurred (in which case all plantable areas must meet the requirements of sections II(B) and II(C) of this

	program agreement and no lawn areas may remain).
B.	**Efficient Irrigation:** If a watering system is used, it must be a drip irrigation system equipped with a pressure regulator, filter and emitters. The system must be free of leaks and malfunctions. Each drip emitter must be rated at less than 20 gallons per hour (gph). If part of a lawn is converted, the sprinkler system must be properly modified to provide adequate coverage to the remaining lawn without spraying the converted area (narrow lawn areas often waste water and should be avoided).
C.	**Surface Treatments:** The converted area must be completely covered by a layer of mulch permeable to air and water. Common mulching materials include rock, bark, ungrouted flagstone or pavers and artificial turf manufactured to be permeable. Concrete or other impermeable treatments do not qualify. Living groundcovers qualify as mulch provided the individual plants are installed at sufficient density to assure 100 percent plant cover. If a weed barrier is used beneath the mulch, it must be manufactured to be permeable to air and water.

III.	Terms of the Rebate
A.	**Important Timelines and Deadlines:** Within 6 months of executing this agreement, you must complete your conversion and notify SNWA. SNWA will inspect completed projects for compliance. If the conversion fails inspection, you will be granted 60 days or the remainder of the 6-month period, whichever is greater, to attain compliance and notify SNWA. This agreement terminates one year after execution or upon incentive payment, whichever comes first. All applicant obligations, including submittal of properly executed covenant documents, must be fulfilled within the one year period or the rebate may be forfeited.
B.	**Incentive Amounts and Limits:** $1.50 per square foot for the first 5,000 square feet and $1 per square foot thereafter, not to exceed $300,000 of approved payments per fiscal year. Limitations are per property, per owner, per SNWA fiscal year (July 1 through June 30). Checks are issued to property owners or their legally-appointed agent. Well users' rebates are limited to 2,500 square feet per fiscal year and are subject to availability of special funds. The SNWA may limit new agreements to

	manage program costs.
C.	**Requirement to Sustain the Conversion:** Rebate issuance is subject to owner's acceptance of a restrictive covenant and grant of conservation easement (PDF) that requires the conversion to be sustained in perpetuity.
D.	**Other responsibilities of the applicant:** SNWA enforces only the conditions of this agreement. The applicant is responsible for complying with all laws, policies, codes and covenants that may apply. Quality and appearance of the conversion is the responsibility of the applicant. Rebates may be considered taxable income.

Appendix HH. Southern Nevada Water Alliance Water Landscapes Program Application and Agreement

Southern Nevada Water Authority

Water Smart Landscapes Program

Application and Agreement

WATER SMART
258-SAVE • snwa.com
It's time to get smart about water

Owner or Business Name:		
Conversion Address:		
City, Zip Code:		
Contact Person (if not owner)		
Telephone Number(s):		
E-mail address		
Mailing address (if different from conversion address)		

Project Type: ☐ Single Family Home: Front yard ❍ Backyard ❍ (mark one or both)
☐ Apartments, HOA common area, Mobile Home Park
☐ Business or Institutional property

Water Source: ☐ A City or Water Agency ☐ Private Groundwater Well (see limitations in condition III B)

Instructions

1. Submit white and yellow copies of your completed, signed application. Keep pink copy.
2. SNWA will call you within 10 days of receipt of your application to schedule a mandatory pre-conversion site visit.
3. When the conversion is complete, homeowners call 862-3760 for final inspection. Other properties may contact their coordinator directly.

Important! You must participate in a pre-conversion site visit *before* removing your lawn. Starting without SNWA approval will make your conversion ineligible.

The undersigned person executing this application and agreement represents and warrants that they are the owner of the property, or they have the express written permission of the owner as evidenced by a duly executed and recorded power of attorney or other document indicating authorization to act on behalf of the owner, and represents and certifies that such person or entity is duly authorized and has been empowered to execute and deliver this application and agreement. As such, I understand and agree to the program conditions on the back of this form and have reviewed the terms of the restrictive covenant required.

_____ _____
Applicant's signature Date

_____
Applicant's printed name (include professional title if you are the owner's designee)

SNWA USE ONLY - SNWA has approved this agreement and authorized the applicant to proceed with the project.

_____ _____ _____
SNWA representative's signature Date Completion period expires

Keep the pink copy. Mail the white and yellow copies to:

SNWA Conservation – P.O. Box 99956 – Las Vegas, NV 89193-9956

Version September 15, 2010

I. Pre-Conversion Eligibility

Version September 15, 2010

A) Authorization to Proceed - Before removing any lawn or water features, this application must be pre-approved by SNWA following a mandatory pre-conversion site review.

B) Customer Eligibility - Areas to be converted must use water from an SNWA water agency or groundwater well within the Las Vegas Valley Groundwater Basin. The applicant's water and/or groundwater account(s) must be in good standing.

C) Qualifying Areas - Areas to be converted must be a maintained lawn or permanently-installed outdoor surface of water. Conversions necessary to comply with any governmental code or policy relating to landscape design standards are ineligible. Project areas previously declared ineligible by SNWA will not be reconsidered.

D) Minimum Project Size - At least 400 square feet of lawn and/or water surface must be converted. Smaller projects are accepted if they completely eliminate a lawn or water feature on a commercial, institutional or multi-family property, or completely eliminate the front or back lawn of a single-family home.

II. Requirements for the Converted area

A) 50% Living Plant Cover – At completion, converted areas must contain enough plants to create at least 50 percent living plant cover at maturity. The SNWA provides a list of plant cover values to be used regardless of the size of the plants at the time of inspection. In a single family residential project, you may instead request SNWA to determine whether the requirement is met by considering the entire plantable area of the front or back yard where the conversion occurred (in which case all plantable areas must meet the requirements of sections II(B) and II(C) of this program agreement and no lawn areas may remain).

B) Efficient Irrigation – If a watering system is used, it must be a drip irrigation system equipped with a filter, pressure regulator and emitters. The system must be free of leaks and malfunctions. Each drip emitter must be rated at 20 gallons per hour (gph) or less. If part of a lawn is converted, the sprinkler system must be properly modified to provide adequate coverage to the remaining lawn without spraying the converted area.

C) Surface Treatments – Converted areas must be covered by a layer of mulch permeable to air and water. Common mulches include rock, bark, ungrouted stepping stones and artificial turf manufactured to be permeable. Living groundcovers qualify when planting density assures 100 percent living plant cover. If a weed barrier is used, it must be manufactured to be permeable to air and water. Concrete or other impermeable treatments do not qualify.

III. Terms of the Rebate

A) Important Timelines and Deadlines – Within 6 months of executing this agreement, you must complete your conversion and notify SNWA. SNWA will inspect completed projects for compliance. If the conversion fails inspection, you will be granted 60 days or the remainder of the 6-month period, whichever is greater, to attain compliance and notify SNWA. This agreement terminates one year after execution or upon incentive payment, whichever comes first. All applicant obligations, including submittal of properly executed covenant documents, must be fulfilled within the one year period or the rebate may be forfeited.

B) Incentive Amounts and Limits – $1.50 per square foot for the first 5,000 square feet and $1.00 per square foot thereafter. No property may obtain more than $300,000 of approved payments per SNWA fiscal year (July 1 through June 30). All thresholds and limits are per property, per owner, per SNWA fiscal year. Groundwater well users' rebates are limited to 2,500 square feet per fiscal year. Checks are issued to property owners or their legally-appointed agent. The SNWA may limit new agreements to manage program costs.

C) Requirement to Sustain the Conversion – Rebate is subject to owner's grant of a restrictive covenant that restricts certain uses of the conversion project areas in perpetuity.

D) Other responsibilities of the applicant – The SNWA enforces only the conditions of this agreement. The applicant is responsible for complying with all applicable laws, policies, codes and covenants. Quality and appearance of the conversion is the responsibility of the applicant. Rebates may be considered taxable income.

