



Watershed Outreach Professionals' Behavior Change Practices, Challenges, and Needs: Insights and Recommendations for the Chesapeake Bay Trust

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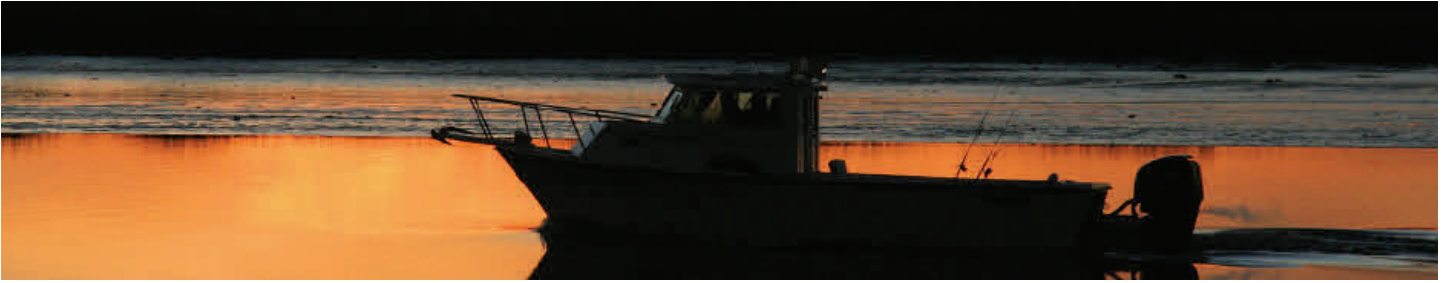
In addition, a big thank you to all of our interviewees for taking the time to share their experiences in environmental stewardship. To every organization we spoke to, we would like to say, your passion for environmental stewardship and protection inspired and motivated our project every step of the way. We would also like to thank the Alliance for the Chesapeake Bay for allowing us to share our work at the Watershed Forum. We hope our research will contribute to the protection and restoration of the Chesapeake Bay watershed, a true national treasure.

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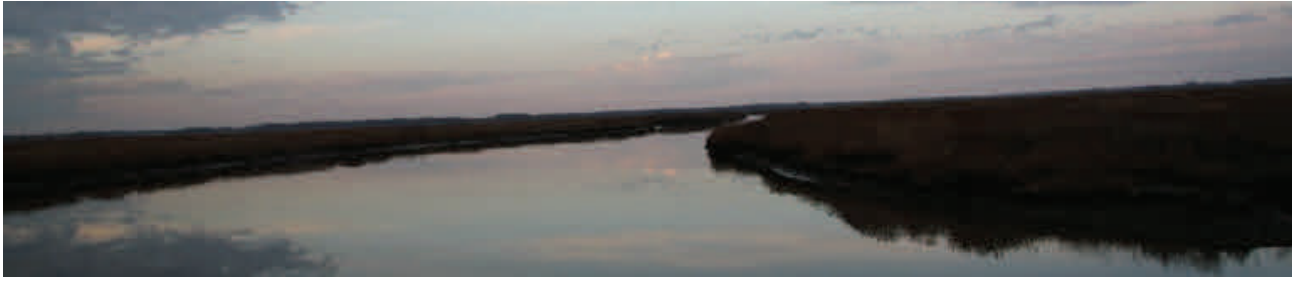


Abstract

This project was conducted in collaboration with a Maryland non-profit grant-making organization, the Chesapeake Bay Trust (CBT). The goal of the project was to determine how to assist local organizations in implementing environmental outreach programs (EOPs) that foster environmentally responsible behaviors (ERB) within the Chesapeake Bay Watershed. Based on findings from a review of conservation psychology literature, interviews with outreach program leaders, and observations of EOPs, the team designed and administered a survey to the CBT grant applicants (n=108, r=55%). The survey determined the EOP practices, challenges, and needs of these organizations.

Survey results demonstrated that the majority of respondents' organizations seek to motivate individuals to protect the Bay (97%) and that their EOPs have behavioral objectives (62%). Respondents reported that they motivate people in variety of ways, such as raising awareness (91 %). Their EOPs, however, also demonstrated misperceptions about how to achieve behavior change, for example suggesting that raising awareness will lead to ERB. Responses further revealed that many organizations are incorporating behavior change strategies and outreach best practices, such as targeting audiences (76%) and conducting internal evaluations (78%). Respondents, however, face challenges in implementing EOPs including: recruiting audiences not already environmentally motivated (53%); intentionally using behavior change strategies (52%); and developing EOPs with limited resources (48%). Finally, respondents felt their EOPs would most benefit from increased collaboration with other organizations (73%), opportunities to learn more about evaluation (63%), and training in how to incorporate academic research on ERB (53%).

These survey results, as well as interview, observation, grant review, and presentation findings, led to the development of recommendations for the CBT and other funders interested in supporting EOPs to motivate ERB. Recommendations focused on facilitating effective program design include, addressing behavior change misconceptions, offering opportunities to learn more about behavior change, and developing outreach best practices skills, such as audience targeting and assessment. The recommendations also focus on ways to ensure that the needs of under-resourced grantees are met by encouraging collaboration and providing user-friendly, Bay-specific resources, such as the Rapid Assessment tool and guide to Strategies for Motivating Watershed Behavior created by the team.



Project Overview

The Chesapeake Bay is the largest estuary in the United States and is considered by many to be a national ecological treasure. Its watershed spans over 64,000 square miles in six states (Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia) as well as the District of Columbia. The Chesapeake Bay watershed is an extremely productive ecosystem. It supports more than 3,600 species of plants and animals, including many threatened and endangered species, and is a vital ecological habitat for many migratory fish and bird populations (Chesapeake Bay Foundation, 2012).

In the last century, the Chesapeake Bay Watershed has experienced a significant increase in human pressure on the environment due to a growing population, expanding urban land development, and intensifying agricultural practices. These sources have contributed to increased pollution flowing into local streams and, consequently, into the Chesapeake Bay itself. One of the biggest threats to the region is an excess of nutrients such as nitrogen and phosphorus. As a result of increased nutrient-rich runoff, the Bay and its local tributaries suffer from poor water quality, fragmented habitats, algal blooms, dead zones, fish kills, and other negative consequences (Federal Leadership Committee for the Chesapeake Bay, 2010). Since human development began in the region, the Bay has lost half of its forested shorelines, over half of its wetland, nearly 80 percent of its

underwater grasses, and more than 98 percent of its oysters (Chesapeake Bay Foundation, 2012). Despite significant efforts by governments, environmental funders and organizations, and other concerned stakeholders, water quality in the Chesapeake continues to suffer.

One such environmental funder is the Chesapeake Bay Trust (CBT), a nonprofit organization based in Annapolis, Maryland. Their stated mission is to “promote public awareness and public participation in the protection and restoration of the Chesapeake Bay and its tributary rivers and streams.” The CBT plans to undertake this mission through its goal of “increas[ing] stewardship through grant programs, special initiatives, and partnerships that support environmental education, demonstration-based restoration, and community engagement activities.” Currently, the CBT funds programs through 12 Maryland-based grant programs meant to achieve the CBT’s mission and goals (Chesapeake Bay Trust, 2010).

One of the CBT’s grants, the Outreach and Community Engagement (OCE) Grant Program, awards funding to organizations seeking to engage Maryland citizens in Bay awareness programs, workshops, and outreach efforts that increase knowledge of Chesapeake Bay restoration. Traditionally, this grant has focused on an Awareness Track that funds programs seeking to increase the

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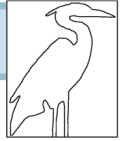
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& Conclusions



public’s awareness and knowledge of local watershed issues. However, in the 2011-2012 grant period, the CBT offered a new Behavior Change Program Track to fund local organizations running behavior change campaigns. The Behavior Change Program Track offers potential grantees \$5,001 - \$35,000, while the Awareness Program Track offers grantees only \$5,001 - \$15,000. The CBT hopes this financial incentive will motivate more organizations to move beyond traditional awareness campaigns. The difference in funding also highlights the CBT’s prioritization of strategic behavior change programming.

The shift to a greater focus on behavior change is in part due to the fact that non-point pollution, which is often the result of human actions

“Protecting water challenges a lot of deeply held beliefs and behaviors...”

and is challenging to regulate, is considered one of the watershed’s biggest barriers to meeting water quality standards.

Non-point pollution derives from diffuse factors such as animal waste, erosion of agricultural land, and runoff from individual homes (among other human-related sources). While each individual event generally results in a negligible amount of pollution, the cumulative effect of these events has been devastating to the Chesapeake Bay region. Thus, motivating people to act in more environmentally responsible ways will be a key part of meeting water quality goals and will therefore be the focus of this project.

While organizations in the area have a long history of developing and implementing environmental stewardship programming, the CBT’s new Behavior Change Track will likely be a catalyst for stronger behavior change programs throughout the region. The CBT recognizes its unique opportunity to shape the development of robust behavior change programming through its influence as a funder. In order to make the most effective use of this

opportunity, the CBT approached the University of Michigan’s School of Natural Resources and the Environment Master’s project program as a client. A group of students, henceforth referred to as the team, collaborated with the CBT to learn about the practices, challenges, and needs of local organizations requesting funding through the OCE grant program. The team then shared with the CBT the results of this effort so that the CBT could better assist its grantees in implementing effective stewardship programs that foster environmentally responsible behaviors (ERB). The team also created two tools based on their results.

Purpose of Project

The purpose of this project was to determine how to assist local organizations in implementing environmental outreach programs (EOPs) that foster ERB within the Chesapeake Bay Watershed. (See [Appendix 1: Logic Model](#))

Project Overview

The team’s project consisted of four phases, as summarized below. In each phase’s respective section(s) within this document, a more detailed introduction and/or method section is provided. This project overview section states the overall goal of each phase and the general pathway taken to accomplish that goal.

Phase 1: Literature review

In this phase, the team conducted a review of relevant past research in order to establish a definition of ERB as well as an understanding of what influences and motivates those actions in an individual. In addition, the team researched what strategies have been shown to be effective at influencing ERB. (See [Appendix 2: Literature Review](#))



1 Project Overview

Phase 2: Interviews, Observations, and Survey

For Phase 2, the team first conducted 20 interviews and seven observations of the CBT’s past OCE grant applicants to gain in-depth knowledge of current practices in program development, challenges faced in program design and development, and areas identified as requiring more assistance. The team then used this information to design a survey that was distributed to all recent grant applicants in order to find out if the practices, challenges, and needs brought up in the interviews and observations were consistent throughout the larger grant-applicant audience.



Howard County PATH Stormwater Program

Phase 3: Survey Analysis

In Phase 3, the team analyzed the survey results in order to assess the current state of OCE grant applicants’ programming as a whole. The team’s survey analysis also sought to determine where the CBT and the team could assist organizations in becoming more effective in their program design, implementation, and evaluation.

Phase 4: Tools, Workshops, and Recommendations

In the final phase, the team created and pilot tested two tools to assist organizations with designing, implementing, and evaluating their behavior change programming. The first tool, *Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices*, (See page 43:

Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices) provides benefits, challenges, evidence, and tips for using research-supported behavior change strategies and program frameworks. This strategy guide also provides a Chesapeake-Bay-specific example of each strategy in action. The second tool created by the team, the *Rapid Assessment for Outreach Programs Fostering Environmentally Responsible Behaviors*, (See page 71: *Rapid Assessment for Outreach Programs Fostering Environmentally Responsible Behaviors*) provides a way for organizations to self-assess if various program elements, including best practices, behavior change strategies, and frameworks, are being implemented effectively.

The team also presented initial survey results, academic research on behavior change, and suggestions for applying these findings and research to EOPs at the Chesapeake Watershed Forum and the Michigan Association for Environmental & Outdoor Education 2012 Conference. These workshops allowed the team to share their project with environmental practitioners, pilot test a workshop on behavior change, and receive feedback from participants on the effectiveness of the workshop.

Additionally, this phase included the team’s participation as panelists for the CBT’s OCE Grant Program review process, which provided another source of insights on the practices, challenges, and needs organizations face in designing EOPs.

Finally, the team developed recommendations for the CBT informed by findings from the project as a whole.

“...The local populace recognizes that [the bay] is a special place worth preserving, and that environmental stewardship is a key component...”

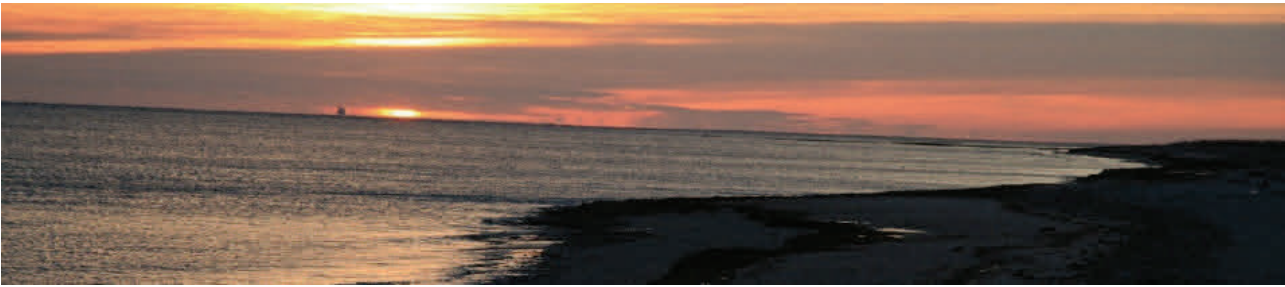
2 Interviews & Observations

3 Survey Research

4 Program Tools

5 Workshops & Grant Review

6 Recommendations & Conclusions



Interviews & Observations

Introduction

The literature review process served to familiarize the project team with the current academic research on environmentally responsible behaviors (ERB), behavior change models, and intervention strategies to encourage behaviors (See [Appendix 2: Literature Review](#)). Next, the team needed to understand the current state of Outreach and Community Engagement (OCE) grant applicants' programming in order to supply the CBT with useful recommendations and resources that would benefit future grant development and grant applicant support. Up to this point, the team's understanding of OCE grant applicants came from discussions with the CBT staff and review of past grant proposals. Therefore, the team dedicated a month to interview organization leaders and observe programs from Maryland and Washington D.C.-based organizations conducting environmental outreach.

The overall purpose of the CBT OCE program leader interviews and program observations was two-fold:

1. To engage with the organizations in an effort to contextualize the study, build relationships with local organizations, and develop credibility
2. To inform a survey of OCE grant applicants

The interviews in particular provided the team with a greater understanding of grant applicant programs, how these organizations attempted to change behavior, if at all, and which, if any, strategies were intentionally being used in their programs. The observations were an opportunity to learn more about organizations' efforts in the field, as well as to pilot test the team's Rapid Assessment tool (See [page 71: Rapid Assessment for Environmental Behavior Change Programming](#)). Both the interviews and observations connected the team to organization leaders, and the observations also allowed the team to interact with local community members. This experience helped to foster trust and build relationships with the project's constituents. It also provided the team with invaluable dialogues regarding outreach and engagement program efforts with the ultimate goal of improving the health of the Chesapeake Bay Watershed. Ultimately, these first-hand experiences laid the foundation for the project and informed each step thereafter.

Interview and Observation Process

The team contacted 37 previous OCE grant applicant organization leaders, whose contact information was supplied by the CBT, to request interviews and observations. In June 2011, the team conducted 20 in-person interviews that were recorded and summarized. Organization leaders



played various organizational roles in governmental organizations, academic institutions, homeowner's associations, and nonprofit organizations. The interviews illuminated the current state of Environmental Outreach Programs (EOPs) in the Chesapeake Bay Watershed, with a focus on what behavior change strategies were being used and what practices, challenges, and needs exist (See [Appendix 3: Interview Script \(Phone and In-Person\)](#)).

The team also observed five different OCE programs, including a stormwater management training, native plantings, and rain barrel programs. After the program, the team conducted brief interviews with organization leaders and participants to learn about program design and receive feedback on the success of the program, which were recorded and summarized (See [Appendix 4: Observation Interview Questions](#)). These observations and post-program interviews were effective in further illuminating the practices, challenges, and needs that organizations faced specifically during program implementation. They also shed light on participants' perspectives of the programs.



Team Conducting Post-Observation Interviews with Participants

Key Themes from Interviews and Observations

The interviews showcased the wide diversity of programs being implemented by organizations to protect and restore the Chesapeake Bay Watershed. Organizations in this region are addressing local water issues from numerous angles. The diversity, creativity, and success of outreach programs is

highlighted by the development of community rain gardens, increase of riparian buffers along streams, and, possibly, the shrinking of the Bay's dead zone. For the purpose of this study, however, the team specifically focused on the practices, challenges and needs that organization leaders face in their outreach efforts.

1. Many organization leaders demonstrated misperceptions of what leads to behavior change (See [Appendix 2c : Dispelling Behavior Change Misperceptions](#))

Misperception 1: Awareness and/or concern leads directly to behavior change

This is the belief that if one is aware of or concerned about an environmental issue, (s)he will then necessarily change their behavior associated with that issue. Some organization leaders identified specific behaviors they wanted to change, yet stated that their organization's primary goal was engagement or awareness, with the implied notion that changed behavior would be achieved as a result of this engagement or awareness. Other organizations did not have any behavior change goals, and are only working on increasing awareness or concern.

Examples:

- One organization leader made the assumption that there is a "tipping point" where people will translate engagement into ERB; however, this organization has never researched this idea themselves, or supported it with academic research
- Another organization leader expressed that their organization felt that once a person had spent some time outdoors, canoeing and becoming comfortable in nature, motivation would likely follow after
- One organization spoke of sharing information on the current status of the



Chesapeake Bay Watershed’s health with participants as a tool that would motivate participants to behave environmentally responsible in their daily lives

- Another organization felt that it was really important that people were aware of the Chesapeake Bay Watershed before the organization can start focusing on behavior change: “People were saying...how do I get people to do [behaviors], while I just want people to know they live in a watershed.”

Misperception 2: Knowledge is a mandatory prerequisite to behavior change

This is a popular misconception that if people only understood environmental problems, then they would alter their behavior to prevent and help resolve environmental problems. Many organizations are hesitant to focus on changing behavior because they feel that since their target audiences do not know enough about the Chesapeake Bay Watershed and its issues, they would not be open to behavior change.

“People were saying...how do I get people to do [behaviors], while I just want people to know they live in a watershed.”

Examples:

- One organization leader said that educating participants about stormwater issues, where storm drains lead to, etc. would lead to behavior change
- Another organization said they ran a series of education-focused programs on environmental impacts caused by pollution that would translate in to stewardship behavior in the home after the program, though they had not evaluated those outcomes
- This theme was echoed throughout the team’s observations because many organizations focused on relaying declarative

knowledge and did not use behavior change strategies (See page 43: *Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices*)

Misperception 3: Using negative emotions is an effective strategy to change behavior

Negative emotions are sometimes used to initially attract people’s attention to an issue, such as using fear in campaigns showing the terrible conditions of the natural environment caused by human actions to “scare” people. Interviewed organization leaders had mixed reactions regarding the impact of this strategy on changing behavior. Some organizations recognized that people needed to be given a sense of hope to feel like they could do something about an issue, while others felt that using negative emotions could be an effective strategy to promote behavior change.

Examples:

- One organization leader stated that he felt fear tactics can work when dealing with health concerns and environmental justice issues, but that tapping into strong positive emotions, like a sense of accomplishment and pride, was also effective
- One observation involved a trash cleanup of a riverbank. This program did not start the program with an introduction to better prepare participants about the amount of trash, potential hazards, methods for cleaning up trash, or a schedule for the day’s activities. Many participants, therefore, were alarmed by the quantity of trash and number of dangerous items, such as syringes and glass, which may have caused participants to feel overwhelmed, nervous, or scared
- During a stormwater awareness program, an organization leader included slides of what



not to do, such as images of downspout pipes leading to pavement rather than permeable surfaces. Such images may lead to feelings of embarrassment or remorse if participants have also done these “bad” behaviors

Exception Examples:

- One organization leader stated, “I don’t think the guilt thing gets you very far.”
- Another suggested, “Fear may change behavior for some people, but research shows that it doesn’t result in long-term change.”
- Many organizations make an effort to keep their newsletters lighthearted and funny, sticking to positive emotions
- During a program observation, as a program leader showed pictures of polluted rivers and irresponsible stormwater practices, she simply stated, “It seems like [our] county can do better” and “this is not meant to scare you.” She even demonstrated how stormwater management can be fun, such as by pointing out pictures of brightly painted rain barrels

2. Many organizations primarily target audiences who are already interested or involved in environmental issues in some capacity, suggesting that organizations are struggling to involve underrepresented audiences

Most organizations realize they are only engaging “the choir”, i.e. those who are already motivated to act, but they don’t necessarily know how to reach other audiences. Therefore, organizations are experiencing difficulty broadening audience demographics to include communities of

color, low-income communities, and others groups traditionally underrepresented in environmental outreach and engagement, such as those who generally do not express concern or feel motivated to take action for the environment. In addition, outreach programs attracting the same audience over and over may lead to assumptions about what the audience already knows and how to encourage ERB without first assessing if these assumptions are true.

“Fear may change behavior for some people, but research shows that it doesn’t result in long-term change.”

Examples:

- One organization mainly targets traditionally engaged audiences with an iPhone app tracking water quality and Chesapeake Bay Watershed conditions
- Some organizations rely on contact from interested parties, such as school groups, churches, volunteer organizations, and corporate groups, as a way to elicit volunteers for field projects, and therefore spend little effort recruiting new audiences

Exception Examples:

- One organization leader said that they deliberately tried to attract audiences who were not in “the choir” by making presentations at community meetings and churches in targeted communities
- Another organization targeted real estate agents to encourage the implementation of stormwater management best management practices (e.g. through the incorporation of rain gardens, permeable pavers, and conservation landscaping) through marketing such practices as valuable features of the property

3. Organizations may think they are targeting an audience, but in fact they are not.



Often organizations’ audiences are very general and not intentionally targeted. Failure to target a specific audience can cause an organization to be unaware of their audiences’ benefits and barriers to a particular behavior, and consequently diminish the impact of their programs. Organizations often rely on organic social diffusion to build a core audience and are not using any recruitment methods. While this technique may offer success through the use of existing social networks and social influence, since the influence of social norms is strong, the likelihood of widespread success is not very high. Furthermore, if programs are not designed to address the specific reasons a particular audience is engaging in a behavior, they will likely be less effective. For example, if the program is focused on relieving the cost of a technology, but the audience is not engaging because they don’t know how to use the technology, the program will be ineffective. This theme may suggest that organizations are having trouble finding a balance between wanting to reach a large number people and having more targeted, customized programs to a smaller, but more impactful, audience.

“...is it better to have a very targeted approach in which you do extensive development and evaluation, or is better to just finish up the program and get out there and back to work, planting trees, etc.—what’s the best use of our time?”

Examples:

- One organization leader said he was relying on the fact that respected community members would see or hear about stormwater management efforts and this would lead to more people changing their behavior
- Similarly, an organization leader stated that he strongly connects an educated public with a motivated public, and if you educate one person, they will spread the message to others
- One organization leader stated that he assumes people will talk about their experiences with neighbors, friends, and

family, which eventually will broaden the organization’s participant base

Exception Examples:

- One organization leader explained that one of their behavior change programs target only small acreage forest owners that other organizations are not focused on recruiting and influencing
- Another organization leader said that while they initially tried a “shotgun approach” in which they tried to get anyone involved in their program, they realized it wasn’t working, and then applied a more targeted approach based on neighborhoods that had the most direct physical connections to stormwater going into the Chesapeake Bay Watershed

4. Evaluation is not a priority for many organizations.

Overall, many organizations see evaluation as an important tool. However, in practice, many organizations’ evaluation process consists of deciding whether or not a particular event seemed successful or felt like it was working, or consists of looking only at measurable outcomes not related to a specific behavior (e.g. numbers of participants, trees planted, etc.). Although the CBT requires evaluation as a component of all OCE programs, organizations often have not embraced evaluation as a tool for determining the success of a program, improving it in the future, and justifying future funding. Formative evaluations seemed to be especially lacking.

The time- and labor-intensive nature of evaluation was often cited as the reason that organizations did not incorporate robust evaluation processes into their programs. During an interview, one organization leader questioned the value of evaluation compared to other program components



and asked, "...is it better to have a very targeted approach in which you do extensive development and evaluation, or is better to just finish up the program and get out there and back to work, planting trees, etc.—what's the best use of our time?" This quote reveals that the benefits of evaluation are not well understood by organizations and therefore it is not adequately incorporated into many programs.

Examples:

- One organization leader spoke of their evaluation as only asking participants if they enjoyed the program
- Several organizations suggested that evaluation is less of a priority than program implementation

Exception Examples:

- One organization leader did immediate evaluation as well as a 6-month follow-up survey asking participants about both attitudes and behavior change
- Another organization leader spoke of starting to budget for evaluation, and said that doing "a little information feedback thing" was not an option. The leader said that their organization was currently brainstorming evaluation metrics, as well as the best ways to collect them
- One organization leader used a digital evaluation tool throughout their program where participants immediately responded to questions regarding the program, their level of understanding, and their actions. Often results were shared real time with the participants, and included discussing the results and giving beneficial feedback to the participants

"...[Strategies] have to be used the right way...it's about how you're going to use it."

5. More general knowledge of behavior change is needed, perhaps through greater access to academic research on behavior change strategies

Many organizations are not aware of what practices and strategies are most effective in changing behavior. While a number of organizations appear to be using behavior change strategies, most organizations seem to use them based on professional experience rather than supported evidence from academic research, and perhaps without the awareness that the strategies could be used as a behavior change tool. While professional experience is certainly an important tool, it seems organizations could further increase program effectiveness by applying existing program development resources. If strategies were chosen intentionally, including consideration of when, why, and how they should be used (e.g. knowing what strategies can be most effectively combined with others, challenges of using certain strategies, etc.), organizations' programs could be more effective at changing behavior. In addition, although many organizations seem to understand the idea that behavior is determined by a number of different factors, organizations do not appear to be deliberately combining strategies in behavior change programs as a way to more effectively target a single behavior.

Example:

- During all program observations, strategies were often used without the intention of changing behavior (e.g. stories were informally shared, but not a formal element of the program)
- Many organization leaders said that they were using behavior change strategies within programs, but their examples of applying the strategy revealed that the organization either did not understand the strategy itself or how it influenced their program



Exception Examples:

- One organization leader stated that no one strategy was a “be all end all.”
- Another stated that strategies were “...good sometimes. They have to be used the right way...it’s about how you’re going to use it.”
 - This recognizes that strategies must be used in context and audience-specific; otherwise, they may not effectively influence people’s actions

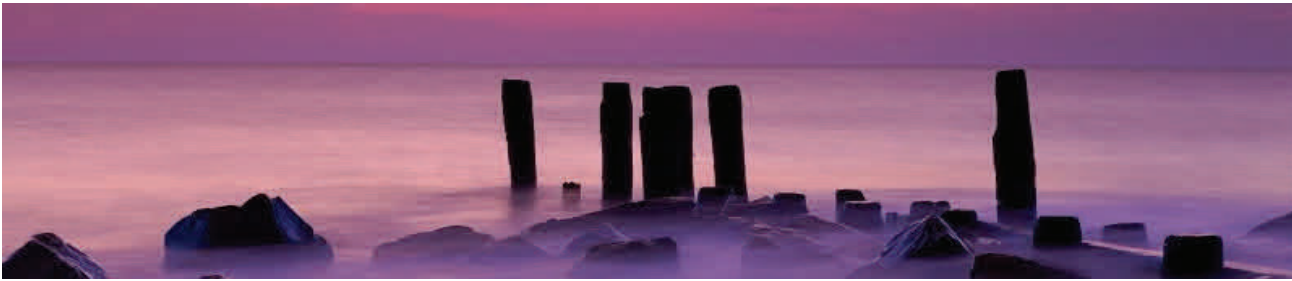
observations helped inform the focus and content of the grant applicant survey. *Table 1: Examples of Interview/Observation Themes Informing Survey Questions* includes a few examples how the team incorporated themes into the survey.

Translating Interview and Observation Themes into the Survey

The themes that emerged from the interviews and

Interview/Observation Theme	Survey Questions
Many organization leaders demonstrated misperceptions of what leads to behavior change	The team asked specifically about the degree to which they use knowledge, concern, and negative emotions to change behaviors
Many organizations primarily target audiences who are already interested or involved in environmental issues in some capacity, suggesting that organizations are struggling to involve underrepresented audiences	The team asked if organizations have had difficulty reaching/recruiting audiences who are not already committed to protecting the Bay and/or local waters
Organizations may think they are targeting an audience, but in fact they are not	The team asked about whether or not organizations’ EOPs had target audiences, if they found it difficult to recruit audiences, if any restrictions from their funders affected this, and whether they collected and applied data from these audiences to guide the design of their EOPs
Evaluation is not a priority for many organizations	The team asked questions about when they collected evaluative data, how they did it, and if they needed or wanted to learn more about how to do evaluation
More general knowledge of behavior change is needed, perhaps through greater access to academic research on behavior change strategies	<p>The team asked the degree to which organizations use academic research to inform EOPs and the degree to which they thought access to academic research would improve their EOPs</p> <p>The team asked which strategies organizations wanted to learn more about and how they personally learned about them (e.g. via professional experiences, workshops, college courses, etc.)</p> <p>The team also defined each behavior change strategy to help ensure that the organizations understood how these strategies are described in academic research</p>

Table 1: Examples of Interview/Observation Themes Informing Survey Questions



Survey Research

Introduction

As environmental professionals in the Chesapeake Bay region work to meet federally mandated water quality standards and reduced pollution goals, non-point source pollution continues to challenge conservation and restoration efforts. Non-point source pollution is one of the key sources of pollution in the Bay, yet it is also particularly difficult to regulate due to its diffuse nature (Brull, 2006). In response, local environmental funders and practitioners are exploring approaches with significant environmental impacts, especially those specifically targeting non-point pollutants. Environmental outreach and engagement programs motivating environmentally responsible behaviors (ERB) are one approach with the potential to significantly reduce pollution from individual watershed residents.

One such funder focusing on ERB is the Chesapeake Bay Trust (CBT), a publicly funded nonprofit organization based in Annapolis, Maryland. The CBT funds environmental stewardship efforts through a variety of grants, and recently expanded their Outreach and Community Engagement (OCE) Grant Program to include a specific Behavior Change Program Track allocating funding for ERB-related programs. In this program, the CBT is offering up to \$35,000 for outreach programs in this track, while funding for their Awareness Project Track is limited to

a maximum of \$15,000. This difference in funding reflects the time- and resource-intensive nature of robust programs with behavioral objectives while also highlighting the CBT's prioritization of and support for well-informed and strategic programs with a focus on motivating individual ERB.

ERB can be defined as an “approach to seeking information, making decisions, and valuing a stewardship ethic” (Monroe, 2003). In the context of programs funded by the OCE grant, ERB involves encouraging individual actions that advance conservation and restoration of the Chesapeake Bay Watershed, while also creating stewards of the Bay and its tributary waterways. Research-supported evidence from social science disciplines, especially conservation psychology, reveals that individual ERB can have a measurable and significant environmental impact (Dietz et al., 2004; Dietz et al., 2009). During the last 40 years, there has been a growing literature base on effective interventions that strategically motivate individuals to adopt ERB (Heimlich & Ardoin, 2008). However, there is a lack of research investigating ERB from the perspective of organizations conducting outreach programs, particularly in the context of watershed conservation and restoration.

This exploratory study highlights the practices, challenges, and needs of the CBT's grant applicants (i.e. local organizations interested in conducting

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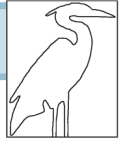
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environmental outreach and community engagement) in designing and implementing OCE programs, with a particular focus on ERB. This study seeks to assist organizations that work to address communities' environmental concerns and create a positive environment where individuals choose to adopt ERB. The findings provide a more thorough understanding of environmental outreach in the Chesapeake Bay and also serve to guide future outreach in effectively encouraging ERB. Ultimately, the results of this study will help inform the CBT's development of their Request For Proposals (RFP) and the support they provide their grant applicants and recipients. Although this study is specific to the Chesapeake Bay Watershed, it may provide other funders and locales useful insight into environmental outreach programming with a focus on encouraging ERB.

Methods

To determine the practices, challenges, and needs of the CBT OCE grant applicants, the team developed and distributed a survey to applicants of the grant program since 2005. Survey measures were created based on interviews with leaders of programs funded by the OCE grant as well as observations of funded programs.

The purpose of the survey was to verify if the information collected from the interviews and observations applied to the majority of grant applicant programs, as well as acquire a broader understanding of environmental outreach programs

(EOPs) in the Chesapeake Bay Watershed (See [Appendix 5: Survey Instrument](#)). The survey explored the following themes: organizational background; program goals, practices, challenges, and needs; and use of outreach best practices and behavior change strategies ([Table 2: Survey Principle Research Questions](#)).

In order to address organizational background, the survey included questions on organization type and the role of the respondent in his or her organization's EOPs. Answers to these questions helped determine possible differences between the practices, challenges, and needs of certain organization types. A question was included to determine whether behavior change was a goal of organizations' EOPs. In addition, questions asking about what informs the design of EOPs, what might help improve EOPs, and what difficulties organizations have in motivating people to protect the Bay measured EOPs practices, challenges and needs.

The research team chose to focus on a variety of "best practices" based on academic literature in outreach program development, such as community-based social marketing (McKenzie-Mohr and Smith, 1999) and participatory programming, as well as the CBT grant requirements. The chosen practices primarily focused on whether organizations targeted audiences and evaluated their programs. These were measured by asking whether respondents collected audience data, customized their program for a target audience, pilot tested, collected data during and after the program, and

Research Questions	
Who are the grant applicants?	Are grant applicants currently attempting behavior change programs?
How do grant applicants design their programs?	Do grant applicants currently use any of the behavior change strategies from the literature?
What circumstances are grant applicants currently facing?	Are the misperceptions found in the literature review present in grant applicants?
What challenges and needs are grant applicants currently facing?	How can the team or the CBT assist with grant applicants' challenges and needs?

Table 2: Survey's Principle Research Questions



used that data to improve their programs.

In the survey, behavior change strategies were described as efforts that “motivate individuals and communities to protect the Bay or/and local waters”. This language supports the CBT’s mission and interests, and therefore, was assumed to be more familiar to local organizations than using the phrase “behavior change strategies.”. The shorter phrase of “behavior change strategies” will be used throughout this article.

The survey included 13 strategies, accompanied by a definition and example ([Table 3: Strategy Definitions and Examples](#)). Eleven strategies were selected based on strong academic research support, including: appealing to positive emotional states, commitment, extrinsic rewards, feedback, increasing how-to skills, intrinsic rewards, participatory programs, prompts, social marketing, social norms or modeling, and stories. Two strategies, highlighting personal benefits and positive nature experiences, were frequently reported as being used by organizations in the interviews and observations. Despite a lack of available support in the literature, these strategies were included in the survey to determine if they were being used by other organizations.

The survey used a series of Likert scales to measure the degree to which organizations agreed with statements constructed around the above themes. Three open-ended questions were also included to learn more about motivational elements used in EOPs, challenges to motivating audiences, and ways behavior change strategies are being used.

The CBT provided the team with a list of 298 organization leaders, all of whom were past applicants of the CBT’s OCE grant. The team excluded contacts that only worked on environmental education programming, ultimately disseminating the survey to 226 individuals in July 2011. The team then excluded contacts with invalid emails and defunct organizations, with the resulting N=193. Survey recipients were contacted five times via email and

phone, based on Dillman’s tailored method (Dillman, 1999), to encourage participation until the survey was closed on September 3rd, 2011 ([See Appendix 6: Survey Reminder Emails and Phone Call Scripts](#)). After eliminating incomplete survey responses, 108 responses (n=108, r=55%) were received and analyzed. It should also be noted that questions in this survey were framed as seeking the perspective of the respondent’s organization; however, for the purpose of this article the term “respondent” refers to “respondent’s organization.”

The research team utilized SPSS software to analyze the survey data. Respondents that did not answer a question were excluded from the sample and counted as missing values. Likert scales were then condensed for data analysis ([Table 4: Collapsed Survey Likert Scales](#)). After looking at the general descriptive patterns, the team sought to determine why certain patterns existed and what relationship variables had to each other based on the principle research questions ([Table 2: Survey Principle Research Questions](#)). The team used Chi-square tests to determine relationships ($p < .05$), crosstabs to examine distributions, and Spearman’s rho ($p < .05$) or Cramer’s V ($p < .05$) to determine the correlation direction and strength between the variables. The three open-ended questions required content analysis and therefore were coded to identify common themes.

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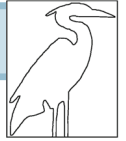
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Strategy	Definition	Example
Appealing to Positive Emotional States	Appealing to emotions such as hope and enjoyment as a way to change people's behavior	Stressing the enjoyable aspects of gardening
Commitment	Using verbal or written agreements, such as pledges, to encourage people to adopt a behavior	Asking people to sign a pledge to only use organic fertilizers on their lawns
Extrinsic Rewards	Using money, food, or prizes to motivate behaviors	Rewarding households that save water with tax rebates or entering them in a raffle for a prize
Feedback	Providing people with information about their level of success or need for improvement in response to a particular behavior	Providing homeowners with information on their electricity consumption throughout the year
Highlighting Personal Benefits	Pointing out the health, financial, or other benefits that may result from a behavior	Emphasizing how using less fertilizer on one's lawn will save the property owner money while also contributing to improved water quality
Increasing "How-To" Skills	Providing people with information and/or training on how to carry out conservation behaviors	Teaching installation, maintenance, and usage skills through a hands-on composting demonstration
Intrinsic Rewards	Motivating individuals to perform an activity because of the personal satisfaction it can offer; this may include stressing values, morals, or how an activity can be enjoyable or interesting.	Stressing that using resources wisely and avoiding waste is "the right thing to do" or encouraging individuals to participate in a river clean-up because it will be fun and enjoyable
Participatory Programs	Involving members of the community in program design or implementation to create a sense of community ownership over the program	Creating block leaders to customize and oversee a neighborhood water conservation program
Positive Nature Experiences	Exposing people to nature via an outdoor experience	Sunset kayak outing that allows people to engage and connect with the Bay and/or local waters
Prompts	Short, simple reminders to perform a desired behavior	Displaying signs to turn off the lights or turn down the heat

Table 3: Strategy Definitions and Examples

(continued on next page)



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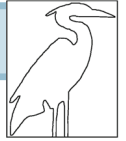
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Strategy	Definition	Example
Social Marketing	Adapting the outlook and techniques from the field of marketing to help promote environmental and social change (Definition of Social Marketing, 2008)	<p>In 2004, the Chesapeake Bay Program created a campaign to reduce nutrient pollution flowing into the Bay. Because much of this pollution is the result of excess lawn fertilizer use, the campaign targeted homeowners with lawns in the Washington, DC region. A telephone survey of about 600 homeowners was conducted to determine the best way to reach this audience. The survey's findings showed that while homeowners were concerned about the environment and the Bay, this concern was not likely to lead to environmental actions. Other findings were that attractive lawns were important to the audience, and that most were likely to fertilize their lawns in the spring.</p> <p>This led to the design of a campaign that would focus on encouraging fertilizer use only in the fall or to hire a Bay-friendly lawn care service. The campaign did not frame the issue of a polluted Bay as an environmental problem, but rather focused on the need to protect blue crabs as a source of delicious seafood-- the numerous seafood restaurants in the area supported this focus. The 7-week campaign included 1) branding the campaign the Chesapeake Club to create a sense of membership and that doing these behaviors was the social norm; 2) TV, radio, and print media advertising targeting the residents; and 3) a partnership with local seafood restaurants that included the use of "Save the crabs, then eat 'em" coasters and other ways to inform patrons about the importance of fertilizing in fall. Post-intervention surveys were conducted the following year to determine the effectiveness of the campaign in changing fertilizer use behavior.</p>
Social Norms or Modeling	Demonstrating the importance of a behavior to people either by describing the behavior as socially acceptable or unacceptable, or by having individuals perform the desired behavior around others to influence their behavior	Encouraging people to talk to their neighbors, family, and friends about installing rain barrels
Stories	Personal verbal or written tales sharing what others are doing to solve environmental problems, or tales with embedded environmental messages	Sharing a story about one's experience fishing in a littered river that motivated them to no longer litter and support river cleanup efforts

Table 3 cont.: Strategy Definitions and Examples



Scale	Original	Collapsed
Strongly Disagree to Strongly Agree (7 pt scale)	Strongly Disagree; Disagree; Somewhat Disagree	Disagree
	Neither Agree Nor Disagree	Neither Agree Nor Disagree
	Somewhat Agree; Agree; Strongly Agree	Agree
Not At All to Very Much So (5 pt scale)	Not At All; Very Little	No
	Somewhat	Somewhat
	Moderately So; Very Much So	Yes
Would Not Help At All to Would Help Very Much So (5 pt scale)	Would Not Help At All; Would Help Very Little	No
	Would Help Somewhat	Somewhat
	Would Help Moderately So; Would Help Very Much So	Yes
Very Unlikely to Very Likely (5 pt scale)	Very Unlikely; Unlikely	No
	Neutral	Somewhat
	Likely; Very Likely	Yes

Table 4: Collapsed Survey Likert Scales

Results

Description of respondents

The majority of respondents reported working for nonprofit organizations, with the remainder working for government, academic institutions, grassroots or other organizations, such as community associations (*Figure 7: Type of organization for which respondents worked*). Respondents were determined to be knowledgeable about their organizations' EOPs because the majority indicated that they design, implement, evaluate, and write grants for their organizations' EOPs (*Figure 8: Respondents' involvement within their organizations' EOPs*).

