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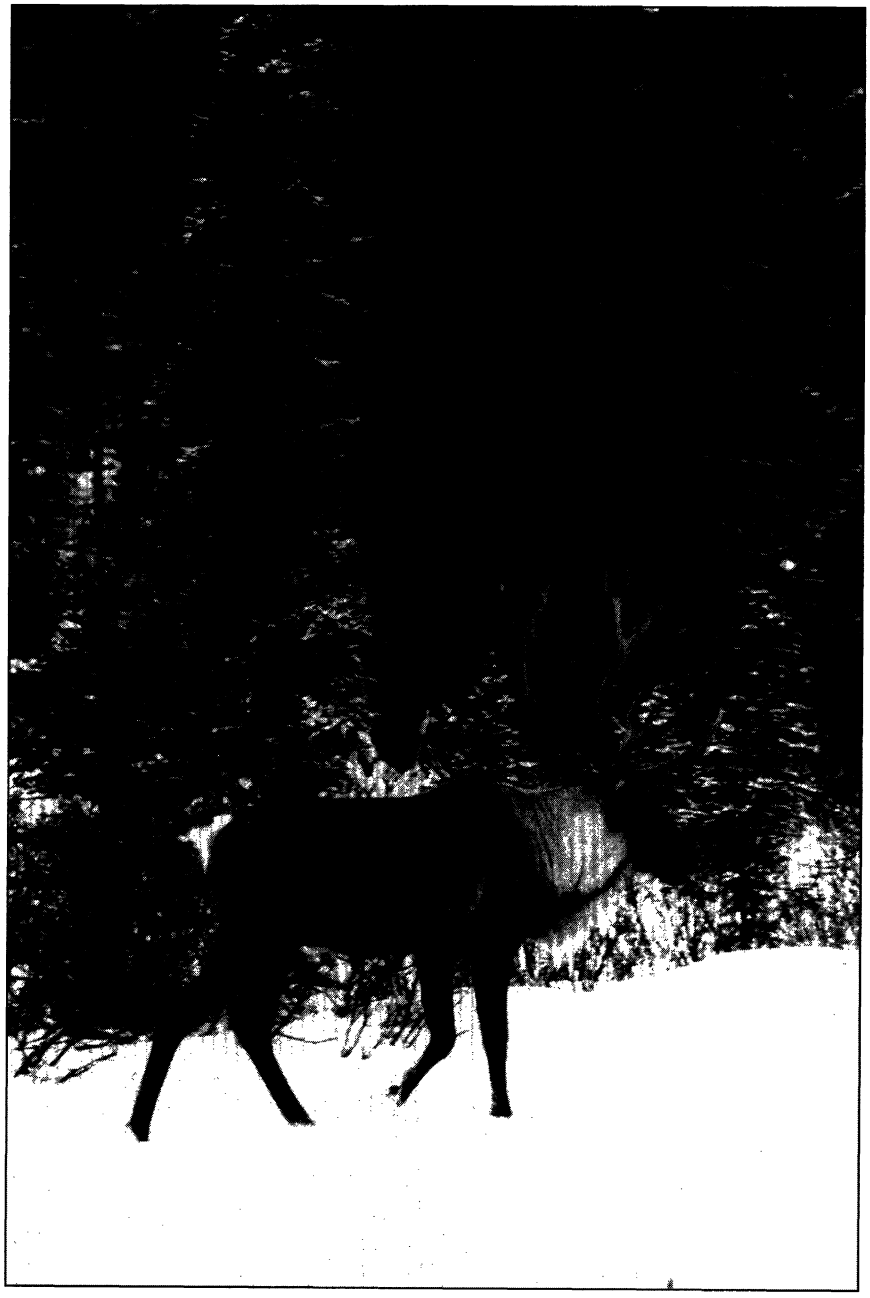


In this Issue

Woodland Caribou: A Conservation Dilemma

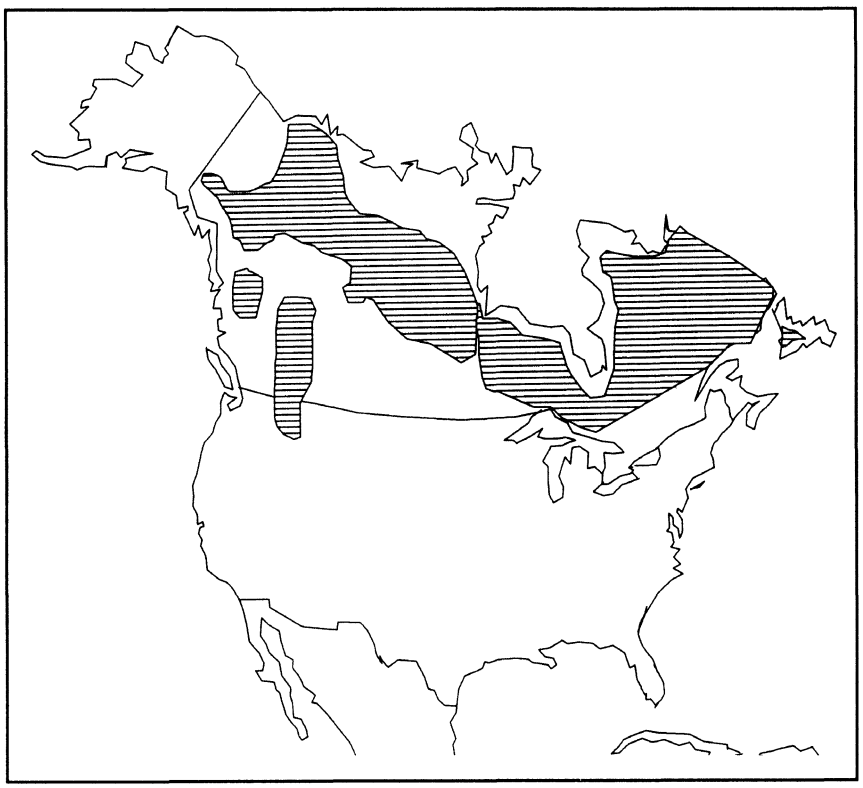
Peter Zager, L. Scott Mills, Wayne Wakkinen, and David Tallmon