8. CONTRACTS AND AGREEMENTS

Appendix II. Cimarron Watershed Alliance Professional Services Contract with the State of New Mexico Environment Department

DFA Administrative Services Division
Bataan Memorial Bldg. - Rm 323
Santa Fe, New Mexico 87503
(505) 827-3880

PROFESSIONAL SERVICES CONTRACT BRIEF
CRB 1, Revised 6/97
(CONTRACT BRIEF MUST BE TYPED)

FY	Agency Code	Organization Code	Contract No.	Amend No.
05	667	5000	0009	

Vendor Code: 0 0 0 0 0 3 3 3 9 0
Contractor Name: Cimarron Watershed Alliance, Inc.
Contractor Address: P.O. Box 260 Ute Park, NM 87749 **Phone:** 505-376-2392
Agency Contact Person: Chris Cudia 505-425-6764, Las Vegas Field Office Margaret Trujillo **Phone:** 476-3689

Single-Year Contract:
❑ $ _____ Total Contract Amount

Multi-Year Contract:
☒ $ 648,843.00 Total Contract Amount

Multi-Year Contract:
Check Applicable Year
☒ FY-1 ❑ FY-3
❑ FY-2 ❑ FY-4

Contract or Amendment Amount:
General Fund $ _____
Other State Funds $ _____
Federal Funds $ 648,843.00
Total $ 648,843.00

Contract Term: From 12 – 06 – 2004 (DFA Approval Date To Be Filled in by Contracts Review Bureau) To 12 – 31 – 2005 (Termination Date)

Retroactive: Y/N _____ Date: ____ – ____ – ____

Documents Enclosed - *Check one or more of the following:*
☒ Contract ☒ Purchase Document ❑ Contract Amendment ❑ Purchase Document Modification
❑ Sole Source Determination ❑ Retroactive Justification ❑ Other _____

BRIEF DESCRIPTION OF SERVICES - PSC between NMED and Cimarron Watershed Alliance, Inc., the Contractor will complete all tasks associated with the Federal Clean Water Act Section 319 (h) FY03-K Cimarron Watershed Alliance Project.

PROCUREMENT PROCEDURE - *Check the applicable citation:*
____ Section 13-1-125 NMSA 1978, small purchase contract (under $20,000 excluding gross receipts tax).
____ Section 13-1-98 NMSA 1978, exempt from the procurement code.
____ Section 13-1-120 NMSA 1978, competitive proposal for architect/engineer/landscape/architect/surveyor.
X Section 13-1-111 NMSA 1978, competitive sealed proposal (contract over $20,000).
____ Section 13-1-126 NMSA 1978, sole source procurement (requires written determination and DFA approval).

REQUIREMENTS - *Enter Y (yes) to certify the following mandatory requirements:*
Y The agency certifies to DFA that all relevant requirements of the Procurement Code have been followed.
Y The agency certifies to DFA that the contractor will perform at all times as an independent contractor for purposes of IRS tax compliance and is not performing services as an employee of the agency.
Y The agency certifies to DFA that the agency has performed a legal review and the contract is in compliance with all federal and state laws, rules or regulations.

OTHER REQUIREMENTS - *Enter Y (yes), N (no), or N/A (not applicable) to each of the following:*
Y The agency certifies to DFA that the requirements of the Governmental Conduct Act, Section 10-16-1 NMSA 1978 regarding conflict of interest with public officers or state employees have been followed.
Y The agency certifies to DFA that the contract complies with GSD rules regarding indemnification and insurance.
NA The agency certifies to DFA that Chief Information Officer approval has been obtained, if applicable.
NA The agency certifies to DFA that Attorney General review has been obtained because:
❑ Contract is greater than $200,000 ❑ Contract is with legislator ❑ Contract is with former state employee ❑ Contract is with present employee
NA The agency certifies to DFA that any required performance bonds have been obtained, Section 13-1-148 NMSA 1978.

Secretary, Environment Department
Cabinet Secretary, Agency Head or Designee **Title** **Date**

DFA USE ONLY

Category	MI	Date Logged CRB	/ /
Status	A	Date Received CRB	12/06/04
Amendment Type		Date Resubmitted CRB	/ /
Staff		Date Approved CRB	12/06/04
		Status	/ /

PURCHASE DOCUMENT

Number	Amount	Date to FCD	Date From FCD

COMMENTS:

DISTRIBUTION: **WHITE** - DFA Files **CANARY** - DFA Key Entry **PINK** - Agency Copy **GOLDENROD** - Agency Suspense

Contract No. 05-667-5000-0009

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT
PROFESSIONAL SERVICES CONTRACT

THIS CONTRACT is made and entered into by and between the State of New Mexico Environment Department, hereinafter referred to as NMED, and the Cimarron Watershed Alliance, hereinafter referred to as Contractor.

IT IS MUTUALLY AGREED BETWEEN THE PARTIES:

1. Scope of Work.

   A. The Contactor will complete all tasks associated with the Federal Clean Water Act Section 319 (h) Grant, FY03-K Cimarron Watershed Alliance Project.

   B. Reference the attached Cimarron Watershed Alliance Workplan.

2. Compensation.

   A. NMED shall compensate the Contractor for satisfactory performance of specific services according to the approved workplan.

   B. The total amount payable under this contract shall not exceed $648,843.00 including New Mexico gross receipts tax.

   C. NMED shall pay to Contractor the New Mexico gross receipts tax levied on the amounts payable under this contract.

   D. Payment shall be made upon receipt of detailed, certified invoices and receipts, which should include, if applicable, an accompanying statement of non-federal matching fund expenditures (record of match) being spent on the Project during the time period of the invoiced charges. Invoices and records of match shall be submitted to:

      Chris Cudia
      New Mexico Environment Department
      Surface Water Quality Bureau
      505 National Avenue, Suite #3
      Las Vegas, New Mexico 87701

   E. Within fifteen days after the date NMED receives written notice from the Contractor that payment is requested for services or items of tangible personal property delivered on site and received, NMED shall issue a written certification of complete or partial acceptance or rejection of the

services or items of tangible personal property. If NMED finds that the services or items of tangible personal property are not acceptable, it shall, within thirty days after the date of receipt of written notice from the Contractor that payment is requested, provide to the Contractor a letter of exception explaining the defect or objection to the services or delivered tangible personal property along with details of how the Contractor may proceed to provide remedial action. Upon certification by NMED that the services or items of tangible personal property have been received and accepted, payment shall be tendered to the Contractor within thirty days after the date of certification. If payment is made by mail, the payment shall be deemed tendered on the date it is postmarked. After the thirtieth day from the date that written certification of acceptance is issued, late payment charges shall be paid on the unpaid balance due on the contract to the Contractor at the rate of .2 percent per month.

3. Term.

This contract shall not become effective until approved by the Department of Finance and Administration. This contract shall terminate on 12/31/05, and can be extended up to three years pursuant to paragraph 14 unless terminated pursuant to paragraph 4, *infra*, or paragraph 5.

4. Termination.

This contract may be terminated by either party upon written notice delivered to the other party at least thirty (30) days before the intended date of termination. By such termination, neither party may nullify obligations already incurred for performance or failure to perform before the date of termination. THE PROVISION IS NOT EXCLUSIVE AND DOES NOT WAIVE OTHER LEGAL RIGHTS AND REMEDIES AFFORDED THE STATE IN SUCH CIRCUMSTANCES AS CONTRACTOR'S DEFAULT/BREACH OF CONTRACT.

5. Appropriations.

The terms of this contract are contingent upon sufficient appropriations and authorization being made by the Legislature of New Mexico and/or the U. S. Congress for the performance of this contract. If sufficient appropriations and authorization are not made by the Legislature and/or U.S. Congress, this contract shall terminate upon written notice being given by the NMED to the Contractor. The NMED's decision as to whether sufficient appropriations are available shall be accepted by the Contractor and shall be final.