Practices of respondent organizations' environmental outreach programs (EOPs)

EOP Goals

Not surprisingly, almost all of the respondents reported that their EOPs seek to motivate individuals to protect the Bay (97%). Moreover, many respondents reported that their EOPs had specific behavioral objectives (62%). However, there were also a relatively large number of respondents who were not sure (19%) or who indicated that their EOPs did not have specific behavioral objectives (15%).

Respondents reported that their EOPs seek to meet the goal of motivating individuals to protect the Bay in a variety of ways (*Figure 9: Goals of Respondent Organizations' EOPs*). The majority indicated that they sought to meet this goal through

**Respondents selected all answers that applied*

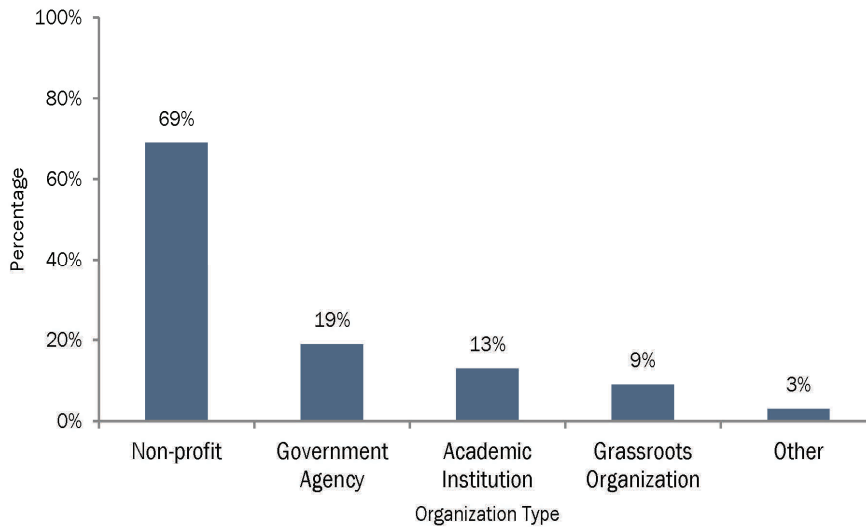


Figure 7: Type of organization for which respondents worked*

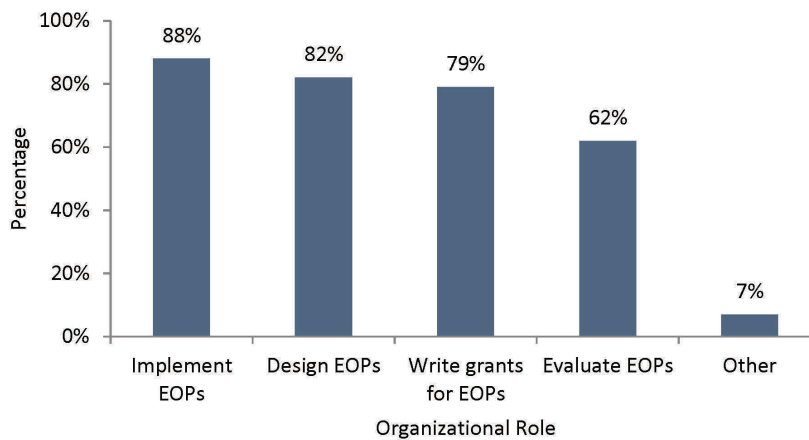


Figure 8: Respondents' involvement within their organizations' EOPs*

increasing their audiences' awareness of issues confronting the Bay and increasing their audiences' feeling that they can personally help to protect the Bay. Other ways were mentioned less frequently but nonetheless reported by over half of respondents. These ranged from providing their audiences with relevant knowledge and skills to stressing how audiences can help future generations.

Factors that inform effective EOP design

An initial open-ended question asked respondents about elements that influenced the effectiveness of

their EOPs design in motivating audiences to protect the Bay and/or local waters, followed by a series of closed-ended response options. Responses to the open-ended question (n=102) revealed that many respondents attributed their effectiveness to a variety of factors (Table 5: *Sample quotes of elements of EOPs that respondents' believed effectively motivate audiences to protect the Bay*). About one-third attributed their programs' effectiveness to providing experiential learning. Another on-third described education, training, or information in general as the effective element of their EOPs. Approximately one-fifth credited collaborating with community members

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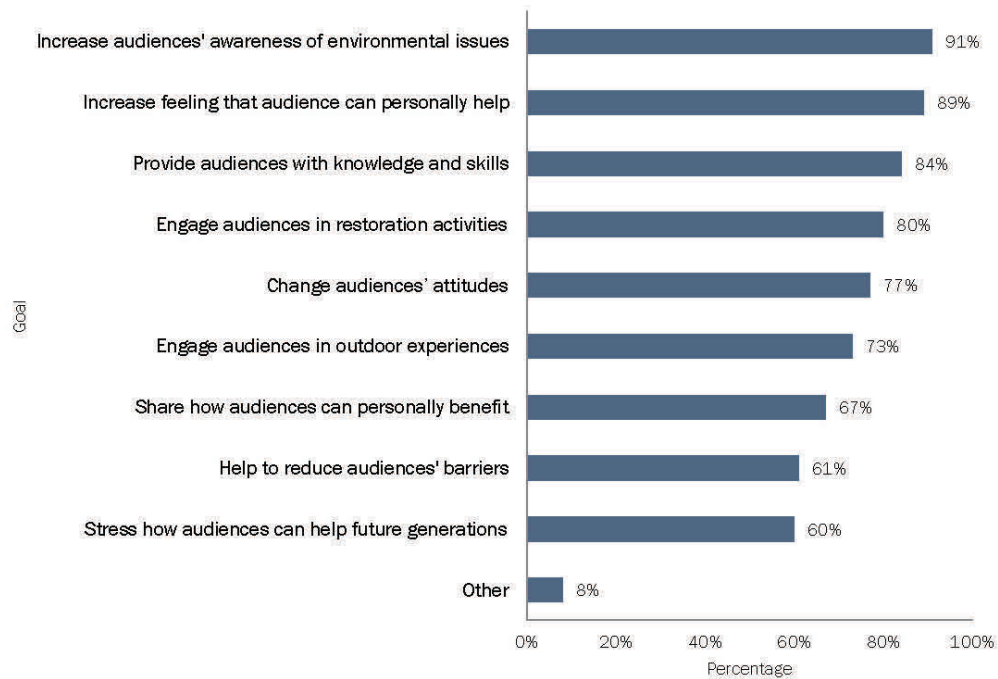
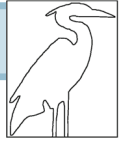


Figure 9: Goals of Respondent Organizations' EOPs

or other environmental professionals, while another one-fifth mentioned helping their audiences make connections to the environment. In fact, the importance respondents attributed to connecting individuals to the environment emerged as a theme repeatedly throughout the survey's open-ended responses (Table 6: *Samples quotes that demonstrate major themes seen throughout survey responses*).

Respondents' selections of the closed-ended choices revealed additional information about the factors that influenced the design of their EOPs (Figure 10: *Information and experiences informing respondent organizations' EOP design*). For the majority, personal experience played a particularly important role, followed by collaborations with other organizations. In comparison, only about half reported that the design of their EOPs was informed by evaluations. Fewer respondents indicated that their EOPs' design was based on data from target audiences (collected by their organizations) or informed by academic research. Fewer still reported that their EOPs' design was based on data from

target audiences (collected by another organization) or based on social marketing. Interestingly, a few respondents also felt that neither data collected from intended audiences by another organization (11%) nor social marketing (10%) was applicable to the design of their EOPs.

Other EOP features

Targeting Audiences

The majority of respondents (76%) agreed that their EOPs target specific audiences and slightly more than half (52%) reported that data they collected from target audiences guided the design of their EOPs. The majority of respondents felt that they knew how their audiences could personally benefit from protecting the Bay (85%). Fewer, however, felt that they knew what barriers prevented their target audiences from protecting the Bay (63%). As would be expected, those who collected data from their target audiences were more likely to agree that they knew how their audiences could benefit from the



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Effective Element	Sample illustrative quotes
Providing information, training, and/or education (n=27, 27%)	“Showing our participants what a high vegetative cover/healthy pasture really should look like and educating them that a healthy, thick, dense stand of pasture slows or eliminates nutrient run-off and soil erosion.”
Providing hands-on, active experiences (n=36, 35%)	“Getting people out into streams through monitoring and cleanup projects. This builds interest in and stewardship over local waters that inspires further action.”
Strengthening relationships, through collaboration, with community and other stakeholders (n=16, 16%)	“Trained Master Gardener volunteers work one-on-one with local residents by making site visits to residents' landscapes to teach and encourage them to practice more environmentally friendly landscape management techniques.”
Using normative messages to motivate others' actions (n=9, 9%)	“Our community association came together to produce a project that controls storm water run off, is a pleasant place for community members to enjoy and brought together community members in the completion of the project. We hope other communities will think ‘if they can do it we can too.’”
Providing an intrinsic and/or extrinsic incentive (n=12, 12%)	“Connecting conservation with a financial argument: It is cheaper to protect than to restore”
Making connections between human welfare and the environment (n=21, 21%)	“Relate the health of the Chesapeake Bay to people's own well being”

Table 5: Sample quotes of elements of EOPs that respondents' believed effectively motivate audiences to protect the Bay (Q5)

targeted behavior ($\chi^2 p < 0.05$; Spearman's $r=0.28$, $p < 0.01$) and understood what barriers prevented them from acting ($\chi^2 p < 0.01$; Spearman's $r=0.27$, $p < 0.01$).

Evaluation Practices

The majority of respondents reported that they conduct their own evaluations (78%) although many also use external evaluation consultants (57%). Half of respondents reported that they pilot test their EOPs before implementing them. Many also reported that they collect evaluative data during implementation to improve their EOPs (64%), after

implementation to judge the EOP's success (69%), and that they use evaluation results to improve their organizations' EOPs (78%). At the same time, in response to a different question, far fewer respondents indicated that evaluations had a strong influence on their organizations' EOPs design (43%). One factor that influenced the extent to which evaluation informed the design of their EOPs was whether or not respondents conducted their own evaluations. Those who conducted their own evaluations were more likely to agree that evaluation informed their EOPs' design than those who did not ($\chi^2 p < 0.01$, $r=0.498$, Spearman's $p < 0.01$).



Theme	Sample illustrative quotes selected to reflect identified themes and
Targeting Other Audiences	“Getting past those who have self identified as outdoor enthusiasts and reaching all the rest. Conservation often does not take into account what it has in common with other peoples needs.”(Q10)
	“Lack of available funding to work on empowerment issues with underserved communities. Lack of ethnic, intellectual of other forms of diversity in the regional environmental community (limits capacity to raise the mass of public support).” (Q10)
Concerns about Evaluation	“We have not fully embraced evaluation techniques, though the value in doing so is recognized. Our organization has difficulty planning EOPs before jumping in and conducting the program.” (Q17)
	“Evaluation time. Not necessarily from our funders but we need more time to evaluate our programs and pilot programs. So often we are pulled in several directions to complete other programs or projects and we don’t critically look at past programs.” (Q10)
	“By the end of project planning, fund-raising, procurement, volunteer recruitment, restoration project implementation, report writing to funders, etc., we will use up all of our man power and I do not think we have time to evaluate our effort...So, I wonder if a contractor/consultant can evaluate our program correctly or not...if our program was given a poor rate by a consultant who may not have capability to evaluate properly, some of us may be fired.” (Q10)
Limited Funding Leading to Competition	“Top down groups seek to raise money and support to empower their aims. Grassroots groups seek to empower the communities they serve. Far from trying to achieve the same ends, these groups are actually working at cross purposed with one another.” (Q17)
	“Funding is so scarce and makes it challenging to instigate collaboration instead of being in competition for limited funds.” (Q10)
Connection to Nature leads to Behavior	“Exposure to nature via hands-on activities is the core of all of our programs, and is a powerful tool to establish a personal connection in individuals that leads to major behavioral changes.” (Q13)
	“Even as social marketing and internet usage and resources become more widespread and effective, the industry need to keep in mind that these things, while helpful, are in no way replacements for direct, hands-on, outdoor experiences.” (Q17)

Table 6: Samples quotes that demonstrate major themes seen throughout survey responses
 (See Appendix 5: Survey Instrument for Survey Questions)
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Theme	Sample illustrative quotes selected to reflect identified themes and partici-
<p>Too Many Under-funded Groups</p>	<p>“Lack of financial resources and time to engage in design and evaluation. It's a catch 22 because limited resources make it critical to get best bang for our buck, but can also tempt program coordinators to skimp on research, planning, field testing, evaluation, etc.” (Q10)</p>
	<p>“The funding for EOP's pales in comparison to the "in-ground" projects, this requires an attitude change by showing that education and outreach may have equal, or higher, payback in the eventual behavioral changes that will lead to more in-ground projects.” (Q17)</p>
	<p>“We are often challenged to find funding for advocacy work. The ability to take action is a powerful motivator and is critical to engaging individuals and communities to improve water quality.” (Q10)</p>
<p>Small Organizations, Training, and Social Marketing</p>	<p>“I think the train the trainers approach can be useful, but have generally found that advice/workshops on how to do it has been very amateurish, and somewhat condescending to both the prospective trainees and the target population. / / good resources from experienced folks who really know how to engage folks in a learning/doing process would be welcome.” (Q17)</p>
	<p>“It would be helpful if we were given more information on the results of social marketing on common issues, rather than having to do it ourselves. It seems really inefficient to have multiple little groups trying to identify barriers—there has to be a lot of similarity. It would be easier to identify unique situations and test those.” (Q10)</p>
<p>Increased Organization Collaboration</p>	<p>“I think many "canned" programs could be developed to the 80% state, and then tailored to the particular organizational and watershed issues of the user. Most conservation organization have very similar objectives and goals and similar community environments and challenges. The program development, evaluation, and implementation could be executed by a "professional" leadership cadre with volunteers from the organization to give it a local flavor.” (Q17)</p>
	<p>“It would be nice to have a comprehensive list of all of the organizations and groups that are currently protecting the Bay, with their contact information.” (Q17)</p>
	<p>“Reporting on projects is not as important as stating what the methodology was and the steps to success. All too often this is neglected and webinars on these programs just state what was done and rarely state how (the steps) to getting it to work.” (Q17)</p>

Table 6 cont.: Samples quotes that demonstrate major themes seen throughout survey responses
(See Appendix 5: Survey Instrument for Survey Questions)

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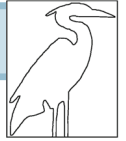


Figure 10: Information and experiences informing respondent organizations' EOP design

Behavior Change Strategies

Respondents reported that a wide variety of behavior change strategies were used as part of their EOPs (Figure 11: *Respondent organizations' use of behavior change strategies*). Respondents indicated that their EOPs most frequently sought to increase audiences' "how-to" skills and least frequently incorporated extrinsic rewards. Within this context it is important to note that a number of respondents stated that they were "not sure" about whether or not their organizations' EOPs used the listed strategies (range: 3%-18%) (Figure 12: *Not sure of behavior change strategies use*), possibly reflecting their lack of familiarity with these strategies.

A potential lack of familiarity with behavior change strategies was also observed in the responses to an open-ended question that asked respondents to pick one of the identified strategies and to describe how their organization has used it as

part of their EOPs. Although the majority of respondents who answered this question (n=63, 58 %) gave appropriate examples (85%) (Table 7: *Samples quotes demonstrating understanding of behavior change strategies*), some shared examples that suggested they misunderstood these strategies (n=9, 15%) (Table 8: *Samples quotes demonstrating misperceptions of behavior change strategies*). The most commonly misunderstood strategy was the use of participatory programs, with respondents confusing this strategy with exposing audiences to hands-on experiences (n=7, 78%). Answers to this open-ended question were also analyzed to determine whether or not respondents appeared to intentionally use the identified strategies to change behavior. Slightly more than half (52%) of the examples suggested that they did not use strategies intentionally, while the remaining respondents' responses suggested that they did (Table 9: *Sample quotes demonstrating and not demonstrating intentional use behavior change*



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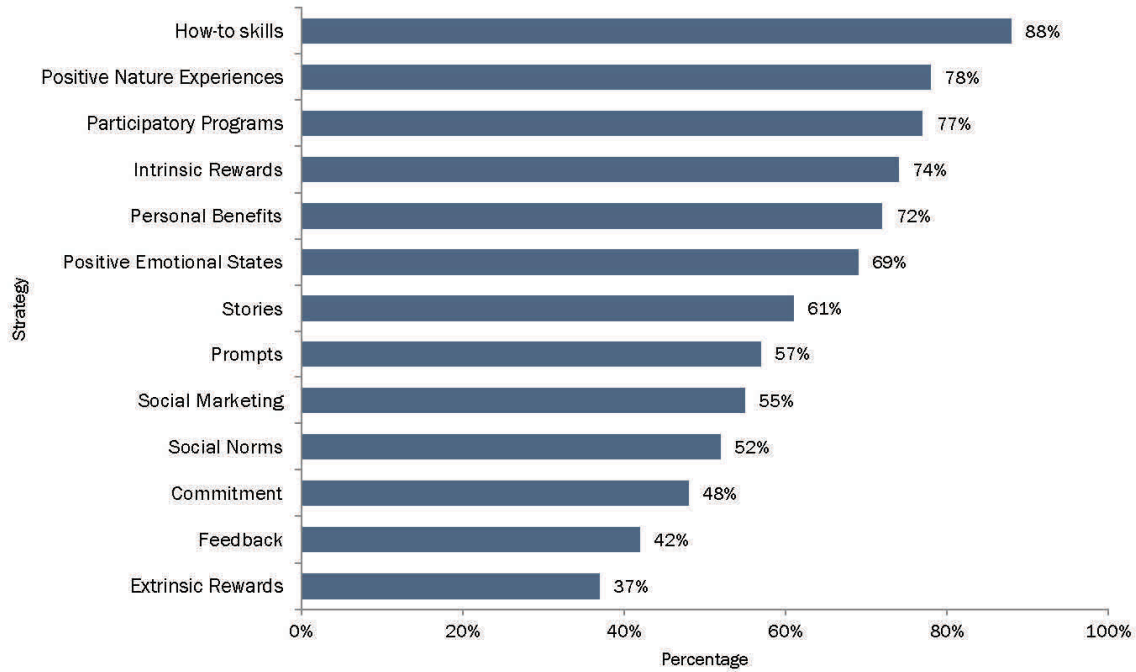


Figure 11: Respondent organizations' use of behavior change strategies

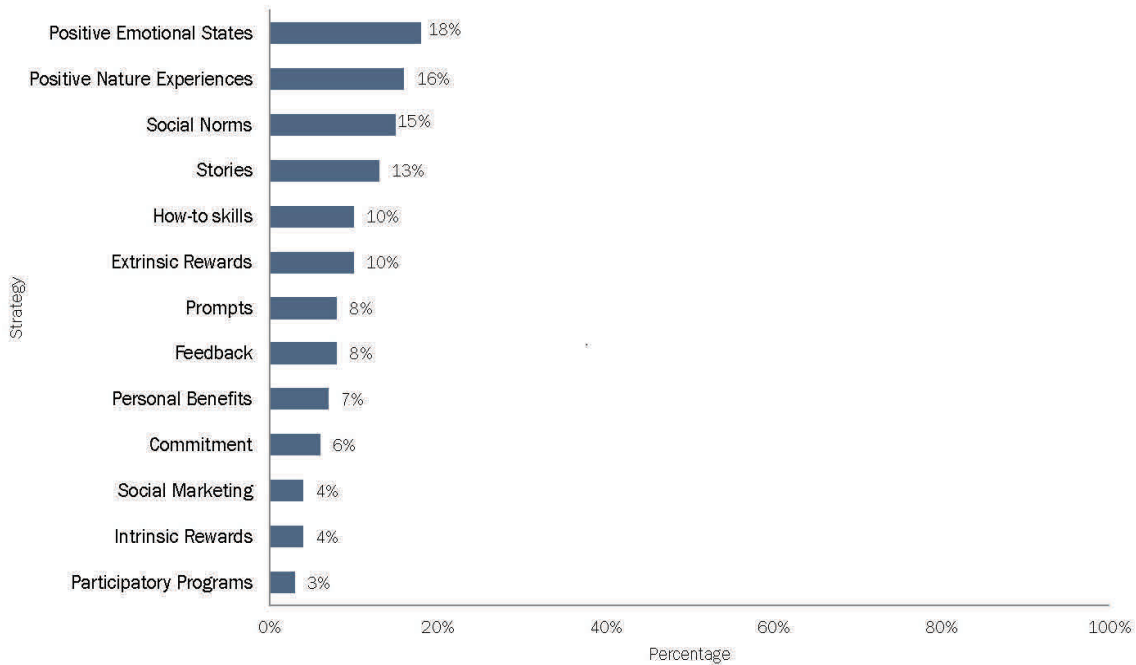
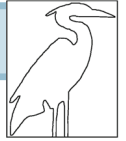


Figure 12: Not sure of behavior change strategies use



Strategy	Sample illustrative quotes
Appealing to Positive Emotional States	"...Through research, determined the barriers to changing littering behavior. Message developed is a positive message showing that the litterer will get rewards of a healthy community and family by not littering."
Commitment	"...we have viewers call in and make a pledge to help the Bay. We collect contact information during that call and are able to follow-up with them to ensure that they know how and where to fulfill their commitment.
Extrinsic Rewards	"We have used incentive awards i.e. Give sways, etc. For some people this is motivation to attend a workshop or fill out an application and attend a class but I don't know that it causes sustainable behavior change but it does draw more people to a program session."
Feedback	<i>NA - no respondent shared an example of using feedback as a strategy</i>
Highlighting Personal Benefits	"We have implemented a successful pet waste pick up program by providing bags and receptacles and appealing to their health concerns and concerns about water pollution."
Increasing "How-To" Skills	"After getting someone interested in improving their horticulture practices, we actually show them how to do it, are available to answer questions on the phone, and create web resources for them to refer to. So, hopefully we inspire and then provide the actual know how backed up by publications and long-term phone access to horticultural consultants."
Intrinsic Rewards	"We also make sure that landowners understand the...intrinsic rewards (having done good; having made a gift for the future)."
Participatory Programs	"Participatory programs have become a key part of [our organization's] education and outreach efforts. We offer a variety of these community based programs, to engage audiences on various topics. We see our role as facilitator and partner, but the members drive the program content."
Positive Nature Experiences	"Exposure to nature via hands-on activities is the core of all of our programs..."
Prompts	<i>NA - no respondent shared an example of using prompts as a strategy</i>
Social Marketing	<i>NA - no respondent shared an example of using social marketing as a strategy</i>
Social Norms or Modeling	"We try to incorporate Social Norms & Modeling in our conservation landscaping program, encouraging clients to invite friends and neighbors to help install their rain garden, cons. landscaping, etc. This reduces the labor costs to the clients, helps us market our product, and directly models the practice to a broader audience.
Stories	"We use stories of our [EOP] as a tool for building the strength of the volunteer community and as a recruitment tool. We publish these monthly in our volunteer letter and quarterly in our newsletter."

Table 7 : Sample quotes demonstrating understanding of behavior change strategies (Q13)



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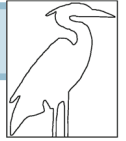
Strategy	Sample illustrative quotes
Participatory Programs (n = 7, 78 %)	“We held a contest for the design of a storm drain marker. The artist was awarded and featured on a billboard. Participation was on the low side. It is hard in this area to get participation.”
	“We have a long term program to encourage residents to monitor water quality. They collect information and water samples that we have analyzed at a University laboratory. The results are used annually to create a Report Card of water quality conditions.”
	“All of our projects include a community outreach component to get folks out to participate in the final stages of a project, e.g., planting native plants in a rain garden.”
	“Enlisting community volunteers to plant marsh grasses.”
	“Engaging volunteers to assist with reforestation efforts.”
Commitment (n = 1, 11%)	“Commitment best defines the strategy that our organization utilizes. First, grass root groups apply for small grants up to \$1,500 to plant trees. Once the application is submitted, it is reviewed by our committee. Once awarded the grass roots group must implement their project they provide a final report. Commitment is needed by all partners involved in the process.”
Feedback (n=1, 11%)	“We use feedback with group. Capstone projects. Finished projects are shared through presentations.”

Table 8 : Sample quotes demonstrating misperceptions of behavior change strategies (Q13)

Strategy	Intentional use	Not demonstrating intentional use
Appealing to Positive Emotional States	“...Through research, determined the barriers to changing littering behavior. Message developed is a positive message showing that the litterer will get rewards of a healthy community and family by not littering.”	“...we use people's enjoyment of the river to encourage stewardship so that they can continue to enjoy it.
Commitment	“...we have viewers call in and make a pledge to help the Bay. We collect contact information during that call and are able to follow-up with them to ensure that they know how and where to fulfill their commitment.	“...Taking pledges by phone during a live tv program has helped us greatly.

Table 9: Sample quotes demonstrating and not demonstrating intentional use behavior change strategies (Q13)

(continued on next page)



Strategy	Intentional use	Not demonstrating intentional use
Extrinsic Rewards	"Held photo contest of flooding and stormwater problems in a particular community to raise awareness for the need to do better stormwater management (and possibly to raise taxes or levy fees to do so)."	"We have used incentive awards i.e. Give aways, etc... this is motivation to attend a workshop or fill out an application and attend a class but I don't know that it causes sustainable behavior change but it does draw more people to a program session."
Feedback	<i>NA – no respondent answer</i>	<i>NA – no respondent answer</i>
Highlighting Personal Benefits	"We have implemented a successful pet waste pick up program by providing bags and receptacles and appealing to their health concerns and concerns about water pollution."	<i>NA – no respondent answer</i>
Increasing "How-To" Skills	"After getting someone interested in improving their horticulture practices, we actually show them how to do it, are available to answer questions on the phone, and create web resources for them to refer to."	"We teach outdoor skills in a fun but slightly competitive daylong program. It's a positive nature experience that increases how to skills..."
Intrinsic Rewards	<i>NA – no respondent answer</i>	<i>NA – no respondent answer</i>
Participatory Programs	"...With all of our on the ground restorative programs the goal is to engage, train, motivate and turn the project over to a community/local group."	"All of our projects include a community outreach component to get folks out to participate in the final stages of a project, e.g., planting native plants in a rain garden..."
Positive Nature Experiences	"...Lead 100 volunteers at tree planting events. Working together in large groups to complete a large project is extremely satisfying for all participants. Participants then learn what they can do within their community and at home from planting trees to becoming an educated consumer, "voting with their forks" and purchasing local food grown by sustainable farms."	"...We use kayak trips, nature walks, and outdoor volunteer opportunities to make people feel connected to their environment. If people get to kayak on the river, they are more likely to care about what goes into the river."
Prompts	<i>NA – no respondent answer</i>	<i>NA – no respondent answer</i>
Social Marketing	<i>NA – no respondent answer</i>	<i>NA – no respondent answer</i>

Table 9 cont.: Sample quotes demonstrating and not demonstrating intentional use behavior change strategies (Q13)

(continued on next page)



Strategy	Intentional use	Not demonstrating intentional use
Social Norms or Modeling	“We try to incorporate social norms & modeling in our conservation-landscaping program, encouraging clients to invite friends and neighbors to help install their rain garden, cons. landscaping, etc. This reduces the labor costs to the clients, helps us market our product, and directly models the practice to a broader audience.”	NA – no respondent answer
Stories	“[Local watershed groups] were part of a special panel discussion presentation to the audience where they gave personal accounts (Stories) of how their own programs have gone. They described the pros & cons and the barriers they had faced trying to motivate their neighbors to change behavior and participate in conservation.”	“We use stories of our [EOP] as a tool for building the strength of the volunteer community and as a recruitment tool. We publish these monthly in our volunteer letter and quarterly in our newsletter.”

Table 9 cont.: Sample quotes demonstrating and not demonstrating intentional use behavior change strategies (Q13)

strategies).

Regarding ways in which respondents learn about behavior change strategies, the majority reported learning about them through professional experiences, although many also identified workshops, websites, and sources other than those listed, such as interactions with other organizations

via networking or collaborations (Figure 13: How respondents learned about behavior change strategies). In contrast, relatively few respondents indicated that they learned about behavior change strategies through academic research, courses, or webinars.

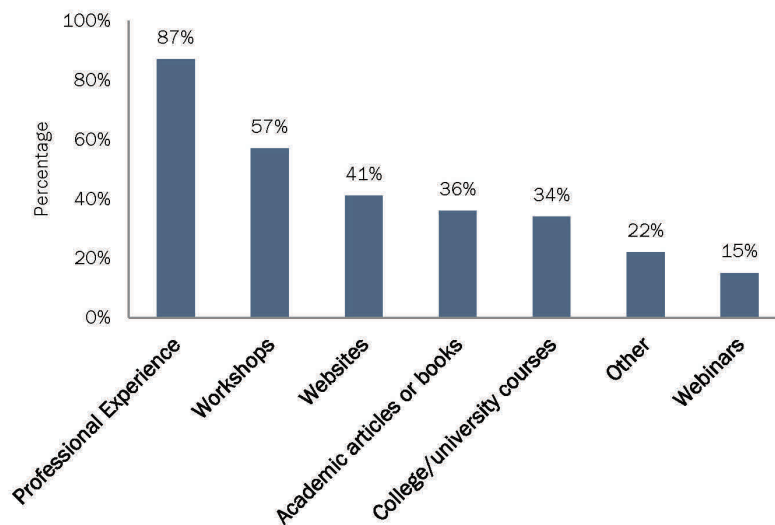
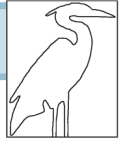


Figure 13: How respondents learned about behavior change strategies



Challenges respondents' organizations face in motivating audiences to protect the Bay

Respondents were asked a series of closed-ended questions and one open-ended question to assess the perceived challenges they face in motivating audiences to protect the Bay.

Responses to the closed-ended questions identified challenges related to recruiting audiences, evaluation, and the use of social marketing and academic research.

Although only about one-third of respondents indicated that they have difficulty reaching or recruiting audiences (35%), a much greater number believed that they have difficulty reaching or recruiting audiences that are not already committed to protecting the Bay (53%). A similar number also felt that they needed greater participant turnout to fully achieve the goals of their EOPs (51%).

Relatively few respondents indicated that they do not have the knowledge or skills to conduct evaluations of their EOPs (20%). A greater percent, however, suggested that they do not have the necessary resources to evaluate their EOPs (47%). These perceptions matter because respondents who felt they had the skills and resources to evaluate their programs were more likely to conduct evaluations. For example, respondents who felt they had the skills to evaluate were more likely to pilot test ($\chi^2 p < .01$; $r = .325$, Spearman's $p < .01$), conduct a post program evaluation ($\chi^2 p < .01$; $r = .231$, $p < .01$), complete an internal evaluation ($\chi^2 p < .001$; $r = .264$, Spearman's $p < 0.01$), and use evaluation results to improve their EOPs ($\chi^2 p < 0.001$; $r = .274$, Spearman's $p < 0.01$). Similarly, respondents who perceived having the resources to evaluate were more likely to conduct an internal evaluation ($\chi^2 p < .05$; $r = .251$, Spearman's $p < .05$) and complete a post-program evaluation ($\chi^2 p < .05$; $r = .264$, Spearman's $p < .01$).

Regarding other challenges in motivating audiences to protect the Bay, a substantial number of respondents felt that social marketing was too

resource intensive for them (36%). In addition, over a quarter of respondents felt that academic research was too theoretical to apply to their EOPs (27%).

Responses to an open-ended question about the challenges they faced in motivating audiences to protect the Bay ($n=64$, 59%) identified challenges similar to those identified as part of the closed-ended responses, as well as additional ones ([Table 10: Examples of responses demonstrating challenges respondents' organizations face](#)). Most of the open-ended responses focused on concerns over limited financial resources, followed by difficulties of reaching audiences "outside the choir", and challenges of changing behaviors in general—in particular, the lack of connections that audiences made between their behaviors and the environment. Additional challenges included restrictions based on funders' requirements and others such as challenges associated with program evaluation.

Respondents' needs and preferences

Respondents were asked to express their preference for several closed-ended question options to assist their organizations in improving EOPs with the goal of behavior change.

More than half of respondents wanted more learning opportunities about how to evaluate EOPs (63%), how to apply academic research to their EOPs (53%), and how to incorporate social marketing into their EOPs (52%). Furthermore, the majority felt that they could benefit from more opportunities to learn from the experiences of other organizations (73%). Interestingly, respondents who wanted to learn more about academic research on behavior change were more likely to already be using academic research to inform their program design ($\chi^2 p < .05$; $r = .333$, Spearman's $p < 0.01$). Therefore, respondents not currently using academic research may be more resistant to using academic research than other types of new learning opportunities.

Respondents indicated that they also would like more opportunities to learn about how they could



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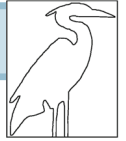
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Challenges	Sample illustrative quotes
<p>Need more resources, such as money, staff, volunteers, time and/or location where programs are run (n = 31, 48 %)</p>	<p>“More staff for outreach to educate landowners and encourage them to participate in restoration projects. Plenty of volunteers out there to plant trees.”</p>
	<p>“We need more time to evaluate our programs and pilot programs. So often we are pulled in several directions to complete other programs or projects and we [don’t] critically look at past programs.”</p>
	<p>“Funding is so scarce and makes it challenging to instigate collaboration instead of being in competition for limited funds”</p>
	<p>“Lack of financial resources and time to engage in design and evaluation. It's a catch 22 because limited resources make it critical to get best bang for our buck, but can also tempt program coordinators to skimp on research, planning, field testing, evaluation, etc.”</p>
<p>Difficulty reaching audiences “outside the choir”. Demonstrate need for the ability to reach out to, communicate with, and/or target culturally diverse audience, e.g. urban and/or minority audiences. (n = 13, 20%)</p>	<p>“Getting past those who have self identified as outdoor enthusiasts and reaching all the rest. Conservation often does not take into account what it has in common with other peoples needs.”</p>
	<p>“Being able to reach non-white, non-Middle class, non-college educated audiences”</p>
<p>Bay residents do not connect human actions with impacts on the watershed (n=9, 14%)</p>	<p>“People in Western MD have not yet made the connection between their activity and the health of the bay. If we can make them realize this connection, developments can be made”</p>
	<p>“This is true of many conservation organizations who are trying to "save" our tributaries - the originating sources of the major pollution issues facing the Chesapeake Bay. Bringing the private property owners on board, including whole communities is essential. The Bay primary source of pollution is private property. Government cannot fix it - not enough resources, knowledge, or trust of the taxpayers.”</p>
<p>Funders’ requirements for EOPs limit the ability of outreach efforts to motivate people (n=9, 14%)</p>	<p>“Too often funds are available for specific projects with a beginning and an end. True Bay stewardship has no end in sight. We are often short on infrastructure funding that is often the bedrock of solid, productive progress.”</p>
	<p>“We have limited unrestricted funds to support staff needed to plan and carry out EOPs.”</p>

Table 10: Examples of responses demonstrating challenges respondents’ organizations face (Q10)



incorporate behavior change strategies into their EOPs (Figure 14: *Strategies respondents' want to learn more about*). The majority were interested in learning more about all of the strategies. Respondents were most interested in participatory programs and social marketing and least interested in learning more about extrinsic rewards and commitments as strategies. In addition, respondents were most interested in learning about these strategies through a workshop (74%), followed by a website (63%) and a webinar (53%). If respondents were interested in learning through a website, they were then asked to prioritize potential features. The majority of respondents desired a downloadable strategy guide and additional information on academic research (Figure 15: *Desired features of a website providing information about how to foster ERBs through EOPs*). An interest for more training, particularly on social marketing from experts who understood the community, was also expressed in answers to an open-ended question (Table 6: *Sample quotes that demonstrate major themes seen throughout survey responses*).

Finally, over half of respondents felt that

funding for evaluation (65%), workshops and training on evaluation (65%), one-on-one evaluation consulting (64%), and information on how to measure changes in outcomes (63%) would be helpful in evaluating their organizations' EOPs.

In response to an open-ended question about what else might help improve EOPs, additional funding was identified most frequently (n=8, 43%), followed by interest in collaboration with other organizations. Concerns suggested that there may be a number of under-funded organizations and strong competition between groups for the limited funding available for EOPs (Table 6: *Sample quotes that demonstrate major themes seen throughout survey responses*). Needs related to evaluation and reaching audiences traditionally underrepresented in environmental outreach and engagement were again identified in response to this question as well (Table 6: *Sample quotes that demonstrate major themes seen throughout survey responses*).

Discussion

This study was conducted to learn about the current practices, challenges, and needs of

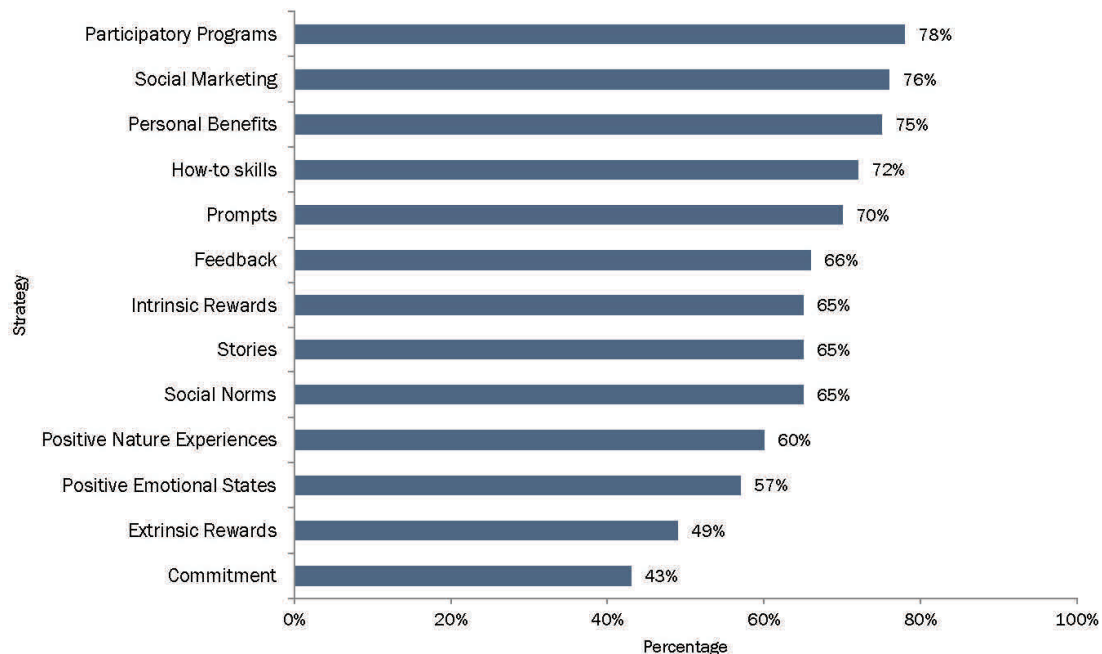


Figure 14: Strategies respondents' want to learn more about

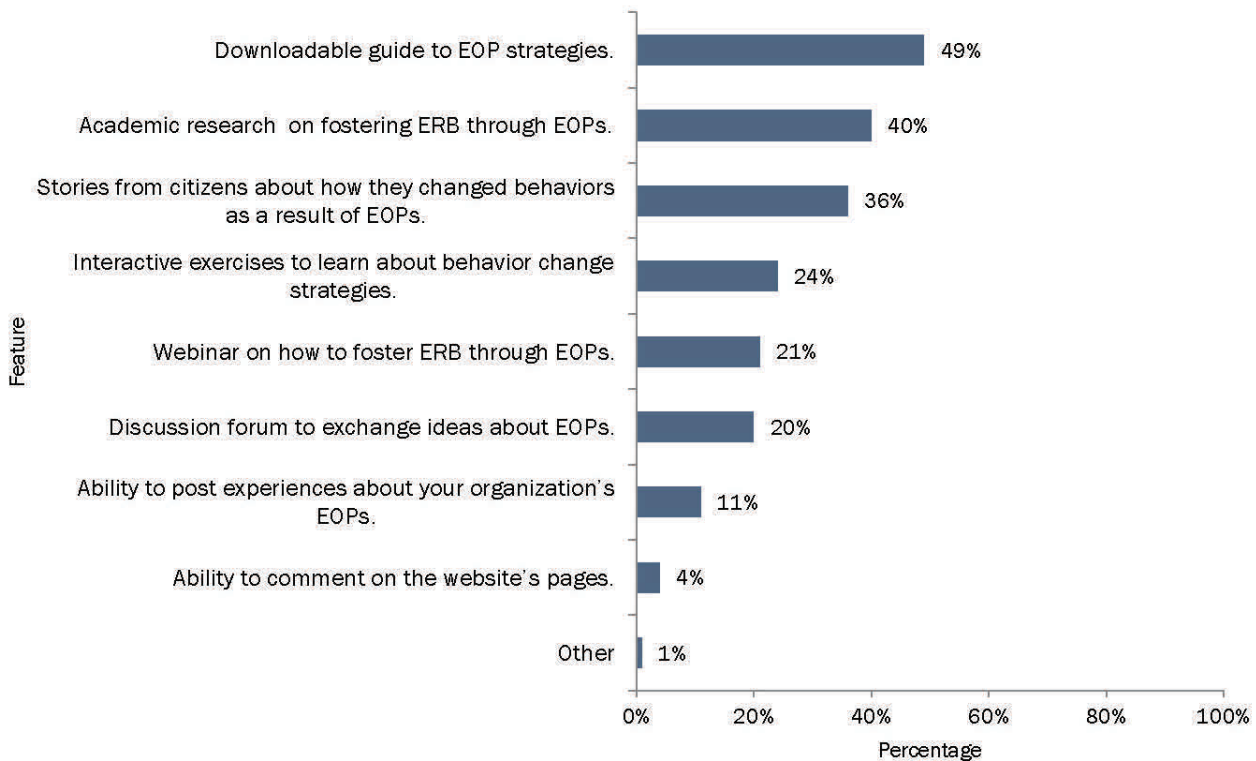


Figure 15: Desired features of a website providing information about how to foster ERBs through EOPs

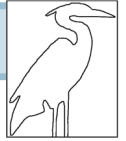
organizations implementing EOPs designed to change individuals' behaviors that affect the Bay. Below we summarize some of the main findings, provide suggestions for how funders can further support and improve such EOPs, describe our study's limitations, and offer recommendations for future research.