At the time of European settlement of North America, caribou (*Rangifer tarandus*) were found over most of Canada and Alaska. Woodland caribou (*R. t. caribou*) extended south to 42° N, and were found in parts of New England, New York, the Upper Great Lakes states, Montana, Idaho, and Washington. By the 1970s, woodland caribou had been eliminated from the eastern United States and most of eastern Canada, extending only to approximately 48° N (Bergerud 1978). The decline extended to the west as well, and by 1980 only 25-30 animals persisted in north Idaho and northeast Washington; caribou had been extirpated elsewhere in the contiguous 48 states. This population was listed as endangered in 1984 under the Endangered Species Act (ESA). At that time, the entire woodland caribou population in the Selkirks consisted of one herd of 20-25 animals that occurred in extreme northeast Washington, northern Idaho, and the Stagleap Park area of British Columbia (B.C.). The decline in woodland caribou was attributed to various factors including:

- Hunting (legal and illegal),
- Increased mortality related to highway vehicle collisions,
- Habitat modification by fire and logging (USFWS 1985).

To address woodland caribou recovery, an interagency recovery plan was developed (USFWS 1985). The plan addressed the factors in caribou decline by calling for:

1. Controlling poaching,
2. Minimizing caribou deaths due to collisions with vehicles,
3. Improving habitat quality by closing roads and allowing natural succession, and
4. Augmenting the existing Stagleap population and/or establishing a second population outside the Selkirks (USFWS 1985).



Shaded areas show current extent of caribou range. At the time of European settlement caribou were found further south, into New England, New York, the Upper Great Lakes states, and Washington. Map from FWS Woodland Caribou Recovery Plan.

Items 1 and 2 were easily addressed, as were certain aspects of Item 3, but population augmentation was more controversial and complex. Therefore, an augmentation plan was developed and approved (Summerfield 1985a, 1985b). A total of 60 animals were transplanted from British Columbia to the Selkirk Mountains of Idaho. Twenty-four animals were released in 1987, 24 in 1988, and 12 in 1990. The release site was south of the existing resident herd. The intent was to establish a second herd in the Selkirks, thereby reducing the chances of extirpation by way of some catastrophic event eliminating the lone resident herd.

All translocated animals were fitted with mortality-sensing radio collars so they could be monitored systematically. As a result, we obtained good data relative to habitat use, movements, and causes and rates of mortality for caribou in the Selkirks. A winter helicopter census was also developed that allows us to track population size and distribution throughout the ecosystem.

Results of Translocation Efforts

Unfortunately, even a cursory look at our data and today's caribou population in the Selkirk Mountains is not encouraging. We began with 25-30 caribou in the Selkirks in the early 1980s and added 60 to the ecosystem with the augmentation, how-

Translocated caribou fitted with mortality-sensing radio collars have provided good data on caribou habitat use, movement, and mortality rates. Photo courtesy of Idaho Department of Fish and Game.

ever today's population is only about 55 caribou. Furthermore, the herd that was established with the augmentation presently consists of only 13 animals. Clearly the augmentation did not catalyze the desired population response.

In response to this, a revised recovery plan called for establishing a second population via augmentation (USFWS 1993). Arguments for another transplant were similar to the first, including reduction of the chances of extirpation with several herds and the desire to place animals in all "available" habitats. The recovery plan also called for a thorough evaluation of the initial augmentation effort and current population dynamics before moving ahead. To that end, we compiled all relevant data and used them as input for population viability analysis using VORTEX and RAMAS.

The analyses shed some light on long-term, broader scale issues while confirming the obvious. They demonstrated that the population is declining, and more importantly, indicated that the simplest and most expedient way to reverse that trend is to eliminate virtually all known predator-related mortality, which accounted for at least 30% (and more likely 50%) of the total mortality. This poses a serious problem for managers, for as the state of Alaska recently discovered, controlling predator populations is a very sensitive issue.

The analyses also showed that caribou are likely to persist in the southern Selkirks for at least the next 20 years, but because of differential survival and movements, virtually all the animals will be part of the resident herd in B.C. Furthermore, the population is likely to stagnate at 40-50 animals, so the probability of persistence at 100 years is less encouraging.

These results indicate that we are not progressing toward recovery, and additional augmentation efforts are unlikely to change that unless there is a fundamental change in caribou demographic rates, specifically an in-

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Cover: Woodland Caribou (*Rangifer tarandus*). Photograph by Tom Ulrich.