6. Status of Contractor.

The Contractor and its agents and employees are independent contractors performing professional services for NMED and are not employees of the State of New Mexico. The Contractor and its agents and employees shall not accrue leave, retirement, insurance, bonding, use of state vehicles, or any other benefits afforded to employees of the State of New Mexico because of this contract.

7. Assignment.

The Contractor shall not assign or transfer any interest in this contract or assign any claims for money due or to become due under this contract without the prior written approval of NMED.

8. Subcontracting.

The Contractor shall not subcontract any portion of the services to be performed under this contract without the prior written approval of NMED.

9. Records and Audit.

The Contractor shall maintain detailed time records that show the date, time and nature of the services rendered. These records shall be subject to inspection by NMED, the Department of Finance and Administration, and the State Auditor. NMED shall have the right to audit billings both before and after payment. Payment under this contract does not foreclose the right of NMED to recover excessive or illegal payments. NMED Project Officers shall audit contracts on a quarterly basis to ascertain Contractor's likelihood of achieving deliverable deadlines as scheduled in annual work plans. If deadlines are not being met – then the Project Officer will make a verbal request with a formal written request to follow that the Contractor explain in writing within seven (7) days the cause for delay. The request shall be mailed by certified mail to the Contractor. If the NMED project officer deems invalid the cause for delay of deliverables, then the Contractor will be given sixty (60) days after certified receipt of letter notifying the Contractor as to their status to develop a corrective action plan agreeable to the NMED Project Officer and to show either through deliverable or revised schedule how deliverables will be affected. If at the end of the sixty-day (60) corrective action period no progress has been made, the Contractor shall be notified that the Contract is terminated. Refer to Paragraph 4 Termination regarding termination by either party before the intended date.

10. Release.

Upon final payment of the amount due under this contract, Contractor releases NMED, its officers and employees and the State of New Mexico from all liabilities, claims and obligations whatsoever arising from or under this contract. The Contractor agrees not to purport to bind the State of New Mexico to any obligation not assumed herein by the State of New Mexico, unless Contractor has express written authority to do so, and then only within the strict limits of that authority.

11. Confidentiality

Any confidential information provided to the Contractor in the performance of this contract shall be kept confidential. Contractor shall not make such information available to any individual or organization without the prior written consent of NMED.

12. Product of Service – Copyright.

All materials the Contractor develops or acquires under this contract shall become the property of the State of New Mexico and shall be delivered to NMED no later than the termination date of this contract. Nothing the Contractor produces, in whole or in part, under this contract shall be the subject of an application for copyright by Contractor or on Contractor's behalf.

13. Conflict of Interest.

The Contractor warrants that Contractor currently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required under the contract. The Contractor certifies that the requirements of the Governmental Conduct Act, Sections 10-16-1 through 10-16-18 NMSA 1978, regarding contracting with a public officer or state employee have been followed.

14. Amendment.

This contract shall not be altered, changed or amended except by instrument in writing executed by the parties hereto.

15. Merger.

This contract incorporates all the agreements, covenants and understandings between the parties hereto concerning the subject matter hereof, and all such covenants, agreements and understandings have been merged into this written contract. No prior agreements or understandings, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless embodied in this contract.

16. Notice.

The Procurement Code, NMSA 1978, §§13-1-28 through 13-1-199 imposes civil and criminal penalties for its violation. In addition, the New Mexico criminal statutes impose felony penalties for illegal bribes, gratuities and kickbacks.

17. Equal Opportunity Compliance.

The Contractor agrees to abide by all Federal and State laws and rules and regulations, and executive orders of the Governor of the State of New Mexico, pertaining to equal employment opportunity. In accordance with all such laws of the State of New Mexico, the Contractor agrees to assure that no person in the United States shall, on the grounds of race, religion, color, national origin, ancestry, sex, sexual preference, age or handicap, be excluded from employment with or participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity performed under this contract. If Contractor is found to not be in compliance with these requirements during the

life of this contract, Contractor agrees to take appropriate steps to correct these deficiencies.

18. Applicable Law.

This contract shall be governed by the laws of the State of New Mexico.

19. Workers' Compensation.

The Contractor agrees to comply with the state laws and rules applicable to workers' compensation benefits for its employees. If the Contractor fails to comply with the Workers' Compensation Act and applicable rules when required to do so, this agreement may be terminated by the contracting agency.

20. Suspension and Debarment

Contractors receiving individual awards for $100,000 or more and all subrecipients must certify that the organization and its principals are not suspended or debarred. The non-Federal entities may rely upon the certification unless it knows that the certification is erroneous.

21. Other Provisions

None

IN WITNESS WHEREOF, the parties have hereto set their hands.

STATE OF NEW MEXICO

By: _____
Ron Curry, Secretary
Environment Department

Date: 11/22/04

CIMARRON WATERSHED ALLIANCE, INC.
CONTRACTOR NAME

By: _____
R. Frank Atmore
President & Chairman

Date: 11/03/04

Approved as to form and Legal Sufficiency

By: _____
General Counsel, NMED
Special Assistant Attorney General

Date: 11/22/04

The records of the Taxation and Revenue Department reflect that the Contractor is registered with the Taxation and Revenue Department of the State of New Mexico to pay gross receipts and compensating taxes.

ID Number: 02-016358-00-7

By: _____
Taxation and Revenue Department

Date: 10/1/04

This Contract has been approved by the DFA Contracts Review Bureau:

By: _____
DFA Contracts Review Bureau

Date: 12/06/04

Appendix JJ. Feather River Coordinated Resource Management Group for Red Clover

LANDOWNER AGREEMENT
RED CLOVER/McREYNOLDS CREEK RESTORATION PROJECT
April 25, 2006

Project Goals:

The Red Clover/McReynolds Creek Project is located primarily on private lands owned by the Goodwin Family. The goal of this project is to reduce the erosion of the meadow, improve fish and wildlife habitat, restore the aesthetics of a stable riparian area while maintaining its multiple-use values. The project goals match the mission of the Feather River Coordinated Resource Management (CRM) group from whom the landowner requested assistance in the Fall, 2002. These goals are also consistent with those of the Proposition 13 CALFED Watershed Program that is funding project construction through a contract with Plumas Corporation. The above referenced entities have been engaged in a collaborative partnership to achieve these shared visions. This agreement that outlines the roles, responsibilities and limitations of the partners, will remain in effect for a period of ten (10) years, through September 30, 2016.

Problem Statement:

The partners, through a three-year process of data collection and analysis, have determined that the primary channel characteristic impacting the goals stated above is the disconnection of the channel from its historic functional floodplain. This channel/floodplain disconnection is pervasive throughout the upper Feather River watershed meadows and valleys. The disconnection results from entrenchment of the channel into its alluvial foundation. This entrenchment phenomenon in the watershed has frequently been associated with practices and watershed impacts dating back over 100 years.

Restoration efforts on Red Clover Creek, both within the project area and without, have been ongoing for more than 20 years with positive initial responses in vegetation and habitat recovery. However, without the flood relief function of a floodplain, frequent moderate to major floods (1986,'93,'95,'97) and attendant sediment loads have repeatedly curtailed this recovery, with the notable exception of the Red Clover Creek Demonstration Project (RCCDP). The existing deeply entrenched channel functions as a 'drain' that de-waters much of the meadow. This has induced a vegetative conversion from perennial moist meadow grasses and forbs to less desirable dry site annuals, forbs and sagebrush. Ongoing monitoring of other CRM meadow projects indicates the potential for functional meadow floodplains to attenuate floods and increase summer baseflows through shallow groundwater storage.