Main Findings

The majority of respondents' EOPs seek to change individuals' behaviors that affect the Bay. Although a number of respondents' EOPs seek to do so in ways that have been supported by research, results also suggest that many respondents' EOPs are designed based on misperceptions about how to foster behavior change. For example, many respondents believe that by providing positive nature experiences, individuals' connections to the Bay will be strengthened, which in turn is expected to result in actions that protect the watershed. Although ERB

have been related to individuals' connections to nature, research also suggests that this relationship is not necessarily a causal one (Mayer & Frantz, 2004). While an individual's connection to nature may have some relationship to their level of ERB, literature has not yet demonstrated that this is a particularly strong relationship. Other factors, such as social influences or skills, may be much stronger determinants of ERB and thus, possibly more important influences to leverage in EOPs (Hungerford & Volk, 1990; Cialdini, 2001). EOPs may therefore be more effective in fostering ERB if they are based on research-based strategies other than, or at least in addition to, ones focused on connecting humans to nature.

Moreover, the extent to which research-based behavior change strategies are currently being intentionally incorporated into EOPs appears limited. For example, responses suggest that EOPs may be incorporating a mix of behavior change strategies,



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but only about half of respondents are using these strategies intentionally. This suggests that respondents may not understand the impact that these strategies can have on behavior. Given this lower level of intentionality, many respondents are likely not maximizing the potential impact of strategies, consequently limiting the capacity for effective behavior change EOPs.

Program “best practices”, such as audience targeting and assessment as well as program evaluation, are another essential element to successful EOPs (McKenzie-Mohr & Smith, 1999; Braus, 2009). Although many respondents’ EOPs are based on a series of best practices, these practices also need to be implemented with the intention of changing behavior to increase EOP effectiveness. The majority of respondents said they target audiences and evaluate their EOPs. However, only half are using data collected from their audiences to inform their program design, implying that respondents may not be using audience information to customize their programs. Furthermore, less than half of respondents are using evaluation to inform their program design, indicating that evaluative results are not widely used to improve program development over time. These results suggest that best practices may be challenging to implement, largely because many organizations have limited resources and/or little guidance for how to apply these results for improving programs.

In addition, respondents face other challenges in developing, implementing, and evaluating EOPs. While respondents reported being able to recruit their traditional audiences, they indicated difficulties with reaching underrepresented audiences that include communities of color, low-income communities, and individuals who are not already concerned about and engaged in environmental issues. Since more than half of respondents reported knowing their audience’s barriers and benefits to ERB, respondents may lack the skills to correctly collect or make use of this information. In light of these significant challenges,

respondents also felt that they might be trying to do too much with too little.

Importantly, respondents appear eager to learn more about behavior change strategies and program best practices through a variety of means. Respondents were particularly interested in learning from other organizations, suggesting that EOP professionals could be encouraged to share “lessons learned” from their programs with others. Respondents also had a strong desire to learn more about social marketing and participatory programs. This likely reflects a strong desire, or at least recognition of the need, to design programs in a more strategic manner. It may also reflect that participants are interested in both the structured approach of social marketing and the community-inclusive approach of participatory programs. After collaboration, respondents were most interested in learning about these topics through a website that includes guidance on how to use specific behavior change strategies as well as information on relevant academic research, shared in an accessible way.

Suggestions for Funders

Funders, like the CBT, who want to support environmental professionals in developing and implementing EOPs that have the potential to foster ERB are encouraged to consider the following recommendations:

Encourage environmental professionals to be intentional in their use of behavior change strategies

A relatively large number of respondents are currently not intentionally using behavior change strategies. That is, they may be using relevant strategies in their EOPs, but may not doing so effectively to change behavior. One way funding organizations may be able to support more strategic EOPs is by requesting that applicants include justifications for their proposed strategies. Such justification could come from conservation behavior



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research or program evaluations demonstrating that similar strategies were effective at reaching the desired goal. Funders could also request that applicants describe how and why specific behavior change strategies will be implemented. These requests could encourage and incentivize strategic thinking, as it demonstrates that the funder places a value on planning effective behavior change EOPs. In addition, requiring a logic model or other visualization of projects' inputs, outputs, outcomes, and impacts could further support intentional strategy use.

Offer professional development and resources to strengthen environmental professionals' ability to develop, implement, and evaluate outreach programs

One important topic for future professional development is building audience assessment and evaluation skills. While respondents are clearly interested in attempting these practices, many who have done so have not been successful at taking advantage of the program improvements that could result. A specific module of a professional development workshop could focus on skills such as surveying an audience, developing a logic model, and incorporating formative and summative evaluation into a program. These workshops could also address respondents' concerns about best practices, such as how to conduct evaluations on a tight budget. With these skills, EOP professionals could develop more thoughtful, goal-oriented programs.

Another important professional development topic would be how to incorporate social marketing, participatory programming, and other frameworks into behavior change EOPs, especially for small and/or resource-limited organizations. Use of a framework such as social marketing or participatory programming would help increase strategic program planning by guiding practitioners through program design. Incorporating how to apply both behavior change frameworks is important for maximizing the best practices of business-type marketing and community-focused programming. It may be

particularly useful to require professional development for organizations conducting behavior change programs for the first time.

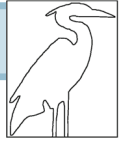
In addition to professional development, EOP professionals could likely benefit from increased awareness and use of the various EOP resources. The Biodiversity Support Program, WWF, the EPA, Conservation International, and The Nature Conservancy have developed helpful step-by-step guides for developing EOPs that could improve the effectiveness of programming (Byers, 2000; Matarasso, 2009; National Audubon Society, 2011; Tetra Tech, Inc, 2010; Warburton, 2008) ([See Appendix 7: Additional Resources](#)).

There are also free resources that can help EOP professionals evaluate their programs. These include My Environmental Education Evaluation Resource Assistant (MEERA) and NOAA's California B-Wet Program evaluation (Zint, 2010; Office of National Marine Sanctuaries, 2007).

A research-based guide for applying behavior change strategies could also be helpful, especially if it includes local examples of EOPs and program evaluation results. ([See page 43: Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices](#))

Facilitate collaboration among outreach practitioners

Throughout the survey, collaboration received high ratings from respondents, both in that they already use it and would like to learn more from other organizations. Therefore, leveraging a practice that EOP professionals value and use could be crucial for motivating professionals to attempt novel behavior change methods for EOP development. Funders could share examples of local organizations that are using behavior change strategies with a focus on how these strategies enhanced EOP effectiveness. Examples might include highlighting what worked, explaining how to incorporate these strategies into programming, and showing specific examples of organizations meeting behavior change



goals. Ultimately, organizations need the procedural knowledge and relevant justification for improving their program design. In addition, prioritizing grants that include elements of collaboration could encourage organizations to work together, while also reducing competition for limited funding. In order for such collaboration to be effective, funders would have to find ways to incentivize working together, such as greater available funds for collaborative EOPs or requirements to present evaluation findings at conferences or online. Funders would also have to be cognizant of creating power imbalances between larger and smaller organizations, ensuring that participating parties benefit in equitable ways. Soliciting feedback from both organizations throughout the process and piloting collaborative grant programs may assist funders in dealing with such power relationships.

Limitations

This study encountered some measurement issues that are important to highlight. To begin, definitions of “motivation”, “behavior change”, and various ERB strategies were needed in the survey to ensure consistency of understanding among respondents, as the team encountered multiple interpretations of these terms during the interview process. Therefore, the team added links to definitions of key words and strategies within the survey. While there was no way to tell if everyone used the links, the majority of the qualitative responses indicated an understanding of the strategies. To further promote clarity and understanding, the project team also used phrasing that was consistent with how the CBT frames particular terms in their RFP.

Moreover, in an open-ended question within the survey, respondents were only asked to explain how they use one behavior change strategy, in an effort to make the most of respondents’ time and increase survey completion. However, due to this choice, it is difficult to say if organizations are also incorporating other strategies into their EOPs effectively to foster ERB.

Lastly, this study lacked a truly organizational perspective, as only one or two individuals from an organization completed the survey. If the study had looked at organizations as a whole, recruiting multiple staff members and looking in-depth at a variety of outreach programs, the results would be more likely to speak to how the entire organization functions, rather than the single viewpoint of an EOP professional. To address this, the team was careful to contact the most appropriate employees at each organization, generally those who had previously applied for the CBT’s OCE grant on behalf of their organization, or others who were currently implementing EOPs. The team also framed survey questions in terms of requesting the opinion of the organization as a whole, rather than the opinions of the individual filling out the survey.

Further Research

To the best of our knowledge, this is one of the first studies to explore EOP professionals’ practices, challenges, and needs as related to outreach programs designed to foster changes in individuals’ ERB. As such, the study presents preliminary insights that should be confirmed through additional studies of EOPs conducted by other organizations and in other contexts. Case studies of organizations to explore how they design, implement, and evaluate EOPs designed to foster ERB, the challenges they face in doing so, and how they overcome these challenges would also provide useful insights. Finally, additional research on interventions designed to strengthen EOP professionals’ understanding and use of behavior change strategies would also be valuable.

Overall, this study demonstrates that there are a multitude of opportunities for funding organizations to better support EOP professionals working to foster ERB. Together, funders and EOP professionals can help strengthen environmental stewardship through strategic behavior change programming.



Funders' Priorities Summary

Introduction

Governmental, non-profit, and for-profit funders have had a long history of providing financial support to environmental organizations, particularly via grants. This type of funding can directly influence the priorities, goals, and strategies of environmental programming as organizations design programs to meet the funder's requirements and perceived values. Therefore, funder involvement has been shown to have both positive and negative effects on applicants' programs (Delfin & Tang, 2008; Schwartz & Austin, 2009).

Schwartz and Austin conducted a literature review of 328 journal articles that address important elements in the relationship between nonprofit organizations and their funders. Their results highlighted that funders can provide technical assistance and help disseminate information, increasing the effectiveness of organizations' programs (Schwartz & Austin, 2009). Although nonprofits have historically been responsible for reporting on how funds were used, over the last several decades, accountability to the funder has increased due to a growth and change in the reporting requirements of grants (Schwartz & Austin, 2009). Additional accountability requirements can benefit nonprofit organizations by providing information that helps them make resource allocation decisions, improve service delivery and performance, and strengthen the organization as a whole.

There are also negative consequences associated with accountability requirements. Articles reviewed by Schwartz and Austin noted that under stricter requirements, some nonprofits deviated from their mission, undermined their relationships with their funders, and lost motivation to learn as an organization and adapt to a changing world. In addition, nonprofits often face an absence of concrete performance standards and lack of consensus between various funders regarding the definition of "effective service outcomes," which can make accountability an additionally challenging

process for nonprofits. However, properly executed program evaluation can facilitate funder and organizational decision-making, monitor program effects, and promote organizational learning and adaptation, overcoming many of the potential negative consequences (Schwartz & Austin, 2009).

As a major environmental program funder in the Maryland region, Chesapeake Bay Trust (CBT) wants a better understanding of their grant applicants' perceptions of funders' impacts on programming. CBT is an organization that seeks to have a strong, positive, and mutually beneficial relationship with its grantees, and learning more about their perceptions is part of that ethic. In light of this desire, the project team asked several questions in the survey focused on perceptions of funders' priorities. These questions were not specifically focused on CBT, but on funders in general, as part of the larger context of the survey as an independent assessment of organizations, rather than a CBT-focused evaluation. However, as one of the largest funders in the area, CBT can use the following findings to clarify implicit expectations and messages organizations perceive in their Request For Proposals (RFPs). In doing so, CBT's RFPs will more fully reflect their intentions and desires for grant programs as well as enhance applicants' program design. In addition, an understanding of existing perceptions will allow CBT to directly address misunderstandings and prioritize promoting perceptions that are not prevalent among organizations. More generally, an awareness of applicants' perceptions of funders' priorities can expose the benefits and challenges that these perceptions may create for grantee programs and bolster CBT's ability to support present and future grantees.

Results

The majority of respondents reported that funders have a range of priorities (Figure 16: *Respondents' Perceptions of Funders' Priorities*). Over three-quarters of respondents (77%) agreed that funders prioritize motivating people to adopt

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environmentally responsible behaviors, while 69% also agreed that funders value reductions in key pollutants entering the watershed. Interestingly, those that agree with funders valuing behavior change were more likely to agree to having behavioral objectives for their programming ($\chi^2 p < 0.022$, Spearman's $r = 0.183$, $p < 0.025$). In addition, more than 7 in 10 respondents (72%) felt that funders prioritize reaching/recruiting as many participants as possible. Respondents also identified other perceived funders' priorities such as: non-pollutant quantifiable outcomes, education and awareness, focus on engaging underserved populations, share-ability of a program, and public perception of the funder. Only one-third of respondents (32%) believed that funders' priorities limit watershed outreach programming. However, nearly three-quarter (71%) of respondents felt that a longer funding period would improve the impact of their programming.

may present challenges for designing programs with focused goals. Funders should ensure that they emphasize only one main priority for each grant program. To promote clarity of purpose to the applicant, funders could describe the singular priority through both text and visuals. A flow chart of how the grant's priority plays into the funder's primary mission could also reinforce this priority and its intended impact.

However, since the survey questions were focused on funders in general, rather than a specific funder, the numerous priorities may also reflect a variety of priorities between various funders in the region. Greater collaboration between funders to define their top priorities could enhance the development of targeted and robust programming. Applicants would not need to drastically reshape their program to apply for more than one grant, which organizations may feel is necessary to secure funding in an increasingly competitive world.

Discussion

Multiple Priorities

Given the results, it is likely that respondents perceive funders as having numerous priorities. This

Influence on Applicant Organizations

The positive correlation between the perception of funders valuing behavior change and applicants designing programs with behavioral

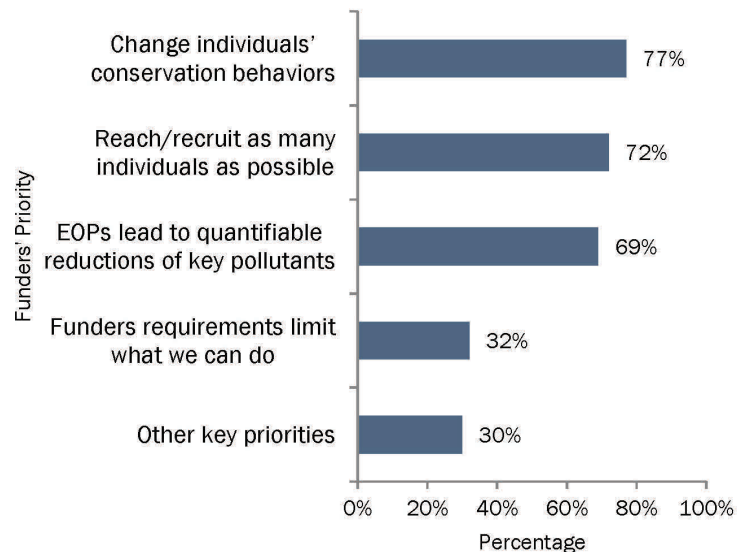


Figure 16: Respondents' perception of funders' priorities



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objectives suggests that funders do influence the focus of grant projects, as supported in the literature. Funders' priorities encourage organizations to engage in certain practices that they may not have otherwise pursued (Delfin & Tang, 2008). Outside of the survey results, the CBT's influence on grantees is further revealed by the growth of Outreach and Community Engagement (OCE) behavior change proposals with the addition of the specific Behavior Change Track. This change by the CBT seems to have motivated organizations to apply behavior change campaign strategies to their adult outreach programming, furthering supporting the idea that funders can exert a strong influence over organizations. Given these results, funders could develop ways to further leverage their influence to enhance strategic design, implementation, and evaluation of programs. The CBT's biannual revision of their RFPs to incorporate the current needs of applicants and the watershed highlights one example of how the CBT already leverages their expertise to benefit applicants. Recognition of the potential positive impact of funders is an important first step to considering ways that funder influence can empower applicants. In addition, funders could further demonstrate the importance of organizations as representatives of their locale's environmental interests, concerns, and needs by including their feedback in the shaping of grant priorities. The involvement of such organizations could help further foster a positive and supportive relationship between funder and applicant.

Limiting Factors

Although only a third of respondents agreed that funders' priorities limit their programming, these priorities can still be interpreted as potentially constraining. Respondents' perception that funders desire programs to reach as many participants as possible can conflict with developing targeted and audience-specific programs. A focus on quantity of participants rather than quality of a targeted program may jeopardize the potential impact of a program. To

help rectify this perception, funders could include an example in the RFP that exemplifies their priority of quality programs.

Another area where the survey data suggests respondents may feel limited by funders' priorities is through the timelines of grants. Different grants demand unique timelines based on the objectives of the grant. For example, the time needed for a program to encourage one to adopt an environmentally responsible behavior would likely be longer than a grant seeking to increase one's awareness. The realistic timeline for achieving the goals of a behavior change program may be longer than a year (Zint, 2012). A longer timeline may also influence the development of more robust programming. From a funder's perspective, a longer funding timeline involves a delicate balance between accountability of finances and feasibility of work over the allotted timeline. The CBT has begun to address this balance through their Behavior Change Program Track, which allows organizations to apply for earlier data collecting stages with the idea that they will then apply later to get support for program implementation. This division of grant goals into phases may make shorter timelines more manageable for applicants.

Overall, greater dialogue between funders and organizations regarding these topics could help promote greater depth of understanding between both parties and ultimately strengthen environmental grant programs.



Program Tools

Introduction to *Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices*

Throughout interviews and survey results, the team saw that there was a strong need for a guide on behavior change strategies. There is a wealth of academic research on influencing environmental responsible behavior (ERB) that outreach practitioners could benefit from, but our survey results showed that academic research only informs the program design of about a third of respondents (See page 20: [Survey Results](#)). While personal experience and collaboration of others should be an important part of program design, the use of academic research could enhance the success of programs by guiding practitioners to employ strategies in intentional and effective ways. The team also found that utilizing academic research was too time and resource intensive for many organizations. In addition, survey results suggested that taking the initial step to use academic research might present a barrier for organizations (See page 20: [Survey Results](#)).

In light of these issues, the team developed and distributed a working draft of the following guide at the Chesapeake Bay Forum 2011. The goal was to create an easy-to-use, research-supported resource for grantees to improve behavior change programming, as well as to make academic research as user friendly as possible for outreach practitioners. At the Forum, the team received feedback from practitioners on the usefulness of the guide. Using that information, the guide was refined and improved to include more Chesapeake Bay-relevant examples

and updated research, as well as to reduce academic jargon.

Each strategy is provided with a definition, examples, a summary of the strategy's challenges, evidence of the strategy's efficacy, tips for successful implementation, and a Bay specific example of the strategy in action.

While this guide is rooted in a watershed context, it may also prove useful to other environmental outreach practitioners interested in behavior change programming. There are currently a number of useful guides, frameworks, and toolkits available that outline how to develop effective environmental outreach programs, yet the majority of these tools fail to include practical information on specific strategies to promote ERB.

Our guide can be used as a supplement to tools that seek to guide program design, implementation, and evaluation. This guide should not be used alone to design programs, as strategies should be situated inside a larger framework of outreach best practices to be most effective.

While the main focus in this guide is behavior change strategies, the team also created guides on two specific frameworks, Social Marketing and the Participatory Approach, (See page 23: [Frameworks for Strategic Program Design](#)) to introduce organizations to commonly used frameworks in the environmental outreach field. Finally, [Appendix 7: Additional Resources](#) succinctly summarizes several other frameworks and tools that may be used to inform environmental outreach programs.

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Strategies for Motivating Watershed Stewardship:

A Guide to Research-based Practices

Have you ever attempted to encourage a homeowner to cut back on lawn fertilizer use? Or a neighbor to pick up after his or her dog? How about motivating your coworkers to properly dispose of hazardous materials? Despite the fact that Chesapeake Bay Watershed residents are generally concerned about the Bay’s health, they continue to behave in ways harmful to the Bay and its local waters (McClafferty, 2001; Raabe, 2011). How can organizations in the Chesapeake Bay region overcome this disconnect between concern and action to encourage environmentally responsible behaviors (ERB) in local communities?

This document describes a variety of strategies that environmental outreach programs can utilize to foster ERB. In particular, Chesapeake Bay Watershed organizations can use this document to help inform the design and implementation of outreach programs. Please note that this is not a comprehensive list of behavior change strategies, nor will every strategy work with every audience. However, these particular strategies were included in this guide because their effectiveness in influencing ERB has been strongly supported by academic research, primarily in the conservation psychology field.

Organizations like yours are in an unparalleled position to encourage members of local communities to adopt ERB. We hope this guide will allow you to maximize such opportunities through the use of the following behavior change strategies.

STRATEGIES

Commitment	Positive Emotional States
Extrinsic Rewards	Prompts
Feedback	Social Norms
“How-To” Skills	Stories
Intrinsic Rewards	

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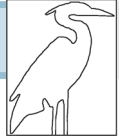
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Commitment



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1 Project Overview

1

Definition:

Using verbal or written agreements, such as pledges, to encourage people to adopt a behavior

Example:

Asking homeowners to sign a pledge to only use organic fertilizers on their lawns

Benefits:

- Commitment is an effective strategy for both short- and long-term behavior change (Lokhorst et al., 2011)
- Because people are socialized to favor consistency, they are more likely to prescribe to a new behavior that they have made a commitment towards (Cialdini, 2001)
- Commitment does not require extensive resources

Challenges:

- Research does not show why commitment works, nor what occurs in an individual's psyche that makes commitment effective (Cialdini, 2001)
- Group commitment is less effective than individual commitment
- Commitment does not necessarily change environmental attitudes (Werner et al., 1995)

Evidence:

- Commitment can alter one's personal norms, which can cause them to adhere to a new behavior (Lokhorst et al., 2011)
- Individual commitments made in a group of people that respect each other, such as neighbors, can create long-term change (Cobern et al., 1995)

Tips:

- Make the commitment an active process, such as by writing down the commitment (Werner et al., 1995)
- Make the commitment specific, straightforward, and easy to understand
- Attach the participant's name to the commitment
- Make the commitment conspicuous and public
 - Public commitments are shown to be more effective than commitments not

- shared with others (Lokhorst et al., 2011)
- Allow people to feel that they have made a commitment voluntarily and that it is internally motivated (See *Intrinsic Rewards*).
- Encourage participants to discuss their commitment with a friend or family member; persuading others to adopt a new behavior encourages the persuader to adhere to the behavior him/herself (Lokhorst et al., 2011 and Cobern et al., 1995)
- Regularly remind the participant of their commitment
 - For example, give the participant a physical take-home reminder (e.g. refrigerator magnet) that can remind the participant of his or her commitment
- May be combined with other strategies, especially feedback, social norms, and intrinsic rewards.



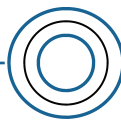
Commitment

Howard County Master Gardeners: Making ERB Stick

In an effort to encourage Howard County residents to use rain barrels and compost bins at their homes, University of Maryland's Master Gardeners Extension turned to personal commitments to help these two behaviors stick. Interested community members are given free rain barrels and/or compost bins for attending supply distribution days at the local landfill, learning how to install and use the barrel and/or bin, and signing a pledge that commits them to installing and using the barrel and/or bin at their home. These pledges require residents to publicly sign their names to a piece of paper that states explicit expectations of use for the free barrel and/or bin and a requirement to read supplementary directions for installation and use. The agreement also includes a contingency statement that stresses if the resident no longer wishes to use the barrel and/or bin, they are required to return the supplies to the county for recycling. Ultimately, this program effectively combines **commitment** with **"how-to" skills** to create a strategic behavior change program.



Master Gardeners at Rain Barrel and Composting Demonstration Event



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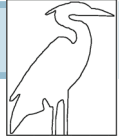
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Extrinsic Rewards



Definition:

Using money or prizes to motivate behavior or assist with high cost

Example:

Rewarding households that install a rain garden with tax rebates or providing free rain barrels at a training workshop

Benefits:

- Even when people are motivated to engage in a behavior, if the cost is too high, they will lose their enthusiasm or ability to act; however, if costs are brought down, this barrier can be eliminated (Thogersen, 1996)
- People are often resistant to behaviors that offer long-term benefits if the action is unpleasant in the short-term; increasing the benefits with a reward can help overcome that short-term discomfort (Allcott & Mullainathan, 2010)

Challenges:

- Financial consideration is only one potential motivation to behavior—for example, household monetary savings are possible with existing energy-saving technology, but such technology has not been widely implemented, despite advertisement of money saving benefits (Allcott & Mullainathan, 2010)
 - This suggests that despite an existing monetary motivation, people may still not perform the behavior, possibly due to a lack of information, “how-to” skills, or social norms
- When a reward is given in the form of payment for a particular action, once the reward is no longer given the level of behavior often returns to, or falls below, the level before the intervention (De Young, 2000)
- Particularly large rewards can overpower other reasons one might have for doing a behavior, such as enjoyment or social interaction, by making the action feel like work (Thogersen, 1996)
 - The definition of when a reward is “too large” is dependent on the participants. A child might find two dollars a large amount of money, while that amount would likely seem small to an adult

- There is little research on whether giving out free products (e.g. water bottles) increases behavior in the absence of other strategies

Evidence:

- Boyce and Geller (2001) conducted research that aimed to encourage students to give thank-you notes to people committing acts of kindness. For one group, a written commitment to hand out thank-you notes was combined with a reward given after the students reported engaging in the behavior (direct reward). In the other, a reward was given to students for signing the commitment sheet (indirect reward). The studies found that indirect rewards were somewhat more powerful and durable than direct rewards, likely because they increased sense of obligation within the commitment sheet (Boyce & Geller, 2001).
- Studies of programs built by the community that appealed to social norms and offered extrinsic rewards found that participation varied greatly between programs with the same extrinsic reward but different design and implementation. These results show that the same reward can have wildly different effects depending on program design and the effective use of strategies (Stern et al., 1985).

Tips:

- Should be used as a way to remove a barrier to behavior rather than a way to motivate behavior
- Pair with other strategies to encourage long-lasting change and the sense that doing the behavior is a “work”
- Can be successfully used to motivate individuals to take the first step to a new behaviors or to decrease the financial burdens of high-cost behaviors, such as those that require technology
- Can be offered with a pro-social reward, such as a donation to charity, to help to avoid the feeling of the behavior as “work” by offering an altruistic alternative (Bénabou & Tirole, 2006)



Extrinsic Rewards



A Rain Garden supported by the RainScapes Reward Rebate Program

Montgomery County DEP: The Price of Stormwater Management

As part of its Watershed Management Division's watershed restoration efforts, the Montgomery County Department of Environmental Protection set up a RainScapes Rewards Rebate Program. The program offers up to \$1,200 to residential properties and \$5,000 to commercial, multi-family, or institutional property as an extrinsic reward to lessen the costs of installing sustainable stormwater solutions on private property. The program works to restore watersheds and meet the requirements of the County's MS4 permit. The rebates lessen the costs to install technologies such as rain barrels, rain gardens, and permeable pavement, all of which can present a large upfront cost to property owners. The program also makes use of **commitment** forms to ensure upkeep of the technology. In addition, the program uses **social norms** through local signage about the installation, as well as a website that includes photographs and reports on successful projects in the area. Finally, "**how-to**" skills are given through reports on the website sharing lessons learned about installation by other community members. Overall, this program demonstrates the use of **extrinsic rewards** embedded within the context of a larger program using other strategies.

1 Project Overview

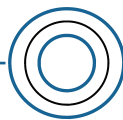
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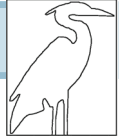
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Feedback



Definition:

Providing information about the level of success or need for improvement in response to a particular behavior

Example:

Supplying homeowners with information on the amount of water they have saved, or pounds of trash they have thrown away, in the past month

Benefits:

- Feedback can be formatted in a number of different ways: it can provide information on an individual's or a group's behavior, and it can compare one to oneself or to others
- Feedback can be self-monitored or monitored by an outside party
- Feedback works best for those who are well below a set goal (Abrahamse et al., 2005), such as very high consumers of energy or producers of waste

Challenges:

- For optimum effectiveness, feedback should be given frequently (Abrahamse et al., 2005)
- If individuals are already at or above a set goal, giving feedback that they are doing well can backfire, resulting in a decrease in behavioral performance (Abrahamse et al., 2005)
- Group feedback, while generally easier to implement than individual feedback, may make it difficult for individuals to know how they are doing and may hinder an individual's sense of obligation to take responsibility for his or her actions (De Young et al., 2011)

Evidence:

- A literature review of 38 feedback studies involving energy conservation shows that feedback can raise energy consumption awareness and result in reduced consumption of about ten percent (Darby, 2000)
- Providing a daily feedback tool was shown to increase visibility and saliency of electricity consumption and empower consumers to take action
 - Feedback resulted in an 8.1% reduction in electricity use versus a 0.7%

reduction in the control group (Gronhoj & Thorgersen, 2011)

- A study that involved posting a feedback sign on a college campus to encourage paper recycling increased pounds of paper recycled by 76.7% above the baseline period; when the sign was removed during the one-week follow up period, recycling remained 48.4% above the baseline (Katzev & Mishima, 1992)

Tips:

- Give feedback immediately after behavior occurs (Abrahamse et al., 2005)
- Make feedback as personalized/user-specific as possible (Darby, 2000)
- Make sure the information given in the feedback is clear and concrete (Darby, 2000)
 - For example, informing people *how much* more trash they recycled compared to their neighbors is more effective than just saying they recycled "a lot"
- Feedback works best, and is often perceived as more credible, when it is positive (De Young et al., 2011)
- Self-monitored feedback is less expensive than feedback from an external source, but requires that one be taught to self-monitor and may be less effective (De Young et al., 2011)
- Be sure the feedback message can be converted to units that are meaningful to the recipient (Ilgen, Fisher, & Taylor 1979)
 - For example, if giving feedback on electricity use, provide feedback in dollars rather than kilowatt-hours
- Feedback works better when combined with other strategies, such as prompts, social norms, or positive emotional states
 - For example, when used with prompts, behavior change was shown to occur more quickly than when it was given without prompts (De Young et al., 2011)



Feedback



Back River shoreline in 2005, before any organized clean up



Back River shoreline after the clean up on October 15, 2011

Back River Restoration Committee: Keeping Participants Informed and Involved!

The first thing you see when you visit Back River Restoration Committee's (BRRRC) website, savebackriver.org, is the total amount of trash, in pounds, removed from Back River's shoreline to date. And if you received their online newsletter for Spring 2012, you saw a photo of the shoreline before the organized cleanups began, followed by a photo of the pristine area taken in 2011.

These are both great examples of how organizations can use feedback as a way to change behavior within their target participants. BRRRC, a 501(c)3 nonprofit organization headquartered in Essex, MD, is "dedicated to restoring the tidal portion of the Back River watershed" (www.savebackriver.org). One of the ways they do this is by involving the local community in stream cleanups, tree plantings, and rain barrel workshops. According to Molly Williams, Project Manager, BRRRC also really places an emphasis on using positive emotions—"...with positive feedback people want to come out again. We try to personally thank everyone who comes out." This combination of **feedback** and **positive emotional states**, often combined with photos, really seems to be working well for BRRRC, who has had over 1,500 volunteers. In addition, BRRRC estimates that about 70% have volunteered more than once. Keep the feedback coming!

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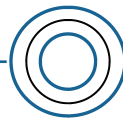
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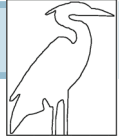
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“How-To” Skills



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Definition:

Information and/or training on how to carry out environmentally responsible behaviors

Example:

A hands-on composting demonstration that allows people to gain competence and confidence to do the behavior on their own

Benefits:

- Environmentally responsible behavior change often requires people to perform behaviors in which they are inexperienced in—“how-to” skills provide the ability to learn how to engage in new behaviors
- “How-to” skills can be the key difference between why individuals do or do not engage in a behavior (De Young, 1989; see Evidence below)

Challenges:

- How to perform a desired behavior may not be a significant barrier for participants
- Participants can have a range of skill levels that can be difficult to incorporate when trying to disseminate “how-to” skills
- Direct experience can be costly, difficult, or even impossible to obtain; it may also result in a negative experience that discourages behavior

Evidence:

- In a study by De Young (1989), the primary difference between recyclers and non-recyclers was not pro-recycling attitudes, satisfaction of being frugal, or belief that recycling was the right thing to do; the primary difference was their perceived difficulty of recycling—whether or not they thought they could actually perform the behavior
 - Knowing *why* one should do a behavior does not mean that one knows *how* to do the behavior
- In a study by Vining & Ebreo (1990), recyclers were much more knowledgeable than non-recyclers about buy-back programs, drop-off locations, and types of recyclable materials; i.e., “how to” knowledge and skills about recycling

Tips:

- “How-to” skills may be most effective if provided to an individual who intends or is ready to do the desired behavior, but is not sure how to go about doing so (De Young 1993)
- May be portrayed verbally as well as physically, allowing participants to perform the action (Monroe & Kaplan 1988)
- Appeal to a range of different skill levels by providing the option to receive additional information or experiences
 - Dissemination of skills can also involve empowering those with higher skill levels to become the “teacher” and train those with less experience
- “How-to” skills are best conveyed if you know your target audience—you can learn about their barriers and skill level for the behavior through the use of interviews, surveys, or other forms of primary research
- May be most effective if combined with other strategies, such as prompts



“How-To” Skills

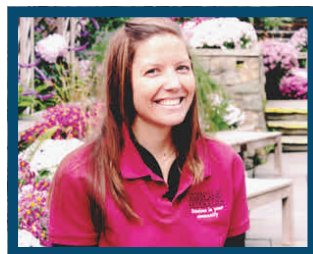
University of Maryland’s Sea Grant Extension: Motivating Change Through Rain Barrel Workshops

Amanda Rockler of University of Maryland’s Sea Grant Extension (UME) Watershed Restoration and Protection Team knows what discourages people to start using rain barrels—and what motivates them. Through UME, whose motto is “Educating People to Help Themselves,” Amanda helps organize a number of programs, including rain barrel workshops, that target local governments, nonprofit organizations, natural resource professionals, and residents.

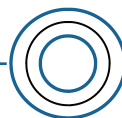
One such program, a rain barrel workshop, was conducted in Howard County in June 2011. A primary goal of this workshop was learning how to install a rain barrel correctly. In order to ensure that participants gained these “how to” skills, Amanda supplied them with an instructional sheet, showed a short video, and then guided them through the process via presentation slides and a demonstration on an actual rain barrel. In addition, Amanda was sure to address common concerns about installing and using rain barrels, including mosquitoes, flooding, and cutting your downspout. Another strategy incorporated into the workshop included giving participants immediate, anonymous **feedback** on their knowledge about stormwater issues, administered through an interactive polling technology. Amanda also supplied participants with the attachments needed for rain barrel installation, (an **extrinsic reward**,) which eliminated the barrier of having to purchase the correct attachments from a hardware store.

Amanda and UME recognize the need to go beyond giving lectures and presentations on the state of the Bay. “The enormity of the problem and its implications are relatively unrecognized in the general population,” says Amanda. “While there are federal, state and county laws and regulations increasingly targeted to address the issue and mandating fixes, at the local level municipal governments are completely unable to address the problems by themselves without a considerable amount of community partnership. The University of Maryland Extension is one of those partners working on the ground, at the local level, shifting paradigms and working towards behavior change.”

Utilizing these behavior change strategies and others, UME’s Watershed Restoration and Protection Team conducts about 30 workshops a year to about 1500-2000 participants.



Amanda Rockler
University of Maryland’s Sea Grant Extension



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Intrinsic Rewards



Definition:

Motivating individuals to perform an action because of the personal satisfaction it can offer or the experience it can provide; this may include how an activity can be enjoyable or interesting

Examples:

Encouraging proper lawn care by challenging homeowners to use as little fertilizer as possible, while also showing that their lawn will not suffer from doing so

Benefits:

- People are able to realize for themselves that a behavior is good for them and the environment
 - Intrinsic rewards promote skill building and being part of something meaningful (De Young, 2000)
- Intrinsic rewards can motivate long-term behavioral changes (Osbaldiston & Sheldon, 2003)
- Intrinsic rewards promote needs that every human experiences, such as the need to feel competent (Ryan & Deci, 2000)

Challenges:

- Requires an understanding of what target audiences draw satisfaction from
 - What is personally satisfying to one person may not be satisfying to others
- Motivation must come from within oneself, the rewards are intangible
 - Successful interventions using intrinsic rewards are more indirect than other motivational strategies, such as extrinsic rewards

Evidence:

- In a review of nine studies investigating the connection between intrinsic satisfaction and conservation behavior, De Young (1996) found significant positive relationships between two types of intrinsic satisfaction and four conservation behaviors
 - Two types of satisfaction:
 - ◇ Frugality, or the prudent use of resources and avoidance of waste
 - ◇ Participation in purposeful activities
 - Four conservation behaviors:
 - ◇ Source reduction, recycling, water

conservation, and willingness to encourage others to conserve

- In another study examining how to promote ERB through different motivational techniques, participants who anticipated enjoying behaviors, such as recycling and waste reduction, performed those behaviors more than those who complied out of a sense of guilt (Osbaldiston & Sheldon, 2003)
 - In addition, participants who enjoyed the behavior continued to perform the behavior after the study concluded, while those who did the behavior out of guilt did not

Tips:

- Highlight the value of using resources prudently and avoiding waste (De Young, 2000)
- Provide opportunities to become directly involved in a variety of behaviors and let participants choose which behaviors to adopt (Osbaldiston & Sheldon, 2003)
- Highlight that participants are doing something that makes a difference; make the participants feel needed (De Young, 2000)
- Stress that conserving resources does not have to mean a lower quality of life (Kaplan, 2000)
- Highlight the opportunity to gain competence in a new skill (De Young, 2000)
- Avoid making participants feel guilty if they do not perform a behavior (Osbaldiston & Sheldon, 2003)



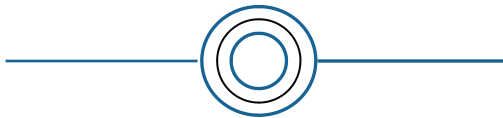
Intrinsic Rewards

Forestry for the Bay: The Intrinsic Rewards of Homeowner Land Management

The Forestry for the Bay program, partnering with Natural Resource Extension offices in Maryland, Virginia and Pennsylvania, conducts “The Woods in Your Backyard” workshops. In these workshops landowners learn about ERB they can perform on their small wooded lots that will have a positive impact on the environment. For example, planting trees that will filter pollutants from ground water to improve stream quality. Forestry for the Bay also highlights the **intrinsic rewards** of performing woodland management ERB, such as:

- Providing more time outdoors “to get away from the rigors of daily life”
- Enhancing appreciation for one’s land by creating opportunities to “discover the unique attributes of [one’s] land and its potential”

Forestry for the Bay also recruits landowners by demonstrating various **extrinsic rewards** of woodland management, such as more abundant wildlife, firewood, increased property values, and reduced energy costs. In the workshops participants learn land management “**how-to**” skills, such as woodland inventory techniques, as well as tree care and identification. Forestry for the Bay utilizes a **participatory approach** to land management, asking what landowners want from their land and providing a self-guided woodland management plan to help develop and accomplish these goals.



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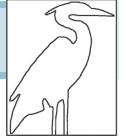
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Positive Emotional States



Definition:

Appealing to positive emotions, such as hope and enjoyment, as a way to change individuals' behaviors (See *Intrinsic Rewards*)

Example:

Stressing the fun aspects of gardening with native plants

Benefits:

- Appealing to positive emotions has been shown to result in people thinking and behaving more creatively, as well as being more open to new thoughts and actions (Frederickson, 1998)
- Positive messaging tends to be perceived as more credible than negative messaging (De Young et al., 2011)
- Appealing to negative emotions has been shown to lead to skepticism, feelings of helplessness, and decreased intention to act (Feinberg & Willer, 2011)
 - Negative emotions have also been shown to limit one to think only in the short term and therefore be less able to plan for the future (Carter, 2011)

Challenges:

- One may be inclined to appeal to negative emotions, (such as fear,) to draw attention to or increase news-worthiness of an issue (O'Neill & Nicholson-Cole, 2009)

Evidence:

- A study by Feinberg and Willer (2011) found that giving people information about the dire consequences of global warming threatens beliefs that the world is "just, orderly, and stable," leading to denial of climate change and decreased motivation to engage in behaviors to reverse the effects of climate change
 - Among participants who held strong beliefs in a just world, those who received a positive message about overcoming global warming were much less skeptical of global warming afterwards than were those who received a dire message
- A study by Hinds and Sparks (2008) found that an emotional connection with the natural environment was a significant

predictor of intent to engage with it

- The study also found that environmental identity was a predictor of engagement with the natural environment, but only if this emotional connection was also present (Hines & Sparks, 2008)

Tips:

- Frame conservation behaviors so that they encourage positive feelings while discouraging negative feelings (Vining & Ebreo, 2002)
 - For example, giving positive feedback on a family's household recycling behaviors could result in feelings of pride or accomplishment (See *Feedback*)
- Elicit positive emotions during recreational experiences—this has been shown to have positive effects on self-image, performance, and pro-social behavior (Farber & Hall, 2007)
- When a program involves nature experiences, be sure to know your audience and expose them to natural settings that they feel comfortable in (Newhouse, Berns & Simpson, 2009)
 - For example, if a participant cannot swim or is scared of drowning, do not force them into a canoe
- Ask participants about memorable times they have spent in nature in order to make a linkage between positive past and present experiences (Chawla, 1999)
- May be combined with many other strategies, such as feedback, intrinsic rewards, prompts, and positive nature experiences



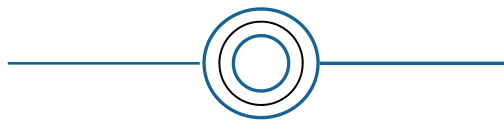
Positive Emotional States

Blue Water Baltimore: Keeping Things Positive

Blue Water Baltimore (BWB) is a nonprofit organization in Baltimore, MD whose mission is to “use community based restoration, education, and advocacy to achieve clean water in Baltimore’s rivers, streams, and harbor, so that citizens of the Baltimore region will enjoy a vibrant natural environment, livable neighborhoods, and a healthy, thriving Inner Harbor and Chesapeake Bay.” (bluewaterbaltimore.org.) Specifically, BWB emphasizes working towards a future where “neighborhood streams are safe for fishing and swimming and our clean harbor is the pride of our city.” This emphasis on positive emotions, combined with using a **participatory approach** to involve community members in taking ownership of these issues directly, has led to BWB’s success.