The views expressed in the *Endangered Species UPDATE* may not necessarily reflect those of the US Fish and Wildlife Service or The University of Michigan.

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Caribou in southern British Columbia and northern Idaho prefer mature and old growth forests, but forests today are generally younger than in the past due to timber harvesting and large wildfires. Photo courtesy of Idaho Department of Fish and Game.

crease in adult survival. Simply adding more animals may buffer the existing herds against the effects of demographic, environmental, and genetic stochasticity, but is unlikely to speed "recovery." Our modelling analyses and previous experience with augmentation indicate this approach will treat the symptoms but not the fundamental causes of caribou decline.

The Underlying Dilemma

Therein rests the underlying issue—our best efforts to "recover" caribou in the Selkirk Mountains have not worked. It seems that we have at least two options. *The first option is to rethink the spatial scale of conservation efforts* and to redirect our energies and resources where the likelihood of success is higher, such as to the stronger, more viable populations in Canada. It is unlikely that caribou can survive in the Selkirks without habitat and a strong population in adjacent British Columbia. We may be wise to forge a cooperative effort with our Canadian neighbors and develop a plan to more effectively ensure caribou persistence on a larger scale. If Canadian populations are doing well, then there may be little risk in continuing to supply a "sink" population south of the U.S. border with transplants. On the other hand, if the "source" populations are marginal, we may increase the likelihood of caribou extirpation on an even larger scale by continuing translocations.

In the broader context, Griffith et al. (1989) showed that augmenting a species in peripheral habitat is unlikely to succeed. In addition, Lesica and Allendorf (1995) suggest peripheral populations isolated by recent range contraction are unlikely to be genetically differentiated, and thus are less likely to have a large degree of conservation value.

Our second option involves rethinking the temporal scale of recovery. Decision-makers, managers, and the public typically expect recovery programs to demonstrate highly visible, high-profile progress over a relatively short time frame. This is unrealistic because recovery programs are designed to reverse long-term population declines often resulting from decades of habitat loss or degradation. It is unreasonable to expect populations to respond quickly to recovery efforts that do not first consider habitat restoration that may take decades. Simply stopping or mitigating further habitat loss or degradation may not be sufficient.

Woodland caribou habitats in the U.S. have changed considerably over the last 100 years, limiting caribou distribution and population size. Caribou in southern British Columbia and northern Idaho "prefer" mature-to-old-growth forests above 1364 m elevation throughout the year (Scott and Servheen 1985, Simpson et al. 1987, Servheen and Lyon 1989). Timber harvest activities over the last 50 years and large wildfires since the turn of the century have altered the habitat mosaic dramatically and resulted in a younger-age forest. The result is that habitats in north Idaho are less extensive and less suitable for woodland caribou today than they were a few decades ago.

Habitat conditions at lower elevations, below identified caribou habitat, have also changed. Timber harvest is an economically important land use at these elevations and has resulted in extensive seral communities that provide very good habitat for expanding moose (*Alces alces*) and white-tailed deer (*Odocoileus*

virginianus) populations. Predator populations, especially mountain lions (*Felis concolor*), have apparently responded to the abundant prey base. Consequently, although caribou are not the primary prey item, predation by mountain lions has become an important mortality factor for caribou in the Selkirk Mountains. Furthermore, woodland caribou are a classic K-selected species in that females do not breed until 2 years of age, rarely produce twins, and often calve every other year. Because of this low reproductive potential, their populations cannot tolerate high mortality.

Reversing the Trend

To reverse this downward population and habitat trend, we believe it is necessary to embark on a grand experiment including an aggressive, long-term habitat management and restoration program designed to shift the balance from seral communities to mature and old-growth communities. To be effective, this must extend beyond identified caribou habitat to include lower elevation white-tailed deer habitat. We expect that this will also shift the balance from whitetails and their predators to caribou and other species characteristic of mature forest communities.

The most obvious problem is that this will require a commitment of at least 100 years to habitat restoration before we can reasonably expect caribou to thrive in the Selkirks. It is easy to envision another large wildfire during that period that would slow the process considerably. We also question the public and agency commitment to such a long-term project.

There may also be short-term, stop-gap measures that will result in the necessary fundamental change in caribou demographic rates, increasing the likelihood of recovery. Directly reducing white-tailed deer and predator densities may have the desired effect, but not without a significant commitment. Care must also be taken to avoid the "predator control" label that such a program may attract. If such an approach were implemented, it behooves us to conduct it as part of an experiment that will provide data and insights for future recovery activities.

Broader Questions

This leads to the broader and more significant questions. Does it really matter if there are a few caribou south of an arbitrarily drawn international border? Must "recovery" occur within the 5-10 year framework typical of agency planning documents? We suspect that over the next decade or so, similar discussions will focus on lynx (*Felis lynx*), wolverine (*Gulo gulo*), fisher (*Martes pennanti*), and other species that reach the southern extension of their range near the U.S./Canada border. At the same time, Canadian biologists will likely discuss conservation measures for species such as spotted skunk (*Spilogale* spp.), gray fox (*Urocyon cinereoargenteus*), and eastern cottontail (*Sylvilagus floridanus*); all of which are common in the U.S. but reach the northern extension of their range near the U.S./Canada border. In our view, conservation efforts should be based on the biology of the species applied at much broader spatial and temporal scales than we typically use. This will require increased cooperation between Canadian and U.S biologists and political bodies.