Project Concept:

The three-year process of data collection, analysis and development of conceptual alternatives by the partners through the CRM Technical Advisory Committee (TAC) process has led to a decision to implement the following Design Alternative.

The selected design alternative will entail abandoning the existing entrenched, disturbed channel. Streamflow will be returned to existing remnant channels on top of the meadow, which will also re-

connect the channel to its naturally evolved floodplain. This will be accomplished by filling the existing gully back to its original grade via the pond-and-plug method. This is expected to raise the shallow groundwater table and re-invigorate the meadow vegetation.

The project also entails installation of livestock management infrastructure. This infrastructure consists of approximately 42,000 linear feet of new or replacement fencing and spring development in two (2) locations (see attached map). Several of the ponds created as part of the project implementation will be sited and designed to provide off-channel water sources as well.

Project Requirements:

The sustainability of all natural restoration projects require certain key activities to provide for the long-term sustainability of the partners' shared vision. This requires the identification of the roles and responsibilities of the partners in the **monitoring, maintenance** and **management** of the project as well as potential funding resources beyond the current contract period. It also requires, to the extent feasible at this time, identification of important thresholds for triggering maintenance and management decisions in the long-term.

Monitoring: Project monitoring has three objectives: 1) to document the success/failure of the project in meeting project goals; 2) to identify potential or actual need for post-project maintenance intervention; 3) to provide information to the PNF and landowner(s) in developing short- and long-term management decisions. Thorough project monitoring requires collaborative effort in both quantitative data collection and qualitative observation.

Monitoring Components:
Fish- size, ***number,species***
Wildlife- ***species, number***
Hydrology- ***streamflow***, ***water temperature***, groundwater
Vegetation- ***community change, percent cover, forage productivity***
Channel- ***X-section,*** profile
Photo- ***change over time***

Monitors by Component:
Fish (Ca. Dept. of Water Resources)
Wildlife (Ca. Dept of Water Resources)
Hydrology (Plumas Corp)
Vegetation (Plumas Corp/landowner)
Channel (Plumas Corp)
Photo (Plumas Corp)

Monitoring Intervals:
Fish- two years baseline/ biennially 4-10 years
Wildlife- baseline/annually 2-5 years
Hydrology- baseline/monthly 2-5 years
Vegetation- baseline/annually 2-10 years
Channel- baseline/1 year/after flood for up to 10 years
Photo- baseline/annually 2-10 years

The monitoring components ***bold italicized*** above would, in total, provide information to document monitoring objective #1- project success/failure. The channel and vegetation components would identify needs for objective #2- maintenance. Channel, vegetation and aesthetic components would

provide the FRCRM and landowner information for objective #3- management. All direct data collection activities would be augmented by qualitative observations from casual visits, flood monitoring and TAC evaluation.

Project Maintenance:

Ideally, a natural restoration project should have minimal need for ongoing maintenance. However, as a 'disturbed' site, a restoration project will require several years to recover and develop the resistance necessary to absorb the impacts of infrequent, but high stress, events such as major floods (>10 year) or severe drought. Alluvial channels such as Red Clover Creek and McReynolds Creek are expected to adjust laterally. The quantitative and qualitative monitoring will be focused on detecting the potential for vertical adjustment of the channel (particularly entrenchment) as well as anomalies in the channel bed deposition patterns. Typically, the project TAC will remain in place and active for many years after a project has been completed. This provides for long-term evaluation of monitoring data/observations, maintenance recommendations and support for land management decisions. Maintenance of the project will become the landowners' responsibility with, if necessary, attempts at further grant support through the auspices of the Feather River CRM.

Project Land Management:

The responsibility for managing the lands encompassing this project ultimately falls on the landowner(s), the Goodwin Family with support from the project TAC and the USDA- Natural Resources Conservation Service (NRCS). A binding contract between the landowner(s) and NRCS explicitly details livestock management activities within the project area. The above referenced agreement, though summarized below, is hereby incorporated in its entirety into this agreement. A short-term management strategy for the project, along with the monitoring plan and thresholds for recovery and subsequent management are described below.

The project area and adjacent uplands, currently comprising two (2) fenced pastures will be further fenced as part of the project work to total five (4) pastures. Additionally, off-channel livestock water supplies will be provided via spring development or project-related ponds. The restored riparian area will be enclosed in permanent fencing to allow separate management of the primary meadow/floodplain/channel area. This enclosure will have grazing excluded for 3 years with annual monitoring, until monitoring indicates that the vegetation has recovered to the extent it will be resistant to significant floodflow stress. Significant floodflow stress will result when floodplain flow depths exceed 1.5' and a velocity of 2 feet/second in this project area. After 3 years the decision to re-introduce livestock into enclosure will be assessed on a yearly basis by landowner(s), NRCS and CRM staff based on the results of the ongoing monitoring program.

APPROVAL SIGNATURES

George Goodwin- Landowner

Scott Thompson- Landowner

Todd Hillaire- Ca. Dept. of Water Resources

Dennis Heiman- Cent. Valley RWQCB

Dan Martynn- District Conservationist
USDA- Natural Resource Conservation Service

Jim Wilcox- Plumas Corporation

9. SUPPLEMENTAL DOCUMENTATION FOR CASE STUDIES

Appendix KK. Roaring Fork Watershed Collaborative Roundtable Discussion Participants

Glenwood Springs 6/9/10:

1. Gerum, A'lissa: Planner, City of Glenwood Springs
2. Jochems, Bill: Pitkin County Healthy Rivers and Streams Board member and Past-President of the Crystal Valley Environmental Protection Association
3. Holland-Sears, Andrea: Hydrologist, US Forest Service White River National Forest
4. Rada, Jim: Garfield County Public Health Director
5. Sturges, Dave: City Council, City of Glenwood Springs
6. Sullivan, Rose Ann: Kootenay Resources, LLC, Consultant, Roaring Fork Conservancy
7. Walker, Hunt: Public Works Director, Town of Snowmass Village

Basalt 6/11/10:

1. Fuller, Mark: Executive Director, Ruedi Water & Power Authority
2. O'Keefe, Tim: Education Director, River Center Project Manager, Roaring Fork Conservancy
3. Owsley, Michael: Pitkin County Commissioner, Board member Ruedi Water & Power Authority
4. Pokrandt, Jim: Communication & Education Specialist, Colorado River Water Conservation District
5. Snelson, Scott: Aspen District Ranger, US Forest Service
6. Tennenbaum, Gary: Stewardship & Trails Manager Pitkin County Open Space & Trails

Aspen 6/14/10:

1. Bakich, Kendall: Aquatic Biologist, Colorado Department of Wildlife
2. Barker, April: Stormwater Manager, City of Aspen
3. Clarke, Sharon: Land & Water Conservation Specialist, Roaring Fork Conservancy
4. Lacy, Mark: Fish Biologist, US Forest Service White River National Forest
5. Ostberg, Carla: Environmental Health Manager, Pitkin County Environmental Health
6. Richards, Rachel: Pitkin County Commissioner, Board member (Alternate) Ruedi Water & Power Authority
7. Rossello, Andy: Utility Engineer, City of Aspen
8. Tasker, Lisa: Independent Consultant, Pitkin County Healthy Rivers & Streams Fund Board member
9. Yates-White, Crystal: Land Manager, Land Management Department, Pitkin County