An example of eliciting such positive emotions was seen in the summer of 2011, when BWB hosted a Pavement to Prairie Party. During this one-day event, 250 volunteers gathered to convert .72 acres of parking lot into a comprehensive green space/outdoor classroom at a Baltimore City Transformation School. According to Ashley Traut, Senior Manager for Stormwater and Community Outreach, “transforming school grounds is the perfect opportunity to use positive emotion to affect behavior change. Tearing out asphalt resonates with the public, and the teachers and kids are always thrilled with the transformation.”

BWB’s success is visible through their 2011 accomplishments, which include more than 5,200 volunteers serving over 11,400 hours, 2,125 native trees and shrubs planted, about 80,000 pounds of trash collected, and approximately 44,750 square feet of institutional impervious surface treated/removed.



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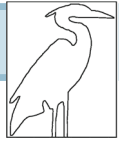
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Prompts



Definition:

Short, simple reminders to perform a desired behavior

Example:

A “No Dumping, Drains to Bay” storm drain stencil

Benefits:

- Common in everyday life and can be easily understood
- Relatively inexpensive and easy to produce and implement

Challenges:

- Using a prompt alone generally does not result in lasting behavior change (Katzev & Johnson, 1987)
- Can be difficult to tailor to a large target audience
- Prompts often presume that individuals know how to carry out the desired behavior

Evidence:

- Prompts posted in university restrooms for two to four weeks led to a 54% decrease in the percentage of lights left on (Katzev & Johnson, 1987)
- Waste containers with specialized lids showing which materials should be recycled increased beverage container recycling behavior by 34% (Duffy, 2009)

Tips:

- Be specific about the desired behavior (Kurz, T., Donaghue, N., & Walker, I., 2005)
 - Messages should not be abstract, e.g. “Save the Environment”
- Repeat prompts as often as possible (Katzev & Johnson, 1987)
- Place prompts close to desired behavior and in ways that they cannot be missed or ignored (McKenzie-Mohr, 2011)
- The targeted behavior should be convenient to perform (Ester, 1981-82)
- Wording should not be intrusive or demanding (Aronson & O’Leary, 1982-83)
 - Annoyance with or resentment of a request will reduce chance for behavior change
- Design prompt to be easily recalled in a setting where the prompt is not present

(Ester, 1981-82)

- Emphasize what individuals will be missing out on or losing by not performing the desired behavior (Katzev & Johnson, 1987)
- Prompts should come from a trustworthy source (Katzev & Johnson, 1987)
- Tailor the message to the target audience (Katzev & Johnson, 1987)
- Start with an easy-to-do behavior (Katzev & Johnson, 1987)
- Engage the mind (De Young, 2011)
 - For example, places a prompt that reads, “Do you need the faucet on?” near where dishwashing takes place
- Utilize motives for why your audience might decide to perform a behavior (De Young, 2011)
 - For example, a prompt using an economic motive could read, “Shorten you shower time and save \$50”
- Encourage positive behaviors rather than discourage harmful ones (McKenzie-Mohr, 2011)
- Prompts have been shown to be more effective when combined with other strategies, such as feedback and social norms (Katzev & Johnson, 1987; Ester, 1981-82; Aronson & O’Leary, 1982-83)



Prompts

Columbia Association: Prompting Appropriate Fertilizer Application

Columbia Association (CA), the Maryland Association of Conservation Districts, Howard Soil Conservation District, and the Keith Campbell Foundation are planning to encourage proper fertilizing behaviors among Columbia residents with a free soil testing program. CA motivates residents' participation by placing door hanger **prompts** on their front doorknobs, engaging the residents with several questions about their current fertilizing activities and requesting they collect a soil sample for free testing. The door hanger prompt also reduces barriers to action by providing "**how-to**" **skills** on collecting a soil sample, as well as providing a soil bag for the sample and instructions where to send the soil for testing. The prompt also highlights potential **extrinsic rewards** of the behavior, suggesting residents will save money by not applying unneeded fertilizer. The prompt also the **intrinsic benefit** of helping protect Columbia's streams, ponds, and lakes. Finally, residents can receive **feedback** in a workshop in each village on how to interpret results of the soil tests.



Columbia Association Soil Testing Door Hanger

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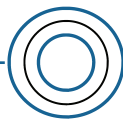
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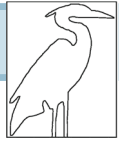
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Definition:

Demonstrating the importance of a behavior to people, either by describing the behavior as socially acceptable or unacceptable or as a common behavior

Example:

Encouraging individuals to talk to their neighbors, family, and friends about rain barrels to show that rain barrels are socially acceptable and common in their community

Benefits:

- By building a social support network for a behavior, social norms allow people to learn and try out behaviors with greater comfort, as they feel they fit in with other people and can rely on others for help in navigating the new behavior
- Community networks increase program self-sustainability
 - For example, a program that informed forming community groups and providing group members with “how-to” information and feedback saw positive behavior change up to two years after the program ended (Staats et al., 2004)

Challenges:

- Portraying an undesired behavior, like littering, as common and what most people do often works against an individual’s motivation to act
 - For example, in littered areas, individuals may continue to litter because they feel no one cares if they do, or that their actions won’t matter because they are just one person, or that they don’t want to be the only person that properly disposes their trash (Schultz et al., 2007)
- Strong norms can make people feel manipulated into doing a behavior, which may result in negative associations with the behavior (Cialdini, 2001)

Evidence:

- A 1995 survey of registered boat owners in Maryland was conducted to assess how often boaters improperly dispose of trash off of their boats, as well as how often boaters see other boaters litter off of their boats. To encourage honesty, the question was framed

as, “how often does trash get thrown or blown off your boat” for various non-accusatory and understandable reasons, such as strong wind. The study found that people who reported seeing other boaters throw trash into the water were 15% more likely to litter off of their own boat (Haab & McConnell, 2001)

- Cialdini (2005) studied different messages to encourage hotel room towel reuse. He compared four types of messages: the current level of behavior (“75% of guests reuse towels”), returning a favor (“the hotel gave money to the cause; will you do your part?”), simply asking guests to help the hotel make an environmental difference, (“we’re going green—help us!”) and an environmental plea. The “current level” and “favor” normative messages resulted in 10% more towel reusing
- Social norms can also be employed by having a community member serve as a program organizer, as well as a role model of the desired behavior. A study comparing programs that sought to increase recycling behavior through prompts, informational pamphlets, and community program leaders who encourage and assist others to recycle found that having community program leaders was the most effective tool for changing behavior. One-third of households with community program leaders recycled regularly, while only one-fifth of households that received prompts or pamphlets recycled regularly (Hopper & Nielson, 1991)

Tips:

- Don’t use peer pressure and allow people to easily say “no”
- When possible, convey that this behavior is valued by society and that many people are already taking this action
 - When it is not true that many people are already doing this action, one can instead promote that ERB is being performed by important or respected community members, who can then encourage community members to perform the behavior



Social Norms

6 Potential Factors that Encourage a “Yes” to a Social Request

1. **Reciprocation:** Individuals want to repay what they have received—if you offer something to someone else first, they will be much more willing to help you in return; individuals are also more likely to agree to a small request after a large one, such as a signature after a donation
2. **Consistency:** Individuals want to be in harmony with their choices and actions; people want to uphold their commitments, especially after being asked why they act a certain way
3. **Social Validation:** Individuals often decide what to do in a situation by observing what most others do in the same situation
4. **Liking:** Individuals want to say yes to and help out people they like; therefore, requests to try a new behavior will be more effective from well-liked friends and family, or by a person who is seen as attractive, similar, friendly, or is associated with familiar things
5. **Authority:** Individuals are more influenced by people they consider powerful, wise, or smart, such as a long-term resident of the community or someone experienced in the particular field
6. **Scarcity:** Individuals are more inclined toward things that are hard to get or limited to a certain group; for example, items only available to top donors was shown to motivate donation behavior (Cialdini, 2001)

Watershed Stewards Academy: Learning from your neighbors!

The Anne Arundel County Watershed Stewards Academy (WSA) works to educate community leaders in order to empower them to convey “**how-to**” skills and **social norms** about environmentally responsible watershed behaviors. After receiving their training and certification through the WSA, the Master Watershed Stewards go back to their own communities to serve as environmental role models by demonstrating the importance of a behavior to the community and the environment. These tactics help make these behaviors the norm in their community. The WSA teaches Stewards how to provide the “**how-to**” skills of watershed behaviors through hands-on examples that can be recreated in their neighborhoods. WSA also provides a network of experts in order to supplement the Stewards’ training and answer questions.



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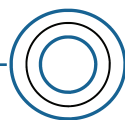
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Stories



Definition:

Verbal or written tales with an imbedded environmental message, such as sharing what individuals or communities are doing to solve environmental problems

Example:

Sharing a story about an individual's experience fishing in a littered river that motivated him or her to stop littering and support river clean-ups

Benefits:

- People are more influenced by things they experience multiple times, which is easier to achieve through stories than personal experience (De Young & Monroe, 1996)
- Narratives about success in similar communities or individuals can help influence motivation (Irvine & Kaplan, 2001)
- Narratives can effectively introduce individuals to new subjects (Monroe & Kaplan, 1988)
- Analogies are particularly useful for new material; for example, the Chesapeake Bay Watershed can be described through an analogy:
 - A watershed is like a shower: water can hit the shower curtain or the tub, but in the end, it all flows to the drain, picking up everything in its path
- Stories can work to change cultural assumptions by offering new future scenarios [all waters are safe for swimming], reframing debates [not “*should* we be sustainable”, but “*how*”], and by giving a voice to the voiceless (such as endangered species) (Reinborough & Canning, 2010)

Challenges:

- Effective analogies require audience familiarity (Thagard, 1992)
- Analogies are not perfect comparisons; when examined deeply, there are usually similarities and differences between the two concepts that can lead to confusion or misrepresentation (Thagard, 1992)
- When adjectives are used excessively and do not add to the narrative, they can cause readers to focus on the descriptions and visuals rather than the message (De Young & Monroe, 1996)

Evidence:

- Engagement with ideas or concepts is necessary for long-lasting and in-depth learning; narratives are more engaging than expository text, resulting in more memory recall and making stories useful for teaching new skills (Hidi & Renninger, 2006)
- In 2009, residents of McCloud, CA used stories and imagery to defend against a Nestlé bottling factory and protect their headwaters. They reframed the issue from “jobs vs. the environment” to “water as a precious resource,” using imagery and stories. By reframing the issue, residents and environmentalists were able to stop the factory (Reinborough & Canning, 2010)

Tips:

- Interesting stories engage the reader more deeply and allow for better information recall than factual lists (Hidi & Renninger, 2006)
- Narratives should allow the reader to reach their own conclusions through vivid imagery and foreshadowing a conclusion
- Try creating analogies that draw upon topics that are relevant to the audience
- Try not to use too many adjectives that do not add to the narrative—readers will focus on the descriptions, not the message

Elements to Make Stories More Interesting

1. **Coherence:** Events within a story should flow together and be understandable
2. **A problem or conflict:** At least one issue in the story that is resolved at the end
3. **Mystery or uncertainty:** When the reader is unsure how the story will end, they are more likely to continue engaging with the text
4. **Characterization:** An effective story creates characters that readers can understand and identify or sympathize with, so they can visualize themselves in the story
5. **Concreteness:** A story should show specific details, rather than general concepts
6. **Imagery:** Engaging stories capture the imagination with a metaphor or description that speaks to the senses (De Young & Monroe, 1996; Reinborough & Canning, 2010)



Stories

Lower Shore Land Trust: Stories in the Chesapeake

On the Lower Shore Land Trust's website (www.lowershorelandtrust.org), there is a short story about a local community member who gave her land to the LSLT in order to help with conservation. The story includes an image of the woman standing on her land, and characterizes her as a person others in the area can likely identify with. The land has been in her family for years, and she wants to see it maintained rather than developed. This story features the **social norm** in the community of conserving your family's land, and some of the **"how-to" skills** one would need to accomplish such a goal.



Potomac Conservancy: Stories in the Chesapeake

The Potomac Conservancy published a story in the style of a graphic novel called "The Fish Mystery: What's in our water?" The story is told through comic-style graphics showing people wondering about the safety of local water, while the side panel provides possible explanations for what's going on with the water. The comic uses characterization of people who live in the area that the reader would relate to, as the words are based on a survey of local community members regarding reactions to intersexed fish. This story also uses vivid imagery and an element of mystery, with resolution of that mystery in the side panel. The comic concludes by asking the reader to sign a petition and get the government to finish the story providing the reader with a final call to action.



Excerpt from Potomac Conservancy's graphic novel, "The Fish Mystery"

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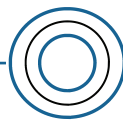
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Frameworks for Strategic Program Design

Now that you have learned how to effectively use a number of strategies for encouraging conservation behaviors, you will want to make sure you design your environmental outreach program using a framework that best fits your needs, the audience's needs, and your program goals. Frameworks are useful for program design because they guide you through the process from beginning to end to ensure your program is well thought-out and likely to achieve its goals. There are numerous ways to design or frame your program. It may be beneficial to explore and experiment with a couple of different approaches to discover the most appropriate methods for reaching your goals and audience.

The Participatory Approach and Social Marketing are two common frameworks that have been shown to effectively support environmentally responsible behavior (ERB) programming. These two frameworks are disparate in approach and conception of audience, but each has the potential to foster long-term ERB.

These two frameworks are not exclusive—elements from each can be combined and tailored to the needs of your program and audience. It is also important to remember that these are not the only frameworks that exist for strategic program design. More information about other frameworks and tools for informing behavior change programs is provided in [Appendix 7: Additional Resources](#). Lastly, please keep in mind that the prior strategies can have the best impact when supported by these or other frameworks in a well-designed behavior change campaign.



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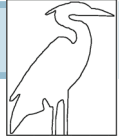
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Participatory Approach



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Definition:

Involving members of the community in program design and/or implementation to create a sense of community ownership of the program

Benefits:

- People are more invested in a program when their ideas and opinions are contributing to its development (De Young, 2003)
 - Creates a sense of ownership and encourages long-term support and accountability from participants (U.S. EPA, 1997)
- Because community members are directly involved in the design or implementation of the program, outsiders are not seen as trying to force change upon individuals in a community
- Allows programs to be customized to participants' level of knowledge, current skills, existing infrastructure, and needs (Staats et al., 2004)
- Incorporates local social, economic, and environmental context as well as community values (U.S. EPA, 1997)
- Empowers community members to be active in coming up with solutions to environmental issues rather than placing the blame on community members

Challenges:

- Knowledge of the local community is required to involve members who are particularly influential (Matthies & Krömker, 2000)
- Stakeholder opinions vary, which can slow down program development
- People often feel their own actions cannot make a difference and may therefore feel discouraged; empowerment is necessary before participation (Warburton, 2008)
- Scientific experts and community members with knowledge of local context and culture may have different views on solutions to environmental issues, or even what the issues are

Methods:

- Obtain introductions to community members through trusted governmental or community groups
 - It is best to involve members of the community who are respected or well liked, or who hold key positions in the decision making for that behavior (Matthies & Krömker, 2000)
- Provide necessary technical knowledge to community members (Warburton, 2008)
- Empower groups with support rather than giving them explicit directions; be sensitive to the fact that group members are attending meetings during their free time
 - Help people understand the issues and invite them to explore possible solutions (Kaplan, 2000)
 - The focus should be on guidance, enthusiasm, flexibility and collaboration—not on rigid processes, bureaucracy, and instruction (Warburton, 2008)
- Stress to community members that their knowledge is vital to the success of the program because the program needs to meet their own needs and the needs of the community (DeYoung, 2003)
- Have the group identify techniques previously successful in their community (Warburton, 2008)
- Allow groups to develop trust at their own pace (Warburton, 2008)
- Split responsibilities among group members (Warburton, 2008)
- Support “small experiments” within communities (Lewin, 1952; DeYoung, 2003)
 - Have the group plan a small, achievable action goal early to foster a sense of accomplishment (Warburton, 2008)
- Reflect on the result of the experiments, and try again as needed (Lewin, 1952; DeYoung, 2003)



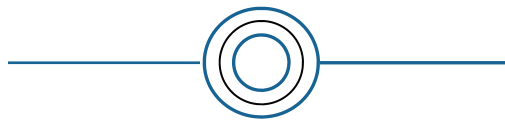
Participatory Approach

World Wildlife Federation: Empowering Communities

From 2005 to 2008, a UK-based World Wildlife Federation (WWF) program aimed to build capacity in the community and influence relevant government structures to ensure that barriers to sustainable living were confronted.

1. A WWF staff member organized groups in different neighborhoods and facilitated eco-group trust building activities. Group discussions focused on expectations, priorities, and motivations to sustainable behaviors.
2. Groups began planning with the staff member to organize and synthesize their ideas for their community to become more sustainable. The group then implemented the plan.
3. Groups conducted both formal and informal reviews of their success, and the group continued to work on their goals independently.

Overall, these groups were very successful in achieving their own goals, which varied from running local compost groups, to energy saving within a church or community center, to making individual changes. This approach worked well, empowering the groups to be self-managing and self-sustaining. However, the most encouraging result was how many group members became excited to share the lessons they had learned and began reaching out to other community members even after the WWF has started to withdraw their staff members from the community (Warburton, 2008).



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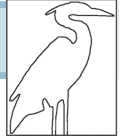
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Social Marketing



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Definition:

A process that is designed to support organizations' development, implementation, and evaluation of successful communication-based programs

- Social marketing adapts commercial marketing techniques to programs in order to promote environmental and social change within target audiences
- Unlike commercial marketing practices, it focuses not on profit and organizational benefits, but rather on benefiting individuals and/or society

Benefits:

- Can help develop a conservation ethic (McKenzie-Mohr, 1999)
- It is an effective strategy in creating sustained conservation behavior change (Barr et al., 2011)
- Applies effective marketing principles, such as audience segmentation and targeting (Hastings, 2007)
- Creates a marketing campaign informed by the needs, concerns, and barriers of the targeted audience (McKenzie-Mohr, 1999)
- Can help form environmental messages that resonate with the target audience (Maibach, 1993)
- Leverages beneficial outcomes for target audience (Hastings, 2007)

Challenges:

- There is rarely a homogenous target audience; having one campaign for a wide-ranging audience may not be effective
- Social marketing requires a lot of pre-implementation leg work—formative research regarding the audience is imperative (Maibach, 1993)
- An audience's exposure and response to a message is completely voluntary (Hastings, 2007)
- Social marketing is a long-term process that does not produce change quickly

Methods: (Adapted from Hastings, 2007 & McKenzie-Mohr, 1999)

- Define a target audience
 - Segment a heterogeneous target audience into smaller, more homogenous groups

- Learn about your audience's concerns, what motivates them, past behaviors, and barriers to changing behavior through the use of interviews and surveys
 - Collaborate with local organizations who are targeting similar audiences
- Set objectives for campaign that are clear, measureable, and realistic
- Conduct both formative and summative evaluations throughout your campaign
- Take the audience-inspired message into the "heart" of the community – geographically, physically, and emotionally; attend community events and develop a relationship with your audience on their "home turf"
 - Stress the audience's identity as citizens rather than as consumers
- Use social media and marketing techniques to publicize and promote the behavior change; use multiple channels of communication to reach different sectors of your audience
 - Such channels may include ads, radio, billboards, YouTube, film, blogs, flyers, and television commercials
 - Repetition of marketing messages is needed to enter people's consciousness
- Conduct a post-campaign survey or other form of summative evaluation



Social Marketing

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Chesapeake Bay Program: Using Social Marketing to Change Fertilizer Behavior

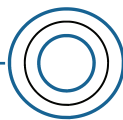
In 2004, the Chesapeake Bay Program created a campaign to reduce nutrient pollution flowing into the Chesapeake Bay. Because much of this pollution was the result of excess lawn fertilizer use, the campaign targeted homeowners with lawns in the Washington, DC region. A telephone survey of about 600 homeowners was conducted to determine the best way to reach this audience. The survey's findings showed that while homeowners were concerned about the environment and the Bay, this concern was unlikely to lead to environmental actions. The survey also found that attractive lawns were important to the audience, and that most were likely to fertilize their lawns in the spring.

These findings led to the design of a campaign that would focus on encouraging fertilizer use only in the fall or hiring a Bay-friendly lawn care service. The campaign did not frame the issue of a polluted Bay as an environmental problem, but rather focused on the need to protect blue crabs as a source of delicious seafood—the numerous seafood restaurants in the area supported this focus. The 7-week campaign included 1) branding the campaign the Chesapeake Club to create a sense of membership and that doing these behaviors was the social norm; 2) the use of TV, radio, and print media advertising targeting the residents; and 3) the creation of partnerships with local seafood restaurants that included the use of coasters reading, “Save the crabs, then eat ‘em” and other ways to inform patrons about the importance of fertilizing in fall. Post-intervention surveys were conducted the following year to determine the effectiveness of the campaign in changing fertilizer use behavior.

Survey data revealed that 30% of people exposed to the campaign planned on not using any fertilizer on their lawns while only 20% of people not exposed to the campaign planned on not using any fertilizer. Ultimately, social marketing helped to decrease fertilizer use on local urban and suburban lawns.



Chesapeake Bay Program, “Save the Crabs, then Eat ‘Em” Advertisement





Introduction to *Rapid Assessment for Outreach Programs Fostering Environmentally Responsible Behaviors*

The *Rapid Assessment for Outreach Programs Fostering Environmentally Responsible Behaviors* was constructed to support organizations in quickly assessing the degree to which behavior change strategies and outreach best practices are effectively being used in environmental outreach programs (EOPs). To the best of the team's knowledge, a tool with this purpose does not currently exist. However, survey findings suggest that such a tool would benefit organizations who expressed interest in evaluation tools, but who also lack evaluation skills and resources (See page 20: [Survey Results](#)). The tool encourages organizations to incorporate a reflection phase into their programming that can highlight strengths and areas for improvement to guide effective program design. An organized post-program reflection can provide useful feedback and ultimately help organizations enhance their programs from conception to implementation. This tool could also be useful for grant reviewers of behavior change programs to guide their assessment of EOP design.

Originally, the team created and used the Rapid Assessment in a pilot test during the program observation phase (See page 7: [Interviews & Observations](#)) of the project. This allowed the team to collect systematic information of EOPs to inform the survey design and also gave the team the opportunity to test the tool for usability and clarity. Based on this initial application, the team refined the Rapid Assessment to make it easy for outreach practitioners to use.

Two major lessons emerged from the pilot test phase that shaped the current Rapid Assessment. First, the original Rapid Assessment was far too complicated and lengthy. The wording was overly academic, sometimes unclear, and included far too many details. Thus, significant effort was made to simplify language and define terms when necessary. In addition, as the team refined the tool,

each strategy or best practice was limited to one page to increase ease of use and therefore contains only the most important pieces of information.

The team believe this Rapid Assessment would be most useful for organizations that have a background in behavior change programming, or organizations that have thoroughly read through the other program tool developed by the team, *Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices* (See page 43: [Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices](#)) and who are familiar with behavior change language. However, because the Strategy Guide only covers strategies, a resource page on the best practices for program design is also included at the end of the Rapid Assessment. It is likely that a practitioner would need to familiarize themselves with these resources before making best use of the Rapid Assessment tool.

In addition, as mentioned throughout this document, one of the most crucial factors is often not whether practitioners are using behavior change strategies, but how effectively they are employing them and whether they are aware of the justification and potential impact of the strategies. Based on the our study's findings, many organizations were not intentionally using strategies to change behavior. Additionally, many organizations were employing strategies, but not always in the most effective ways. With these ideas in mind, the team tried to refine the prompting questions in the Rapid Assessment to encourage users to consider why and how they were using strategies. The team believes that used together, the Strategy Guide and Rapid Assessment will collectively assist organizations in applying behavior change strategies effectively to foster environmentally responsible behaviors (ERB).

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Rapid Assessment for Outreach Programs Fostering Environmentally Responsible Behaviors

While all environmental organizations want to be able to demonstrate the effectiveness of their programs, assessing program design and implementation can be an overwhelming task: Where does one start? What measurements are most meaningful? How do I apply evaluation findings to improve my programs? This document seeks to assist organizations with assessing whether elements of their environmental behavior change programs are being used to their highest potential. Program elements are summarized into one-page assessments, including questions about the effectiveness of the particular program element, based on academic research. These questions serve to prompt the assessor in examining how a program is currently utilizing the element and ways use of the element could be improved.

First, this document asks questions about three best practices that are crucial for effective outreach program design: targeting audiences and evaluation. Second, this document has one-page assessments for a variety of strategies that environmental outreach programs can utilize to foster environmentally responsible behaviors (ERB). Programs will likely not incorporate all strategies; therefore, these assessment pages can be used individually, depending on the program. Third, the document includes assessment pages on two frameworks, participatory programming and social marketing, that can be used to help design a program including the previously mentioned strategies.

While this document is not meant to give detailed explanations on how to employ best practices, strategies, or frameworks, [Appendix 7: Additional Resources](#) contains a reference list for each section that will assist you in learning about and applying these methods to your outreach programs.



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Best Practice: Targeting Audiences

Question	Rating (X = No, 1 = A little, 5 = Very much so)
Is a specific audience targeted?	X 1 2 3 4 5

If targeting a specific audience:

Who is the audience?

How is information about the audience being used to shape program development?

What are the audience's barriers to the program goal(s)?

What are the audience's benefits to the program goal(s)?

How does the message of the program appeal to the audience?

How does the marketing of the program appeal to the audience?

Opportunities for Improvement

1
Project
Overview

2
Interviews &
Observations

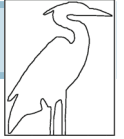
3
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Research

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Tools

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Best Practice: Evaluation



6 Recommendations & Conclusions

What questions does the evaluation seek to answer?

5 Workshops & Grant Review

What measurable outcomes are needed to evaluate the project? Are any data or collection tools already available?

What types of formative (during-program) evaluation or assessment tools are employed?

What types of summative (post-program) evaluation or assessment tools are employed?

4 Program Tools

What resources are available for evaluation? What is still needed?

4

Is there participant follow-up? Y / N

If yes, how long after the program? _____

3 Survey Research

How are evaluation results incorporated into program development or improvement?

3

Opportunities for Improvement

2 Interviews & Observations

1 Project Overview



Strategy: Commitment

Question	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
Is the commitment demanding or strongly worded?	X 1 2 3 4 5
Is the commitment specific and straightforward?	X 1 2 3 4 5

Is the commitment: *(Circle all that apply)*

Type of commitment

Verbal Email Written Other: _____

Length of commitment

Short term (< 1 month) Medium term (1 to 3 months) Long term (+3 months)

Level of commitment

Individual Group Public Semi-Public Private

Why these choices?

Opportunities for Improvement

1
Project
Overview

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Interviews &
Observations

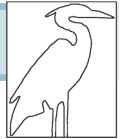
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Strategy: Extrinsic Rewards



6 Recommendations & Conclusions

5 Workshops & Grant Review

4 Program Tools

3 Survey Research

2 Interviews & Observations

1 Project Overview

Question	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
How valuable is the reward to the participants?	X 1 2 3 4 5
Does the reward have value to the recipients?	X 1 2 3 4 5
Is the targeted behavior explicitly linked to the reward?	X 1 2 3 4 5
Does the amount or level of the reward inform participants of their level of success?	X 1 2 3 4 5

Is the reward given: *(Circle all that apply)*
 Before the behavior During the behavior After the behavior

Is whether or not one is given the reward dependent on: *(Circle all that apply)*
 Doing the behavior Level of success with the behavior

How frequently is the reward given?

Does the reward assist the participants in being able to afford the desired behavior? Y / N

Does the program incorporate other strategies (especially if long-term effects are desired)? Which ones? Why?

Opportunities for Improvement



Strategy: Feedback

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Question	Rating (X=N/A or not used, 1 = A Little, 5 = Very much so)
How much do participants already engage in the behavior?	X 1 2 3 4 5
Is the feedback given close in time and space to target behavior?	X 1 2 3 4 5
How often is the feedback given? <i>Frequency:</i> _____	X 1 2 3 4 5
How private is the feedback?	X 1 2 3 4 5
Is the feedback explicit about the target behavior?	X 1 2 3 4 5
Does the feedback encourage long-term behavior change?	X 1 2 3 4 5

Question	Rating (X=N/A or not used, 1 = Very complicated, 5 = Very simple)	Question	Rating (X=N/A or not used, 1 = Very negative, 5 = Very positive)
How understandable is the message?	X 1 2 3 4 5	What is the tone employed in the feedback?	X 1 2 3 4 5

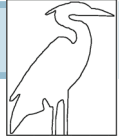
Does the feedback compare the participant to: *(Circle all that apply)*
 Themselves Others: _____ Neither

In which of the following ways is feedback given: *(Circle all that apply)*
 Individual Group Public Semi-Public Private

Why and how?

Opportunities for Improvement

Strategy: "How-to" Skills



6 Recommendations & Conclusions

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1 Project Overview

Target Behavior:	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
Are participants told how to proceed with the behavior?	X 1 2 3 4 5
Are participants given ways to continue to improve their competence in the future?	X 1 2 3 4 5
Are participants given skills to overcome barriers to performing the behavior?	X 1 2 3 4 5
Are participants provided with information on how to acquire any necessary equipment or tools?	X 1 2 3 4 5
Are habits that might be barriers to the target behavior addressed?	X 1 2 3 4 5
Are participants already motivated to do the behavior?	X 1 2 3 4 5

Methods used to teach "How-To" Skills: *(Circle all that apply)*

Hands-on Lecture Handout Other: _____

Opportunities for Improvement



Strategy: Intrinsic Rewards

Does your program...	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
Highlight the value of using resources frugally?	X 1 2 3 4 5
Avoid making participants feel guilty?	X 1 2 3 4 5
Provide opportunities for direct participation?	X 1 2 3 4 5
Highlight opportunities for enjoyment or fun?	X 1 2 3 4 5
Allow participants to choose what behavior to adopt?	X 1 2 3 4 5
Highlight opportunities for competition?	X 1 2 3 4 5
Make the participants feel needed?	X 1 2 3 4 5
Highlight opportunities to challenge oneself?	X 1 2 3 4 5
Show that the behavior will not lead to a lower quality of life?	X 1 2 3 4 5
Highlight opportunities to learn new skills?	X 1 2 3 4 5

How will this program benefit target audiences? How does the program highlight these benefits?

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Strategy: Positive Emotional States



Does the program appeal to any of the following emotions?	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
Hope	X 1 2 3 4 5
A sense of urgency	X 1 2 3 4 5
Fear	X 1 2 3 4 5
Pride/Accomplishment	X 1 2 3 4 5
Fun	X 1 2 3 4 5
Guilt	X 1 2 3 4 5
Feelings of nostalgia	X 1 2 3 4 5

Describe how your program appeals to the emotions above:

Opportunities for Improvement



Strategy: Prompts

Question	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
Does the prompt engage participants?	X 1 2 3 4 5
	(X=NA not used, 1 = Rarely, 5 = Very often)
How frequently is the prompt given?	X 1 2 3 4 5
	(X=N/A No motive, 1 = Implicit, 5 = Explicit)
Is a reason for why one should do the behavior included in the prompt?	
	(X=N/A No motive, 1 = Far away, 5 = Very close)
How close is the prompt located to where the behavior takes place?	X 1 2 3 4 5
	(X=N/A or not used, 1 = Complicated, 5 = Simple)
How understandable is the prompts' intended message?	X 1 2 3 4 5
	(X=N/A or not used, 1 = Abstract, 5 = Concrete)
How specific is the prompt about the desired behavior?	X 1 2 3 4 5
	(X=N/A or not used, 1 = Negative, 5 = Positive)
What kind of tone is employed in the prompt?	X 1 2 3 4 5

How does the design of the prompt ensure that an individual will recall what behavior to perform?

Is the prompt tailored to the participants? Is yes, how so?

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Strategy: Social Norms



6 Recommendations & Conclusions

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1 Project Overview

Question	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
Is the desired behavior framed as a social norm among community members, or as a behavior frequently performed by community leaders?	X 1 2 3 4 5
Is a positive relationship created between participants and program leaders?	X 1 2 3 4 5
Are the norms spread through change agents, such as community leaders?	X 1 2 3 4 5
Are program leaders seen as credible authority figures?	X 1 2 3 4 5
Is participation in the behavior voluntary?	X 1 2 3 4 5
Is there a strong group dynamic among participants?	X 1 2 3 4 5
Does the program appeal to the norm of reciprocation (wanting to help others who have helped you)?	X 1 2 3 4 5
Does the program appeal to the norm of liking?	X 1 2 3 4 5
Does the program appeal to the norm of consistency?	X 1 2 3 4 5
Does the program appeal to the norm of authority?	X 1 2 3 4 5
Does the program appeal to the norm of social acceptance ?	X 1 2 3 4 5
Does the program appeal to the norm of scarcity?	X 1 2 3 4 5

Opportunities for Improvement



Strategy: Stories

Question	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
Does the story appeal to inherently interesting elements, such as descriptions of nature?	X 1 2 3 4 5
Are the components of the story concrete, as opposed to abstract?	X 1 2 3 4 5
Do the participants easily understand the story?	X 1 2 3 4 5
Does the story use vivid imagery?	X 1 2 3 4 5
Does the story present a problem (which is then resolved)?	X 1 2 3 4 5
Does the story challenge the participants' previously held beliefs?	X 1 2 3 4 5
Does the story utilize elements of mystery that are revealed by the conclusion?	X 1 2 3 4 5
Does the story utilize the participants' previous knowledge, either in the form of previous experiences or learned facts?	X 1 2 3 4 5
Does the story create characters the participants can understand and identify with?	X 1 2 3 4 5
Is the subject matter of the story engaging to the participants?	X 1 2 3 4 5

Opportunities for Improvement

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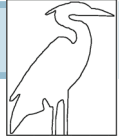
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Framework: Social Marketing



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4 Program Tools

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1 Project Overview

Question	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
Is the program tailored to the audience?	X 1 2 3 4 5
Are the audience's specific benefits to doing the behavior well understood?	X 1 2 3 4 5
Are the audience's benefits to doing the behavior fully conveyed to the audience?	X 1 2 3 4 5
Are the audience's specific barriers to doing the behavior well understood?	X 1 2 3 4 5
Are the audience's specific barriers to doing the behavior addressed?	X 1 2 3 4 5
Was the program piloted prior to full-scale implementation?	X 1 2 3 4 5
Are the results of the pilot used to improve the program design?	X 1 2 3 4 5
Is evaluation conducted throughout the program to measure effectiveness and make suggestions for improvement?	X 1 2 3 4 5

Opportunities for Improvement



Framework: Participatory Approach

Question	Rating (X=N/A or not used, 1 = Not much, 5 = Very much so)
Are community members involved in the program design?	X 1 2 3 4 5
Are community members involved in the program implementation?	X 1 2 3 4 5
Is community members' knowledge asked for and utilized?	X 1 2 3 4 5
Are experts available to assist community members in making informed decisions?	X 1 2 3 4 5
Are leaders of the community involved in the program?	X 1 2 3 4 5
Do community members feel empowered to affect change?	X 1 2 3 4 5
Do community members trust your organization?	X 1 2 3 4 5
Are community members able to develop trust at its' own pace?	X 1 2 3 4 5
Does the program tap into existing community groups?	X 1 2 3 4 5
Are community members encouraged to plan a small, achievable goal early on?	X 1 2 3 4 5

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Workshops & Grant Review

Conference Workshop Reflection

Introduction

In the fall of 2011, the team participated in two conferences, the Chesapeake Watershed Forum hosted by the Chesapeake Bay Alliance and the Michigan Alliance for Environmental and Outdoor Education (MAEOE) annual conference. At each conference, the team interacted with watershed conservation and restoration organization employees, educators, scientists, and outreach coordinators. In addition, the team presented on environmentally responsible behaviors (ERB) in the context of environmental outreach programs (EOPs).

The goals of these workshops were to:

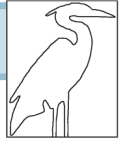
1. Share the team's research and its relevance to the audience
2. Introduce behavior change and how to incorporate it into outreach programs
3. Give the audience an opportunity to discuss EOPs with other outreach professionals
4. Pilot test a potential "workshop" on behavior change strategies for the Chesapeake Bay Trust (CBT)

About the Conferences and Workshops

Chesapeake Watershed Forum 2011

The Chesapeake Watershed Forum is an annual three-day event, which gathers together environmental professionals and government representatives to learn and share insights on improving Chesapeake Bay Watershed health. The 2011 Chesapeake Watershed Forum took place at the United States Fish and Wildlife Service National Conservation Training Center in Shepherdstown, West Virginia on September 30-October 2 and attracted over 340 attendees. Workshops at the Forum were divided into six general themes: Science & Practice; Conservation & Preservation; Planning & Regulation; Marketing/Media, Behavior Change, and Advocacy; Organizational Development; and Citizen Engagement. The team presented for 90 minutes as part of the Marketing/Media, Behavior Change, and Advocacy track and had approximately 50 audience members, one of the largest attendance rates at the Forum.

The team's workshop, titled "Behavior Change in the Chesapeake Bay: Strategies for Environmental Stewardship" began with an introduction to behavior change within the Chesapeake Bay Watershed context ([See Appendix 8: Workshop Slides](#)). Next, the team gave a brief summary of the research, preliminary survey results,



and explained how the information presented was relevant to the audience. The team then reviewed the top five behavior change strategies that survey respondents reported wanting to learn more about. These five strategies were: “how-to” skills, feedback, prompts, social norms, and stories. The team then defined each strategy, gave examples of how each are used, discussed benefits and challenges, and finally provided tips for using each strategy most effectively. Throughout the workshop the team modeled behavior change strategies in a number of ways to demonstrate their use:

- Provided stories inspired by behavior change literature and Chesapeake Bay Watershed organizations
- Provided feedback directly after audience members shared information about their organization’s behavior change programming
- Highlighted prompts located in the conference room



Team member, Sam Little, presenting at the Chesapeake Watershed Forum Workshop

In the next segment of the workshop, the team sought to increase audience competence in applying behavior change strategies to an outreach program. In small groups, audience members developed a hypothetical outreach program, using the behavior change strategies they had just learned

about, to reduce excessive chemical fertilizer use on homeowners’ property (See Appendix 9: *Small Group Activity Worksheet*). After 20 minutes of discussion the groups reported on their program to the larger audience and the team provided feedback on each groups’ program.

The team concluded the workshop by stressing that the team’s project is meant to develop a deeper understand of behavior changes strategies being applied within the Chesapeake Bay Watershed outreach community, as well as foster research-based justification for behavior change program development. In response to survey respondents’ interest in learning about designing and implementing behavior change programs, the team developed a strategy guide for outreach professionals. The guide provides key findings from academic research on fostering behavior change that is accessible to practitioners (See page 43: *Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices*)

Audience members voluntarily completed a post-workshop evaluation, which allowed the team to assess the degree to which the workshop achieved its goals and to determine areas that can be improved upon in future iterations of the workshop, should the CBT wish to adapt and utilize it for their purposes. Questions on the evaluation sought to measure satisfaction with various elements of the workshop, such as the introduction to behavior change and the depth of information presented. The evaluation also had respondents report on pre- and post-workshop levels of various topics addressed by the workshop, such as familiarity with behavior change strategies and ability to apply strategies. Other measures included the type of organization, level of organizational focus on behavior change, and prior knowledge of workshop information (See Appendix 10: *Workshop Feedback Form*).

Michigan Alliance for Environmental and Outdoor Education (MAEOE) 23rd Annual Conference: Striving



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for Sustainability

The second workshop was at the 2011 annual conference organized by the MAEOE held October 7-9 at the Delta College Planetarium in Bay City, Michigan. Formal and non-formal environmental educators throughout Michigan attended the conference to share knowledge and techniques in educating the next generation of conservation and sustainability stewards. Workshops at the conference were organized around four strands: Earth Science & Technology, Michigan Agriculture, Great Lakes & Freshwater Studies, and Achieving Learning Standards through Environmental Education.

The team's workshop, as part of the Achieving Learning Standards through Environmental Education strand, was similar to the Chesapeake Watershed Forum workshop. Differences included a slightly smaller and different audience make-up (approximately 20 educators), and a shorter time allotment (45 minutes). The team altered its approach, due to the audience being largely educators by relating behavior change to watershed outreach and education professionals in general, rather than only those working in the Chesapeake Bay Watershed. The workshop provided the team with an opportunity to reach out to environmental professionals in Michigan interested in strategic program development to foster ERB. As a way to adapt to the shorter time allotment, the team excluded the small group activity. Finally, the workshop included a post-workshop evaluation survey identical to the one administered at the Chesapeake Watershed Forum except for the exclusion of a question regarding satisfaction with the small group activity.