We do not advocate turning our back on woodland caribou, but rather drawing a realistic "line in the sand," then channeling energy and resources to secure those populations and habitats necessary to ensure their future on a global scale. Political boundaries must not obstruct our vision or thinking, and time frames should be expanded to realistically address many conservation issues. With a broader perspective, conservation efforts will enjoy a much greater likelihood of success.

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Prototyping for Successful Conservation: The Eastern Barred Bandicoot Program

Tim W. Clark, Richard P. Reading, and Gary Backhouse

Prototyping is a proven strategy to solve complex, challenging tasks like those posed by endangered species recovery efforts. Prototypes are small-scale, exploratory interventions in social or policy systems to implement a trial change, such as changing people's assumptions about how they should interact or who should share what kinds of power. With the primary goal being to gain information, prototypes are structured as innovative, interactive processes for active learning. They are the creative, corrigible initiatives that, if successful, can provide the basis for structuring later pilot projects. Prototyping thus is a means of upgrading professional and organizational practice and knowledge in general (Lasswell 1963, 1971a). Our experience on three continents shows that the prototyping strategy has not been employed explicitly or systematically in endangered species conservation to date, despite the significant improvements it offers to our collective conservation efforts.

In this paper we introduce the prototyping strategy using the Australian eastern barred bandicoot (*Perameles gunnii*) management program as an example. We offer five prototypical considerations that we believe are transferable to other endangered species programs.

Prototyping: Theory and Use in Endangered Species Conservation

Prototypes are innovative approaches to problems that are geared toward development of a model on which to base future actions or programs. The underlying philosophy was presented by Lasswell (1971b:192): "The approach described here is especially pertinent to the aspiration of all who would innovate fundamental changes. The aspiration toward relevance implies the will to grasp and change reality. Programs of this kind can be expedited by the spread of a technique that builds self-correction into its every application."

Prototypes are used as a learning technique and as a template for future action; as such, they serve as exemplars or archetypes. Successful prototypes encourage other programs to adopt their fundamental features or key elements, thus providing a model for replication and continual revision (Lasswell 1963). Prototypes can be official or unofficial, and are commonly employed in the business world. For example, auto manufacturers set up prototypes of varying kinds, ranging from special problem-solving teams to experimental car designs (Westrum 1994). The prototying idea is to achieve a standard of operation that represents a new model. Once this is done, pilot projects can be carried out on a large scale. The aim of prototyping is to discover and lay "the foundation for orderly replication of the revised prototype model" (Lasswell 1963:112).

Trial changes are made in programs or policies as a way to facilitate self-observation, build insight, and enhance prospects for success. Such changes thus cannot be tightly controlled like scientific experiments, although the existence of some replicable features makes them similar to experiments. Nor can they be left solely to political manipulation and control. Their uniqueness makes them similar to case studies as a way of learning about a system. Because conservation programs lie somewhere between science and politics—their conditions cannot be totally controlled in a scientific sense, nor should they be managed only by bureaucratic officials and politicians—prototypes are particularly useful as a means of initiating changes and gaining insight about such programs.

Prototypes differ from preplanned pilot studies in that they remain more flexible and creative. The self-correcting element is key. Prototyping efforts are usually managed by a small group of researchers/initiators who are "deeply concerned with contributing to knowledge and professional skill" and fundamentally committed to the success of the project (Lasswell 1963:95). Because of the uncertainty, originality, and spontaneity in social systems, they cannot predict at the outset which strategies will be most effective. Thus, "part of the challenge of the approach is to discard and adapt throughout the course of the project" (Lasswell and McDougal 1992:896). However, they should not modify the project too quickly or too often. It must be granted an adequate trial period to develop some support, legitimacy, and "power" before being reevaluated. Even though the goals of a project may be clear, as in the clear goal to recover the bandicoot species, numerous ambiguities may persist: "Hence an aim of any prototypic study is to devise a better strategic programme" (Lasswell 1971a:190). Prototypes thus establish a process for detecting and correcting errors, a procedure for accumulating successes and weeding out failures (Brunner 1995, personal communication). In their emphasis on continual learning and creativity, prototypes require clear, detailed, and comprehensive explanations of all aspects of the prototype, including all actions undertaken (Lasswell 1971b).

Work settings characterized by high complexity, uncertainty, and conflict—which certainly describes endangered species recovery programs—benefit most from prototyping (Brewer and deLeon 1983). Several

conditions increase the probability of successful prototyping. First, all participants in the program should agree to participate, although not everyone need fully understand the exercise. Second, leadership should agree to the general principles and approach of prototyping. Third, the process must be open and creative. Fourth, top professionals should be included and their opinions respected. Finally, people involved should be interested in improving performance rather than gaining power—i.e., keeping politics to a minimum (Lasswell 1971b). Prototyping efforts may be strongly opposed by some interests that prefer the status quo (Lasswell 1963), and for the effort to be effective, participants must neutralize such opposition. Prototyping is only possible in supportive contexts not dominated by issues of power and control.