Glenwood Springs 6/10/10 Floating Summit, "Raft" Groups

1. Allen, Tamra: Planner, Garfield County
2. Aragon, Trish: City of Aspen Engineering
3. Arensman, Russ: Glenwood Springs City Council
4. Bakich, Kendall: Aquatic Biologist, Colorado Division of Wildlife
5. Barker, Amanda: Masters student, University of Michigan
6. Barker, April: City of Aspen Stormwater Program
7. Bershenyi, Stephen: Glenwood Springs City Council
8. Blakeslee, Bill: Colorado Division of Water Resources
9. Boineau, Bill: Snowmass Village Mayor
10. Bornstein, Jacob: Colorado Water Conservation Board
11. Bowles, Art: Basalt Water Conservancy District
12. Britt, Claire: Roaring Fork Conservancy
13. Brown, David: U.S. Geological Survey
14. Carey, Jason: Private Engineer, RiverRestoration.org
15. Clarke, Sharon: Land & Water Conservation Specialist, Roaring Fork Conservancy
16. Curry, Kathleen: Colorado Representative District 61
17. Driscoll, Moss: Elk Mountain Consulting
18. Ellsperman, Stephen: Roaring Fork Conservancy Board & City of Aspen
19. Erickson, Nissa: US Representative Jared Polis
20. Friedman: Ashley: Roaring Fork Conservancy
21. Fuller, Mark & Penny Atzet: Executive Director, Ruedi Water & Power Authority
22. Geiger, Chris & Mary Elizabeth: Glenwood Springs River Commission and Balcomb & Green
23. Gerum, A'lissa: Planner, City of Glenwood Springs
24. Graf, David: Colorado Division of Wildlife
25. Hellmann, Bethany: Masters student, University of Michigan
26. Heiman, Jeremy: Glenwood Springs River Commission
27. Hirsch, Christine: US Forest Service White River National Forest
28. Hoffman, John: Carbondale Town Council
29. Holland, Andrea: US Forest Service, White River National Forest
30. Hornbacher, Dave: City of Aspen Deputy Director of Utilities & Environmental Initiatives
31. Houpt, Tresi: Garfield County Commissioner, Board member Ruedi Water & Power Authority
32. Jackson, Mt. Sopris Conservation District
33. Jochems, Bill: Pitkin County Healthy Rivers Board
34. Johnson, Sarah: Education Coordinator, Roaring Fork Conservancy
35. Kaup, Shelley: Glenwood Springs City Council
36. Kohl, Anne: Masters student, University of Michigan
37. Kolm, Ken: Colorado School of Mines
38. Kondratieff, Matt: Aquatic Researcher, Colorado Division of Wildlife
39. Krivonen, Marci: Aspen Public Radio
40. Kyzer, Carlyle: Roaring Fork Conservancy
41. Lacy, Mark: Fish Biologist, US Forest Service White River National Forest
42. Rick & Lindsay Lofaro: Roaring Fork Conservancy

43. Romig, Brian: Colorado Division of Water Resources
44. Malone, Delia: Colorado Natural Heritage Program
45. McIntyre, Kathleen: Masters student, University of Michigan
46. McKinney, Leo: River Commission, Glenwood Springs City Council
47. Merritt, David: Colorado River District Board Member
48. Meyer, Louis & Cindy: Roaring Fork Conservancy Board & Schmueser Gordon Meyer
49. Michalek, Angela, Masters student, University of Michigan
50. Miller, Bill: Miller Ecological Consultants, Inc.
51. Mohrman, Jana Lea: US Fish & Wildlife Service
52. Morse, W. Travis: U.S. Army Corps of Engineers
53. Nall, Sue: US Army Corps of Engineers
54. Nichols, Peter: Attorney, Trout, Raley, Montano, Witwer, & Freeman, P.C.
55. O'Keefe, Tim: Roaring Fork Conservancy
56. O'Meara, Mark: Director, Carbondale Utility
57. Perregaux, Ed: Development Director, Roaring Fork Conservancy
58. Pokrandt, Jim: Communication & Education Specialist, Colorado River Water Conservation District
59. Poschman, Greg: Pitkin County Healthy Rivers and Streams Advisory Board
60. Ransford, Colorado River Basin Roundtable Representative, Attorney
61. Richards, Rachel: Pitkin County Board of Commissioners
62. Rosello, Andy: Utility Engineer, City of Aspen
63. Schwener, Diane and Rob: Roaring Fork Conservancy Board President
64. Skadron, Steven: Aspen City Council
65. Simonton, Cliff: Planner, Eagle County
66. Snelson, Scott: US Forest Service, White River National Forest
67. Sturm: Colorado Water Conservation Board
68. Sugar, Matt: US Senator Mark Udall
69. Sullivan, Rose Ann & Paul Sanders: Kootenay Resources, LLC, Consultant, Roaring Fork Conservancy
70. Tasker, Lisa: Independent Consultant, Pitkin County Healthy Rivers & Streams Fund Board member
71. Walker, Hunt: Public Works Director, Town of Snowmass Village
72. Waterman, Jon: National Geographic, Author of "Running Dry"
73. Wilde, Mike and Deborah: Mt. Sopris Conservation District Board & Project WET Colorado

Appendix LL. Interview Questionnaire for Case Studies

Questionnaire for Watershed Governance and Education Models

June 29, 2010

(Adapted from Ecosystem Management Initiative questionnaire,
prepared by Dr. Steve Yaffee and Dr. Julia Wondolleck, University of Michigan)

Interviewee:
Organization:
Role within the Organization:

Introduction

Just to refresh your memory, my name is <Name> and I am a graduate student at the University of Michigan's School of Natural Resources and Environment. I am part of a larger research group exploring examples of collaborative watershed management in the United States. We hope to bring valuable lessons from these examples to other watershed groups. We really appreciate hearing your perspective on <Case Study> and we hope you'll offer your views both about successes this effort has enjoyed as well as things that in retrospect you think might have been approached differently. I expect this interview to last around an hour. If additional information or clarification is needed, I'll follow-up with you or other individuals in <Case Study> at another time.

Would you like to have anything clarified on my end before we move into our discussion of the partnership?

I would like to incorporate the perspective of as many people as possible and would appreciate any other useful contacts for the <Case Study> that you can provide at the end of our discussion.

Is it okay with you if I record this interview to help with my note-taking?

INTERVIEW START <Record>

Description & Evolution

- While I have begun researching the <Case Study> and have a basic understanding of its history, could you please describe your role in the <Case Study> and how long you have been involved in it?
- What was the motivation for you and your organization for participating in the <Case Study's> collaborative process? When did you become involved?

Some of the following questions you may have answered in other interviews or through background research. Make sure you have answers for them and then ask clarifying questions if needed.

- Has the overarching goal or mission of the watershed partnership changed at all over time? Are there other aspects of the process that aren't fully captured in the mission statement?
- What other organizations are involved in the partnership? And to what extent are the other organizations involved? Why did they become involoved?
- What are the major issues the partnership is focused on? Have the issues or purposes of the partnership changed over time?
- What programs/tasks/activities are you using to try to achieve the partnership's objectives?

  Try this to focus the conversation: "I've reviewed the x and y reports on your process, and I've looked over the website so I have a pretty good sense of your mission and partners, and major activities over the past x years. What I am particularly interested in learning from you is about this organization's "governance structure" – how the process is structured and why it is structured that way and what lessons can be learned from its experience with being organized this."

- How is the partnership structured? Who is involved in what aspects (i.e. which stakeholder groups)? How often do they meet? Who sets the agenda; what are the topics and objectives of each meeting? Who manages the meetings? What happens btwn meetings? Are there sub-working groups on a particular issues? Who is involved in these working groups (i.e. just the partners, or is this where others can get involved?) How are decisions made? Who makes those decisions? Who acts on the decisions?

    - *Examples: advisory councils, commissions, working groups, technical committees*
    - *Be sure to clarify how decisions are made and who is involved in this process.*
    - *Try to get a feel for how inclusive the process is. Are stakeholders at the table to help make decisions?*

- What are some limitations to the partnership's organizational structure, level of authority, and sphere of influence (e.g. state water law, political will)? Has its organizational structure changed over time (e.g. grass-roots to state-recognized authority)? If so, in what ways, and why?
- How is the partnership managed (e.g. size and responsibilities of staff; coordinator position; etc.)?
- How is the partnership and its projects funded (e.g. agency funding, member dues, foundation grants, etc.)?
- What was most helpful in getting this partnership started? What was particularly challenging in the early stages of the process?