Workshop Goals

Sharing the research and its relevance to the audience

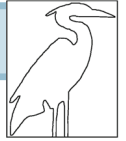
The workshops provided an opportunity for the team to expose outreach and education

professionals to research findings related to promoting ERB. The team shared preliminary results from the survey, focusing particularly on the current practices, challenges, and needs of the Chesapeake Bay Watershed organizations conducting outreach programs. These results demonstrated that outreach professionals:

- Have numerous program goals
- Are using many behavior change strategies but not necessarily in an intentional way in order to achieve their behavioral objectives
- Want more opportunities to collaborate with other similar organizations
- Want to incorporate more academic research in their program development, but there are some challenges in doing so ([See page 20: Survey Results](#))

The purpose of sharing the research results was to communicate the current state of EOPs particularly among Chesapeake Bay Watershed outreach professionals, and how behavior change goals currently are, and can be, intentionally incorporated into these programs.

Another important purpose of the workshops was to demonstrate the project's relevance to those in attendance. When presenting new information, one should make sure the information is relevant and interesting to the audience (Jacobson et al., 2006). In addition, knowing one's audience, which we attempted to do by asking for a show of hands of which types of organizations were present and asking questions about their strategy use, will also better ensure that one's presentation is meeting the audience's needs and building on prior knowledge (Jacobson et al., 2006). The survey results presented at the Chesapeake Watershed Forum workshop was relevant to many of the audience members, as many of them participated in the study survey or interviews. Also, based on a post-workshop survey, other audience members had similar roles in their organization or worked for an organization with a



similar scope to the survey participants. In contrast, the MAEOE conference workshop reached a different, yet still engaged, audience consisting primarily of K-12 school instructors and non-formal environmental educators, rather than outreach professionals.

Introducing behavior change and incorporating it into outreach programs

Many organizations have their own vision of what is involved in outreach, resulting in a variety of approaches for effectively reaching program goals. The focus of these workshops was on how EOPs can achieve behavioral objectives. Therefore, the team made sure to introduce and discuss the concept of ERB, introduce a number of research-supported behavior change strategies, and give specific examples and tips on how to incorporate these strategies into outreach programs.

Giving the audience an opportunity to discuss outreach and engagement with other practitioners

According to responses from the survey and interviews, personal experiences and collaboration between organizations determine the effectiveness of outreach programs to a high degree. The team sought to use these workshops as an opportunity for audience member collaboration through discussion of their programs, experiences, and challenges. Kaplan (2000) discusses how people want to participate and be involved, and that participation can actually play a strong role in being able to find solutions to environmental problems. For these reasons, the team thought it was crucial to give audience members a change to discuss and share their experiences.

Pilot testing a workshop for Chesapeake Bay Trust

- One final recommendation of the team’s research project is for the CBT to provide a grant applicant and/or recipient workshop or webinar that further addresses:

- The need for increased strategic planning of EOPs
- The lack of knowledge of how to design, implement, and evaluate an effective behavior change program
- The difficulty of incorporating academic research into programming

These workshops served as a pilot test of a workshop that the CBT may want to consider developing for their future grant applicants and/or recipients.

Workshop Evaluation Results

Chesapeake Watershed Forum Evaluation Results

Thirty-six evaluation surveys (~75%) were returned from Chesapeake Watershed Forum workshop attendees, the majority of which were from nonprofit organizations (86%) (Figure 17: *Organization Type of Chesapeake Watershed Forum Workshop Evaluation Respondents*). These percentages align closely with the make-up of respondents from the team’s survey of the CBT Outreach and Community Engagement (OCE) grant applicant, showing a similar audience.

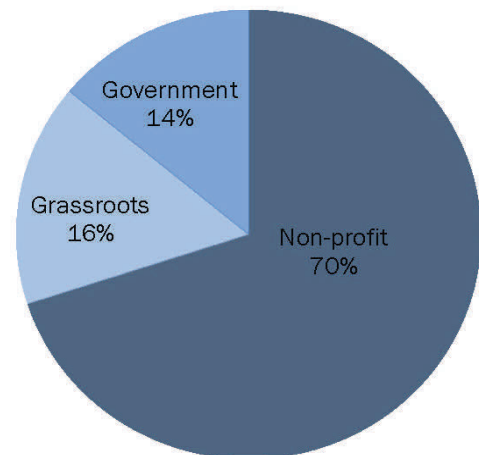


Figure 17: Organization Type of Chesapeake Watershed Forum Workshop Evaluation Respondents

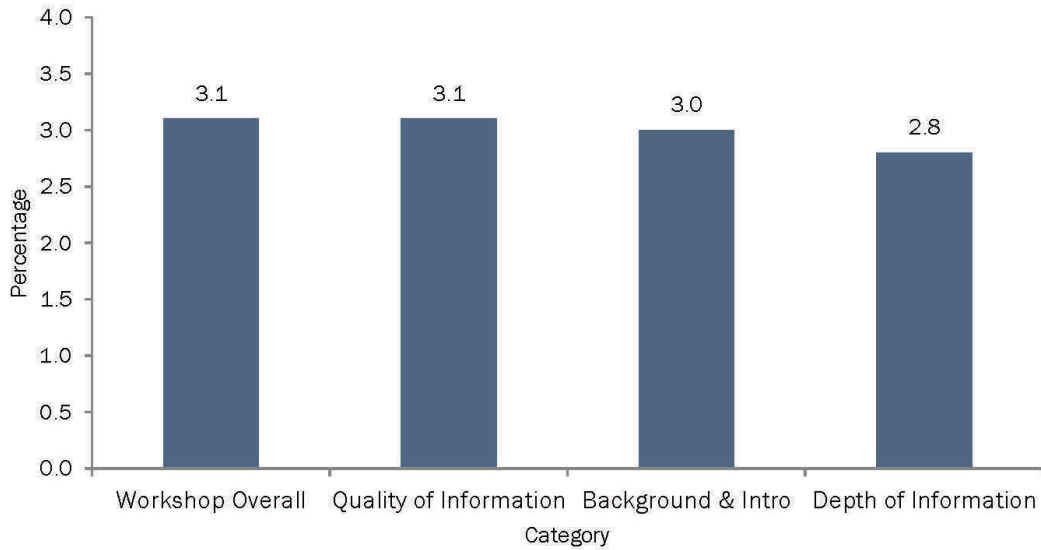


Figure 18: Mean Level of Respondent Satisfaction with Chesapeake Watershed Forum Workshop Components

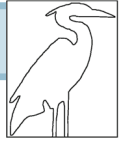
Over half of respondents (56%) reported that behavior change was a primary goal of their organization, 25% were not currently focusing on behavior, and 17% have behavior change as a secondary goal. A greater percentage of respondents from the grant applicant survey had behavior change as a goal, which may be attributed to differences in language used to describe behavior change—the survey used the term “motivation”, while the workshop evaluation used the term “behavior change”. The use of the term “behavior change” may have been a more direct measure, and therefore respondents may have been less willing to say it was their focus. This points to a strong need for shared definitions, as the audience at the Chesapeake Watershed Forum workshop seemed to interpret these words differently.

Overall, respondents were very satisfied with the workshop as a whole (mean = 3.1, where 1 = Not at all satisfied – 4 = Very satisfied) (Figure 18: *Mean Level of Respondent Satisfaction with Chesapeake Watershed Forum Workshop Components*). Respondents were slightly less satisfied with the depth of the information and the small activity (mean = 2.8, where 1 = Not at all satisfied – 4 = Very

satisfied). This may be attributed to the limited time provided to present on a topic as complex as human behavior. The depth versus breadth debate is always an important challenge to acknowledge in designing a workshop and, in order to create a balance, the team considered their goals and desired impacts while structuring the presentation. For example, the team felt it was important to present the behavior change strategies in sufficient depth while at the same time providing the audience with a variety of strategies to design a unique and creative outreach program in the small group activity.

Evaluation results also suggested that respondents desire more space and time for the small group activity. For example, in response to an open-ended question, two respondents stated, “Small group activity was not appropriate for room” and “More time for small group activity!” Again, the 90 minute time constraint limited the amount of time that could be allotted to the group activity. In addition, the large conference room where the workshop took place was not conducive for group discussions.

Overall, results showed a mean of about a



1.3-point increase in knowledge of, confidence in using, and commitment to using behavior change strategies before and after the workshop (where 1 = None - 7 = Extensive). This demonstrates that the team's workshop was effective at reaching many of the goals stated earlier.

MAEOE Evaluation Results

Less than half of the audience members (~35%) returned evaluations at the MAEOE workshop. Respondents were generally very satisfied with the workshop as a whole, including the depth of information (mean = 3.2, where 1 = Not at all satisfied - 4 = Very satisfied). The results also demonstrated a substantial increase in knowledge of, confidence in using, and commitment to using behavior change strategies before and after the workshop (mean = ~2.4, where 1 = None - 7 = Extensive). Respondent knowledge prior to the workshop was slightly lower (~.5) at MAEOE than the Chesapeake Watershed Forum. The low response rates prevented the team from using the evaluation results to draw conclusions or recommendations for the project. However, the MAEOE conference was a valuable learning experience for the team and a great opportunity to share findings with a broader audience.

"The group activity was helpful, it helped to apply the barriers and skills."

Conclusions

A substantial audience turnout and overall positive feedback at both conferences suggest that encouraging ERB is a topic of interest for outreach and education professionals. The Chesapeake

Watershed Forum engaged the team and watershed professionals in a dialogue about behavior and gave the team an opportunity to share findings that the professionals can apply to future behavior change programs, from requests for funding to program evaluation. Below are several conclusions and recommendations for improvement based primarily on the feedback from the Chesapeake Watershed Forum workshop.

A greater focus on word definition

The Chesapeake Watershed Forum workshop audience, as well as survey respondents and interviewees, struggled with understanding the difference between programs that focus on knowledge, concern, and awareness, rather than behavior change. This may be attributed to the broad and varied definitions of each of these psychology-based terms and the difficulty in separating them from actual behaviors. It may be useful to first introduce common misperceptions about what leads to ERB and then follow with what has been shown to be effective ([See Appendix 2C: Behavior Change Misperceptions](#)).

Go beyond lecturing and use a variety of learning strategies

The team knew that the audience at the Chesapeake Watershed Forum would be a diverse group of environmental professionals with a variety of backgrounds, presenting a challenge for effectively delivering the desired message. Learning research has shown that when facing a diverse group of adult learners, it is important to use a variety of learning strategies and engage the audience with the material (Jacobson, 2006; Brown, 2003). Some elements of the workshop that addressed these purposes included:

- Asking the audience questions about their familiarity with environmental behavior change and encouraging them to share their



experiences of using behavior change strategies

- Allowing the audience to explore the concepts amongst themselves in the small group activity

Future workshops may want to begin with a short activity to engage the audience, as suggested in the learning cycle (Brown, 2003). This could be an activity that asks small groups of audience members to write about a part of one of their organization's programs that has been successful at achieving a particular goal and to reflect on why they think it is successful at achieving that goal. The team relied on the post-workshop survey results to assess what the audience knew about the workshop topic; in future workshops it would be beneficial to directly assess what audience members already know (Brown, 2003; Jacobson, 2006). This could be achieved through asking initial questions about the topic.

Use more examples and provide more practical advice for practitioners

Recommendations for improving the workshop from the evaluation results highlighted the desire for more examples from research, as well as tools that outreach professionals can use. The team incorporated these elements into the workshop by using watershed relevant examples when possible and showing research that focused on the Chesapeake Bay Watershed. Future workshops can focus on increasing the relevance to the audience, as this has been shown to be an essential component in learning new information (Jacobson, 2006). Furthermore, more robust evidence of strategies that have been effective in the context of the Chesapeake Bay Watershed will demonstrate presenters' expertise on a subject, which is an important aspect of developing a trusting relationship (Cialdini, 2001). Finally, survey results showed that respondents who want to learn about academic research are more likely to already be using it, suggesting that there may be discomfort with using academic research. A focus

on practical advice that is backed up by academic research will help to create more accessible resources for outreach professionals.

By taking these evaluation results and recommendations into consideration, this workshop may serve as a useful tool to support grant applicants and/or grant recipients with incorporating behavior change strategies into outreach programs.

"Including a few more 'real world' (& watershed related) examples of behavior change strategies."

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Grant Review Reflection

Introduction

The Chesapeake Bay Trust's (CBT) Outreach and Community Engagement (OCE) Grant Program awards funding biannually to organizations in Maryland and engage adult residents in Chesapeake Bay Watershed awareness and behavior change programs. More specifically, this grant seeks to fund programs that strategically work to advance the public's knowledge of watershed restoration and motivate people to become stewards of the watershed through adopting environmentally responsible behaviors (ERB). In 2011, the OCE grant expanded and offered a new Behavior Change Program Track in addition to the CBT's traditional Awareness Program Track. This new track encouraged local organizations to develop programs that move beyond raising awareness about watershed issues to targeting watershed-specific behaviors.

Due to the team's knowledge of the OCE grant and expertise with environmental behavior change strategies, the CBT invited the team to participate in the 2011-2012, Cycle 2 OCE grant technical review process. The team joined a panel of 13 other members, ranging from social scientists, social marketing experts, academics, and nonprofit leaders to help inform the CBT's funding decisions. The review panel scored and provided comments for the OCE proposals to assist the CBT in funding the strongest programs in the Awareness and Behavior Change Tracks. This was a unique opportunity for the team to learn more about local outreach professionals' practices, challenges, and needs. The proposals, therefore, provided another source of insights, along with the interviews, observations, and survey, to inform the team's broader recommendations for the CBT.

Review Process

Each panelist was given approximately one

month to read, comment upon, and rate six randomly assigned grant proposals. Three panelists and Kacey Wetzel, the CBT's OCE Grant Program Officer, scored each grant proposal based on the criteria summarized below ([Table 11: OCE Grant Program Applicant Numbers and Criteria \(2011-2012, Cycle 2\)](#)). Each panelist was designated as the primary reviewer of two proposals and began the review with the merits of these proposals, summarizing them for the rest of the group.

At the review meeting, proposals were discussed in order of highest to lowest cumulative score. The primary reviewer introduced the proposal and briefly described its strengths and limitations. This was then followed by a discussion of the proposal and other panelists offered their opinions and stated if they thought the proposal merited funding. The group then decided whether the proposal should be fully or partially funded, or left on the table to discuss later in the meeting. Based on the meeting's discussion, the CBT then extended full and partial funding to 13 OCE grant applicants.

Observations

Below is a list of main observations that summarize the grant proposals' strengths, areas for improvement, and lessons learned from the team's grant review process. This is not a comprehensive list, but rather an attempt to highlight key insights that the team took away from serving on the panel. Although these reflections are derived from the team's experience as panelists for the OCE grant technical review, they can be extended to the CBT's other grant programming as ideas for enhancing the CBT's support for all grant applicants.

Strengths

The CBT's OCE grant program has many strengths. The CBT is a leader in providing funding for behavior change programs and many elements are very well executed. The CBT's experience and relationship with local organizations guides the evolution of this grant and is central to the grant program's popularity and achievements.



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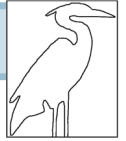
Behavior Change Program Track	Awareness Program Track
12 Applications	21 Applicants
<p>Scoring Criteria for both Tracks:</p> <ul style="list-style-type: none"> • Program goals consistent with Request For Proposals (RFP) • Timeline • Targeting of an audience • Supporting the overall goal of the applicant organization • Understanding of audience's context • Partnerships and qualifications • Evaluation • Innovation and sustainability of program • Technical information on methods • Budget • Overall quality of written proposal 	
<p>Behavior Change Track Specific Criteria:</p> <ul style="list-style-type: none"> • Requests funding for the behavior change program elements: <ul style="list-style-type: none"> ◦ Identify audience subgroups and conduct audience assessment (e.g. survey work) ◦ Create message based on audience assessment ◦ Design program and methodology based on audience assessment ◦ Pilot test communication campaign ◦ Implement and evaluate program 	<p>Awareness Track Specific Criteria:</p> <ul style="list-style-type: none"> • Part of a larger initiative to change behavior in the future • Audience specific and justified message • Methodology outline • Increase knowledge about watershed challenges • Involve community residents in volunteer education • Gives examples of similar successful programs • Demonstrated experience

Table 11: OCE Grant Program Applicant Numbers and Criteria (2011-2012, Cycle 2)

- Interest in the OCE grant program continues to grow with the most applicants ever applying to the CBT's 2011-2012, Cycle 2 Request For Proposals (RFP)
- Panel members agreed that allocating funding specifically for programs targeting behavior change is a good idea and that the CBT is moving in the right direction toward most effectively fostering Chesapeake Bay Watershed stewardship
 - This transition to include a behavior change track is also supported by the

fact that the CBT has seen a number of successful awareness programs through its OCE grant program in past years, and feels its applicants are prepared to design and implement behavior change programs

- The RFP is challenging local organizations to develop “well-informed” awareness and behavior change programs (i.e. grounded in target audience assessment and justified by academic research, expertise, and success of other similar programs)



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- The CBT increased the focus and evaluation requirements of its 2011-2012 Cycle 2 RFP. This highlights evaluation as a priority of the CBT and encourages applicants to also value it as a necessary part of a fundable program
- Kacey Wetzel, Program Officer for the OCE Grant Program, is very open to working with grant applicants prior to them submitting their proposals
 - This support can enhance the applicant pool with strong proposals and builds an important line of communication and relationship between funder and grant applicant

Areas for Improvement

Despite the above strengths there are also ways that the CBT may be able to enhance the strength of proposals. Below are areas for improvement, drawn from both the proposals the team read and discussions amongst panel members that suggested where greater clarification and/or support may be needed.

1. Confusion Between Tracks
 - Now that the OCE grant program is divided into awareness and behavior change tracks, there seems to be some confusion among applicants about the difference between the two tracks. For example, several of the proposed behavior change programs seemed to fit better in the awareness track
 - This confusion may be due to a lack of understanding about how to design and implement an effective behavior change program
 - Applicants may also have unrealistic goals of achieving behavior change through awareness raising programs, due to a lack of experience with this type of programming
2. Justification of Proposed Programs
 - Often programs lacked justification for why

- certain features of their programming, such as exposure to nature or informational lectures, would increase awareness or change behaviors
 - Research- or evaluation-based justification often did not play a large role in proposals
 - ◊ Quotes from past program participants were sometimes used to justify the success of a program, without referencing any evaluation or research results to support such claims
- Applications often did not include strong examples of other organizations that had success with similar programs

3. Target Audience

- When applicants proposed a program targeting a new audience, details on recruitment strategies were sometimes lacking and assessment of the target audience's barriers was limited
 - For example, often identified barriers did not extend beyond time and transportation limitations

4. Program Timelines

- Timelines were often unrealistic and inconsistent in light of target objectives
- Often program evaluations were not given a realistic amount of time to implement, complete, and use to improve the program

"...we need more time to evaluate our programs and pilot programs. So often we are pulled in several directions to complete other programs or projects and we don't critically look at past programs."



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5. Evaluation

- Applicants included partners to help them collect field data and conduct technical trainings, but rarely to develop and implement their evaluation
- Many organizations appear to be focused more on the “doing” rather than the “evaluating” or using evaluations to improve future programs
- Formative evaluation was especially lacking in proposals

6. Program Sustainability

- Program sustainability is very important to the CBT, but often not thoroughly addressed by applicants
- Often former grant recipients appear to assume that they can obtain continued funding by the CBT for the same program

“...Sadly most EOP's have become an end unto themselves instead of a means toward an end...”

Specific Proposal Components

1. Behavior Change Track

- Most applicants did not adhere to the instructions for the “message creation” step, which was to create the message based on needs assessments of the target audience
- Applicants did not seem to have an understanding of the requirements of the “pilot communications campaign” step
 - Often this step was missing all together. When it was present, details about how it would be conducted and how it connected to improving the goal were lacking
- Based on the proposals, most grant

applicants did not seem to understand that each step of the CBT’s behavior change campaign should build on the previous step

- Many proposals did not identify specific behavior change strategies and those that did offered very brief descriptions that did not seem sufficiently justified throughout

2. Awareness Track

- Many proposals contained language that suggested applicants believed that awareness programs, by themselves, may be sufficient to change behavior
 - For example, they suggested that some organizations believed that by making participants aware that the water quality of the Chesapeake Bay Watershed is poor, participants would work to improve it
- This supports the common misconception that exposure to information (e.g. about watershed problems) will foster behavior change
- The RFP may have perpetuated this misconception by asking applicants to propose a plan for transitioning awareness programs into a behavior change program

Recommendations

To support applicants in designing grants that are more likely to meet the CBT’s goals, the team encourages consideration of the following.

1. Suggestions for RFP

- Stress that proposals need stronger justifications for what they proposed based on academic research, past evaluation results, and possibly, other past successful programs
- Be more explicit about what types of programs are NOT part of the RFP, such programs for children or schools
- Provide examples, at least programs’ abstracts, of funded proposals as part of



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both the behavior change and awareness tracks

- Clearly describe and/or gives examples of how an awareness program can inform and/or transition into a larger behavior change program
 - A pre-behavior change track, between the two current tracks, may be a better intermediate for a behavior change program to avoid perpetuating the misconception that awareness leads to action
- Stress the importance of providing evidence about a past programs' effectiveness and of identifying what improvements will be made to further enhance the proposed program
 - Strengthen evaluation requirements
 - ◇ Require a logic model as part of the grant application as a way to encourage applicants to explicitly make the short and long term goals of their program and how they plan to meet those goals
 - ◇ Require a plan for formative and summative evaluation processes
 - ◇ Require a list of themes that will be explored by the evaluation process
 - ◇ Require a list of references that will inform the evaluation process
 - ◇ Indicate what amount of the budget should be allocated to evaluation (minimum of 5-10%)

2. Support collaboration

- Require grant recipients to share their findings as part of meetings or conferences that allow others to learn from their experiences
- Further facilitate collaboration between organizations by creating a mentorship program that partners groups, conducting similar programs, to work together especially in the formative stages of their programs

3. Provide Resources

- Provide tailored resources on best practices for developing, implementing and evaluating programs and behavior change strategies, based on academic research, to help enrich the grant applicant's program/methods justification
- Offer workshops, 1-2 day summits, webinars, and/or other resources, lead by respected and/or local experts to address topics such as:
 - Social marketing
 - Targeting audiences
 - Community involvement
 - Message creation
 - Evaluation/assessing impact of program
 - Sustainability of program over time

"It would be helpful if we were given more information on the results of social marketing on common issues, rather than having to do it ourselves. It seems really inefficient to have multiple little groups trying to identify barriers—there has to be a lot of similarity. It would be easier to identify unique situations and test those."



Recommendations & Conclusions

Final Recommendations

Below are the overall recommendations for the Chesapeake Bay Trust (CBT) based on findings from project interviews, observations, survey results, grant reviews, and workshop presentations. [Table 14: Recommendations and Corresponding Report Sections with Additional Details on Recommendations on p. ___](#) lists sections in the report that provide further details on each specific recommendation.

1. Foster a greater understanding of how to develop strategic behavior change programs

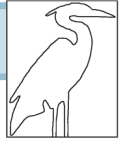
Many organizations that have applied for funding from the CBT design programs with the goal of motivating people to protect the Chesapeake Bay Watershed. However, evidence from this study suggests that grant applicants have misperceptions about how to foster behavior change, such as the belief that if people are more knowledgeable about environmental issues, or if people are more connected to nature, they will perform more environmentally responsible behaviors (ERB). To achieve the highest potential for promoting ERB through its grant funding, the CBT should continue to focus on clarifying how behavior change programs differ from awareness programs, as well as illustrating how organizations can intentionally

develop programs that target ERB.

1.1 Address misperceptions about the relationship between awareness and behavior change

The CBT distinguishes between awareness and behavior change programs, yet grant applicants are not yet clear on the difference between environmental outreach programs (EOPs) that increase awareness of environmental issues and those that change individual behaviors. This is an important distinction to make, as traditional awareness raising approaches do not necessarily lead to behavior change ([See Appendix 2C: Behavior Change Misperceptions](#)). Applicants need a strong understanding of what behavior change programs do and do not involve in order to design and implement more effective programming.

In the 2011-2012 Outreach and Community Engagement (OCE) Grant Program Cycle 2, the majority of organizations submitted awareness program proposals and did not demonstrate that they knew how an awareness program could transition into a behavior change program, or whether or not they understood that increasing environmental awareness, knowledge or concern alone is generally not sufficient to change behavior.



1.1. Recommendations

1. Explicitly state in the Request for Proposals (RFP) that increasing awareness of, knowledge about, or concern for watershed issues does not necessarily lead to behavior change
 - This can be illuminated by a common example: while most people are concerned about eating healthier, such as by consuming the recommended five to seven servings of fruits and vegetables a day, few people actually do it, demonstrating that there is a gap between that concern and action.
 - An environmentally relevant example: Chesapeake Bay Watershed residents reported in a Conservation Management Institute survey that they are concerned about environmental issues relating to their water, but this concern did not significantly correlate with their actions (McClafferty, 2001).
 - Consider rephrasing the RFP Awareness Track Criteria to avoid perpetuating misperceptions that awareness leads to behavior.
 - ◇ Currently, the RFP states that awareness is a prerequisite to behavior change, but the (See [Appendix 2C: Behavior Change Misperceptions](#)) from this study suggests this may not necessarily be true—while awareness can be part of a behavior change program, it is not a mandatory element; removing this phrasing may reduce confusion.
2. Consider making the distinction between awareness and behavior change programs clearer to avoid perpetuating misperceptions that awareness leads to behavior
 - Awareness Track applicants are encouraged in the RFP to place their programs in the context of a larger initiative that will eventually seek to influence behavior. While it is important to show there is a connection between the two tracks, this may influence applicants to continue the same awareness campaigns when applying for behavior change programs, as many applicants are unaware of the strategic planning necessary for successful behavior change.
 - ◇ Consider revising the following statement from the RFP:

“The best proposals will place the project in the context of a larger initiative that will eventually seek to influence behavior. (In the future what behavior will the audience who has been made more aware ultimately change?)”
 - to include that there will need to be an additional program, such as by stating,

“The best proposals will place the project in the context of a larger initiative that will eventually seek to influence behavior. (In the future what behavior will the audience who has been made more aware ultimately change once other behavior change elements have been included in the program, such as barrier reduction and behavior change strategies?)”
 - For example, a greater distinction could be drawn between the activities that inform ultimate program implementation (e.g. audience segmentation and assessment, message creation, methodology, and pilot-testing communications campaign) and actual implementation by creating phases that break apart these earlier elements as distinct program parts.
 - Visually highlight the difference between an awareness program and behavior change program by using a Plan of Action Chart ([Table 12: An example chart visually highlighting the difference between an awareness program and behavior change program](#)).



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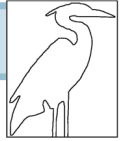
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Plan of Action				
Program Goal	Audience	Strategies	Activities	Timeline
Increase awareness regarding the environmental and health risks posed by a malfunctioning septic system	Homeowners with septic systems living in X neighborhood	<ol style="list-style-type: none"> Lecture Septic replacement visit Disseminate EPA septic tank homeowner guide 	<ol style="list-style-type: none"> Lecture by septic system expert and local watershed organization Site visit to property where septic tank was leaking and is being replaced Small group discussions lead by homeowners with new and environmentally friendly septic tank 	Feb. 2012 - Oct. 2012
Encourage residents with septic systems to maintain their tanks, get them inspected, and repair or replace system if experiencing malfunctions	Homeowners with septic systems living in X neighborhood	<ol style="list-style-type: none"> How-to skills Commitments Social norms Stories Extrinsic rewards 	<ol style="list-style-type: none"> Recruit a neighborhood septic system liaison Send out septic survey to X neighborhood to learn about audience (door hanger disseminated by liaison) Based on survey results, tailor a septic system workshop for the neighborhood where homeowners learn how to identify, report, and repair a malfunctioning system Recruit one respected neighbor to share their story of replacing their septic due to a system failure and their positive experience, as well as what they needed to learn in order to know how to maintain their new system Provide a coupon to participants for a discounted septic system inspection and repair Encourage each participant to sign a pledge that they will talk to two more neighbors about septic system health Send out follow-up survey or make follow-up phone calls to evaluate the success of program outcomes Share evaluation report and findings with other environmental outreach organizations 	Feb. 2012 - Feb. 2013

Table 12: An example chart visually highlighting the difference between an awareness program and behavior change program



1.2. Assist grant applicants in learning about behavior change strategies

Currently, many OCE grant applicants are relying primarily on their intuition and past experiences to develop behavior change programs. This norm excludes the potential benefits of research-based strategies that organizations could be drawing upon. While organizations that apply for funding from the CBT are using a number of different behavior change strategies, about half are not doing so with the intention of changing behaviors. This is problematic because organizations are not likely to be using strategies in ways that are most effective, nor are organizations likely to be aware of how or why

strategies do or do not work. As a result of relying on intuition and personal experience, even organizations that may have experienced success are not likely to know exactly how that success was achieved and how to replicate that success in future outreach efforts.

Grant applicants need to be aware of effective behavior change strategies, as well as how to apply them intentionally and successfully. Survey and interview respondents demonstrated interest in learning about behavior change strategies through several different means, such as workshops, websites, and webinars.

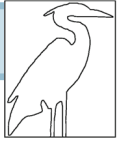
1.2. Recommendations (continued on next page)

1. Further stress the need for justification of the strategies used in program proposals
 - Program proposals should be supported by findings from behavior change research or evaluation studies of successful EOPs using similar strategies.
 - ◊ Highlight resources where grant applicants can access findings from relevant academic research for free, such as the team's *Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices* (See page 43: *Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices*), Doug McKenzie Mohr's website, "Fostering Sustainable Behavior: Community-based Social Marketing", (www.cbsm.com), and other relevant resources compiled by the team (See Appendix 7: *Additional Resources*). Suggestions for how to encourage grant applicants to use evaluation findings can be found in Recommendation 2.2
2. Offer professional development opportunities on behavior change strategies
 - Professional development could involve experts, such as:
 - ◊ Virginia Tech's Erin Ling, who has expertise in the field of social marketing with a watershed focus (www.bse.vt.edu/people/other-faculty/ling-erin.html)
 - ◊ Annette Frahm, who has expertise in social marketing and water quality (www.ecospeakers.com/speakers/frahma.html)
 - ◊ Conservation International's Michael Matarasso, Conservation and Natural Resources Management Consultant, who has written several guides to targeting behavior while involving communities (See Appendix 7: *Additional Resources*)
 - ◊ Bruce Byers who has written a guide on influencing environmental behavior (www.brucebyersconsulting.com/) (See Appendix 7: *Additional Resources*)
 - ◊ Social marketing consultants Kari Cutler, Jack Wilbur, & Jan L. Tyler (www.socialmarketingconsultants.com), and environmental psychologist Doug McKenzie-Mohr (cbsm.com)



1.2. Recommendations *(continued on next page)*

- ◇ Local experts:
 - * Alan Andreasan, a Georgetown University professor and Executive Director of the Social Marketing Institute
 - * Brian Day, contributor to multiple publications related to environmental education, communication, and behavior change
 - The workshop conducted by the team at the Chesapeake Watershed Forum served as a pilot for a professional development opportunity. The workshop had successful outcomes in increasing attendees' understanding of behavior change strategies as well as their ability and desire to use them in EOPs. Future professional development efforts could build on this workshop and the lessons learned from its evaluation, such as the inclusion of more Bay-specific examples and interactive activities to increase engagement with the material. Such a workshop may also lay the foundation for additional collaborations between organizations ([See page 87: Conference Workshop Reflection](#)).
 - ◇ In addition to workshops, consider sharing relevant content and resources through a webinar to assist organizations unable to attend the workshops
- 3. Connect grant applicants conducting behavior change programs**
- This could involve connecting local outreach leaders in the professional development workshops suggested above. Including local speakers is also particularly important, as they will be able to speak the local context and thus, able to give more relevant examples.
 - ◇ For example, staff from organizations who have implemented successful behavior change campaigns, such as the Chesapeake Club or the Alice Ferguson Foundation
 - The CBT's "Where we Fund" map on their website, cbttrusts.org, could include more information about behavior change programs the CBT has funded. Grant applicants in the behavior change track could then be directed to the map to connect with other organizations targeting similar behaviors.
 - Create a behavior change group on the Chesapeake Network and require behavior change program grant recipients to report outcomes at the end of their funding period.
 - ◇ Within the group, divide up posts by specific behaviors, such as an individual section for rain barrel programs.
 - ◇ Create a template for grant recipients' evaluative results to standardize reported information and help grant recipients find needed information more easily.
 - * My Environmental Education Evaluation Assistant (MEERA, <http://meera.snre.umich.edu/reports-and-case-studies>) collects case studies of evaluations in profiles that detail information about the evaluation in order to assist others to run similar evaluation. This network sharing tool could follow a similar profile .
 - * Could include: Targeted Behavior, Targeted Audience, Evaluation Instruments, Logic Model/Plan of Action
 - * This recommendation should be balanced with grant applicants' desires to remain competitive for funding. However, by making it is a requirement for all grant applicants, organizations will likely feel as though they are receiving as much information as they are providing to others.
- 4. Disseminate *Strategies for Motivating Watershed Stewardship: A Guide to Research-Based Practices***



1.2. Recommendations *(continued on next page)*

- This tool was created by the team as an easy-to-use guide to behavior change strategies that also highlights program successes and lessons learned from Chesapeake Bay Watershed organizations, obtained through examples shared by survey respondents (See page 43: *Strategies for Motivating Watershed Stewardship: A Guide to Research-based Practices*)
5. Disseminate *Rapid Assessment for Outreach Programming Fostering Environmentally Responsible Behaviors*
 - This tool was created by the team to assist organizations in quickly assessing their EOPs during or after implementation. It focuses on assessing the degree to which behavior change strategies and program design best practices are effectively being incorporated into EOPs (See page 71: *Rapid Assessment for Outreach Programming Fostering Environmentally Responsible Behaviors*).
 6. Disseminate and recommend use of EOP development resources
 - There are free online resources, (for example, National Audubon Society's *Toolkit for Engaging People in Conservation*,) that provide more information on program best practices, such as targeting and assessing audiences, building a logic model, and evaluating a program. Many include an step-by-step process to use in program development (See Appendix 7: *Additional Resources*).

"...Our organization has difficulty planning EOPs before jumping in and conducting the program."

"It would be helpful if we were given more information on the results of social marketing on common issues, rather than having to do it ourselves. It seems really inefficient to have multiple little groups trying to identify barriers—there has to be a lot of similarity. It would be easier to identify unique situations and test those."



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2. Facilitate “well-informed” behavior change program development, implementation, and evaluation

The CBT requires applicants to propose “well-informed” programs, meaning programs that are based on quantitative assessments of audience knowledge, attitudes, and practices (See Appendix 11: CBT’s OCE Grant Request for Proposals). However, there are common misperceptions among grant applicants about the components of an effective outreach program. For example, less than half of survey respondents indicated that evaluation had a strong influence on their program design. To implement “well-informed” programs, applicants will need to gain additional assessment and evaluation skills and learn how to appropriately use findings from such studies to guide their programs.

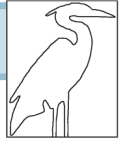
2.1. Provide grant applicants with opportunities to strengthen their audience targeting, recruitment, and assessment skills

Although many survey respondents reported that they target specific audiences, interview results and reviewed grants suggest that organizations may be targeting too broad an audience, or may not be effectively targeting audiences.

The grant review also demonstrated that audience assessment and evaluation timelines were somewhat unrealistic. This observation suggests a lack of experience in or knowledge of assessment and evaluation methods.

2.1. Recommendations

1. While the current RFP is already very explicit about targeting audiences, additional information potential target audiences, suggestions for recruiting target audiences, and assessing target audiences for effective outreach and behavior change programs may be beneficial
 - The RFP could encourage each program to designate a community liaison that is part of the target audience to help recruit others.
 - The RFP could require that proposals for Phase II and Phase III of behavior change programs include sample audience assessment questions or detail the types of information that will be collected from target audiences to inform the program.
2. Provide professional development on targeting audiences, recruitment strategies, and other outreach program “best practices”
 - This could include experts on social marketing, participatory programming, or other relevant areas as described in further detail above (See Recommendation 1.2.2).



2.2. *Strengthen the emphasis on program evaluation*

The CBT identifies the importance of program evaluation in its RFP and requires grant recipients to

conduct evaluations, yet survey results indicated that few OCE applicants are doing so in ways that is improving future programs.

2.2. Recommendations

1. Require 5-10% of budget be allotted to formative and summative program evaluation
 - Require grant applicants to submit a comprehensive evaluation report and share how they will use evaluation findings to adapt their program in the future as a way to verify the use of the allotted evaluation funds.
 - ◊ Moreover, when past grant recipients submit a new grant, require them to explain how previous evaluation findings were used to inform the development of their proposed program.
2. Require applicants to submit an evaluation plan that addresses the questions in [Table 13: Sample evaluation criteria from the Chesapeake Bay Foundation's B-Wet program](#).
3. Point grant applicants to resources that explain the steps for creating a program evaluation, such as MEERA (meera.snre.umich.edu) and NOAA California B-WET Project Evaluation (<http://chesapeakebay.noaa.gov/bay-watershed-education-and-training-b-wet/evaluation>) ([See Appendix 7: Additional Resources](#))
4. Provide professional development workshops to assist grant applicants and/or grant recipients in conducting stronger evaluations
 - Structure workshops to model the evaluation process and allow attendees to participate in the process.

Suggested criteria for outreach evaluation (B-WET, 2006):

Does evaluation focus on measuring changes in participants (changes can be in knowledge, attitudes, skills or conservation actions)?
Are the methods for gathering evaluation data systematic and, if replicated, would they gather reliable qualitative and/or quantitative data?
Could results be used to inform programming decisions (either planning the program, making changes to improve the program or judging the program's impact and value)?
Will the evaluation measure outcomes that correlate to the project's goals and objectives and/or to the Trust's OCE program's definition of behavior change?
Are the indicators of outcomes chosen appropriate for this project?
Are the data-gathering instruments appropriate for the audience(s) and the outcomes to be measured?
Will the documentation of evaluation results as described help guide assessments of the project's effectiveness, impact and/or value?

Table 13: Sample evaluation criteria from the Chesapeake Bay Foundation's B-Wet program

“By the end of project planning, fund-raising, procurement, volunteer recruitment, restoration project implementation, report writing to funders, etc., we will use up all of our man power and I do not think we have time to evaluate our effort....”



2.3. Demonstrate that the CBT values strategic planning

One of the strongest ways funders can positively influence grant applicants is by clearly demonstrating their prioritization of strategic planning. Given their control of financial resources,

funders hold a significant amount of power, and by emphasizing their desire for well-planned EOPs, grant applicants will likely follow their lead (See page 39: [Funder's Priorities Summary](#)).

2.3. Recommendations

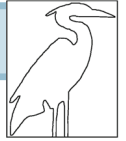
1. Consider giving equal preference to each of the planning phases of behavior change programs
 - Currently, the implementation phase receives top priority for funding, which may lead grant applicants to jump to this phase and compromise developing initial phases (i.e. establishment o a baseline, audience segmentation and assessment, message creation, methodology, pilot program)
 - ◇ Although this current preference is based in the CBT's desire to fund programs that will have the highest impact on the Chesapeake Bay Watershed's health while making the greatest use of their funding, demonstrating to grant applicants that the CBT fully supports the initial phases of a behavior change program by giving such phases equal preference will lead to more robust programs in the long term, as it shows that the CBT values strategic planning.
2. Consider altering the wording of the RFP where preference is given to implementation
 - The RFP currently reads:

"in cases in which applicants have already developed a communication campaign for the behavior in question".

Consider changing it to read,

"in cases in which applicants have already developed a communication campaign for the behavior in question based on all previous strategic planning elements included in the track".

This will help to further demonstrate the CBT's prioritization of strategic planning upfront in the RFP.



3. Ensure that the unique challenges of under-resourced organizations are addressed

Survey and interview respondents expressed throughout this study that their organizations' outreach programs lack sufficient resources, which limits organizations' abilities to effectively motivate Chesapeake Bay Watershed citizens to action.

3.1. Foster partnerships and collaboration among grant applicants to overcome the challenges associated with limited resources

Learning from the experiences of other organizations was one of the most widely reported ways respondents learn about motivating people. Collaboration was also one of the highest rated ways organizations would like to learn more about behavior change strategies. Getting organizations to share information by creating incentives to work together may help to reduce organizations' challenges to implementing effective behavior change programs.

3.1. Recommendations

1. Offer up to \$70,000 for a behavior change program that has two or more partner organizations
 - Encourage partnerships between well-resourced organizations or organizations experienced in behavior change programming, and under-resourced organizations or organizations less experienced in behavior change programming that have other relevant strengths (such as access to specific target audiences.)
 - ◇ Under-resourced organizations would benefit from the additional capacity to develop EOPs.
 - ◇ Well-resourced organizations would benefit from greater opportunities to apply their behavior change models within different communities, as well as furthering their organization's environmental goals.
 - ◇ Both organization types would benefit from access to greater grant program funding.
2. Give priority to funding proposals that include partnerships between organizations
3. Require grant recipients to share their program results in a way that potential applicants can learn about their successes, challenges, and suggestions for improvement
 - For example, grant recipients could be asked to post results on a website or present them at a conference or workshop.
4. This recommendation raises issues that should be addressed— for example, considering power relationships in a way that both participating parties benefit in equitable ways and are able to contribute to the overall process in a meaningful way; such issues can be addressed by pilot testing different approaches to incentivize collaboration between organizations
 - Other issues to consider are: What funding is for such collaborations? Are the funds equitably distributed between collaborators? How do you implement such collaboration?

“Funding is so scarce and makes it challenging to instigate collaboration instead of being in competition for limited funds.”



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4. Other Recommendations

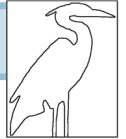
While most of our recommendations fit within the themes listed above, there were two additional recommendations that emerged over the course of the team’s project. One of these recommendations focuses on the timeline needed for behavior change programs. The other recommendation is a suggestion for further improving the grant process.