The Australian Bandicoot Prototyping Effort: A Test Case

A prototyping exercise was initiated in 1988 to facilitate the conservation and recovery of endangered eastern barred bandicoots in Victoria, Australia. While few of the program's participants were formally familiar with prototyping as such, most were committed implicitly to the idea and practices of prototyping and agreed to participate. We believe several components of our prototyping effort are transferable to other endangered species conservation programs.

Eastern barred bandicoots are relatively small (500-900g), nocturnal marsupials with thin snouts, strong curved claws, and pale bars on their hind quarters. They feed primarily on soil invertebrates and are highly fecund, with the shortest gestation of any mammal (12.5 days) and the ability to give birth every 3-4 months. *P. gunnii* once inhabited the grasslands and grassy woodlands of Victoria and Tasmania, but after a 99+% decline in range and abundance, the species is threatened with extinction on mainland Australia. Bandicoots suffer from extensive habitat alteration and degradation, predation by introduced red foxes (*Vulpes vulpes*) and feral and domestic cats (*Felis catus*), motor vehicle collisions, disease, and possibly pesticides (Seebeck et al. 1990). By the end of 1991, only 109 bandicoots were known to survive on the mainland in four populations: one in the wild, two in small nature reserves with anti-predator fencing, and one in captivity.

Throughout the 1970s, intermittent research on the species' status and distribution took place, and in the early 1980s, active but limited management commenced. Initially the recovery program was loosely organized, although a variety of conservation activities were initiated, including habitat protection and enhancement, predator control, motorist warning signs, community education, and formation of recovery teams (Arnold et al. 1990). Success was limited. In 1988, a prototyping effort was begun, including rigorous research (e.g., Clark and Seebeck 1990). A population viability analysis estimated a 100% chance of extinction of the wild population in 25 years and a much shorter mean time to extinction (Lacy and Clark 1990). Concurrently, results from annual field surveys indicated a strongly decreasing population trend. Although captive breeding and reintroductions were initiated in 1988, these populations were not self-sustaining. This combination of factors accelerated conservation efforts.

The continuing downward trends also led participants in late 1991 to call for a in-depth programmatic review of all recovery efforts up to that time (Reading et al. 1992). They looked at all factors and forces affecting the program, both external and internal: biological/technical, organizational, socioeconomic, and power/authority. The evaluation identified the following weaknesses:

(1) incomplete knowledge about many factors that were likely responsible for bandicoot decline,

(2) underappreciation of the urgency of the situation,

(3) insufficient strategic planning with specific recovery targets, timelines, and responsibilities,

(4) little information on important sociological and organizational variables,

(5) no regular, systematic program evaluation as a basis for learning and improvement.

This evaluation, a key part of the prototyping strategy, was crucial. In a cooperative, trustful, and supportive problem-solving setting, it permitted all participants to identify problems and their likely consequences. Participants examined and evaluated various alternatives to alleviate the problems. The overall prototyping philosophy provided the flexibility to adapt conservation initiatives to the actual conservation challenges quickly and successfully.

The context of the bandicoot case made prototyping possible at that time because of the relatively low profile of the program, the limited number of participants and loose organization, the willingness of participants to examine a variety of options for the future of the program, the lack of debilitating conflict, the support or neutrality of key actors toward prototyping and the concept of developing a model program, and the primary interest of most participants in program success (i.e., bandicoot recovery). Both internal and external support for the program were high. Additional support for prototyping developed as the program began meeting success.

The bandicoot recovery program was reorganized in early 1992 as a result of the group's evaluation (Backhouse 1992, Backhouse et al. 1994a). The restructuring set up a central decision-making authority and four expert teams or working groups in captive management, wild population and reintroductions, economic and sociological issues, and public relations. New work arrangements, better communication flows, and improved decision making invigorated the conservation effort. Mandatory written evaluations from all participants were discussed in monthly meetings as a basis for modifying actions.

The eastern barred bandicoot's status improved dramatically under

the program reorganization and new operations. Goals were clarified and attention was focused on a much wider array of organizational issues, for example. This resulted in a dramatic increase in both captive and reintroduced populations and in improved wild and captive management. Also, standardized monitoring was put into place, new reintroduction sites were located and evaluated, and more regular and ongoing formal and informal evaluations were undertaken. The net result was the growth of the dwindling population to over 700 individuals by late 1993 (Backhouse et al. 1994b). While recent successes bode well for the species, the eastern barred bandicoot remains far from recovered (Humphries and Seebeck 1995).

A continuing commitment to the prototyping strategy encourages adaptability of conservation efforts and eventual bandicoot recovery. But as the status of the bandicoot improves, government budgets shrink, and public support oscillates, maintaining commitment will not be easy.

Prototypic Elements Transferable to Other Endangered Species Efforts

The following lessons learned from the bandicoot prototyping effort are transferable to other endangered species programs (Clark et al. 1995).

(1) Explicitly use a prototyping strategy to guide the recovery effort. Participants should agree to use a flexible, adaptive approach to their thinking, organization, research, and management. It is likely that some conservationists have already used a prototyping approach, but have not used the term to describe their method or recognized that the theory exists. Theory on prototyping should explicitly guide each application, and as theory is more widely and successfully applied, it will gain prominence and acceptance.