  You can probe, if necessary, with open-ended questions using the following facilitating factors and challenges (e.g. how did leadership from existing organizations shape the effort to get started?)

  § *Probes: Facilitating factors*

- *Individual champion or leadership from agencies*
- *Strong sense of place*
- *Perceived crisis (drought, TMDL process, large-scale diversions, litigation)*
- *New laws or regulations*
- *Clear, broadly supported vision, goals or mandate*
- *A process for engaging stakeholders*
- *New horizontal, cross-organizational structures*
- *Resources, assistance from funders*

§ *Probes: Initial Challenges*

- *Complexity of agency jurisdictions (and turf issue)*
- *Lack of trusted, credible convener*
- *Lack of trust among stakeholders*
- *Lack of capacity among some groups to participate*
- *Conflict over vision and goals*
- *Conflict over scope of work*

- How was the credibility of the process preceived by others, both by outside organizations and the general public?

Accomplishments & Challenges

- What would you say have been the partnerships' major accomplishments?
- What would you say are the major factors that have enabled the partnership to make progress?
- What have been the major challenges?
- What are some of the other challenges the partnership has faced (e.g. watershed plan implementation) or is facing? How has it dealt with them?

Probe, if necessary, with open-ended questions (e.g. were there challenges associated with using science to determine what actions were needed…?)

- *Interagency or inter-jurisdictional conflict about the work*
- *Lack of resources*
- *Unwieldy scale for the effort*
- *Turnover, discontinuities in participation*
- *Lack of credible information about the watershed*
- *Difficult/slow transition from learning to planning to implementing*
- *Lack of representation of key groups with ability to constrain or block implementation*
- *Poorly understood roles, other challenges within the structures for collaboration*
- *Lack of broad support for proposed management changes*
- *Lack of capacity or will to implement*
- *Agreements with no teeth, no accountability*
- *No process for evaluating and communicating about progress*
- *No process for making adjustments in response to new information*

- How have scientists been involved in increasing the understanding of the watershed/landscape? Were scientists involved in identifying threats and management solutions for the organization?
- Was the new knowledge about the watershed created through this process viewed as credible and a sound basis for decision making?
- What are the biggest reasons that explain why the partnership has been able to make the progress it has made? How have you measured success?

Probes: Facilitating factors

- *Scale of the effort*
- *Right parties at the table*
- *Strategic use of science to answer key questions, fill gaps in understanding*
- *Good interaction between participants and scientists (clear roles, translation of science for decision makers etc.)*
- *Good process for managing, improving access to data*
- *Success reaching agreement on priorities – implementers on board*
- *Fit of strategies to problem*
- *Resources for implementation*
- *Incentives for implementation, or ways of creating accountability*
- *Small successes*
- *Monitoring to demonstrate progress*
- *Effective public outreach, or outreach to key supporters like elected officials*
- *Institutionalizing process for learning, adjusting course based on monitoring and evaluation*

Education & Outreach

- Have you ever run a public awareness campaign for this process?
  - If YES, could you describe this campaign? Who was involved? How long did the campaign run? What were your specific goals and messages? Who was your target audience?
  - What were some of the challenges or barriers to change that you faced during your campaign? How did you overcome these challenges?
  - Was it successful, what might you have done differently?
- How did you monitor your success? Did you change your approach as the campaign progressed?
- What other outreach programs do you have?
- What have been your most successful outreach programs? Why?
- What were some outreach programs that had minimal success or programs that you have discontinued? Why?
- How do you measure success in your education and outreach programs? Did you use scientific or social baseline data? If so, how did you collect this data?
- What types of behavior changes did you promote? What messages did you use? How did you motivate people to change their behaviors? What incentives did you use?
- Did you collect baseline data on public support for your main messages before you began? If so, what was the level of support? Did this level of support change throughout the course of your public outreach campaign?

Campaign Elements

- What types of media did you use to convey your messages? (e.g. television, print media)
- What were some of the products you used to convey your messages? (e.g. brochures,
- bumper stickers)
- Were media efforts evaluated? What did you find?

Lessons Learned

- Again, this project is developing case studies to help people working toward collaborative watershed management in other areas understand different ways in which they might structure and manage their process. If you had to summarize the one or two *most* important lessons from your experience, what would you say?
- In hindsight, is there anything you wish had been done differently in <Case Study>, or anything you wish could be done differently now?
- Is there anything else you'd like to say that we haven't yet covered?
- Could I get your recommendations on whom else I should interview about <Case Study>? (This can be done with a follow-up e-mail as well)

Appendix MM. Blackfoot Challenge Partners

Private Landowners

Federal Agencies

- Bonneville Power Administration
- U.S. Bureau of Land Management
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- U.S. Geological Survey
- U.S. Park Service
- U.S. Natural Resources Conservation Service

State Agencies

- Lubrecht Experimental Forest/UM
- Montana Department of Agriculture
- Montana Department of Commerce-Travel Montana
- Montana Department of Environmental Quality
- Montana Department of Fish,Wildlife and Parks
- Montana Department of Natural Resources and Conservation
- Montana Department of Transportation
- Montana Natural Resource Information Service
- Montana State University-Bozeman
- MSU Extension Services
- The Montana Watercourse
- University of Montana-Missoula

Local Agencies

- North Powell, Lewis & Clark, and Missoula Conservation District
- North Powell, Lewis & Clark, and Missoula County Commissions
- North Powell, Lewis & Clark, and Missoula Weed Control Districts

Corporations

- Plum Creek Timber Company
- Bouma Post and Pole
- Bonner Economic Development Group
- Browning Ferris Industries Waste Management Systems
- Valmont

Foundations

- Blackfoot Lewis & Clark Trail Heritage Foundation
- Cinnabar Foundation
- Chutney Foundation
- Engelhard Foundation
- National Fish and Wildlife Foundation

Non-Profit Partners

Big Blackfoot Chapter of Trout Unlimited

- Montana Trout Unlimited
- Trout Unlimited Western Water Project
- Blackfoot Legacy
- Montana Watershed Coordination Council
- The Nature Conservancy of Montana
- Five Valley LandTrust
- Montana Land Reliance
- Rocky Mountain Elk Foundation
- Ovando Volunteer Fire Department
- Helmville Volunteer Fire Department
- Seeley Lake Fire Department
- Greenough/Potomac Volunteer Fire Department
- Missoula Electric Cooperative
- Montana College of Forestry and Conservation
- Ducks Unlimited (DU)
- National Center for Appropriate Technology
- Audubon Society
- Defenders of Wildlife
- Brown Bear Resources
- Great Bear Foundation
- Northwest Connections
- Northern Rockies Conservation Cooperative
- Montana Riparian Association
- River Network
- Living with Wildlife Foundation
- Lincoln & Ovando Historical Societies
- Lewis & Clark Bicentennial Commission
- Swan Ecosystem Center
- Travelers Rest Preservation & Heritage Association
- The Blackfoot River Chapter of the Lewis and Clark Heritage Foundation
- Clearwater Resource Council

Missoula County Rural Initiatives

Appendix NN. Niobrara Council Committee Members

NIOBRARA COUNCIL STANDING COMMITTEES

(January 2010)

EXECUTIVE
Mike Tuerk* – Chair
Betty Hall – Vice Chair
Jason Appelt – Secretary
Kerry Krueger – Treasurer

ROAD AND BRIDGE
Mark Adamson*
Jason Appelt
Dave Beck
Twyla Graham
Dennis Jilg
Mike Tuerk
Buddy Small

LEGISLATIVE
Mark Adamson
Jason Appelt
Dallas Dodson
Betty Hall
Lance Kuck*
Mike Murphy
Clayton Stalling