“It’s a catch 22 because limited resources make it critical to get best bang for our buck, but can also tempt program coordinators to skimp on research, planning, field testing, evaluation, etc.”

4. Recommendations

1. Extend the behavior change funding period to two to three years, allowing for more robust program development, implementation, and evaluation
 - This is necessary as proper audience assessments can take several months, leaving little time for program implementation and evaluation a year-long program.
 - Multi-year funding could be conditional on program progress reports.
 - Durable behavior change, or change that lasts after an intervention program ends, is necessary to ensure environmental health is protected in perpetuity, especially considering that organizations cannot sustain such programs indefinitely (De Young, 1993). However, it takes time to see if program results endure lasting change. Thus, longer funding periods may be required (Zint, 2012).
2. Provide applicants with access to grant proposal reviewers’ scoring rubric (or a summary of the rubric.) This would help applicants assess the strength of their program before submitting their application.

“Too often funds are available for specific projects with a beginning and an end. True Bay stewardship has no end in sight. We are often short on infrastructure funding that is often the bedrock of solid, productive progress.”



	Survey Discussion (p. ___)	Funders' Priorities (p. ___)	Conference Workshop (p. ___)	Grant Review (p. ___)
Recommendation				
Recommendations for addressing misperceptions about the relationship between awareness and behavior change				
Explicitly state in the RFP that increasing awareness of, knowledge about, or concern for watershed issues does not necessarily lead to behavior change			✓	✓
Consider making the distinction between awareness and behavior change programs clearer to avoid perpetuating misperceptions that awareness leads to behavior	✓			✓
Recommendations for assisting grant applicants in learning about behavior change				
Further stress the need for justification of the proposed project's strategies	✓			✓
Offer professional development on behavior change strategies	✓		✓	✓
Connect grant applicants conducting behavior change programs	✓		✓	✓
Disseminate <i>Strategies for Motivating Watershed Stewardship: A Guide to Research-Based Practices</i>	✓		✓	✓
Disseminate the <i>Rapid Assessment for Outreach Programming Fostering Environmentally Responsible Behaviors</i> tool	✓		✓	✓
Disseminate and recommend use of outreach program development resources	✓			✓

Table 14: Recommendations and Corresponding Report Sections with Additional Details on Recommendations
(continued on next page)



1
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Research

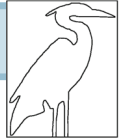
4
Program
Tools

5
Workshops &
Grant Review

6
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& Conclusions

	Survey Discussion (p. ___)	Funders' Priorities (p. ___)	Conference Workshop (p. ___)	Grant Review (p. ___)
Recommendation				
Recommendations for developing applicants audience targeting, recruitment, and assessment skills				
While the current RFP is already very explicit about targeting audiences, providing suggestions for recruiting target audiences and assessing target audiences for effective outreach and behavior change programs may be beneficial	✓			✓
Provide professional development on targeting audiences, the various steps of evaluation, and other outreach program best practices	✓		✓	✓
Recommendations for emphasizing program evaluation				
Require 5-10 % of budget be allotted to a comprehensive evaluation of a program				
Require applicants to submit an evaluation plan that addresses the questions in Table 13: Sample evaluation criteria from the Chesapeake Bay Foundation's B-Wet program	✓			✓
Point grant applicants to resources that explain the steps for creating a program evaluation	✓		✓	✓
Provide professional development workshops to assist grant applicants and/or grant recipients in conducting stronger evaluations	✓			✓

Table 14 cont.: Recommendations and Corresponding Report Sections with Additional Details on Recommendations (continued on next page)



	Survey Discussion (p. ___)	Funders' Priorities (p. ___)	Conference Workshop (p. ___)	Grant Review (p. ___)
Recommendation				
Recommendations for demonstrating that CBT values strategic planning				
Consider giving equal preference to each of the planning phases of a behavior change program	✓	✓		✓
Consider altering the wording of the RFP where preference is given to implementation		✓		✓
Recommendations for ensuring that the unique challenges of under resourced organizations in the watershed are addressed				
Offer up to \$70,000 for a behavior change program that has two or more partner organizations	✓			✓
Give priority to funding proposals that include partnerships between organizations	✓	✓		✓
Require grant recipients to share their program results in a way that potential applicants can learn about their successes, challenges, and suggestions for improvement	✓			✓
This recommendation raises issues that should be addressed by pilot testing different approaches to incentivize collaboration between organizations	✓			
Other recommendations for facilitating "well-informed" behavior change programs				
Extend the behavior change funding period to two to three years, allowing for more robust program development, implementation, and evaluation		✓		
Provide applicants with access to grant proposal reviewers' scoring rubric (or a summary of the rubric)				

Table 14: Recommendations and Corresponding Report Sections with Additional Details on Recommendations



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Concluding Remarks

The purpose of this project was to determine how to assist local organizations in implementing environmental outreach programs (EOPs) that foster environmentally responsible behavior (ERB) within the Chesapeake Bay Watershed. To accomplish this goal, the team determined the current practices, challenges, and needs of OCE grant applicants by conducting EOP observations and leader interviews, which informed a survey of EOP leaders. The team also gained insights into EOP development by participating in the 2011 Chesapeake Watershed Forum and the CBT Outreach and Engagement (OCE) grant review process. Based on the study results, the team created two tools and made recommendations to assist CBT in supporting behavior change EOPs in the region.

EOP Practices

The vast majority of organizations reported that they seek to motivate individuals to protect the Chesapeake Bay Watershed and over half have specific behavioral objectives. Organizations also reported that they motivate individuals in a variety of ways, such as increasing audiences’ awareness of issues confronting the Chesapeake Bay Watershed and providing experiential learning experiences. Personal experience and collaboration with other organizations was most commonly reported as informing EOP design. Best program practices, including targeting audiences and evaluation, were also reported as being part of EOP current practices, although fewer use them to inform EOP design. Finally, nearly all EOP leaders reported using behavior change strategies, while slightly more than half did not intentionally use these strategies to encourage the adoption of ERB. Survey Results on [page__](#) discuss EOP practices in more detail.

EOP Challenges

The most common challenges organizations

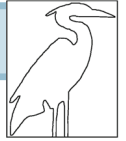
conducting EOPs reported facing involve audience recruitment, limited resources, and evaluation. EOP leaders felt reaching “outside the choir” and recruiting those who are not already committed to protecting the Chesapeake Bay Watershed were significant challenges to effective EOPs. Survey Results on [page__](#) discuss EOP challenges in more detail.

EOP Needs

EOP leaders reported wanting to learn more about program evaluation, targeting audiences, behavior change strategies, and social marketing. Workshops, websites, and webinars were all reported as favorable ways of receiving this information. Other needs included a desire for more collaboration between organizations, tactics for maximizing limited funding, and assistance in reaching beyond traditional audiences. Survey Results on [page__](#) discuss EOP needs in more detail.

Chesapeake Watershed Forum Workshop

The team presented to a group of Chesapeake Bay Watershed environmental professionals at the Chesapeake Watershed Forum in Fall 2011 to share initial survey results, introduce the topic of environmental behavior change, and discuss how to intentionally incorporate behavior change strategies into EOPs. The workshop also gave audience members the opportunity to discuss their own experiences with EOPs to foster ERB. In addition, the workshop was intended to serve as a potential model that CBT could use in the future to improve grant applicants’ knowledge and application of behavior change strategies. Based on over all positive feedback from participants, the team learned that workshops on behavior change should engage participants and promote sharing of expertise with others. Relevant examples of Bay-related behaviors and EOPs that successfully targeted and changed those behaviors are also important elements of this



type of workshop (See page 87: *Conference Workshop Reflection*).

Grant Review

CBT asked the team members to participate in its' OCE Grant Program proposal review process. The grant review was an opportunity to make specific recommendations for improvement based on the funding proposals that each team member reviewed and the discussion among all reviewers. Overall, the OCE program has numerous strengths, such as requirements specifically for behavior change programs and criteria for "well-informed" programs. Suggested areas for improvement include greater clarification regarding the difference between awareness and behavior change tracks and more justification requirements for proposed programs. Recommendations were made for improving the RFP, supporting collaboration, and providing resources (See page 94: *Grant Review Reflection*).

strategic behavior change programming and evaluation, watershed stewardship has the potential to expand throughout the region and ultimately improve the health of the Chesapeake Bay Watershed.

"The good news is if people are the problem, people can also be the solution." – David Gershon, founder of Empowerment Institute

Final Recommendations

The final section of this report (page 99) includes recommendations for CBT in three themes that continually emerged throughout the project. The first theme focuses on fostering an understanding of how to develop a strategic behavior change program, including addressing common misperceptions associated with behavior change. The second theme focuses on facilitating "well-informed" behavior change programs by providing grant applicants with the necessary skills, such as how to assess a target audience. Finally, the third theme focuses on addressing the needs of under-resourced organizations through collaboration.

Looking Forward

The team hopes that the outcomes in Table 15, *Anticipated Project Outcomes and Impacts*, will result from the dissemination of this project.

With time, energy, and commitment to



Short-term	Intermediate	Long-term
CBT has increased understanding of OCE grant applicants' practices, challenges, and needs, as well as use of behavior change strategies	CBT uses tools and recommendations developed by the team to develop and implement professional development opportunities and resources for Behavior Change Track program applicants	Chesapeake Bay Watershed organizations prioritize and implement more effective behavior change programming
CBT has increased access to behavior change research	CBT enhances its RFP and funding process	Behavior change research better informs the process of grant-making at all levels – from CBT's RFP to individual grant applicant program development
Workshop audience members have increased knowledge of research-based behavior change strategies		CBT is better able to meet its mission to "...promote public awareness and public participation in the protection and restoration of the Chesapeake Bay and its tributary rivers and streams."
Workshop/presentation audience members have more positive attitudes toward research-based behavior change strategies		Health of the Chesapeake Bay is improved

Table 15: Anticipated Project Outcomes and Impacts

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Project Overview

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Appendix 1:
Logic Model

Logic Model			
Inputs	Activities & Duration	Outputs	Outcomes and Impacts
<ul style="list-style-type: none"> Program Budget <ul style="list-style-type: none"> Chesapeake Bay Trust stipend (\$3000/member) University of Michigan, SNRE Master's Project funding (\$1500/member) Researchers <ul style="list-style-type: none"> University of Michigan Master's Project Team Dr. Michaela Zint, SNRE Advisor Steering Committee <ul style="list-style-type: none"> Chesapeake Bay Trust (CBT) Existing Information <ul style="list-style-type: none"> Conservation Psychology, Environmental Education, and other relevant peer reviewed research Funded CBT Outreach and Community Engagement (OCE) Grant Proposals OCE Proposed Project Spreadsheet CBT's RFP Documents 	<ul style="list-style-type: none"> Meetings <ul style="list-style-type: none"> CBT meetings as needed Weekly advisor meetings Weekly team meetings Literature Review <ul style="list-style-type: none"> Overview of behavior change models and strategies Data Collection <ul style="list-style-type: none"> Interviews with OCE program leaders and participants Observations and Rapid Assessment analysis of sample OCE programs Survey of OCE program leaders Data Analysis <ul style="list-style-type: none"> Quantitative and qualitative data analysis of survey responses Presentations <ul style="list-style-type: none"> Develop and present workshop for Watershed Forum Develop and conduct presentation for MAEOE, SNRE and CBT Grant Review <ul style="list-style-type: none"> Serve as reviewers for OCE grant applicants Final Report <ul style="list-style-type: none"> Write up project results and discussion Creation of tools to assist grantees with behavior change programming Project Duration <ul style="list-style-type: none"> January 2011 – April 2012 	<ul style="list-style-type: none"> Workshop for the Chesapeake Bay Watershed Forum Presentation at Michigan Alliance for Environmental and Outdoor Education Strategies for Motivating Watershed Stewardship Tool Rapid Assessment Tool Data from Interviews, Observations, and Survey Publishable Paper on the OCE Grant Applicant Survey Final Reports for CBT and SNRE 	<ul style="list-style-type: none"> Short-term <ul style="list-style-type: none"> CBT has increased understanding of OCE grant applicants' practices, challenges, and needs, as well as use of behavior change strategies CBT has increased access to behavior change research Workshop/presentation audiences have increased knowledge of research-based behavior change strategies Workshop/presentation audiences have more positive attitudes toward research-based behavior change strategies Intermediate <ul style="list-style-type: none"> CBT uses tools and recommendations developed by the Team to develop and implement professional development opportunities and resources for Behavior Change Track program applicants CBT enhances its RFP and funding process Long-Term <ul style="list-style-type: none"> Chesapeake Bay area organizations prioritize and implement more effective behavior change programming Behavior change research better informs the process of grant-making at all levels – from CBT's RFP to individual grantee program development CBT is better able to meet its mission to "...promote public awareness and public participation in the protection and restoration of the Chesapeake Bay and its tributary rivers and streams." Health of the Chesapeake Bay is improved

Appendix 2: Literature Review

Appendix 2A: Behavior Change Overview

Introduction

The team conducted a literature review from the fields of psychology, sociology, marketing, and education as each relates to environmentally responsible behavior change. Literature included in this review is primarily from the field of conservation psychology. The purpose of this literature review was to determine the predictors of environmentally responsible behaviors (ERB) and find out how such actions can be encouraged through behavior change strategies, particularly as related to watershed behaviors. As with all human behavior, ERB are determined by multiple factors, difficult to predict, and are not static (De Young, 2011). Therefore having an understanding of the theoretical predictors, determinants, and correlates of ERB will be useful for watershed practitioners when justifying strategic behavior change programs.

Environmentally responsible behavior change can be defined as an “approach to seeking information, making decisions, and valuing a stewardship ethic” (Monroe, 2003). Examples of ERB include reducing household energy consumption, changing transportation choices in the workplace, and storm water management in commercial areas (Moloney et al., 2010; Baudians et al., 2002; Taylor et al., 2007).

Individual behavior change is capable of producing a significant environmental impact. For example, Dietz et al. (2009) demonstrated that reducing carbon dioxide emissions through simple changes in household actions would reduce U.S. emissions by 7.4 percent. On a more local level, another study demonstrated that the implementation of a stormwater management program in a suburban neighborhood resulted in the adoption of best management practices throughout the community and measureable water quality improvements (Dietz et al., 2004).

In the following document, *Overview of Behavior Change Models*, the team has focused primarily on models from the field of conservation psychology that include cognitive, psychological, situational, emotional, socio-demographic, and/or social predictors of behavior and their interactions (Mobley et al., 2009). Each model emphasizes different variables as important predictors of behavior, and no single model incorporates all possible predictors (Moloney, 2010; Hines et al., 1987; Hemlich & Ardoin, 2008).

The team also reviewed a number of strategies that may increase environmental responsible behavior. These include: Commitment, Extrinsic rewards, Feedback, “How-to” skills, Intrinsic rewards, Positive emotions, Prompts, Social norms, and Stories. It is important to recognize that these strategies must be incorporated into a larger program framework that incorporates these strategies and best program practices. Best program practices can include identifying a target audience (Monroe, 2003; Game et al, 2010), removing individual and social/institutional barriers (Kollmuss & Agyeman, 2002), and using both formative and summative evaluation (McKenzie-Mohr, 2000). In addition, several frameworks, such as social marketing and a participatory approach, have been developed to help practitioners design effective behavior change programs.

Finally, there are also a number of common misperceptions to changing behavior (Kollmuss & Agyeman, 2002; Moloney et al. 2010; Hungerford & Volk, 1990; Kaplan, 1991). These misperceptions include that understanding or caring about a problem leads directly to action on that problem, as well as the effectiveness of fear as a motivation to action. A review of these misconceptions is the final section of the literature review.

Overview of Behavior Change Models

Human behavior is determined by multiple factors and thus, difficult to predict. However, there are a number of models that attempt to predict human behavior based on a variety of factors. The six models in this literature review were chosen based on the amount of empirical support available as well as the wide range of variations among the approaches to understanding and influencing behavior.

This document provides a description of several of human behavior change models. Each description includes an illustrative figure (when possible), definitions of important terms, and empirical research supporting the model.

1. Theory of Planned Behavior (Ajzen, 1991)

Based on the Theory of Planned Behavior (TPB), intention to act is the best predictor of behavior. Intention to act is in turn predicted by attitudes toward the behavior, subjective norms, and perceived behavioral control. Perceived behavioral control not only influences behavior indirectly through intention to act but also has a direct link to behavior. The more favorable the attitude and subjective norm toward a behavior, and the greater the perceived behavioral control, the stronger an individual's behavioral intention and therefore, the greater the likelihood of the behavior. The relative importance of these variables is expected to vary depending on the situation and the behavior (Figure 1: *Theory of Planned Behavior (Ajzen 1991)*).

Variable Definitions (Ajzen,1991, p. 188)

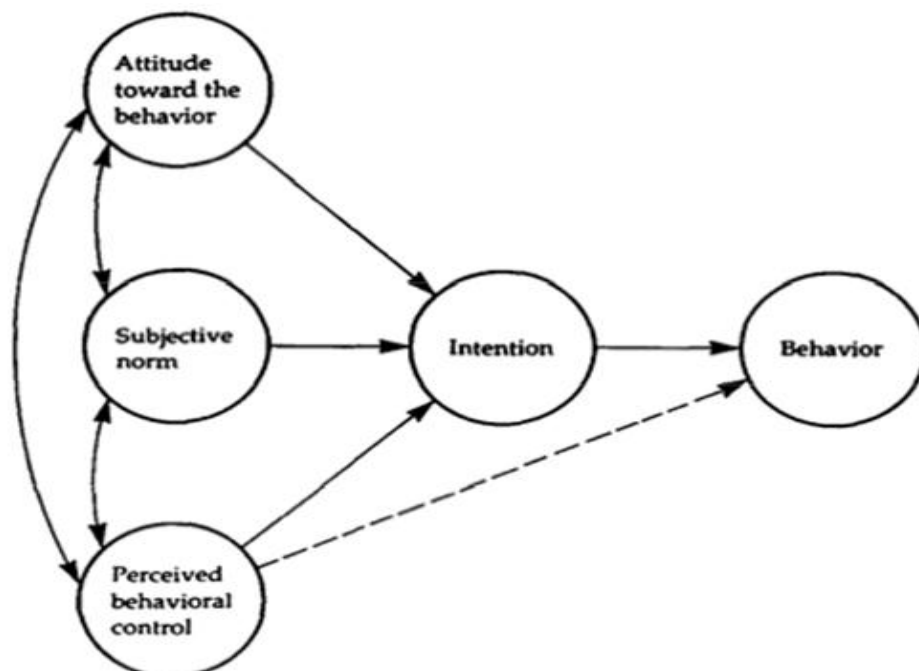
Attitude toward the behavior: "...the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question."

Subjective norm: "...the perceived social pressure to perform or not to perform the behavior."

Perceived behavioral control: "...the perceived ease or difficulty of performing the behavior...it is assumed to reflect past experience as well as anticipated impediments and obstacles."

Empirical Support

A study by Zint (2002) compared three attitude-behavior theories for predicting science teachers'



environmental risk education intentions: The Theory of Planned Behavior (Ajzen, 1991), The Theory of Reasoned Action (Ajzen & Fishbein, 1980) and the Theory of Trying (Bagozzi & Warshaw, 1990). The findings of this study suggest that the teacher's attitude towards behavior was the most important predictor of their intention to act, followed by their level of perceived behavioral control. Overall, TPB was found to be a better prediction of science teachers' environmental risk education intentions than either other theories because TPB was the only model that included both perceived behavioral control and attitude toward behavior. A meta-analysis of 187 studies on the Theory of Planned Behavior (Armitage and Conner, 2000) found similar results—perceived behavioral control increased prediction of intention to act by 5%. Another meta-analysis of 87 studies of the Theory of Planned Behavior in health behavior showed that the theory accounted for 41% of the variance in behavioral intentions and 34% of the variance in behaviors (Armitage & Conner, 2001), supporting the importance of model's variables.

2. Model of Responsible Environmental Behavior (Hines et al., 1987)

Hines et al. originally proposed this model based on a meta-analysis of environmental behavior research (128 empirical studies were reviewed) to identify variables that predicted individuals' environmentally responsible behaviors. The following variables were identified: personality factors (attitudes, locus of control, personal responsibility,) action skills, knowledge of action strategies, knowledge of issues, intention to act, and situational factors (Figure 2: *Model of Responsible Environmental Behavior (Hines et al. 1987)*).

Variable Definitions (from Hines et al.,1987)

Attitudes: "...those factors which dealt with the individual's feelings...with regard to particular aspects of the environment or objects related to the environment." (p. 4)

Locus of control: "...an individual's perception of whether or not he or she has the ability to bring about change through his or her own behavior." (p. 4)

Personal responsibility: "...individual's feelings of duty or obligation....either expressed in references to the environment as a whole...or in reference to only one facet of the environment..." (p. 5)

Action skills: "...it appears that skill in the application of action strategies to issues, combined with the appropriate knowledge, endow individuals with the ability to take action." (p. 7)

Knowledge of action strategies: "...an individual must also possess knowledge of those courses of action which are available and which will be most effective in a given situation." (p. 6)

Knowledge of issues: "Before an individual can intentionally act on a particular environmental problem, that individual must be cognizant of the existence of the problem. Thus, knowledge of the problem appears to be a prerequisite to action." (p. 6)

Situational factors: "Situational factors, such as economic constraints, social pressures and opportunities to choose different actions, may enter the picture and serve to either counteract or to strengthen the variables in the model." (p. 7)

Empirical Support

The Hines et al. (1987) model was modified by Hungerford and Volk (1990) who categorized the variables in the original model into entry level (includes ecological knowledge, sensitivity, attitudes,) ownership (includes knowledge of issues, knowledge of consequences,) and empowerment (includes environmental action skills, locus of control, behavioral intention) variables. Hungerford and Volk (1990) also developed an approach called issue investigation that works to influence each of the variables in the model. Several studies of the effectiveness of issue investigation support its ability to influence the variables in the Model of Responsible Environmental Behavior, and subsequently lead to environmental behavior change (e.g., Ramsey et al., 1989). A more recent meta-analysis by Bamberg and Möser (2007) confirms that the variables in these models predict environmentally responsible behavior.

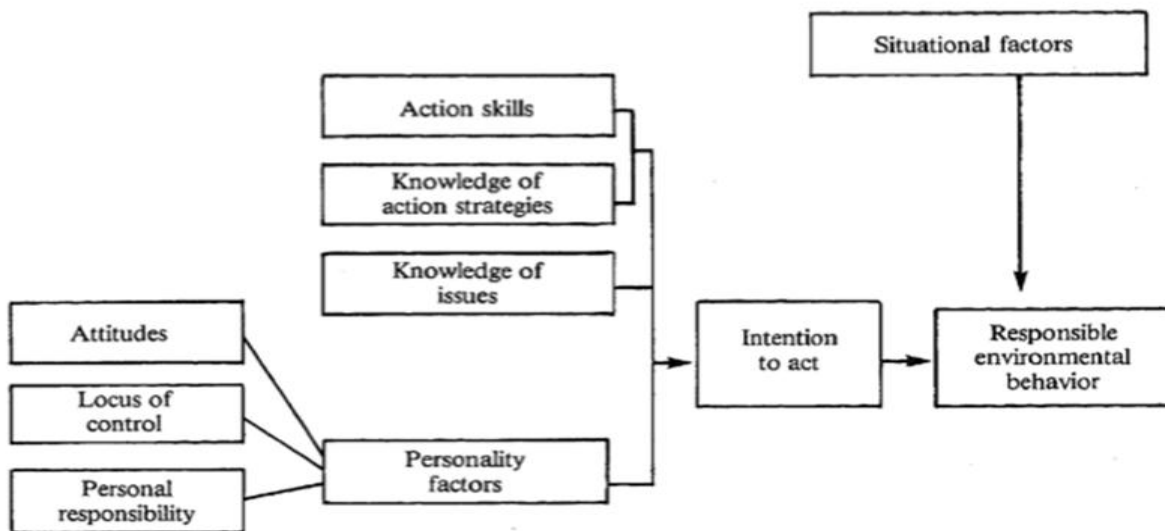


Figure 2: Model of Responsible Environmental Behavior (Hines et al., 1987)

3. Reasonable Person Model (RPM) (Kaplan S. & Kaplan R., 2003)

This model is a conceptual framework that considers what contexts bring out the best in people. The basic premise behind this model is that “people are more reasonable, cooperative, helpful, and satisfied when their environment supports their basic informational needs (Kaplan & Kaplan, 2003, 1484).” Individual’s informational needs are organized into three connected and often interdependent domains: model building, becoming effective, and meaningful action.

Model building pertains to the human desire to understand the world around the individual. The Humans build models, or mental structures , in order to store information based on their experiences. How individuals understand a situation will depend on the mental models they have. When an individual lacks a well-developed model about a new situation, relating new and important information in a way that builds on previously existing models allows exploration of the information so that it is beneficial and useful to them.

Becoming effective involves the capacity to utilize knowledge and skill. Central to this capacity are the two forms of attention: directed attention and fascination (Kaplan & Kaplan, 1995). Directed attention requires focus and effort. It is what humans use to do things such as listen to a complex presentation, read detailed directions, and multitask Directed attention is a limited resource that eventually fatigues, which can

lead to irritability, distractibility, and impulsiveness, as well as difficulty starting and continuing new behaviors. The other form of attention, fascination, is effortless and helps in recovering from this fatigue. Nature has been shown to draw on this second form of attention. This model argues for the importance of both kinds of attention in being able to make clearheaded decisions and feeling competent.

The final domain, meaningful action, focuses on people's motivation to feel helpful and valuable. Meaningful participation in activities, such as work that requires their particular skill set, allows individuals to feel as though they are being heard, are making a difference, and are needed (Figure 3: *Reasonable Person Model (RPM)* (Kaplan s. & Kaplan R., 2003)).

Variable Definitions

Building Models: Humans build cognitive maps of their environments, which develop over time and through repeated exposure.

Understanding: People are motivated to know what is going on and therefore hate confusion. People seek and desire settings that use their existing knowledge and are easily understood.

Exploration: People are motivated to learn, discover, explore, and test their knowledge. They prefer to explore at their own pace and to answer their own questions based on their interests. People seek environments that support their need to explore, such as museums.

Becoming Effective: The ability to pay attention is limited and can lead to irritability, distractibility, and impulsiveness, as well as difficulty starting and continuing new behaviors. People are motivated to use and expand their competence to learn new skills, test abilities, and hone proficiency. To become and remain effective requires mindful management of attention resources.

Meaningful Action: People are motivated to make a difference; they need a genuine role in what is going on, one that draws on their knowledge or skills.

Empirical Support

Systematic research of this model is currently limited, but in their description of the model in *The Journal of Environmental Psychology* the Kaplan's (2009) provide several examples to give the framework greater concreteness. Guatemalan farmers helping their Mexican counterparts "used parables and stories, their expressions of the love of farming and community, and their insistence on small-scale experiments. They helped the Mexicans learn by seeing themselves as students, facilitated participation by showing their deep respect for the Mexican farmers, and fostered the latter's competence by requesting that they, in turn, share their new knowledge with others (Kaplan & Kaplan, 2009, 334).

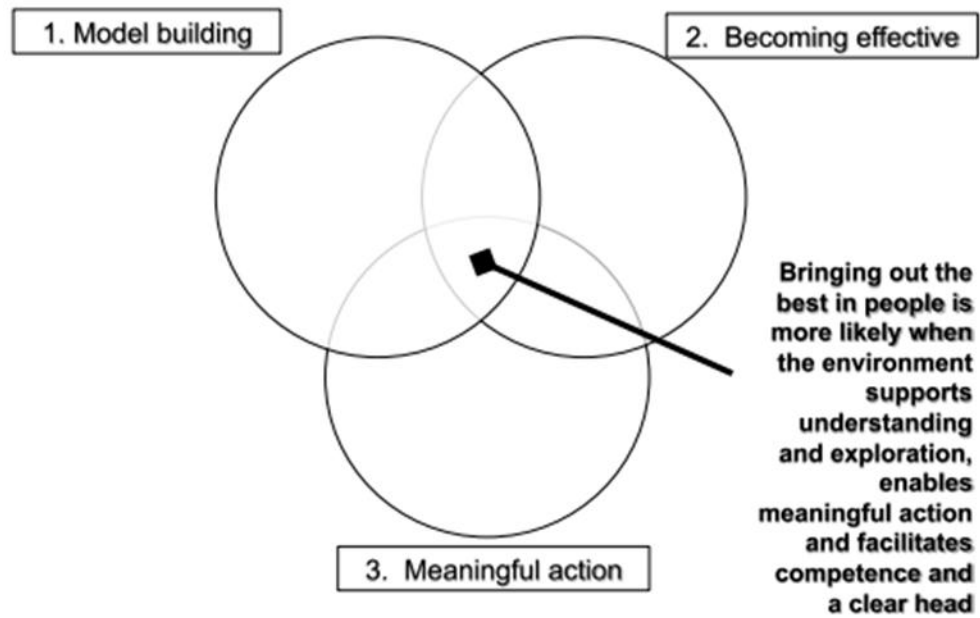


Figure 3: Reasonable Person Model (RPM) (Kaplan S. & Kaplan R., 2003)

4. Community Based Social Marketing (CBSM) (McKenzie-Mohr, 1996)

Community based social marketing is a five-step program approach to influence individuals' behaviors primarily by decreasing barriers to desired behaviors. The first step is selecting a specific behavior to target and identifying the target audience for that behavior. Organizations may also want to target behaviors that have the highest impact on a particular issue, as well as the highest probability of being adopted.

The second step is to identify the barriers, as well as possible benefits, to the behavior in the context of the target audience. A good starting point is a literature review, followed by surveys, focus groups, and direct observation of the target audience. Some suggested possible barriers include time, money, comfort, safety, and convenience.

Once the barriers to the behavior have been identified, the next step is to design a program to overcome them. Community Based Social Marketing offers examples of strategies such as commitment, prompts, social norms, incentives, or trying to remove barriers altogether.

The fourth step is to implement the program on a small scale with a control group and an intervention group to pilot the strategy, and if the results are positive, to implement the program at a larger, community scale. If the results are not positive, the strategy should be modified and piloted again. The fifth step involves evaluation and modification the intervention on the larger scale as during the pilot phase (Figure 4: *Model of the CBSM Method* (Hart, 2010)).

Variable Definitions

Barriers: In CBSM, barriers are defined as conditions that impede the desired behaviors. For example, barriers to reducing driving behavior can include not knowing how to use the public transit system or feeling social pressure to drive a car to fit in.

Commitment: A technique in which an individual is asked to sign a paper or make a verbal agreement that binds the individual to a particular course of action. For example, signing a pledge that states that he or she agrees to reduce his or her power usage by 10% by the end of the year. Commitment has been shown to foster a variety of pro-environmental behaviors (Katzev & Wang, 1994).

Incentives: A positive motivational or enabling influence. Can be financial (money from the utility company in exchange for reducing power usage in peak times) or non-financial (getting the opportunity to meet people at a volunteer clean up experience).

Prompt: A visual or auditory aid that reminds people to carry out an activity they might otherwise forget. Prompts are not meant to motivate behavior or change attitudes but to remind people to engage in behaviors they are already receptive to doing.

Social Norm: Behavioral expectations and cues within a society, community, or group. Norms are used to explicitly or implicitly convey appropriate and inappropriate values, beliefs, attitudes, and behaviors.

Empirical Support

McKenzie-Mohr (2000) describes that the city of Durham Region, on the outskirts of Toronto, wanted to encourage greater water efficiency in its residents as the population grew. They directly followed the suggested CBSM steps, as listed below.

1. Targeted behavior: Decrease lawn watering in the summer by 10%.
2. Used survey and observations to identify barriers.
- 3 & 4. Two interventions were tested as part of a pilot study. The first intervention consisted of students visiting residents in their homes to teach them about efficiency and give them prompts to display above their outdoor water faucet and tools to help them measure water usage. The students asked them to verbally commit to reducing their water usage. The second intervention consisted of mailing residents a pamphlet about water conservation.
5. Direct observation showed that households visited by students decreased their watering by 54%, while households who received pamphlets increased by 15%. Additionally, excessive watering (over one hour) decreased by 66% for the residents visited by students, while it increased in the information only group by 96%. Overall, the intervention showed that pamphlet interventions are likely to not be sufficient in changing behavior; however it is unknown if the participants would have increased their water usage without the pamphlet, since there was no control group.

The CBSM Method

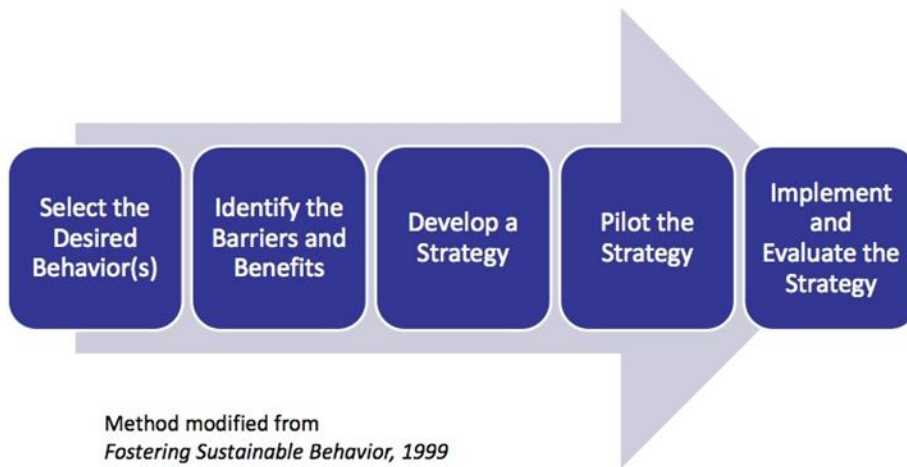


Figure 4: Model of the CBSM Method (Hart, 2010)

5. Norm Activation Model (NAM) (Schwartz, 1973)

The Norm Activation Model suggests that altruistic social norms, that one morally should behave in certain ways, are characterized by widespread approval but often limited participation. This model seeks to understand the process that translates social norms into behavior. According to Schwartz (1975), social norms are translated into personal norms when individuals internalize the belief that they should behave in accordance with these norms. Once internalized, being aware of the consequences of one's actions (e.g., recycling reduces waste in landfills) and feeling accountable for one's actions (e.g., it is my duty to recycle) activates personal norms and results in participation (Figure 5: *Norm Activation Model (Schwartz, 1973)*).

Variable Definitions

Norms: "moral behavior which people generally agree upon in a sort of abstract detached way (Hopper, 1991, p. 200)."

Social Norms: Values and attitudes of significant others; we expect others to act in the morally proper way, and in turn expect the same of us. There are social norms for environmental stewardship in general, but not everyone acts accordingly (Hopper, 1991).

Personal Norms: Social norms adopted at a personal level. The consequences of violating or upholding a personal norm are tied to one's self-image. Violating these norms engenders guilt, and to uphold them engenders pride (Hopper, 1991).

Awareness of Consequences: Knowing why specific behaviors should be undertaken and what will happen if one does.

Ascription of Personal Responsibility: Feeling responsible and accountable for one's actions activates behavior.

Empirical Support

The Schwartz model was used in a study of an urban community-wide curbside recycling program to determine the extent to which recycling could be conceptualized as an altruistic behavior (Hopper, Nielsen, J.R. & McCarl, J., 1991). Hooper et al. found that block-leader programs, where residents encouraged neighbors to recycle, influenced social and personal norms and subsequently increased recycling behavior. The study also compared programs using prompt and information strategies to the block-leader program, and found that while these strategies did increase recycling, but to a lesser degree. In addition, neither of these strategies affected norms and attitudes toward recycling. These findings demonstrate the possible impacts of social interaction in facilitating attitude and behavior change.

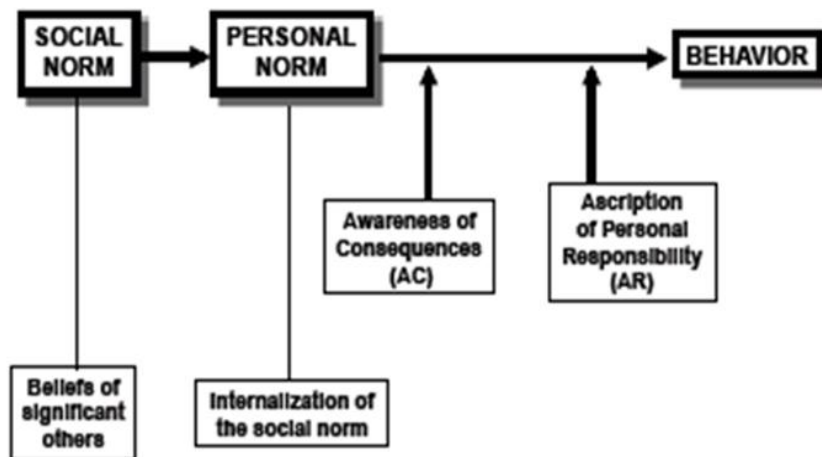


Figure 5: Norm Activation Model (Schwartz, 1973)

6. Social Support and Problem Solving (Staats, Harland, & Wilke, 2004; Aronson & O'Leary, 1983)

Social support and problem solving tries to tap into human problem solving to create solutions that empower groups to make changes to their behaviors. These types of interventions typically create small groups of individuals who know each other or interact in some way—in the same church, in the same neighborhood, etc. Once these groups have formed, an expert typically provides the group a problem to solve (or helps it identify a problem to solve) that the group has some local knowledge in: For example, everyone has local knowledge of his or her personal household habits. The expert will also help by providing resources or other guidance to provide the group with information they are missing, such as scientific knowledge. Finally, the expert provides feedback on how the group is doing.

The group meets regularly to discuss possible solutions, provides support for individuals who are trying small experimental solutions, and shares results. This group dynamic is used to build a sense of personal responsibility and self-efficacy to solve problems, and create a social norm that everyone is trying to change their behaviors. There is typically also emphasis on supporting social diffusion through modeling.

As suggested by this description, this particular model emphasizes small experiments of local residents engaged in changing their own behavior and learning from their own and others' mistakes and successes.

Variable Definitions

Modeling: Modeling occurs when people demonstrate behavior in a place where others can observe them

Personal responsibility: Belief that one has a duty to act.

Self-efficacy: Belief that one can make a difference through ones actions.

Social diffusion: When behavior is spread through the creation of social norms. For example, when shopping carts were first introduced to reduce breakage in supermarkets, they were not popular. However, when stores hired people to walk around using carts [modeling], individuals soon also began adopting the behavior, copying the people who were already using the cart (Nesbit et al., 1976).

Social Norm: Behavioral expectations and cues within a society, community, or group. Norms are used to explicitly or implicitly convey appropriate and inappropriate values, beliefs, attitudes, and behaviors.

Empirical Support

Eco-Teams is a program where 5 to 8 households – called an Eco-Team – meet 7 times over a 5 - 6 month period and use a step-by-step workbook to create a more environmentally sustainable lifestyle. Using the handbook, they take action to develop sustainable lifestyle practices in five areas: garbage, water, energy, transportation, and consumption. The sixth action area, empowerment, enables them to help others take action for the planet. They also receive weekly feedback about their activities. The focus of these groups is to try to make habitual behavior more reasoned and therefore more able to be changed.

Staats et al. (2004) compared the Eco-Team group with a matched control group before the intervention, directly after, and 2 years later. Overall, about half of the Eco-Team households changed their behaviors significantly. This difference was maintained or enlarged over the 2-year period. The main problem with the ETP is that it is demanding, and often attracts people who are already environmentally ahead of the curve. Therefore, the authors suggest the Eco-Team approach needs to be adapted to create a less demanding program; reducing the time or monetary cost to participants, for example. However, the durability of the results show that the ETP is a valuable case study in creating pro-environmental behavior change.

Another example of a Social Support and Problem solving model is the WWF-UK. The WWF-UK conducted a three year “Community Learning and Action for Sustainable Living (CLASL)” project (Warburton, 2008). CLASL sought to develop, implement, and evaluate a research-based program to encourage and enable three community groups to identify and implement ways to live more sustainably. Evaluation was embedded throughout the project’s life cycle: 1) a literature review informed the development of the CLASL model, 2) formative feedback contributed to adjustments to the project’s implementation, and 3) a summative evaluation assessed the projects’ overall effectiveness. Data were collected through interviews, observations of meetings and workshops, and a questionnaire that sought to assess changes in individual group members’ self-reported knowledge, attitude, and behaviors.

The program sought to accomplish the following goals: Build the knowledge, capacity, capability, commitment, ownership and responsibility among participants to increase sustainable living, embed the learning within the project community, and ensure that barriers to sustainable living are tackled.

To accomplish these goals, the project sought to employ social learning within community groups on environmental behavior, along with expert guidance. Social learning involves learning with and from peers and role models, especially through collective action. Group members learned from the process, from each other, as well as WWF-UK staff. As a result, group members became more empowered and engaged in actions that improved the sustainability of their own lives and their organizations (i.e., a church and school). Group members also had a significant impact by reaching out to others as ambassadors for sustainable living.

At the same time, group member found that what they and their organizations could do was limited by cultural and policy constraints. Factors that contributed to the CLASL's success included its research-based model, the networks it worked with to identify groups, group members sharing leadership responsibilities, and the support and resources provided by WWW-UK staff. Overall, the researchers concluded that the program was more valuable when it was tailored to the specific audience.

Finally, a study at University of California, Santa Cruz, for example, Aronson and O'Leary (1983) investigated the effect of prompts and people modeling the behavior on whether people in public showers would turn off the water while soaping to conserve. First they surveyed the population and found that most students were knowledgeable about the need to turn off water, both to save water in a water-poor state and conserve energy. This result confirmed the validity of a prompt as an intervention, because students did not need to be informed that this behavior was important, but possibly needed to be reminded to do it. Showering behavior was recorded through subtle observation from the adjoining locker area.

The first intervention was a prompt posted on a wall, which resulted in 6% of people to complying. Second they tried an obtrusive sign, posted on a tripod in the middle of the shower area, which increased compliance (19%), but also seemed to earn some resentment of people who were then observed taking even longer showers than most other people, possibly out of anger.