(2) *An interdisciplinary, problem-oriented approach is essential.* Numerous disciplines offer useful, even necessary, knowledge and approaches for species recovery; combining them all in an effort to understand the problem is essential. This will not happen on its own. Prototyping demands an interactive, flexible effort that can integrate disciplines pragmatically. Participants need to have the skills and leadership to make this approach function successfully.

(3) Use small, flexible teams knowledgeable and skilled in the full range of concepts and methods available. Dynamic teams can address the highly complex, uncertain, and urgent challenges facing conservation programs, including things like captive propagation, reintroduction, community relations, and decision making. For the most part, teams functioned effectively in the bandicoot program as they concentrated reliable information, facilitated communication and collaboration, provided support among members, and increased performance and innovation.

(4) *Clarify goals of the prototyping exercise and establish open, accountable decision-making mechanisms.* Goals should be formally and clearly articulated. They should be set collectively by all participants, should remain task-oriented (e.g., species recovery), and should be easily measured (e.g., number of animals or populations, dates of task completion, area of habitat protected) to the extent possible. At the same time, goals should remain open and be revisited frequently to see if they are still relevant relative to progress and changing circumstances. The complexity and uncertainty characteristic of conservation programs should not preclude or rigidify conservation actions. Decision making should be a transparent, open, participative process, based on the most reliable available knowledge and collective judgment. However, clear lines of accountability must be maintained.

(5) *Evaluate all aspects of the prototyping exercise systematically and regularly.* Frequent formal and informal evaluations provide participants with the opportunity to reflect on their situations, their actions, and the outcomes and effects. The group should constantly assess how its actions are helping to achieve the overall goals and whether there are better means to reach goals. It is also important to assess how discrete actions complement each other to reduce redundancies and increase integration.

Conclusions

Prototyping is an answer to the need for innovation, creativity, and new initiatives in endangered species conservation. The recent successes in the eastern barred bandicoot recovery program in Australia demonstrate the benefits of bringing together a small group of committed people, developing a core of trust and openness, attempting to initiate small, well-deliberated changes in a program, and embracing the flexibility to adapt to feedback. The emphasis is on learning and the process is self-correcting. Small-scale innovations like this could be initiated at any level in any of the hundreds of endangered species recovery programs now underway. Again, it is a way of accumulating successes and weeding out failures, and it provides exemplars to be copied, improved, and incorporated into existing policy and institutional practices. Every recovery program can develop its own systematic approach to learning and improvement through prototyping and report its results to all those concerned with conserving biological diversity.

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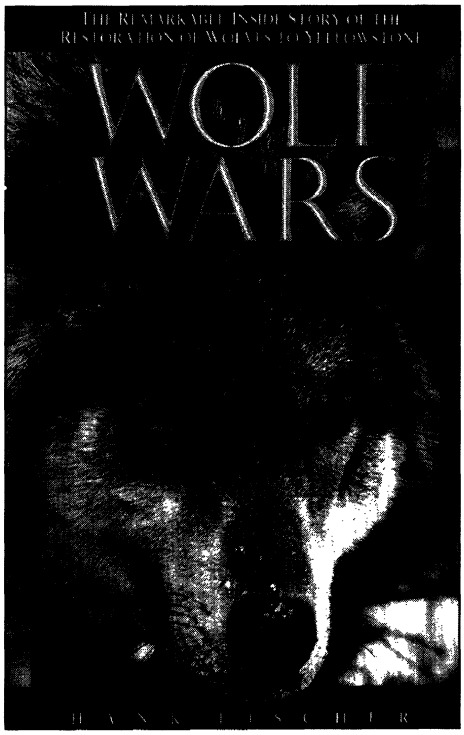
(continued on UPDATE p. 10)

Book Review

Wolf Wars

By Hank Fischer. 1995. Falcon Press. Helena and Billings, MT. $12.95. 183 pp.

Reviewed by Greg Schildwachter



Hank Fischer's well-written account of the reintroduction of gray wolves to Yellowstone National Park focuses on the players in this drama. Fischer populates his narrative with memorable characters like Dr. Les Pengelly whose "completely bald head...seemed to bulge with ideas" (p.24), Senator Max Baucus whose eyes bulged with apprehension, Joe Helle who roamed between charm and apoplectic opposition, and Renée Askins who exuded syrupy enthusiasm. Fischer wraps his skillfully presented story so tightly around people that the book will disappoint readers searching for analysis of this milestone in American conservation. The issues raised by gray wolf conservation (which are some of the most important issues in the conservation of endangered species) are demonstrated here, but not analyzed.

The focus on people is clear from the beginning and diligently maintained throughout. The Foreword by well-known wolf researcher Dave Mech, and "special note" by Defenders of Wildlife President Rodger Schlickeisen, both comment on the attitude of the human species, and Fischer opens by disclosing his personal perspective in the prologue. His account begins with a reconstructed narrative of biologists capturing wolves for translocation to Yellowstone early in 1995. The next chapter briefly explores the beginning of the Euro-American relationship with the gray wolf and how the wolf was extirpated from Yellowstone and other parts of the West. Next, the reader meets the wildlife scientists who built the basis for wolf management and the authors, movie directors, rock stars, advocates, public resource managers, and politicians who took the project from there. Nearly all major characters are introduced with some character development to distinguish them, and as the crowd grows throughout the chronology, Fischer implicitly makes the point that without people there would be no goal of restoration, much less any progress in that direction. An unskilled writer might have left the reader feeling lost at a reception, but Fischer accomplishes these introductions like a novelist.