RESOURCES
Dallas Dodson
Lance Kuck*
Mike Murphy
Pete Sawle
Buddy Small
Clayton Stalling
Mike Tuerk

REVENUE AND BUDGET
Mark Adamson
Dave Beck
Dallas Dodson
Betty Hall
Kerry Krueger*
Mike Tuerk

DEVELOPMENT
Jason Appelt
Twyla Graham
Betty Hall
Mike Murphy
Buddy Small*

PERSONNEL
Dennis Jilg
Lance Kuck*
Mike Murphy
Pete Sawle
Clayton Stalling

EDUCATION
Dave Beck
Dallas Dodson
Twyla Graham*
Dennis Jilg
Kerry Krueger

Commissioner representative = **bold faced type**
Committee Chair = *

NOTE: Each committee also has a reserved advisory position for the NPS and the USF&WS representatives

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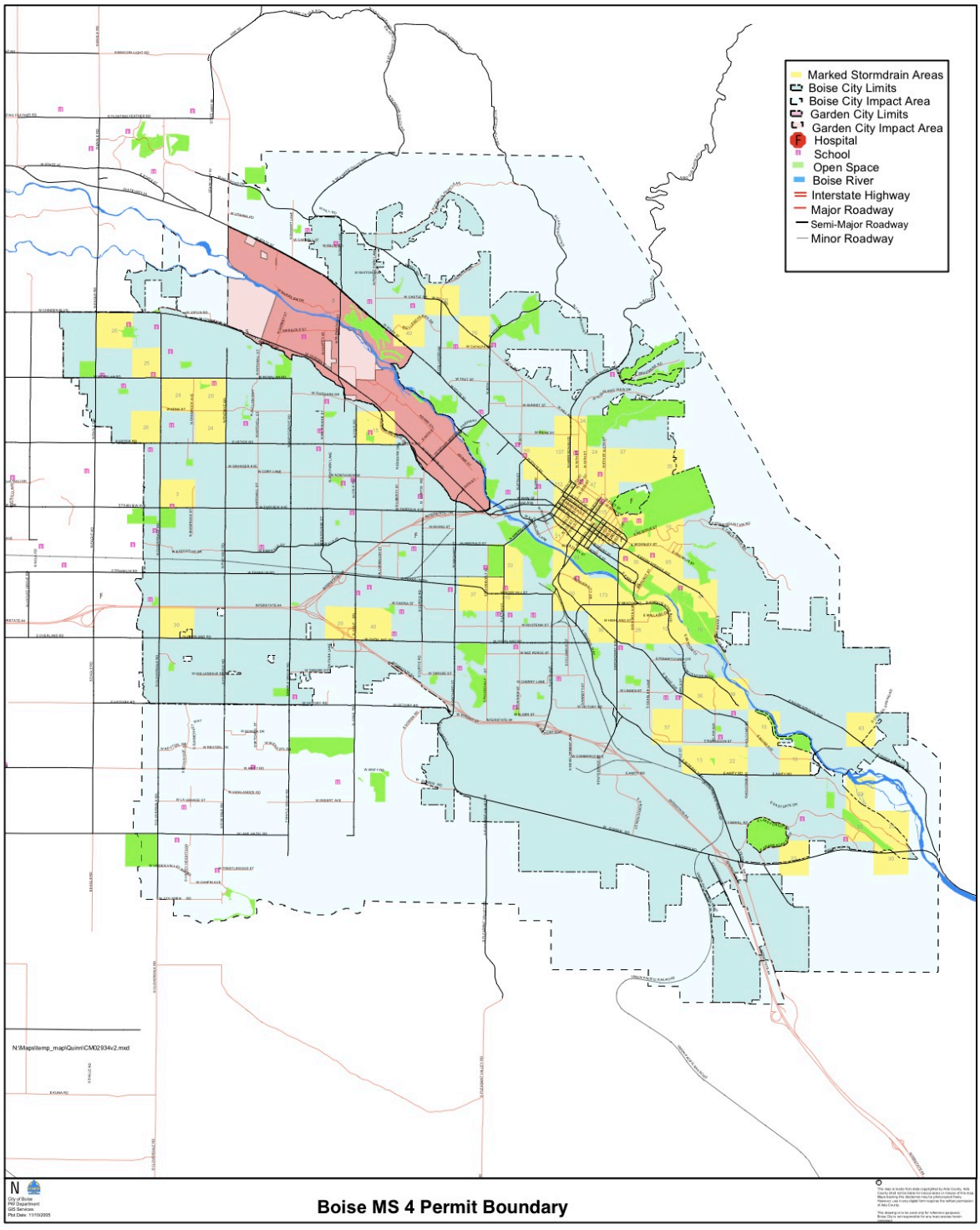
Advisory Positions

Fire Learning Network – Lance Kuck
NPS Fire Management Plan Advisory Council – Pete Sawle
Middle Niobrara Weed Awareness Group – Lance Kuck and/or Twyla Graham
Instream Flow Partnership Team Representative – Jason Appelt
Region 24 Emergency Management Planning Team – Buddy Small
Nebraska Land Trust – Lance Kuck

Appendix OO. Partners for Clean Water Boundary Map



Appendix PP. Partners for Clean Water Permit

Permit No.: IDS-02756-1
Application No.: IDS-02756-1

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, Washington 98101
206/553-0523

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, 33 U.S.C. § 1251 et seq., as amended by the Water Quality Act of 1987, P.L. 100-4 (the "CWA"),

THE CITY OF BOISE, THE ADA COUNTY HIGHWAY DISTRICT, BOISE STATE UNIVERSITY, THE IDAHO TRANSPORTATION DEPARTMENT DISTRICT 3, DRAINAGE DISTRICT #3, AND THE CITY OF GARDEN CITY
(hereinafter "co-permittees ")

are authorized to discharge from all municipal separate storm sewer system outfalls existing as of the effective date of this permit, to the Boise River and its tributaries in accordance with the conditions set forth herein.

This permit shall become effective November 29, 2000

This permit and the authorization to discharge shall expire at midnight, November 29, 2005

Signed this 30th day of October, 2000

Randall F. Smith, Director
Office of Water, Region 10
U.S. Environmental Protection Agency

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PART I. DISCHARGES AUTHORIZED UNDER THIS PERMIT

A. PERMIT AREA. This permit covers all areas within the corporate boundaries of **Boise, Idaho and Garden City, Idaho** served by, or otherwise contributing to discharges from, municipal separate storm sewer systems (MS4) owned or operated by the co-permittees listed in Part I.C.

B. AUTHORIZED DISCHARGES. This permit authorizes all existing storm water discharges to waters of the United States from the MS4 subject to the limitations of this permit. This permit also authorizes the discharge of storm water which has commingled with other flows including process wastewater and storm water associated with industrial activity, provided each such other flow is authorized under a separate National Pollutant Discharge Elimination System (NPDES) permit.

C. CO-PERMITTEES.

CITY OF BOISE (Boise City)
CITY OF GARDEN CITY (Garden City)
ADA COUNTY HIGHWAY DISTRICT (ACHD)
BOISE STATE UNIVERSITY (BSU)
IDAHO TRANSPORTATION DEPARTMENT DISTRICT 3 (ITD)
DRAINAGE DISTRICT #3 (DD3)

1. Except as described in Part I.C.2., the co-permittees' obligations to comply with the terms and conditions of this permit shall be joint and several.

2. Each co-permittee shall be individually obligated (and the remaining co-permittees shall not be obligated) to comply with those terms or conditions of this permit which:

   a. relate exclusively to discharges from portions of the MS4 owned or operated solely by that co-permittee;
   b. are identified in this permit as being the obligation of a single, named co-permittee; or
   c. have been identified in Table III.A or the Cooperative Agreement approved by EPA under Part II.F. of this permit as being the responsibility of that co-permittee .