After this, the researchers kept the same prompt, but had a person waiting in the shower area with the shower off, and started soaping up with the water off when someone entered, modeling the desired behavior, while not acknowledging anyone else in the room. This intervention led to a 49% compliance level. When there were two models, this jumped to 67%. These large increases in compliance demonstrate the power of social norms, where people feel uncomfortable or unwilling to be the first person to change their behavior, but when others are already doing a behavior, people become more willing to try it themselves.

**Appendix 2B:
Behavior Change Model Chart**

Models	Model Variables	Intervention Points	Strengths	Weaknesses	Similarities & Differences
<p align="center">Azjen (1991) Theory of Planned Behavior (TPB)</p>	<ul style="list-style-type: none"> ▪ Belief regarding outcome of the behavior x Evaluation of outcome → Behavioral Attitude ▪ Belief about what important others think about behavior x Desire to comply with others → Subjective norms ▪ Perceived behavioral control ▪ Behavioral intent 	<ul style="list-style-type: none"> ▪ Behavioral beliefs ▪ Normative beliefs ▪ Perceived behavioral control 	<ul style="list-style-type: none"> ▪ “Behavioral intent” strongly correlated with behavior ▪ Extensively tested model that applies to wide range of behaviors 	<ul style="list-style-type: none"> ▪ May be interpreted as assuming that people choose behaviors with the highest expectation of attaining valued goal 	<p><i>Similarities:</i></p> <ul style="list-style-type: none"> ▪ Like MREB and NAM, includes attitudes ▪ Like MREB, includes intention <p><i>Differences:</i></p> <ul style="list-style-type: none"> ▪ Only model that does <i>not</i> include issue importance ▪ Unlike ERBM, NAM, lacks responsibility/norms
<p align="center">Hines et al. (1987) Model of Responsible Environmental Behavior (MREB)</p>	<ul style="list-style-type: none"> ▪ Psycho-social: <ul style="list-style-type: none"> • Attitudes • Locus of control • Personal responsibility ▪ Cognitive: <ul style="list-style-type: none"> • Action Skills • Knowledge of strategies • Knowledge of issues ▪ Intentions ▪ Situational Factors 	<ul style="list-style-type: none"> ▪ Attitudes ▪ Locus of control ▪ Personal responsibility ▪ Action skills ▪ Knowledge of strategies ▪ Action Skills ▪ Knowledge of issues 	<ul style="list-style-type: none"> ▪ Recognizes general environmental knowledge as important, but not sufficient, to create behavior change, identifies other types of knowledge that are likely to be important 	<ul style="list-style-type: none"> ▪ May require a captive audience ▪ Connection between different types of knowledge and action is questionable ▪ “Situational Factors” is a catch all (includes many factors) 	<p><i>Similarities:</i></p> <ul style="list-style-type: none"> ▪ Like NAM and TPB, includes attitudes ▪ Like RPM and TPB, includes intention <p><i>Differences:</i></p> <ul style="list-style-type: none"> ▪ Only model to directly include situational factors ▪ Does not include social norms (unlike TPB, social support, NAM, CBSM)
<p align="center">Kaplan and Kaplan (2003) Reasonable Person Model (RPM)</p>	<ul style="list-style-type: none"> ▪ Model building ▪ Understanding ▪ Exploration ▪ Becoming effective ▪ Mental vitality ▪ Competence ▪ Meaningful action ▪ Participation 	<ul style="list-style-type: none"> ▪ Creating supportive environments <ul style="list-style-type: none"> • Utilizing any of the primary variables • Best results when all three domains are considered interdependently 	<ul style="list-style-type: none"> ▪ Draws on a diversity of research from cognitive, motivational, and affective areas ▪ Promotes behaviors without coercion or guilt ▪ Acknowledges innate human preferences for certain environments 	<ul style="list-style-type: none"> ▪ A framework for bringing out the best in people rather than an actual model of behavior change 	<p><i>Similarities:</i></p> <ul style="list-style-type: none"> ▪ Includes feedback like social support and problem solving model ▪ Promotes declarative and procedural knowledge <p><i>Differences:</i></p> <ul style="list-style-type: none"> ▪ All model variables are seen as interrelated ▪ Focus on human-environment interaction

Models	Model Variables	Intervention Points	Strengths	Weaknesses	Similarities & Differences
<p>McKenzie-Mohr (1996) Community-Based Social Marketing (CBSM)</p>	<ul style="list-style-type: none"> Select behavior to be targeted Identify barriers and benefits. Design a strategy to overcome barriers. Pilot strategy Evaluation 	<ul style="list-style-type: none"> Creating strategies to overcome barriers identified by target audiences 	<ul style="list-style-type: none"> Step-by-step design that explicitly highlights need to identify target behavior, learn about audiences and barriers to behavior Lots of relevant available resources to build on Extensive library of case studies 	<ul style="list-style-type: none"> Target audience is not involved in solution creation and thus may lead to psychological reactance (strengthening of a contrary attitude) to being told what to do. May miss out on creative solutions born of local knowledge Problems with how to define high-impact, high-probability behaviors (many behaviors have multiple impacts and varying probabilities) May be problematic for reproducing effective interventions; 	<p><i>Similarities:</i></p> <ul style="list-style-type: none"> Could include many of the variables from other models as barrier types, from norms to knowledge; however, this is not explicit in the model Similar to TPB in suggesting need to target behavior Similar to ERBM identifies importance of situational factors (i.e., potential barriers) <p><i>Differences:</i></p> <ul style="list-style-type: none"> Only step-by step model
<p>Schwartz (1973) Norm Activation Model (NAM)</p>	<ul style="list-style-type: none"> Social Norms Personal Norms Awareness of Consequences Ascription of Personal Responsibility 	<ul style="list-style-type: none"> Social interaction promoting behavior Providing declarative knowledge Prompts 	<ul style="list-style-type: none"> Acknowledges the importance of moral judgments Seeks to find conditions that change personal behavior to be consistent with a specific social norm 	<ul style="list-style-type: none"> Lacks situational variables, procedural knowledge (competence and self-efficacy), and intentions 	<p><i>Similarities:</i></p> <ul style="list-style-type: none"> Like TPB includes subjective norms Like social support and problem solving, includes social support <p><i>Differences:</i></p> <ul style="list-style-type: none"> No procedural knowledge variables
<p>Staats, Harland, & Wilke (2004), Aronson & O’Leary (1983), Warburton (2008) Social Support and Problem Solving (EcoTeams, WWF, UCSC)</p>	<ul style="list-style-type: none"> Create small groups to solve environmental issues and support their efforts with resources, and experts 	<ul style="list-style-type: none"> Create situations that encourage the community members to develop and enact small scale solutions, with the support of resources and experts 	<ul style="list-style-type: none"> Community involvement can create ownership and pride Community involvement can increase the creativity of solutions and empower individuals to act Creating social norms is a powerful tool for spreading behavior change—social modeling and social diffusion Includes feedback, solution sharing, and commitment, which have also be found to change behaviors Taps into innate human desire to solve problems Focused on resulting in durable behaviors 	<ul style="list-style-type: none"> Can be time and resource intensive May be more attractive to individuals already interested in environmental issues Compromise can happen easily if the focus is on getting people to accept behavior rather than what is ecologically necessary; for example, if people said they were only willing to reduce their electricity by 10%, but 20% is needed to reduce pollutants to a safe level, what level does the intervention target—the feasible or the necessary? 	<p><i>Similarities:</i></p> <ul style="list-style-type: none"> Involves creating social norms like the NAM Involves a sense of personal responsibility, like MREB and NAM Lack of focus on attitudes like RPM/CBDM and CBSM Focus on knowledge and efficacy like MREB, TPB, NAM, and RPM/CBDM <p><i>Differences:</i></p> <ul style="list-style-type: none"> Only model that is focused on groups rather than individuals Most explicitly “bottom up” rather than “top down” model

Appendix 2C: Behavior Change Misperceptions

Dispelling Behavior Change Misperceptions

Many individuals have intuitive ideas about how to foster behavior change that guide their communication/education efforts. In environmental programming, these ideas often involve increasing knowledge and concern for an environmental problem, as well as appealing to guilt (Figure 6: *Intuition-based model of factors that predict environmental behavior*). However, while each of these variables may have some effect on behavior, research suggests that influencing these factors is not the most effective way to change behavior.

Misperception 1: Understanding of environmental problems → Action on Environmental Problems

(also referred to as “information deficit” model)

One of the most dominant intuitive ideas in environmental behavior change programs is that if individuals were more knowledgeable about environmental problems, they would then act on these problems. Based on this model of behavior change, many environmental programs seek to provide individuals with natural science information related to environmental problems.

Various studies have shown that knowledge of an environmental problem (in the natural science sense) is unlikely to be sufficient for fostering action on that problem. Katzev (1987) conducted a series of studies, which demonstrated that individuals who received pamphlets or tip booklets containing information on energy conservation did not significantly change their energy conservation behaviors. Kaplan (2000) also suggests that if individuals are provided with too much information about environmental problems, they may experience “overload” and it may cause them to feel helpless and, thus immobilize action.

In contrast, while knowledge about environmental problems is unlikely to be sufficient for fostering behavior change, other types of knowledge may be highly important. This includes procedural knowledge, meaning what actions individuals can engage in to help address environmental problems (Hines et al., 1987).

Misperception 2: Caring and concern for environmental problems → Action on Environmental Problems

Another popular intuitive idea is that if individuals cared more or were more concerned about environmental problems, they would act on these problems. A lot of environmental programs therefore try to highlight the seriousness of these problems, again usually expressed from a natural science perspective (e.g., number of species that will be harmed).

A variety of surveys suggest that most citizens in US and elsewhere express concern for the environment but report that they are not necessarily acting to protect environment (McClafferty, 2001; Raabe, 2011). This suggests there is a gap between concern for the environment and action. Furthermore, it could also be that individuals tend to care about the environment, but that they also care and potentially prioritize other values. Green purchasing decisions, for example, are not just based on products’ perceived environmental benefits but their perceived quality and cost (Coyle, 2005).

Misperception 3: Appeal to fear and guilt → Action on Environmental Problems

Another idea that seems to be invoked especially when Misperception 1 and Misperception 2 do not appear to be effective is to appeal to negative emotions such as fear and guilt. Consider all the various negative images that have been invoked within the context of climate changes of polar bears on small remains of ice, for example.

What we know, however, is that evoking negative emotions can actually lead to urges to act in undesirable ways—for example, fear leads to the urge to escape (Frederickson 1998) and guilt leads to resentment, neither of which will lead to the desired behavior and may actually cause individuals to “tune out” and destroy communicators/educators’ credibility (Hastings et al., 2004).

Prepared based on a presentation by Dr. Zint at the American Association for the Advancement of Science in February 2007.

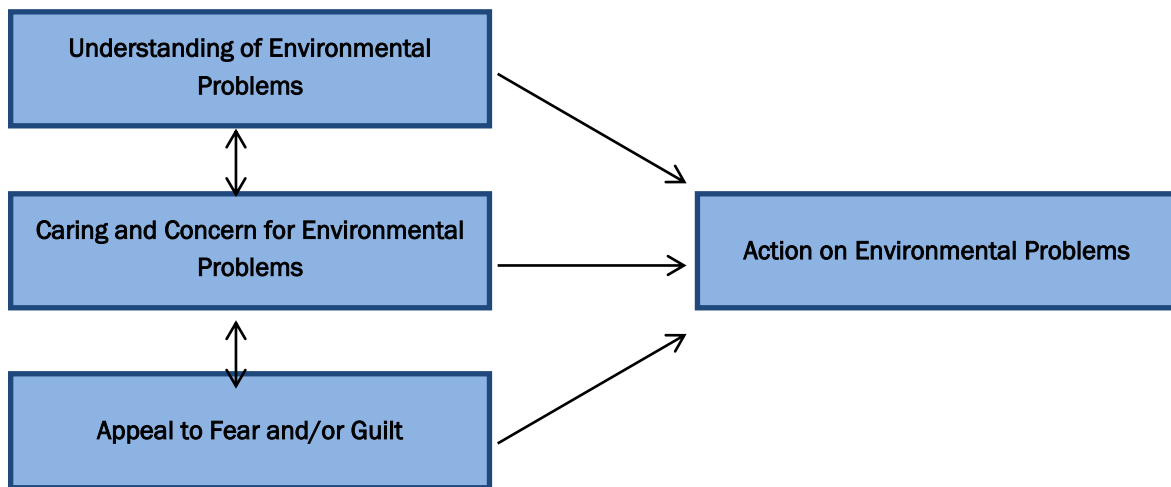


Figure 6: Intuition-based model of factors that predict environmental behavior

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Appendix 3: Interview Script (Phone and In-Person)

Phone: Hello, is this _____? Hello, my name is _____. I am a graduate student at the University of Michigan School of Natural Resources and Environment. I am calling in reference to our scheduled interview about your community outreach programs. Is this still a good time to talk?

In-Person: Hi, _____ it is nice to meet you. My name is _____ and I am a graduate student at the University of Michigan School of Natural Resources and Environment. Thank you for taking time out of your busy day to discuss your community outreach programs.

Phone and In-Person: Let me start by providing you with a brief background on our research. We are working on our Masters at the University of Michigan's School of Natural Resources and Environment. As part of our degree, we are completing a master's project that involves working in collaboration with a client to gain practical work experience. Our research project is focused on exploring different ways of increasing stewardship of land and water resources in the Chesapeake Bay Watershed. In particular, we are concentrating on key elements involved in designing programs that motivate and empower communities to engage in environmentally responsible behaviors. Currently we are interviewing leaders of organizations, like you, that focus on the Chesapeake Bay watershed in order to gain invaluable insight on program development.

Before we begin, I am required by the University of Michigan to read you the following confidentiality agreement in order to conduct this study. Please bear with me as I read it and of course, let me know if you have any questions:

The audio file of our conversation will be kept confidential to the extent required by federal, state, and local law. This means that individual responses will not be shared with the Chesapeake Bay Trust or any other persons outside of the Masters Project group without explicit permission. In addition, any information that is potentially identifiable will not be shared with the CBT nor affect funding decisions. The information you share will be kept on password-protected computers and/or a locked file at the School of Natural Resources and Environment (SNRE), University of Michigan until completion of a final report, after which the information will be destroyed. However, the Institutional Review Board and university and government officials responsible for monitoring this study may inspect these records.

Is this acceptable?

1) Participant background:

First, I would like to ask some initial questions about your role at your organization.

- a) What is your official title?
- b) What are your primary responsibilities?

2) Program Information and Goals

Next, I would like to learn more about one of your outreach programs and its goals.

- a) Which community outreach program would you like to discuss today?
 - [If familiar with that program]: I am somewhat familiar with that program. Could you tell me a little more about it?
 - [If not familiar with the program]: Could you tell me a little more about this program?
 - [If not a community outreach program]: Our research is more focused on programs that increase stewardship of land and water resources, such as those funded by the CBT. Can you think of another program that fits this description?
- b) What is your role in the program?
 - P: What role did you play in the development, implementation, and/or evaluation of the outreach program?
- c) Is your program a new program, continuing program, or expansion of a previous program?

- P: [If continuing or expansion] Please describe the program the current one is building upon.
- d) At what stage are you in the program?
- P: Are you in the development, implementation, or evaluation phase of the program?
- e) Who is/are your primary audience(s), how did you chose this audience, and why do you choose to focus on this particular segment of the population?
- P: Do you focus on the general public, citizens in the watershed, homeowners in a specific watershed, the agricultural community, elected officials, other?
- f) What is the program's primary goal or goals?
- P: Is it focused on increasing awareness, raising concern, changing behavior, or engaging participants? (If they list a goal like: save the ____, frame as: Are you accomplishing that goal by focusing on increasing awareness, raising concern, changing behavior, or engaging participants)
 - P: Awareness: For example, handing out pamphlets or giving an informational presentation to increase knowledge of issues such as nitrogen levels or trash pollution in the Bay.
 - P: Concern: Having an interest in or worry about the Bay
 - P: Changing Behavior: Increasing your participant's environmentally responsible actions that improve water quality in the Bay
 - P: Engagement: Short term community involvement in improving Bay health, such as trash pick up days
 - [If awareness]:
 - What issue are you specifically trying to raise awareness about (if they have not already told you)?
 - Why did you choose that issue?
 - Any specific scientific studies or reports? Particular experiences? Anything else?
 - Briefly describe what strategies you are using to achieve this goal.
 - P: pamphlets, presentations, workshops, online, print publications, events
 - Why did you choose those strategies?
 - [If concern]:
 - What issue are you specifically trying to raise concern about (if they have not already told you)?
 - Why did you choose that issue?
 - Any specific scientific studies or reports? Particular experiences? Anything else?
 - Briefly describe what strategies you are using to achieve this goal.
 - P: pamphlets, presentations, workshops, online, print publications, events
 - Why did you choose those strategies?
 - [If behavior change]:
 - Which behaviors do you seek to change?
 - What components of your program help to ensure it will change behaviors?
 - P: Why do you believe this to be the case? What specific experiences, studies/theories/research (possibly studies of barriers participants might face to engage in the behaviors,) evaluation results, etc.?
 - Which behaviors may be particularly important to improve the Bay's health?
 - What makes you identify these particular behaviors?
 - Any specific scientific studies or reports? Particular experiences? Anything else?
 - [If engagement]:
 - What issue are you specifically trying to engage participants in (if they have not already told you)?
 - Why did you choose that issue?

- Any specific scientific studies or reports? Particular experiences? Anything else?
 - Briefly describe what strategies you are using to achieve this goal.
 - P: pamphlets, presentations, workshops, online, print publications, events
 - Why did you choose those strategies?
 - [If other goal]:
 - Why did you choose to focus on _____?
 - Why did you choose that ____?
 - Any specific scientific studies or reports? Particular experiences? Anything else?
 - Briefly describe what strategies you are using to achieve this goal.
 - P: pamphlets, presentations, workshops, online, print publications, events
 - Why did you choose those strategies?
 - Do other programs you run have similar goals?
- g) What obstacles hinder your program from successfully meeting its goals?
 - P: Why do you believe this to be the case? What specific experiences, studies/theories/research (possibly studies of barriers participants might face to engage in the behaviors,) evaluation results, etc.?
 - P: (if done already) Did you have any expectations of these obstacles or any other obstacles that did not happen? Why did you believe that those barriers would be an issue? What specific experiences, studies/theories/research (possibly studies of barriers participants might face to engage in the behaviors,) evaluation results, etc.?
- h) What do you hear from your community as their major concerns about the Bay? How does this shape your program development?

3) Behavior Change Knowledge:

Now, I am going to list several strategies that have the potential to result in conservation behaviors. It is fine to say that you're not using this strategy or don't believe it would be helpful; many of these strategies may not be applicable to your program. Again, I will be clarifying each strategy with a definition; please feel free to interrupt me if you are already familiar with this strategy or if you need further clarification. This is a slightly longer section.

- a) Another strategy involves the use of **prompts**, which are short, simple reminders to perform a desired behavior such as displaying signs to turn off lights or turn down the heat. Prompts are usually near the location where the behavior is performed.
 - P: Another example is the signs over recycling bins that say "Recycle Here"
 - Are you using this as part of your program?
 - P: [If yes] How?
 - P: [If no] How could this strategy be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?
- b) Another strategy that has the potential to result in conservation behavior is **sharing stories**. This refers to using verbal or written tales with messages about conservation behavior imbedded.
 - P: An example could be a story of how someone came to engage in a particular conservation behavior, how they find a conservation behavior rewarding, or how they overcame obstacles to behavior change.
 - Are you using this as part of your program?
 - P: [If yes] How?
 - P: [If no] How could this strategy be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?

- c) One strategy is the use of **social norms** or **modeling**. These tools can create behavior expectations and cues within a group that demonstrate the importance of a behavior to a community either by having individuals perform the desired behavior around others to influence their behavior or by defining behaviors as socially acceptable or unacceptable.
- P: Examples include prominently displaying recycling bins in a neighborhood or getting residents to shop with reusable bags as a way to encourage others to decrease plastic bag consumption.
 - Are you using social norms or modeling as part of your program?
 - P: [If yes] How?
 - P: [If no] How could these strategies be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?
- d) Another strategy is the use of **feedback**. This refers to the process of providing people with information about their level of success or need for improvement in response to a particular behavior.
- P: One example is providing information on a resident's water bill about how much water they have used in comparison to the previous month.
 - Are you using this as part of your program?
 - P: [If yes] How?
 - P: [If no] How could this strategy be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?
- e) Another strategy involves the use of **extrinsic rewards** such as money, tokens, or prizes,
- Are you using this as part of your program?
 - P: [If yes] How?
 - P: [If no] How could this strategy be used to help achieve your program's goals?
- f) Another strategy is the use of **intrinsic rewards**, or appealing to one's values or morals.
- P: Examples include the importance of helping others, or doing the right thing.
 - Are you using this as part of your program?
 - P: [If yes] How?
 - P: [If no] How could this strategy be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?
- g) Another strategy is the use of **commitment**, which refers to verbal or written agreements, such as pledges, used to encourage one to adopt a behavior.
- An example of a commitment strategy is getting a participant to sign a contract stating they will recycle and put trash where it belongs.
 - Are you using this as part of your program?
 - P: [If yes] How?
 - P: [If no] How could this strategy be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?
- h) Another strategy used to encourage conservation behaviors involves **appealing to emotional states** such as hope, enjoyment, fear, or guilt as a way to change one's behavior.
- P: Some examples include advertising that attending a tree planting is a fun way to meet new people, or demonstrating that the use of lawn chemicals can have serious negative health effects for you and your family.
 - Are you using this as part of your program?
 - P: [If yes] How?
 - P: [If no] How could this strategy be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?
- i) Another strategy involves **increasing one's action skills**, or competence, by providing one with information and training on how to carry out conservation behaviors.
- P: Examples would include increasing one's ability of knowing how to install a rain barrel or knowing which items are recyclable.

- Are you using this as part of your program?
 - P: [If yes] How?
 - P: Through a lecture? Through hands-on skill-based training?
 - P: [If no] How could this strategy be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?
- j) Finally, another strategy is known as **community-based social marketing**, which aims to influence individuals' behaviors by decreasing barriers to desired behaviors.
- P: This strategy selects a specific behavior and a target audience, identifies barriers and benefits to the behavior, develops a strategy, pilots the program, implements and evaluates the program.
- The major step of community-based social marketing is assessing the audience's **barriers** to behavior change. Barriers are factors such as lack of time, money, comfort, safety, or convenience that may prevent the audience from doing a particular behavior.
 - Have you assessed your audience's barriers? If so, how?
 - P: [If not using it] how could this strategy be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?
 - Community-based social marketing also assesses **benefits** of behavior change. Benefits are ways in which individual may benefit from doing a behavior, such as monetary savings, social networking, and improved health.
 - Have you assessed your audience's benefits? If so, how?
 - P: [If not using it] how could this strategy be used to help achieve your program's goals?
 - How could this strategy be useful to improving your programming?

4) Evaluation:

Next, I will be asking questions related to evaluation of your program.

- a) Have you already evaluated your program or are you planning to do so?
 - P: If yes, can you explain the evaluation process?
 - For example, how often do you evaluate your outreach programs? What types of evaluation tools do you use?
 - P: Do you use pre- or post-surveys, focus groups, interviews, paired studies, others?
 - Is there anything that you would need to support your evaluation process?
 - P: What about training?
 - P: If no, what would you need to support an evaluation process? Please be specific.
 - P: What about training?
- b) Do you budget for time spent on evaluation?

5) Preferred Methods of Receiving and Sharing Information:

Now I will be asking you about how you would prefer to receive and share information about conservation behavior change strategies.

- a) What would make you want to come to a workshop focused on ways to encourage conservation behaviors to protect or restore the Bay?
 - P: Are there any specific tools you know would help improve yours and other outreach programs?
- b) If there was a website focused on sharing behavior change strategies, are there any features you would find particularly useful?
- c) Are there any other ways you would prefer to learn about conservation behavior change strategies focused on protecting or restoring the Bay?

6) Relevant background characteristics:

Next I'd like to ask you for some general background characteristics that may have influenced your program development.

- a) Approximately how many years have you worked in this field?
- b) What is the highest educational degree you have completed? (HS, B, M, PhD)
- c) What were your degrees in?
 - [If B or higher] What, if any, college/university course(s) helped you learn about human behavior?
 - P: Were there any courses with a focus/mention of conservation behavior?
- d) Have you attended any workshops that helped you learn about ways to encourage conservation behaviors?
 - [If yes] What was the focus of the workshop?
- e) What are other ways you have learned to promote conservation behavior among program participants?
 - P: Through personal experience, other professional development, etc.
- f) [For interviewer to circle] Gender: M / F

7) Other:

- a) Anything else you would like to share related to what we have talked about today?

8) Request:

Finally, we hope to observe several ongoing outreach programs this summer to gain further insights into the types of projects and programs that are taking place within the Chesapeake Bay Watershed. We would like to pilot test a Rapid Assessment method for determining programs' potential for conservation behavior change. We would also like to conduct short interviews with program leaders and participants at the end of the program. This will help us in our research and we would be glad to share what we learn with program leaders.

- a) Will you be conducting any program activities during the summer?
- b) If so, would you be open to having us observe the program and talking with the program leader as well as participants at the end of the program?
 - [If yes] Great! I will email you for more information on the date and time of your program.

Thank you very much for your time, and have a great day!

Appendix 4: Observation Interview Questions

(Tailor based on program's goal)

1) Grantee Leaders Program Reflections:

I am interested in learning about your thoughts regarding today's programming.

- a) What was the goal of today's program?
 - What (if any) conservation behavior did you hope to change?
- b) To what extent did this program fulfill this goal? 1=not at all 7=to a great extent.
 - Why did you select the response you did?
- c) How do you think participants changed or will change [desired behavior] as a result of your program?
 - What about changes in their conservation behavior?
 - Why do you think this is/will be case?
- d) Do you plan on evaluating the extent to which this program changed participants' behaviors? If so, what specifically do you plan to evaluate and how? If not, what else might you evaluate – or do you have no evaluation plans?
- e) How do you think your program could be improved to better meet your goals – especially your conservation behavior change goal?
- f) What barriers may prevent you from making these changes? What would help to ensure that you will be able to make these changes?
- g) Any other related feedback you would like to share?

2) Participants Program Reflections:

I am interested in learning about your thoughts regarding today's programming.

- a) What did you like most about this program?
- b) What did you learn from participating in this program?
 - What did you learn about [targeted behavior]?
- c) How have your attitudes towards [targeted behavior] changed as a result of participating in this program?
- d) How will you change what you do as a result of participating in this program?
 - What about changing [target behavior]?
 - Why do you plan – or not – plan to change your [target behavior]?
- e) How do you think the program could be improved to facilitate changes in future participants [target behavior]?
- f) Any other related feedback you would like to share?

Appendix 5: Survey Instrument

How do you engage individuals and communities in Chesapeake Bay watershed stewardship?

Engaging individuals and communities in the stewardship of land and water resources is critical if we are to restore and protect the Chesapeake Bay watershed!

About the study

We, a group of graduate students from the University of Michigan's School of Natural Resources & Environment working in collaboration with the Chesapeake Bay Trust (CBT), would like to learn about what you and your organization do to improve the health of the Chesapeake Bay and/or local waters. More specifically, we are interested in learning about communication, education, social marketing, and/or public participation programs (which we will refer to as environmental outreach programs, **EOPs**) that motivate individuals and communities to help restore and protect the Bay watershed. We would like to find out "what works" and what may help to further improve environmental outreach programs.

Please note that potentially identifiable information will **NOT** be shared with the Chesapeake Bay Trust or any other individuals outside of our graduate student group.

About the questionnaire and use of results

We are contacting you because we believe you are knowledgeable about your organization's EOPs. Please share your valuable insights and experiences with us by completing this questionnaire, which should take about **30 minutes**.

By completing this survey, you will have the option to enter your contact information for the chance to win waived registration fees for yourself and a colleague to the 2011 Chesapeake Watershed Forum (Sept. 29-Oct. 2).

A summative report of the study's findings will be shared with the CBT and used to better support EOPs. At the end of the survey, you will be able to choose if you would like to receive a summary of the results. We also plan to share what we have learned at the Chesapeake Watershed Forum in October 2011.

Protecting your confidentiality

Your survey responses will be kept confidential to the extent required by federal, state, and local law. This means that individual responses or any information that is potentially identifiable will **NOT** be shared with the Chesapeake Bay Trust or any other individuals outside of our graduate student group. The information you share will be kept on password-protected computers and/or a locked file at the School of Natural Resources and Environment (SNRE), University of Michigan until completion of a final report, after which the information will be destroyed. However, the Institutional Review Board and university and government officials responsible for monitoring this study may inspect these records.

Completing this questionnaire is, of course, voluntary and answering any of the questions is optional.

Thank you in advance - we greatly appreciate your participation!

Please contact any group member below with questions or concerns regarding this survey:

Meghan Kelly - meghanke@umich.edu

Samuel Little - sdlittle@umich.edu

Kaitlin Phelps - kjphelps@umich.edu

Carrie Roble - croble@umich.edu

M.S. Candidates

School of Natural Resources & Environment, University of Michigan

Advisor: Dr. Michaela Zint - zintmich@umich.edu

INTRODUCTION TO YOU, YOUR ORGANIZATION & YOUR ORGANIZATION'S ENVIRONMENTAL OUTREACH PROGRAMS (EOPs)

Section 1A

1. Which of the following best describes your organization?

Please check **ALL** that apply:

- a. Non-profit
- b. Government agency
- c. Grassroots organization
- d. For-profit/private sector
- e. Other, describe

2. What role do you play in your organization's environmental outreach programs (EOPs) (i.e., communication, education, social marketing, or public participation programs that motivate individuals and communities to help restore and protect the Chesapeake Bay watershed)? Please check **ALL that apply:**

- a. Write grants for EOPs
- b. Design EOPs
- c. Implement EOPs
- d. Evaluate EOPs
- e. Other (please describe: _____)

Section 1B

3. To the best of your knowledge, to what extent have the following informed the design of your organization's EOPs?

(Not Applicable; Not At All, Very Little, Somewhat, Moderately So, Very Much So)

- a. Personal experience
- b. Data from interviews, focus groups, or surveys of the intended audience collected by your organization
- c. Data from interviews, focus groups, or surveys of the intended audience collected by consultants or researchers
- d. Social marketing
 - i. *Pop-out definition:*
 - 1. Adapting the outlook and techniques of commercial marketing to programs in order to promote environmental and social change within target audiences; focused not on profit and organizational benefits as commercial marketing practices are, but rather on benefiting individuals and/or society. (Adapted from <http://socialmarketing.wetpaint.com/page/Definition+of+Social+Marketing>)
 - ii. Example:
 - 1. In 2004, the Chesapeake Bay Program created a campaign to reduce nutrient pollution flowing into the Chesapeake Bay. Because much of this pollution is the result of excess lawn fertilizer use, the campaign targeted homeowners with lawns in the Washington, DC region. A telephone survey of about 600 homeowners was conducted to determine the best way to reach this audience. The survey's findings showed that while homeowners were concerned about the environment and the Bay, this concern was not likely to lead to environmental actions. Other findings were that attractive lawns were important to the audience, and that most were likely to fertilize their lawns in the spring.

This led to the design of a campaign that would focus on encouraging fertilizer use only in the fall or to hire a Bay-friendly lawn care service. The campaign did not frame the issue of a polluted Bay as an environmental problem, but rather focused on the need to protect blue crabs as a source of delicious seafood– the numerous seafood restaurants in the area supported this focus. The 7-week campaign included 1) branding the campaign the Chesapeake Club to create a sense of membership and that doing these behaviors was the social norm; 2) TV, radio, and print media advertising targeting the residents; and 3) a partnership with local seafood restaurants that included the use of “Save the crabs, then eat ‘em” coasters and other ways to inform patrons about the importance of fertilizing in fall. Post-intervention surveys were conducted the following year to determine the effectiveness of the campaign in changing fertilizer use behavior. (Adapted from <http://www.toolsofchange.com/English/CaseStudies/default.asp?ID=90>)

- e. Academic research on changing conservation behaviors
- f. Evaluations of your organization’s EOPs
- g. Collaborations with other organizations
- h. Other (please describe: _____)

ABOUT YOUR ORGANIZATION’S ENVIRONMENTAL OUTREACH PROGRAMS (EOPs)

Section 2A

- 4. **Does your organization seek to motivate people to protect the Bay and/or local waters through its EOPs?**

___ NO – IF YES, SKIP TO QUESTION 7
 ___ YES – IF YES, CONTINUE TO NEXT QUESTION

Section 2B

- 5. **In your opinion, what is ONE element of your organization’s EOPs that is effective at motivating audiences to protect the Bay and/or local waters? (fill-in)**

Section 2C

- 6. **In motivating people to protect the Bay and/or local waters, to what extent are your organization’s EOPs designed to:** (Not Applicable; Not At All, Very Little, Somewhat, Moderately So, Very Much So)
 - a. Increase audiences’ awareness of environmental issues
 - b. Change audiences’ attitudes about environmental issues confronting the Bay and/or local waters
 - c. Engage audiences in watershed restoration activities
 - i. *Pop-out example:* e.g., stream clean-ups
 - d. Engage audiences in outdoor experiences that connect them with the Bay and/or local waters
 - e. Increase audiences’ feeling that they, personally, can help to protect the Bay and/or local waters
 - f. Provide audiences with the knowledge and skills to carry out behaviors to protect the Bay and/or local waters
 - g. Share how audiences can personally benefit from protecting the Bay and/or local waters

- i. *Pop-out example:* Results of a behavior that are seen as positive by the person doing the behavior, such as improved health or reduced cost
- h. Help to reduce barriers that prevent audiences from protecting the Bay and/or local waters
 - i. *Pop-out example:* obstacle(s) that impede people from a desire behavior (ex. not enough time, not enough skills)
- i. Stress how audiences can help future generations by protecting the Bay and/or local waters
- j. Other (please describe: _____)

Section 2D; 2E; 2F

7. To what extent do you agree/disagree with the following statements about your organization's EOPs?

(Not Applicable; Strongly Disagree to Strongly Agree, 7 pt. scale)

- a. We have had difficulty reaching/recruiting audiences
- b. We have had difficulty reaching/recruiting audiences who are not already committed to protecting the Bay and/or local waters
- c. Our EOPs have specific behavioral objectives
 - i. *Pop out example:* i.e., our organization seeks to foster particular conservation actions, such as taking shorter showers.
- d. Our EOPs target specific audiences
- e. We collect data from our target audiences to guide the design of our EOPs
- f. We know what barriers are preventing our target audiences from protecting the Bay and/or local waters
- g. We know how our target audiences may personally benefit from protecting the Bay and/or local waters
- h. We pilot test our EOPs before implementing them
- i. We collect evaluative data during implementation to improve our EOPs
- j. We collect evaluative data after our EOPs to judge its success
- k. We conduct our own evaluations of our EOPs
- l. We use external consultants to evaluate our EOPs
- m. We use evaluation results to improve our EOPs
- n. Our funders priority is that our EOPs:
 - i. Reach/recruit as many individuals as possible
 - ii. Change individuals' conservation behaviors
 - iii. Lead to quantifiable reductions of key pollutants (nutrients and sediment, etc.)
 - iv. Our fun(please describe): _____
- o. Our funders requirements limit what we can do to engage individuals or communities in protecting the Bay and/or local waters

WHAT WOULD HELP IMPROVE YOUR ORGANIZATION'S ENVIRONMENTAL OUTREACH PROGRAMS (EOPs)?

Section 3A

8. To what extent do you think that the following would help improve your organization's EOPs so that they are more likely to motivate people to protect the Bay and/or local waters? (Not Applicable; Would not help at all, Would help very little, Would help somewhat, Would moderately help, Would help very much)

- a. Opportunities to learn more about:
 - i. How to apply social marketing techniques to our EOPS
 - 1. *Pop-out definition:*

2. Adapting the outlook and techniques of commercial marketing to programs in order to promote environmental and social change within target audiences; focused not on profit and organizational benefits as commercial marketing practices are, but rather on benefiting individuals and/or society. (Adapted from <http://socialmarketing.wetpaint.com/page/Definition+of+Social+Marketing>)

ii. Example:

1. In 2004, the Chesapeake Bay Program created a campaign to reduce nutrient pollution flowing into the Chesapeake Bay. Because much of this pollution is the result of excess lawn fertilizer use, the campaign targeted homeowners with lawns in the Washington, DC region. A telephone survey of about 600 homeowners was conducted to determine the best way to reach this audience. The survey's findings showed that while homeowners were concerned about the environment and the Bay, this concern was not likely to lead to environmental actions. Other findings were that attractive lawns were important to the audience, and that most were likely to fertilize their lawns in the spring.

This led to the design of a campaign that would focus on encouraging fertilizer use only in the fall or to hire a Bay-friendly lawn care service. The campaign did not frame the issue of a polluted Bay as an environmental problem, but rather focused on the need to protect blue crabs as a source of delicious seafood– the numerous seafood restaurants in the area supported this focus. The 7-week campaign included 1) branding the campaign the Chesapeake Club to create a sense of membership and that doing these behaviors was the social norm; 2) TV, radio, and print media advertising targeting the residents; and 3) a partnership with local seafood restaurants that included the use of “Save the crabs, then eat ‘em” coasters and other ways to inform patrons about the importance of fertilizing in fall. Post-intervention surveys were conducted the following year to determine the effectiveness of the campaign in changing fertilizer use behavior. (Adapted from <http://www.toolsofchange.com/English/CaseStudies/default.asp?ID=90>)

- iii. How to apply academic research on changing conservation behaviors to our EOPS
- iv. How to evaluate our EOPs
- b. Learning from the experiences of other organizations conducting similar EOPs
- c. Other (please describe _____)

9. **To what extent do you agree/disagree with the following:** (Not Applicable; Strongly Disagree; Disagree; Somewhat Disagree; Neither Agree Nor Disagree; Somewhat Agree; Agree; Strongly Agree)

- a. Social marketing is too resource intensive for my organization
 - i. *Pop-out definition:*
 1. Adapting the outlook and techniques of commercial marketing to programs in order to promote environmental and social change within target audiences; focused not on profit and organizational benefits as commercial marketing practices are, but rather on benefiting individuals and/or society.

(Adapted from
<http://socialmarketing.wetpaint.com/page/Definition+of+Social+Marketing>
)

ii. Example:

1. In 2004, the Chesapeake Bay Program created a campaign to reduce nutrient pollution flowing into the Chesapeake Bay. Because much of this pollution is the result of excess lawn fertilizer use, the campaign targeted homeowners with lawns in the Washington, DC region. A telephone survey of about 600 homeowners was conducted to determine the best way to reach this audience. The survey's findings showed that while homeowners were concerned about the environment and the Bay, this concern was not likely to lead to environmental actions. Other findings were that attractive lawns were important to the audience, and that most were likely to fertilize their lawns in the spring.

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- b. Academic research on changing conservation behaviors is too theoretical to be relevant to our EOPs
- c. We do not have the knowledge/skills to conduct evaluations of our EOPs
- d. We do not have the resources to conduct evaluations of our EOPs
- e. In order to plan, implement, and evaluate programs that are designed to change behavior, we need a longer funding period
- f. We need better participant turn-out to be able to fully achieve the goals of our EOPs

10. What other important barrier(s) your organization faces in motivating audiences to protect the Bay and/or local waters through EOPs? (fill-in)

Section 3B

11. To what extent do you think that the following would help your organization's staff with evaluating your EOPs? (Not Applicable; Would not help at all, Would help very little, Would help somewhat, Would moderately help, Would help very much)

- a. Funding specifically allocated for evaluation
- b. Information about how to measure outcomes such as changes in participants' knowledge,

- attitudes, skills, behaviors
- c. Workshops/training on evaluation
- d. One-on-one evaluation consulting
- e. Other (please describe: _____)

WHAT STRATEGIES DOES YOUR ORGANIZATION USE AND/OR WANT TO LEARN MORE ABOUT IN ORDER TO MOTIVATE PARTICIPANTS TO PROTECT THE BAY AND/OR LOCAL WATERS?

Section 4A; 4B

12. Below are strategies for motivating participants to protect the Bay and/or local waters. Please respond if you use each strategy in your EOPs and if you would like to learn more about how your organization could use this strategy.