Many subjects and issues are raised that could launch deeper discussions and further research, but these are not pursued in the book. These subjects and issues include comparisons with other endangered species projects, the debate between recolonization and reintroduction, the issue of management restrictions on private landowners, the principle of compensating ranchers for wolf depredations, the relationship between state and federal government, the Endangered Species Act being used for surrogate policy goals, the role of public participation, and the meaning of political leadership. The bibliography provided will help scholars and students pursue some of these.

Fischer does not completely forego his opportunity to comment, but he so politely avoids any hint of diatribe or polemic that his analysis is hidden and a little confusing. In the Epilogue he states in a few sentences that Yellowstone Park wolf restoration is "not a particularly good model for endangered species recovery" (p. 170) because it cost too much in time, money, and goodwill. He argues that an efficient process that relies on cooperation is needed. This contradicts, or subtly refines, the earlier description of the reintroduction as "our chance to prove that the Endangered Species Act could resolve even the thorniest issues" (p.153).

This book was not meant to analyze, leaving that important task to other authors. As Fischer notes, tangible progress in conservation is rare and should be scrutinized when it is accomplished. Fischer's book contributes a useful and enjoyable testimony that will inform this effort.

Greg Schildwachter is a Boone and Crockett research assistant with the Boone and Crockett Wildlife Conservation Program at the School of Forestry at The University of Montana. He is studying voluntary agreements in endangered species conservation for a Ph.D. dissertation.

Report From Washington

Endangered Species Act Reauthorization Efforts Continue

By Christopher E. Williams

When the Republican Party captured majorities in both houses of Congress in the 1994 elections, conservationists working to reauthorize a strong Endangered Species Act buckled in for a bumpy ride. It is not that Republicans are uniformly opposed to the ESA. In fact, some of the Act's staunchest supporters are on the Republican side of the aisle. But the change in leadership brought some of the Act's harshest critics into positions of authority over the reauthorization. In the Senate, Senator Dirk Kempthorne (R-ID) assumed control of the subcommittee in charge of writing the legislation, and Senator Slade Gorton (R-WA) took the chair of the subcommittee that holds the ESA's purse-strings. In the House, Congressman Don Young (R-AK) heads the committee of jurisdiction, and soon after taking charge he appointed Congressman Richard Pombo (R-CA), a vociferous critic of the ESA, to head a task force to rewrite the law. Now, after months of hearings, drafting, minor scandals, and a controversial road show, we are beginning to see the new leadership's legislation.

ESA Reform Legislation

The first legislation to appear was Senator Gorton's "Endangered Species Act Reform Act of 1995" (S. 768). Even before its introduction, the bill was mired in controversy when a memo leaked from the senator's office confirmed that the bill had been written by industry lobbyists. The cornerstone of the bill is a provision that abandons the ESA's goal of species recovery. S. 768 authorizes the Secretary of the Interior to choose, without benefit of public review and comment, from a menu of "conservation objectives" for each listed species, ranging from recovery to as little as prohibition of direct, intentional take. In effect, the Secretary would have the sole authority to choose which species to save and which to allow to become extinct. The bill eliminates habitat destruction from the definition of harm, limiting the Act's take prohibition to activities that directly kill or injure an individual of the species. This provision would in effect overturn the Supreme Court's decision in the *Sweet Home* case. S. 768 renders the consultation requirements of ESA section 7 virtually meaningless by leaving the decision on whether to consult to the action agency, and exempts broad categories of activities from consultation altogether. Secretary of the Interior Bruce Babbitt summed up his view of the bill in seven words: "It will repeal the Endangered Species Act."

Senator Kempthorne is preparing a bill that is more likely than S.768 to be the Senate's reauthorization vehicle. Although the bill had not yet been introduced at press time, a detailed outline recently released by the senator's staff describes a measure similar to the Gorton bill in its key provisions. For example the Kempthorne bill adopts, with minor changes, the Gorton scheme of abandoning the general goals of recovery in favor of conservation objectives. The bill's take definition greatly restricts habitat protection and protection from incidental take, and the bill severely undermines the Section 7 consultation process. In addition, the Kempthorne bill puts strict limits on the use of federal water to conserve endangered aquatic species, arbitrarily limits the definition of "endangered species" to those likely to become extinct within "two human generations" (40 years), and eliminates the role of the National Marine Fisheries Service in endangered species conservation.

In the House, Congressman Pombo and Chairman Young introduced the "Endangered Species Conservation and Management Act of 1995" (H.R. 2275) in September. Despite a series of widely publicized field hearings, allegedly intended to get the view of "real people" about changes needed in the ESA, H.R. 2275 is virtually identical to the industry-drafted S. 768 in many of its key provisions, including those described above. In addition, H.R. 2275 included "takings" language, creating a costly new entitlement for landowners who claim that regulation under the ESA had reduced the value of their property by 20%. H.R. 2275 undermines the U.S. leadership in international species conservation by severely limiting the ability of the U.S. to act under its own authority to control trade in endangered and threatened species, and hindering compliance with the requirements of the Convention on International Trade in Endangered Species (CITES).