PART II. STORM WATER MANAGEMENT PROGRAM

Each co-permittee shall implement a Storm Water Management Program (SWMP) designed to limit, to the Maximum Extent Practicable (MEP), the discharge of pollutants to and from that portion of the MS4 owned, operated, or utilized by that co-permittee . Each co-permittee shall implement the SWMP in accordance with the schedule contained in Part II, and as summarized in Table III.A, of the permit.

c. Database and Record Keeping. Co-permittees shall develop and maintain a database of all active and completed construction sites permitted within their jurisdiction and completed during the term of this permit. Such a database shall contain basic information regarding the nature of the construction activity, size of land clearing and grading activities, and contact information on the contractor and/or developer and shall be utilized within **one year of the effective date of the permit**.

d. Annual Report. **Each annual report beginning with the second**, shall include the following: **the number of site plans that were reviewed, the number that passed review and the number that required revision prior to passing review; the number of inspections carried out summarized by month or other similar calendar-based total; the number of citations, notice-of-violations, or stop-work-orders issued by co-permittees; the type and number of educational materials distributed by co-permittees; the outreach events that representatives of co-permittees attended in order to disseminate information regarding the purpose of the program; and a summary of information compiled in the database of all active and completed construction activity**. Copies **construction site discharge programs** shall be included in the **second annual report**.

11. *Public Education:* Co-permittees shall implement a public education program as follows:

a. Public Education Program. The co-permittees shall implement a program to inform the public of the impact of pollutants in storm water on waters of the United States and how to avoid adding such pollutants to storm water runoff. This public education program shall include the following activities:
   (1) The distribution of public education flyers, inserts or booklets to householders regarding appropriate methods for disposing of used motor oil and similar substances
   (2) Programs and activities to promote awareness of locations where the drain discharges and promote importance of maintaining clean water resources. Examples of such activities and programs include a stenciling program and participation in educational forums such as Water Awareness Week
   (3) Promoting the collection and/or composting of yard wastes from residential and commercial sites. Co-permittees shall promote the "Keep watershed clean" campaign and shall distribute copies of flyers previously developed, including but not limited to, the Storm Water Ordinance (developed by the City of Boise), RiverCare Tips to Protect Water Quality (developed by the City of Boise), and the Storm Water Trooper bookmark (developed by the City of Boise);
   (4) Co-permittees shall distribute the *Storm Water Commercial and Industrial BMPs Handbook* to commercial and industrial facilities identified as priorities due to the nature of the industrial and commercial activities to be found at such sites. Co-permittees shall make available the *Storm Water Plant Materials - A Resource Guide* to other facilities and make developers and contractors aware of the existence of such information; and
   (5) Co-permittees shall document the complaints received from the general public regarding violations to the storm water ordinance, and the co-permittees' response to complaints.

b. Annual Report. **Each annual report** shall include data on the following:

- **the number and type of flyers, inserts, or booklets distributed to householders regarding household hazardous waste ;**
- **the amount (in gallons) of used motor oil collected; the number of storm water inlets and drains stenciled during the year;**
- **the number of students and teachers attending "Water Awareness Week;"**
- **the amount (cubic yards) of yard wastes collected from residential and commercial sites;**
- **the number of flyers distributed including, but not limited to, the Storm Water Ordinance, RiverCare Tips, and the Storm Water Trooper bookmark;**
- **the number of Storm Water Commercial and Industrial BMPs handbooks distributed to commercial and industrial facilities;**
- **the number of Storm Water Plant Materials - A Resource Guide distributed to other facilities, and a list of developers and contractors receiving such information; and**
- **a list derived from a database, or similar record keeping procedure, that documents the complaints received regarding violations to the storm water ordinance, to include detail on what follow up was taken, and the resolution of the original complaint**.

The annual reports shall include a **description of who the target audience was** for the distribution of the educational flyers, booklets, etc., and why they were chosen.

B. DEADLINES FOR PROGRAM COMPLIANCE. Except as provided in Part II.A and Table III.A, compliance with the SWMP shall be required **30 days from the effective date** of the permit.

C. LEGAL AUTHORITY. Each co-permittee shall operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the co-permittee at a minimum to:

1. Control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the MS4 by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity;

2. Prohibit through ordinance, order or similar means, illicit discharges to the MS4;

3. Control through ordinance, order or similar means the discharge to the MS4 of spills, dumping or disposal of materials other than storm water;

4. Control through interagency agreements among co-permittees the contribution of pollutants from one portion of the MS4 to another portion of the MS4;

5. Require compliance with conditions in ordinances, permits, contracts or orders; and

6. Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the MS4.

Co-permittees shall include with the **first annual report** a demonstration that each co-permittee possesses legal authority that satisfies the six criteria listed above. Co-permittees shall include with this demonstration copies of all statutes, ordinances, permits, contracts, orders or inter-jurisdictional agreements that they contend demonstrate the adequacy of their legal authority.

D. STORM WATER MANAGEMENT PROGRAM RESOURCES. Each co-permittee shall provide adequate finances, staff, equipment, and support capabilities to implement the SWMP as described in Part II.A and summarized in Table III.A.

E. STORM WATER MANAGEMENT PROGRAM MODIFICATION. Only those portions of the SWMP specifically required as permit conditions shall be subject to the modification requirements of 40 CFR §§ 122.62, 122.63 and 124.5. Addition of the following components, controls, or requirements by co-permittees shall be considered minor changes to the Storm Water Management Program and not require modifications to the Permit: replacement of an ineffective or infeasible BMP; implementing a requirement of the SWMP with an alternate BMP expected to achieve the goals of the original BMP; and changes required as a result of schedules contained in Part III of this Permit.

F. COOPERATIVE AGREEMENT. Co-permittees shall draft an enforceable Cooperative Agreement and submit it to EPA for approval **no later than one year from the effective date of this permit**. This Cooperative Agreement shall identify the roles and responsibilities of the co-permittees under this permit and shall be signed by all co-permittees and entered into within **one month** of written or verbal approval from EPA.

PART III. SCHEDULES FOR IMPLEMENTATION OF STORM WATER MANAGEMENT PROGRAM. The co-permittees shall implement the complete SWMP described in Parts II.A.1 through 11. Table III.A summarizes the SWMP, includes the dates by which specific components must be initiated, developed, implemented, or reported upon, and identifies the co-permittee(s) which have responsibility for each specific component. Modifications to the SWMP shall be consistent with Part II.E. of this permit.

Appendix QQ. Partners for Clean Water MS4 Co-permittees

The Boise Area MS4 co-permittees include (Partners Website 2010):

- **Ada County Highway District (ACHD)** as the lead agency responsible for administering the permit, water quality monitoring, and industrial facility inspections. They are the primary owner and operator of storm drainage systems associated with Ada County's roadways in the permit area.

- **City of Boise (City)** manages drainage in conveyance systems for four gulches (i.e. ravines) as well as the stormwater runoff from commercial sites. They are the lead agency for public education and outreach on behalf of all co-permittees.

- **Garden City** is an independent jurisdiction in the permit area. They permit and manage their own stormwater systems for residential and commercial development. They also conduct public education activities within Garden City. Despite their independent jurisdiction, Garden City is surrounded by Boise City and border the Boise River so they are certainly an integral part of the permit.

- **Boise State University (BSU)** owns and operates their stormwater system on campus as well as several outfalls. They perform public education and outreach for the university.

- **Ada County Drainage District 3 (DD3)** owns and maintains a system of drainage facilities that provide conveyance for stormwater and limited agricultural drainage. Portions of this system are connected to the drainage system operated by the Ada County Highway District.

- **Idaho Transportation Department, District 3 (ITD3)** controls stormwater discharges into ground and surface waters during construction, including the long-term operation and maintenance of its facilities.