Critics with particular axes to grind introduced several other bills amending the ESA. Congressman Pete Geren (D-TX) and Senator Conrad Burns (R-MT) introduced a bill aimed primarily at protecting the interests of sports hunters and fishers (H.R. 2217, S. 1152). Congressman John Shadegg, a vocal private property advocate, introduced the bill that eliminates protection for habitat and prohibitions against incidental take, and relies solely on financial incentives for habitat conservation on private land (H.R. 2364).

Moderate Alternative Bills

Supporters of the ESA have thus far had little around which to rally in this Congress. Several conservation groups have endorsed Congressman Wayne Gilchrest's (R-MD) "Endangered Natural Legacy Act of 1995" (H.R. 2374). The bill leaves the existing ESA largely intact, and includes provisions for prevention of species endangerment, improving the recovery planning process, and creating greater opportunities for cooperation with private landowners. Likewise, Congressman Jim Saxton's (R-NJ) "Endangered Species

Habitat Conservation Act of 1995" (H.R. 2444) makes changes in the listing process and provides for greater state involvement in endangered species conservation, but does not significantly weaken the Act's key provisions. Neither bill has been wholeheartedly embraced by conservationists, but the relatively modest proposals of Congressmen Gilchrest and Saxon have added a much-needed moderate voice to the ESA debate in the House. In the Senate, John Chafee (R-RI), a vocal supporter of the ESA, is the chairman of the full committee charged with reauthorizing the Act, and conservationists are counting on him to work for a strong ESA reauthorization bill.

In another encouraging development, lawmakers on both sides of the ESA debate have introduced bills to provide incentives for landowners to conserve endangered species habitat on private lands. For example, Congressmen Pombo and Saxton have both introduced bills to provide estate and income tax benefits for landowners who enter into agreements with FWS to actively conserve and manage habitat on their property (H.R. 2286, H.R. 2423). In the Senate, Senators Kempthorne and Chafee have expressed interest in tax incentives for habitat conservation.

The Houses Resources Committee recently approved H.R. 2275 on a 27-17 vote, but Speaker Newt Gingrich's displeasure with the bill will probably delay floor action on the ESA in the House. The introduction of the Kempthorne bill will soon get things moving in the Senate, and we have probably not seen the last legislative proposal to reauthorize the ESA in the 104th Congress. Debate on the ESA in both houses of Congress will intensify even as the likelihood increases that it will spill over into next year. Keep your seatbelts fastened.

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("Prototyping" continued from UPDATE P. 7)

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Bulletin Board

New Endangered Species UPDATE Advisory Board

We are pleased to announce that the UPDATE has created an Advisory Board to provide ideas and direction on a variety of issues. The Board will consist of the following people: Richard Block, Vice President for Scientific and Program Development at the Indianapolis Zoo; Susan Haig, Senior Wildlife Ecologist with the National Biological Service and Associate Professor at the Forest and Rangeland Science Center at Oregon State University; Norman Myers, International Consultant in Environment and Development; Patrick O'Brien, Chevron Ecological Services; and Hal Salwasser, U.S. Forest Service and Boone and Crockett Club.

National Conservation Award Nominations Now Being Accepted

The Chevron-Times Mirror Magazines Conservation Awards recognize individuals and organizations that have found creative solutions to natural resource challenges. These Awards seek to encourage those who have little or no national recognition, as well as to honor veterans with long records of noteworthy achievement. Nominations might include an individual, environmental organization or public agency that spent time cleaning up a local stream or bay, restored a wildlife habitat, created hiking trails and parks, or in some way helped protect this country's natural resources.

Anyone wishing to submit a nomination should send one letter of nomination describing the nominee's achievements in detail, plus two endorsement letters and a brief biographical sketch of the nominee to: Chevron-Times Mirror Magazines Conservation Awards, 575 Market Street, Room 870, San Francisco, CA 94105.

The deadline for all nominations is December 15, 1995.

Court Rules on Snake River Snail Listing Lawsuit

On August 31, 1995 Idaho District Court granted summary judgement to the Department of Interior regarding the Idaho and American Farm Bureaus (plaintiffs) lawsuit to delist five Snake River snails. The plaintiffs alleged violations of the Endangered Species Act (ESA), Administrative Procedures Act (APA), and the Federal Advisory Committee Act (FACA) in regards to the December 1992 listing action. Intervenors, on behalf of the Department of Interior, included three Idaho conservation groups. The plaintiffs attempted to establish that the listing caused 1) injury to their recreational and aesthetic interests, 2) injury to their economic interests, and 3) that plaintiffs were entitled to standing under the "citizen suit" clause of the ESA. The plaintiffs also claimed procedural errors in the convening of an advisory committee. The court dismissed the delisting suit in ruling that the plaintiffs failed to establish legal standing to challenge the listing under ESA or APA, and that a FACA challenge was not warranted. Therefore, the Snake River snails remain listed as threatened (1) and endangered (4). A final recovery plan for these species has been submitted for approval and will be published in the near future. For more information contact Jeri Williams, Snake River Basin Office, (208) 334-1931, e-mail <Jeri_Williams @fws.gov>.

Announcements for the Bulletin Board are welcomed. Some items from the Bulletin Board have been provided by Jane Villa-Lobos, Smithsonian Institution.

Endangered Species UPDATE

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