Strategy	Does <u>your organization</u> use this behavior change strategy?	Would <u>you</u> like to learn more about how your organization could use this strategy?
<i>Positive Nature Experiences</i> Exposing people to nature via an outdoor experience. For example, sunset kayak outing that allows people to engage and connect with the Bay and/or local waters	__ NOT SURE __ YES __ NO	__ NOT SURE __ YES __ NO
<i>Prompts</i> Short, simple reminders to perform a desired behavior. For example, displaying signs to turn off the lights or turn down the heat	__ NOT SURE __ YES __ NO	__ NOT SURE __ YES __ NO
<i>Stories</i> Personal verbal or written tales sharing what others are doing to solve environmental problems, or tales with imbedded environmental messages. For example, sharing a story about one's experience fishing in a littered river that motivated them to no longer litter and support river clean-up efforts	__ NOT SURE __ YES __ NO	__ NOT SURE __ YES __ NO
<i>Social norms or modeling</i> Demonstrating the importance of a behavior to people either by describing the behavior as socially acceptable or unacceptable, or by having individuals perform the desired behavior around others to influence their behavior. For example, encouraging people to talk to their neighbors, family, and friends about installing rain barrels	__ NOT SURE __ YES __ NO	__ NOT SURE __ YES __ NO
<i>Feedback</i> Providing people with information about their level of success or need for improvement in response to a particular behavior. For example, providing homeowners with information on their electricity consumption throughout the year	__ NOT SURE __ YES __ NO	__ NOT SURE __ YES __ NO
<i>Extrinsic rewards</i> Using money, food, or prizes to motivate behaviors. For example, rewarding households that save water with tax rebates or entering them in a raffle for a prize	__ NOT SURE __ YES __ NO	__ NOT SURE __ YES __ NO
<i>Intrinsic rewards</i> Motivating individuals to perform an activity because of the	__ NOT SURE __ YES __ NO	__ NOT SURE __ YES __ NO

<p>personal satisfaction it can offer; this may include stressing values, morals, or how an activity can be enjoyable or interesting.</p> <p>For example, stressing that using resources wisely and avoiding waste is "the right thing to do" or encouraging individuals to participate in a river clean-up because it will be fun and enjoyable</p>		
<p><i>Commitment</i></p> <p>Using verbal or written agreements, such as pledges, to encourage people to adopt a behavior. For example, asking people to sign a pledge to only use organic fertilizers on their lawns</p>	<p><input type="checkbox"/> NOT SURE</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>	<p><input type="checkbox"/> NOT SURE</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>
<p><i>Appealing to positive emotional states</i></p> <p>Appealing to emotions such as hope and enjoyment as a way to change people's behavior. For example, stressing the fun aspects of gardening</p>	<p><input type="checkbox"/> NOT SURE</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>	<p><input type="checkbox"/> NOT SURE</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>
<p><i>Increasing "how-to" skills</i></p> <p>Providing people with information and/or training on how to carry out conservation behaviors. For example, through a hands-on composting demonstration</p>	<p><input type="checkbox"/> NOT SURE</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>	<p><input type="checkbox"/> NOT SURE</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>
<p><i>Social marketing</i></p> <p>Adapting the outlook and techniques of commercial marketing to programs in order to promote environmental and social change within target audiences; focused not on profit and organizational benefits as commercial marketing practices are, but rather on benefiting individuals and/or society. (Adapted from http://socialmarketing.wetpaint.com/page/Definition+of+Social+Marketing)</p> <p>Example: In 2004, the Chesapeake Bay Program created a campaign to reduce nutrient pollution flowing into the Chesapeake Bay. Because much of this pollution is the result of excess lawn fertilizer use, the campaign targeted homeowners with lawns in the Washington, DC region. A telephone survey of about 600 homeowners was conducted to determine the best way to reach this audience. The survey's findings showed that while homeowners were concerned about the environment and the Bay, this concern was not likely to lead to environmental actions. Other findings were that attractive lawns were important to the audience, and that most were likely to fertilize their lawns in the spring.</p> <p>This led to the design of a campaign that would focus on encouraging fertilizer use only in the fall or to hire a Bay-friendly lawn care service. The campaign did not frame the issue of a polluted Bay as an environmental problem, but rather focused on the need to protect blue crabs as a source</p>	<p><input type="checkbox"/> NOT SURE</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>	<p><input type="checkbox"/> NOT SURE</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>

<p>of delicious seafood-- the numerous seafood restaurants in the area supported this focus. The 7-week campaign included 1) branding the campaign the Chesapeake Club to create a sense of membership and that doing these behaviors was the social norm; 2) TV, radio, and print media advertising targeting the residents; and 3) a partnership with local seafood restaurants that included the use of "Save the crabs, then eat 'em" coasters and other ways to inform patrons about the importance of fertilizing in fall. Post-intervention surveys were conducted the following year to determine the effectiveness of the campaign in changing fertilizer use behavior. (Adapted from http://www.toolsofchange.com/English/CaseStudies/default.asp?ID=90)</p>		
<p><i>Highlighting personal benefits</i> Pointing out the health, financial, or other benefits that may result from a behavior. For example, Using less fertilizer on one's lawn will save the property owner money while also contributing to improved water quality</p>	<p><input type="checkbox"/> NOT SURE <input type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p><input type="checkbox"/> NOT SURE <input type="checkbox"/> YES <input type="checkbox"/> NO</p>
<p><i>Participatory Programs</i> Involving members of the community in program design or implementation to create a sense of community ownership over the program. For example, creating block leaders to customize and oversee a neighborhood water conservation program</p>	<p><input type="checkbox"/> NOT SURE <input type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p><input type="checkbox"/> NOT SURE <input type="checkbox"/> YES <input type="checkbox"/> NO</p>

13. Pick ONE of the previous strategies, from the last two pages, that your organization has effectively used as part of its EOPs to motivate audiences/participants to protect the Bay and/or local waters. (You can click the left arrow button below to go back a page without losing any entries.)

Briefly describe how your organization used this strategy so that others may be able to learn from your experience: _____ (fill-in)

14. To what extent have the following helped you personally learn about the above strategies? (Not Sure, Not At All, A Little, Somewhat, Moderately So, Very Much So)

- Professional experience
- Workshops
- Webinars
- Websites
- College/university courses
- Academic articles or books
- Other (please describe: _____)

HOW WOULD YOU LIKE TO LEARN MORE ABOUT MOTIVATING PEOPLE TO PROTECT THE BAY AND/OR LOCAL WATERS?

Section 5A

15. If you were provided with the following opportunities to learn more about how to motivate people to protect the Bay and/or local waters through EOPs, how likely would you participate in or utilize them? (Not Sure; Very Unlikely; Unlikely, Neutral, Likely, Very Likely)

- Workshop
- Webinar
- Website

d. Other (please describe: _____)

16. [If Neutral, Likely, or Very Likely on website] **Which of the following features would you like a website on EOP strategies to have?** (Please check only your top 3 priorities)
- a. Stories about other organizations' EOPs that motivated audiences to protect the Bay and/or local waters
 - b. Stories from citizens about how they changed their stewardship behaviors as a result of EOPs
 - c. Ability to post experiences about your organization's EOPs
 - d. Information about what academic research says on how to foster changes in conservation behaviors through EOPs
 - e. Discussion forum to exchange ideas about EOPs
 - f. Ability to comment on the website's pages
 - g. Downloadable guide to EOP strategies
 - h. Interactive exercises to learn about conservation behavior change strategies
 - i. Webinar on how to foster conservation behaviors through EOPs
 - j. Other: ____ (fill-in) ____

17. **Is there anything else you would like to share related to your organization's EOPs and their role in protecting the Bay and/or local waters?** (fill-in)

18. **If we have any questions about your responses, may we contact you? ***

*Regardless of your answer, you will still be entered to win waived registration fees for yourself and a colleague to the 2011 Chesapeake Watershed Forum (Sept. 29-Oct. 2).

Just as a reminder, your individual responses are confidential; they will not be shared outside of the Master's Project group. (Yes/No)

19. [IF YES TO Q18] **How do you prefer we contact you?**

- a. Email (Please provide your email address)
- b. Phone (Please provide the best number for us to reach you)

20. **Would you like to receive a report summarizing the results of this survey?** (Yes/No)

THANK YOU!

**Appendix 6:
Survey Reminder Emails and Phone Call Script**

**Appendix 6a:
Survey Pre-notice E-mail**

Subject: How does *[insert organization name]* engage individuals and communities in Chesapeake Bay watershed stewardship?

Dear *[insert title and last name]*,

Starting **Tuesday, August 2nd**, you will have the opportunity to participate in a **30-minute online survey** in which you can share your invaluable insights regarding environmental outreach programming in the Chesapeake Bay watershed.

Your thoughtful replies will help inform the creation of resources that will aim to enhance the development and implementation of environmental outreach programs. More specifically, you will be supporting our graduate study that is working in collaboration with Chesapeake Bay Trust to explore how such programs motivate individuals and communities to restore and protect the Bay watershed.

By completing the survey you will have the chance to win waived registration fees for yourself and a colleague to the Chesapeake Watershed Forum!

Please complete the survey by **Thursday, September 1st** to help improve environmental stewardship throughout the Bay watershed!

Thank you for your time and consideration. It's only with the generous help of people like you that we can continue our research to help protect and restore the Bay and local waters.

Sincerely,

Meghan Kelly
Samuel Little
Kaitlin Phelps
Carrie Roble



**Appendix 6b:
Initial Survey Request E-mail**

Subject: How do you engage individuals and communities in Chesapeake Bay watershed stewardship? Survey available until September 1st

Dear *[insert title and last name]*,

Your invaluable insights as an environmental professional are needed!

We believe that *[insert organization name]* implements environmental outreach programs and can offer an informative perspective to our research in the Chesapeake Bay watershed. We are looking to learn from programs like yours that work to engage people in watershed-focused environmental behaviors: What are your best practices? In what areas do you need more support?

Your thoughtful replies to our survey will help to support our graduate research through the School of Natural Resources and Environment at the University of Michigan, working in collaboration with the Chesapeake Bay Trust, to explore how environmental outreach programs motivate individuals and communities to restore and protect the Bay watershed. More specifically, the results of this survey will help to inform the creation of resources for the purposes of enhancing the development and implementation of such programs by organizations like yours.

Please note that potentially identifiable information is **confidential** and will **NOT** be shared with the Chesapeake Bay Trust or any other individuals outside of our graduate student group.

By completing the survey you will have the chance to win waived registration fees for yourself and a colleague to the 2011 Chesapeake Watershed Forum!

Please complete the survey by **Thursday, September 1st**; it should not take more than **30 minutes**. The following link will take you to the survey: Survey Link

Or copy and paste the URL below into your internet browser: Survey Link

Thank you for your time and consideration. Completion of this questionnaire is, of course, voluntary and answering any of the questions is optional. However, it's only with the generous help of people like you that we can continue our research and help to encourage stewardship of the Chesapeake Bay watershed.

Sincerely,

Meghan Kelly, Samuel Little, Kaitlin Phelps, and Carrie Roble

P.S. Please contact any group member below with questions or concerns regarding this survey. Also, if you feel this message was sent to you in error, or you are not the best person at your organization to complete this survey, please let us know.

Meghan Kelly - meghanke@umich.edu
Samuel Little - sdlittle@umich.edu
Kaitlin Phelps - kjphelps@umich.edu
Carrie Roble - croble@umich.edu

M.S. Candidates
School of Natural Resources & Environment, University of Michigan

**Appendix 6c:
1ST Reminder E-mail**

Subject: Share your thoughts on Chesapeake Bay watershed stewardship! *Survey closes Sept. 1*

Dear *[insert title and last name]*,

Last week we emailed you a survey seeking your insight on adult environmental outreach programs that motivate individuals to restore and protect the Bay and local waters. We believe that *[insert organization name]* works on programs with this goal and can contribute valuable insights. Please support our graduate research working in collaboration with the Chesapeake Bay Trust.

About 30 individuals have already completed the questionnaire! **Your response** will inform our professional development resources that aim to support organizations like yours. We would greatly appreciate your help by taking the time today to fill out the survey.

The following link will take you to the survey:

Survey Link

Or copy and paste the URL below into your internet browser: Survey Link

By completing the survey, you will have the chance to win waived registration fees for yourself and a colleague to the [2011 Chesapeake Watershed Forum!](#) We would also be glad to share our findings with you.

Thank you for very much for your time!

Sincerely,

Meghan Kelly, Samuel Little, Kaitlin Phelps, and Carrie Roble

M.S. Candidates
School of Natural Resources & Environment, University of Michigan



Appendix 6d: Survey 2nd Reminder Phone Call Script

Hello, is this *[insert title and last name]*?

Intro:

Hello, my name is *[insert researcher name]*, and I am calling to confirm that you received a survey sent to you from our graduate research team at the University of Michigan's School of Natural Resources and the Environment. We are working in collaboration with the Chesapeake Bay Trust to explore how environmental organizations like *[insert organization name]* are motivating individuals to restore and protect the Chesapeake watershed through environmental outreach programs.

Justification/incentive for completing survey:

[If person says they are too busy/haven't had time]: I understand that you're a busy person, and it's completely reasonable that filling out a survey is not a top priority for you. However, if you can find 20 minutes to fill it out, *(continue below)*

We will be using the results from this survey to design professional development materials that aim to support environmental behavior change programs. Therefore, your input is crucial in helping us better understand the perspective of organizations with experience in this type of work and in developing appropriate professional development materials.

The survey should take 20 to 30 minutes. If you have an opportunity to fill it out within the next week, we would really appreciate it. By completing the survey, you will also be entered in a drawing to win free registrations for yourself and a colleague to the Chesapeake Watershed Forum in the end of September / early October.

Prompts for caller:

IF DID NOT RECEIVE SURVEY:

- Verify contact's email address; send survey link to updated address via direct email; ask them to supply email address when completing the survey.

IF PERSON IS NOT GOING TO COMPLETE SURVEY OR NOT THE RIGHT PERSON

- Ask if there is someone else at the organization to answer the survey

If leaving a voicemail:

[Begin with Intro]

If you have not received this survey, please give me a call back at *[insert phone number]* or email me at *[insert email address]* and I can send you the survey link. If you feel you are not the appropriate person at your organization to fill out this survey, please let us know who would be more appropriate. Thank you, and have a great day!

**Appendix 6e:
Survey Completion Thank You Email**

Subject: Thank you from CBT and U of M graduate student team

Thank you very much for completing the U of Michigan, School of Natural Resources and the Environment graduate research team and Chesapeake Bay Trust survey! We had a great response rate (50%), and particularly appreciated the time many of you took to provide detailed comments to our open ended questions.

For those who requested it, we will share results with you as soon as we have condensed the large volume of valuable information into a suitable summary.

We also wanted to let you know that a respondent from Kent County won our raffle for two Chesapeake Watershed Forum registrations.

Thank you, again, for your important contribution to this study.

Sincerely,

Meghan Kelly
Samuel Little
Kaitlin Phelps
Carrie Roble

**Appendix 7:
Additional Resources
for Developing, Implementing, and Evaluating Behavior Change Outreach Programs**

Evaluation Sourcebook: Measures of Progress for Ecosystem- and Community-Based Projects. (Schueller et al., 2006)

This sourcebook, developed by the University of Michigan School of Natural Resource and Environment Ecosystem Management Initiative, provides sample evaluation questions, indicators and data sources to help projects track improvements in ecosystem health, economic vitality, quality of life, sustainability, or trust and collaboration. The Evaluation Sourcebook draws on the experience of many on-the-ground ecosystem and community-based projects, as well as the extensive literature on ecological, social and organizational evaluation. It is designed to help you clarify and communicate what you are trying to achieve and to measure progress on multiple levels so that you can track improvements in ecosystem health, economic vitality, quality of life, sustainability or even trust and collaboration.

The sourcebook also includes instructions and worksheets to help you complete a logic model (i.e. situation map) of your project and fill in four interrelated planning worksheets that contain your group's evaluation questions and indicators, logistics for collecting information, and plans to respond to evaluation findings. A tool to rank evaluation questions by importance is also used in conjunction with the *Measuring Progress* text, which is available at the link. The sourcebook is available online at the Ecosystem Management Initiative website: <http://www.snre.umich.edu/ecomgt/evaluation/sourcebook.htm>

Fostering Sustainable Behavior: An Introduction to Community Based Social Marketing (McKenzie-Mohr, 2009)

Community-Based Social Marketing (CBSM), developed by environmental psychologist Doug McKenzie-Mohr, draws heavily on research in social psychology, which indicates that initiatives to promote behavior change are often most effective when they are carried out at the community level and involve direct contact with people.

For more information see CBSM website:

<http://www.cbsm.com/>

Getting In Step: A Guide for Conducting Watershed Outreach Campaigns (EPA, 2010)

This guide is the EPA's "new and improved tips and tools for creating awareness, educating specific audiences, and motivating positive behavior change to improve water quality." Most information is a combination of social marketing and the Nonpoint Source Outreach Toolbox developed by the EPA. Part 1 explains and gives examples of the six steps to developing a watershed outreach plan, including how to target audiences, create messages, and evaluate the outreach. Part II shows how to implement an outreach program. Finally, the Guide includes five additional resources for developing and implementing a program, such as selecting behaviors and choosing evaluation questions. The guide is available online at the EPA's website:

<http://www.epa.gov/owow/watershed/outreach/documents/getnstep.pdf>

Heating Up Society to Take Environmental Action: A Guide to Effective Environmental Education and Communication (Academy for Educational Development, 2002)

The GreenCOM Project of the Academy for Educational Development designed this guide to provide insight into what they have learned to be effective in motivating behavior. The guide is divided into five broad elements of effective programs: assessing your audience, planning and developing strategies with communities and removing barriers, pretesting and revising campaigns, implementing campaigns, and finally monitoring and evaluating campaigns. The guide is available online at the Center for Global Health Communication and Marketing website:

http://www.globalhealthcommunication.org/tool_docs/51/heatingupsociety.pdf

Logic Model Development Guide (W.K. Kellogg Foundation, 2002)

The W.K. Kellogg Foundation developed this detailed overview of logic models. This guide describes what a logic model is and how it can be used to direct your evaluation efforts. Fictitious examples are used throughout to help readers understand the processes of both developing a logic model and using it to frame your evaluation questions. Helpful tips are also provided for establishing indicators to measure success. The appendix offers logic model templates as well as checklists of important things to consider when constructing each part of the model. The guide is available on the W.K. Kellogg Foundation website:

<http://www.wkcf.org/knowledge-center/resources/2006/02/WK-Kellogg-Foundation-Logic-Model-Development-Guide.aspx>

MEERA (My Environmental Education Evaluation Resource Assistant) (Zint, 2010)

MEERA, developed by University of Michigan School of Natural Resource and Environment, EPA, and USFS, is an online guided, step-by-step process of program evaluation, including questions to ask before beginning an evaluation, as well as a short overview of logic models: Questions addressed: What is a logic model? Why should I develop a logic model? How do I get started? While this is focused on EE, the advice is relevant for other types of programs. This resource also contains links to a multitude of helpful resources. Website: <http://meera.snre.umich.edu/plan-an-evaluation/planning-and-implementing-an-ee-evaluation>

NOAA California B-WET Project Evaluation (Office of National Marine Sanctuaries, 2007)

This is an online guide designed for environmental education providers in California to evaluate their programs. The contents in the guide are relevant for outreach and engagement programs as well. Topics include basics on evaluation, as well as how to plan, design, implement, and report an evaluation.

Targeting Behavior: Working with People to Design Conservation Communications Strategies (Matarasso, 2009)

This Conservation International manual is designed to help conservation practitioners use Targeting Behavior to plan and carry out successful communication and education programs that lead to behavior change and conservation. The manual is divided into three sections. The first section is an overview of the Targeting Behavior methodology. The second section describes a case study of a marine program in Raja Ampat, Indonesia, where the methodology was used to develop an education and communication strategy. The third section of the manual walks you through the steps and tools you will use to identify (1) conservation problems and behaviors, (2) alternatives to those behaviors, (3) ways to overcome barriers, (4) target groups, (5) learning needs, and (6) program activities. The manual is available online at The State of the World's Sea Turtles website:

http://seaturtlestatus.org/sites/swot/files/CI-Targeting%20Behavior_low%20...pdf

Tools of Engagement: A Toolkit for Engaging People in Conservation (Audubon, 2011)

The National Audubon Society developed this outreach program planning toolkit, which outlines 20 steps to successfully engage people in conservation. Steps detail such topics as identifying your goals, collaborating with the right partners, targeting audiences, evaluation, and selecting social strategies. Audubon also included concrete examples and additional planning tools to further assist conservation outreach organizations. The guide is available online at the Audubon website:

<http://web4.audubon.org/educate/toolkit/toolkit.php>

Understanding and Influencing Behaviors: A Guide (Byers, 2000)

Bruce Byers and the Biodiversity Support Program developed this guide suggesting a simple process for collecting, understanding, and analyzing information about people's behavior in relation to the environment. Next, the guide detail nine "Stepping Stones", which are steps for motivating environmentally responsible behavior through outreach. These "Stones" explain how to target audience, choosing behaviors, evaluating, etc. The guide is available online at the World Wildlife Fund website:

http://www.worldwildlife.org/bsp/publications/bsp/behaviors_eng/behaviorsguide_eng.pdf


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Appendix 8: Workshop Slides

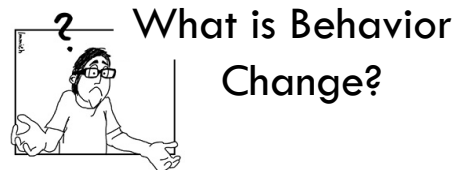
BEHAVIOR CHANGE IN THE CHESAPEAKE BAY: Strategies for Environmental Stewardship

Meghan Kelly, Samuel Little, Kaitlin Phelps, and Carrie Roble



NATURAL RESOURCES
AND ENVIRONMENT
UNIVERSITY OF MICHIGAN

Under the guidance of Dr. Michaela Zint
and support from Chesapeake Bay Trust



Why conservation behaviors?

- Systems perspective
- Humans activities affect natural systems
 - ▣ Leading to degradation OR conservation
 - ▣ Individual behaviors can be
 - the **CAUSE**
 - as well as the **SOLUTION**

Agenda

- **Summary of our research and its connection to YOU**
- Preliminary survey results
- Behavior change strategies
- Small group activity
- Conclusion



Our Research

- **Guiding Research Questions:**
 - ▣ What are local environmental organizations doing to foster conservation behaviors?
 - ▣ How can academic research and our study support CBT's grant-making process?
 - ▣ What resources can we provide organizations to help them develop effective behavior change programs?
- **Methods**
- **Relevance to you and your organization**
 - ▣ Watershed-specific
 - ▣ Outreach programming design

Agenda

- Summary of our research and its connection to YOU
- **Preliminary survey results**
- Behavior change strategies
- Small group activity
- Conclusion



A Sampling of Our Research Results

- Completed Surveys: 104
- Response Rate: 54%
- **Who responded?**
 - Non-profit: **75%**
 - Government Agency: **20%**
 - Other: **20%** (primarily academic institutions)
 - Grassroots organization: **10%**
 - For-profit/private sector: **0%**

What are goals of outreach programming?

- Respondents agreed their programs are designed to:
 - 91% said **“increase awareness”**
 - 89% said **“increase feelings of personally being able to protect the Bay”**
 - 84% said **“provide knowledge and skills to do conservation behaviors”**
 - 79% said **“engage people in restoration activities”**
 - 77% said **“change attitudes”**

What are Behavior Change Strategies?

- Techniques that provide information and/or motivation
- Carefully planned, research validated program design
 - Use a variety of strategies

Our Strategies

- Commitment
- Extrinsic Rewards
- Feedback
- “How-To” Skills
- Intrinsic Rewards
- Positive Nature Experiences
- Prompts
- Social Norms
- Stories

What informs outreach program design?

- Respondents agreed their programs are informed by:
 - 84% said **personal experience**
 - 77% said **collaboration with other organizations**
 - 54 % said other (funders' requirements, committee input, etc.)
 - 32 % said **academic research** on behavior change

Agenda

- Summary of our research and its connection to YOU
- Preliminary survey results
- Intro to conservation behavior change
- **Behavior change strategies**
- Small group activity
- Conclusion



Behavior Change Strategies

- Strategies that people want to learn about most:
 - “How-To” Skills (**71%**)
 - Prompts (**70%**)
 - Feedback (**66%**)
 - Social Norms (**65%**)
 - Stories (**65%**)

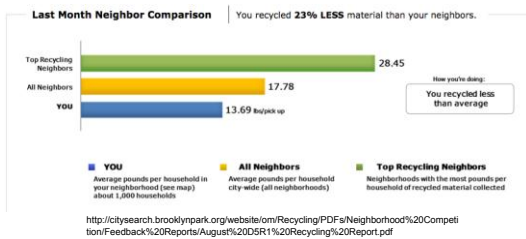
“How-To” Skills

- Knowing *why* you should do a behavior doesn't mean you know *how*
 - e.g., composting, using a rain barrel, recycling...
- Competence *and* confidence



Feedback

- Letting people know how they are doing



Prompts

- Simple requests or reminders
- **Benefits**
 - Easy
 - Inexpensive
 - Recognizable



“How-To” Skills

- **Benefits**
 - Make doing new, unfamiliar behaviors possible
- **Challenges**
 - Know your audience:
 - Is this a barrier?
 - Skill level
- **Tips**
 - Provide to those who intend to act, just don't know how
 - Show and tell

Feedback

- **Benefits**
 - Can be provided in many different ways
 - Tends to work best for those below a set goal
- **Challenges**
 - Can backfire
 - Needed frequently
 - Individual feedback: most effective, and most difficult
- **Tips**
 - Give immediately after behavior
 - Be clear & concrete
 - Frame positively

Prompts

- **Challenges**
 - Careful design is key
 - Presume competence
- **Tips**
 - Be specific/explicit
 - Make distinct
 - Place close to behavior
 - Include motives



Social Norms



Social Norms

- **Benefits & Challenges**
 - ▣ The behavior of the majority
 - ▣ Community integration
- **Factors that encourage a "yes" to a social request**
 - ▣ Reciprocation
 - ▣ Consistency
 - ▣ Liking
 - ▣ Authority

Stories



Stories



Stories

- **Benefits**
 - ▣ Experience
- **Challenge**
 - ▣ Know your audience
- **Aspects of interesting stories**
 - ▣ Problem solving
 - ▣ Characterization
 - ▣ Concreteness
 - ▣ Imagery

Agenda

- Summary of our research and its connection to YOU
- Preliminary survey results
- Intro to conservation behavior change
- Behavior change strategies
- **Small group activity**
- Conclusion



Small Group Activity

Goal: To increase competence of how to apply behavior change strategies to programs

- What strategies would you recommend? Why?
- Be ready to report back to the rest of the group



<http://www.fbalawns.com/services.php>

Conclusion



Conclusion

- We want to support you!
 - Professional Development Resources
 - 45% of respondents would like more information about academic research on fostering behavior change
 - 55% of respondents would like a downloadable guide to our selected programming strategies

Thank You!!

Thank you for attending our session! Feel free to contact us with any questions:

Meghan Kelly – meghanke@umich.edu

Samuel Little – sdlittle@umich.edu

Kaitlin Phelps – kjphelps@umich.edu

Carrie Roble – croble@umich.edu

Email addresses are also available on the handout

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**Appendix 9:
Small Group Activity Worksheet
Chesapeake Watershed Forum**

Background: You are a consultant for Chesapeake Bay Buddies (CBB), a local watershed organization. The CBB would like to reduce excessive chemical fertilizer use on homeowners' property, which contributes to nutrient loading in the Bay after run-off events. Please use your expertise to help CBB design a carefully planned program that uses some combination of appropriate behavior change strategies to encourage environmentally responsible fertilizer use.



Potential Strategies:

- How-to Skills
- Feedback
- Prompts
- Social Norms
- Stories



Conservation Behavior: Lawn fertilizer application behavior; more specifically, encourage the audience to use organic fertilizers instead of chemical fertilizers, or use fertilizers in the fall rather than the spring

Targeted Audience: Property owners within a suburban neighborhood outside of Washington, D.C.

Assuming you have sufficient resources, discuss which strategies you would recommend and be ready to report back to the rest of the group.

There are no "right" answers. Get creative, use your experience, and have fun!

NOTES:

**Appendix 10:
Workshop Feedback Form
Behavior Change in the Chesapeake Bay**

Thank you for participating in our workshop! In an effort to improve our workshop, we are interested in receiving your feedback. Please take five minutes to let us know how we did and how we can more effectively share conservation behavior change strategies. This questionnaire is both voluntary and confidential.

THE WORKSHOP

Rate your level of satisfaction with the following:

	Not at all 1	Somewhat 2	Very 3	Extremely 4
The workshop overall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The background and introduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small group activity (Fertilizer Behavior)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The depth of information shared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The quality of information shared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How could this workshop be improved?

USING CONSERVATION BEHAVIOR CHANGE STRATEGIES

Please rate the following statements:

(1 = None; 2 = Little; 3 = Some; 4 = Average; 5 = Above Average; 6 = Substantial; 7 = Extensive)

BEFORE THE WORKSHOP							Rate your level of the following BEFORE and AFTER the workshop:	AFTER THE WORKSHOP						
None ←————→ Extensive								None ←————→ Extensive						
1	2	3	4	5	6	7		1	2	3	4	5	6	7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	My overall familiarity of CBC* strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	My ability to apply CBC strategies to my organization's outreach programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	My understanding of common barriers that may be confronted while using CBC strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	My ability to overcome common barriers to using CBC strategies in programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	My confidence in designing a program that uses CBC strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	My commitment to using CBC strategies in program development and implementation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*CBC refers to "conservation behavior change"

ABOUT YOU

Which of the following best describes your organization?

Please check **ALL** that apply:

- Non-profit
- Government agency
- Grassroots organization
- For-profit/private sector
- Other, please describe: _____

Which of the following best describes your organization?

- A primary goal of my organization is encouraging CBC within our target audience(s)
- A secondary goal of my organization is encouraging CBC within our target audience(s)
- CBC is not a goal of my organization, but we would like to incorporate it into our programming
- My organization does not have an interest in incorporating CBC into our programming
- Other, please describe: _____

Did you have prior knowledge of the information presented today? If so, please explain below.

Name: _____ Organization/Title: _____

May we contact you if we have questions? Y / N

Email: _____ Phone: _____

Any additional comments or thoughts?

Thank you!



2011-2012 Outreach and Community Engagement Grant Program Application Package

www.chesapeakebaytrust.org / 410-974-2941

AT A GLANCE

The 2011-2012 Outreach and Community Engagement Grant Program is designed to engage Maryland citizens in activities that raise awareness and increase participation in the restoration and protection of the Chesapeake Bay and its rivers.

In this Application Package:

Program Overview and Proposal Instructions

Deadline:

5 p.m., December 9th, 2011

Application Tracks:

Behavior Change Programs: \$5,001 - \$35,000 for behavior change projects.

Awareness Projects: \$5,001 - \$15,000 for projects not focused on behavior change as a project outcome.

Submit Your Application on-line:

www.cbtrustgrants.org



www.bayplate.org

Introduction

The Chesapeake Bay Trust promotes public awareness and participation in the restoration and protection of the Chesapeake Bay and its rivers. We envision a future in which the citizens and communities of Maryland and the broader Chesapeake Bay region will have achieved the levels of individual and community stewardship necessary to restore and protect the lands and waters of the Chesapeake Bay. Since 1985, the Trust has awarded over \$40 million in grants to schools, nonprofit organizations, and public agencies throughout Maryland.

The Trust is supported by purchases of the *Treasure the Chesapeake* license plates, the Chesapeake Bay Fund tax check-off option on the Maryland State income tax form, donations from individuals, and partnerships with government agencies and corporations. The Trust greatly appreciates the support that makes our programs possible.

The Trust encourages you to learn more about how to apply for a Trust grant.

Goals of the Outreach and Community Engagement Grant Program

The Trust's highest priority is to increase individual and community stewardship of land and water resources. The Outreach and Community Engagement Grant Program provides accessible funds to organizations and agencies to implement community-led stewardship efforts that increase public understanding of watershed challenges, build ownership of local watersheds, engage more individuals and organizations in stewardship practices and projects, and expand the base of citizen support necessary to advance the restoration of the Bay.

In light of the Trust's commitment to the advancement of diversity in its grant-making and environmental work, the Trust strongly encourages grant applications for projects that increase participation of communities of color in the restoration and protection of the watershed.

Funding Availability

Approximately \$400,000 is available for the 2011-2012 Outreach and Community Engagement Grant Program.

NEW: New this year, the Trust is supporting projects in one of two tracks as listed below and defined further in the individual criteria sections.

Behavior Change Program Track: Applicants may request from **\$5,001 - \$35,000** for projects that aim to change citizen behaviors in an effort to improve citizen stewardship of the Bay watershed and its resources. This Track is new this year.

Awareness Projects Track: Applicants may request from **\$5,001 - \$15,000** for projects that aim to increase citizen awareness of issues and challenges in restoration of the Bay watershed and its resources. *This track is most similar to previous rounds of the Outreach and Community Engagement Request for Proposals.*

Applicants are strongly encouraged to contact Trust staff to discuss proposals prior to the deadline.

For requests under \$5,000, please consider applying to the Trust's Mini Grant Program, details of which can be found at www.cbtrust.org.

Behavior Change Program Track - Criteria

The purpose of this track is to support "well-informed" behavior change projects that target a specific change in behavior within a specific audience that leads to improved stewardship of the Bay watershed and its resources. The term "well-informed" refers to programs based on quantified assessments of audience knowledge, attitudes, and practices. Often, we structure outreach programs based on *assumptions* of audience knowledge, attitudes, and practices without testing whether those assumptions are true. Research shows that "well-informed" outreach campaigns are much more successful, and as result, the Trust is supporting the types of projects and tools used to accomplish "well-informed" outreach campaigns at a higher level.

Requests under the Behavior Change Track of the Outreach and Community Engagement Grant Program can be made to support any of the following elements (described in more detail below):

- 1) Audience segmentation and assessment – Identify subgroups and conduct an assessment (e.g., survey work)
- 2) Message creation – Create the message to be communicated based on target audience assessment
- 3) Methodology – Design the project and select a medium to deliver the message based on the target audience assessment
- 4) Pilot Communications Campaign – Test the communications campaign on a small scale
- 5) Broad Implementation – Implement the communications campaign and evaluate the program based on audience response

You may request funds for any of the above five elements. Preference will be given to requests in the following order:

- a) Requests for (5), implementation, in cases in which applicants have already developed a communication campaign for the behavior in question
- b) Requests for two or more of elements 1-4 listed above and described in detail below.
- c) Requests for one of the elements 1-4 listed above and described in detail below.

Project Development

Select a Behavior:

Proposals must identify the specific change in individual or community watershed health-related behaviors and/or organizational practices that are projected to result from project activities. When selecting a behavior, it is important to identify an “end-state behavior.” For example, the principal interest is not in having people purchase rain barrels, but rather in having them installed. When choosing a behavior, identify the “competing behaviors” (the behaviors you are looking to discourage, ex. excessive application of fertilizers), which must be considered in project messages and design.

Audience Assessment and Segmentation:

a. Proposals should identify the target audience and should demonstrate that the target audience has been segmented where appropriate. Audience segmentation is a process of dividing your target audience into subgroups based on similar needs, interests, and/or behavioral patterns. Examples might include, depending on the selected behavior, year-round residents vs. part-time residents, or homeowners vs. renters, or boaters vs. non-boaters. This process allows for a more effective and efficient project design, tailored to distinct subgroups of the target audience.

b. Proposals must demonstrate that a formal assessment of the target audience has been conducted or that a formal assessment of the target audience is intended in the initial phase of the project in order to assess the target audience’s knowledge, attitudes, and behaviors relative to the goal of the project. Audience assessment should function to influence project design and implementation by identifying the audience’s perceived barriers to adopting the desired behavior(s) and/or practice(s). The best audience assessments use some combination of basic literature review, past or proposed observations, interviews, focus groups, and surveys to determine the target audience’s perceived barriers and benefits to adopting the behavior. What benefits might your audience receive from adopting a particular behavior or practice you are promoting? Why isn’t your audience already demonstrating these behaviors or practices? Because research shows that audience assessment is imperative before attempting to change behavior, if you have not already conducted a formal assessment of your target audience, you may request funds for audience assessment (element #1 above) or apply to Track #2 – Awareness Project Track described below.

Message Creation:

Proposals must identify the intended message of the project and messages(s) should be designed based on assessment of the target audience. (e.g., don’t litter, clean trash from your stream; use native plants).

Methodology:

Proposals must clearly explain and justify the methodology used to deliver the message(s) to the target audience (e.g., workshop, training, volunteer planting event, innovative media, etc.) and the medium should be chosen based on the audience’s “media diet” (the primary ways that the target audience prefers to receive information). Projects should promote the behavior with creativity and through tactics and media types that maximize the desired response.

Pilot Communications Campaign:

The ideal behavior change project involves a test run of your communications campaign on a very small scale within your target audience. Due to the high cost of implementing many programs on a broad scale, it is important to know that a method will work before scaling up. Conducting a test run / pilot allows a program to be refined before incurring the costs of large-scale implementation.

Implementation:

You may only request funds for broad scale implementation of a behavior-change communications campaign if you have already completed or will complete as part of this proposal an audience assessment, message creation, methodology identification, and pilot testing (elements 1-4 described above)

Outcomes

- Projects should affect measurable change in the target audience's attitudes and behaviors. Evaluation is an important component. Without a proper evaluation program, you will not be able to assess success. Examples of evaluation techniques are pre- and post-training/workshop/presentation surveys and interviews of participants.
- Projects must engage individuals, communities, or organizations in stewardship practices or projects with the ultimate objective of the project focused on influencing behavior or action.

Technical merit

- Applicants are encouraged to rely on known social marketing best practices.
- Applicants should design their particular outreach and engagement tactics specifically to the target audience.
- Qualified technical experts, agencies, or organizations must be identified as partners or contractors.
- Required information for all outreach and engagement tactics is provided as outlined in the project narrative section of the below proposal instructions of this RFP.

Awareness Project Track - Criteria

Education and awareness is an important component of and prerequisite to behavior change. The goal of an awareness project is to increase knowledge within a target audience, without necessarily changing behavior. An outcome of such a project might be increased number of people that understand that trash is an issue, without necessarily reducing litter. The maximum request for awareness proposals is \$15,000. The following criteria will be used by the Trust to evaluate proposals under the Awareness Project Track. Preference will be given to proposals that meet multiple criteria.

Project Development

- Proposals must identify the intended message of the project. (i.e., don't litter, clean your stream; use native plants).
- Proposals must clearly explain and justify the methodology used to deliver the message(s) to the target audience (e.g., workshop, training, innovative media, etc.).
- The best proposals will place the project in the context of a larger initiative that will eventually seek to influence behavior. (In the future what behavior will the audience who has been made more aware ultimately change?)

Outcome

- Projects must increase citizen awareness about watershed challenges and issues and build ownership of local watersheds with the ultimate goal of engaging more individuals and organizations in stewardship practices and projects.
- The best projects will involve community residents. Activities designed to educate volunteers and lead to engagement of such volunteers in stewardship activities are strongly encouraged.

Technical merit

- Applicants are encouraged to rely on known communications best practices. Applicants should justify the selection of their particular outreach and engagement tactics and provide examples of similar programs that have demonstrated success using these tactics.
- Qualified technical experts, agencies, or organizations must be identified as partners or contractors.
- Required information for all outreach and engagement tactics is provided as outlined in the project narrative section of the below proposal instructions of this Request for Proposals.

Additional Criteria for all Tracks

Sustainability and Evaluation

- Projects will be ranked on the likelihood that the proposed project has the potential for lasting impact, can serve as a model that could be replicated elsewhere, and outlines a plan to be sustained beyond the term on the grant.
- Projects should have quantifiable outputs, such as number of people reached, number of attendees, number of media hits, etc. at levels appropriate to the full project scope and request amount.

- Proposals should describe how the project's impact will be evaluated or assessed; evaluation should involve the target audience and be both quantitative and qualitative.

Community engagement and partnerships

- Engagement with the community is paramount. Partnerships with agencies, schools, churches, non-profits, and other groups in the community that leverage impact and broaden the base of support are strongly encouraged.
- The best projects will connect to other existing community watershed stewardship efforts, such as school-related projects, restoration projects, and volunteer projects. Applicants should identify other complementary or related efforts in their watersheds. For a list of Trust-funded projects in the area, applicants are encouraged to reference the recently funded projects map on the Trust website or check out the Trust's annual report online.
- The best projects will reach beyond the 'choir' and will engage new audiences that are not already involved in or familiar with your message.
- **Projects initiated by and/or involving underrepresented groups are strongly encouraged.**

Mitigation and Permit Based Projects

- The Trust is unable to fund projects or programs that are required by a separate Federal, state, or locally issued permit, decree, or enforcement action. In some cases, the Trust may elect to fund optional portions of required projects that are in excess of regulatory requirements. Please state 1) whether your project is required under any existing or pending permit, decree, or enforcement action, and 2) how and whether your proposal exceeds the regulatory requirements.

Budget and Match

- Cash and in-kind match are not required, but match is a criterion on which the project will be evaluated. Preference will be given to projects showing matching contributions of funds or in-kind services from project partners and other sources (See budget section on Application Form below).
- Appropriateness and scale of budget will be evaluated. Requests for staff time are often appropriate; however, be sure to justify clearly the amount of staff time required for the project and the tasks associated with staff time requested.

Eligible Applicants

The Trust welcomes requests from the following organizations:

- 501(c)3 Private Nonprofit Organizations
- Faith-based organizations
- Community Associations
- Service, Youth, and Civic Groups
- Municipal, County, Regional, State, Federal Public Agencies
- Soil/Water Conservation Districts & Resource Conservation and Development Councils
- Forestry Boards & Tributary Teams
- Public and Independent Higher Educational Institutions

An Executive Officer and Project Lead must be identified for all proposals. Both individuals must be staff or board members of the applicant organization. Individuals associated with for-profit entities to be engaged in the project cannot serve in either role.

The strongest proposals will show committed partnerships that provide funding, technical assistance, or other in-kind services to support the successful implementation of the project.

Funding Restrictions

The Trust does not fund the following:

- Endowments, deficit financing, individuals, building campaigns, annual giving, research, direct mail fund raising, or venture capital.
- Mitigation or capital construction activities such as structural erosion control measures.
- Political lobbying.
- Refreshments and T-shirts.
- Reimbursement for a project that has been completed or materials that have been purchased.
- Projects and programs located outside of Maryland.
- Budget items that are considered secondary to the project's central objective. These items include, but are not limited to, cash prizes, cameras and video equipment, and microscopes.
- Funding is generally restricted to projects on public property, property owned by non-profit organizations, community-owned property, and property with conservation easements, unless otherwise specified in a grant program.
- The Trust is a project specific funder and does not fund traditional marketing efforts that serve to promote generally the applicant organization and its initiatives.

The Trust evaluates each proposal on a case by case basis. The Trust reserves the right to fund projects and budget items that advance its mission and meet its specific funding priorities and criteria.

Application Submission Instructions and Deadlines

Applicants must submit proposals using our new Online Grants System, located at www.cbtrustgrants.org by **5:00 pm on December 9th, 2011**. Late applications will not be accepted, and the online funding opportunity will close promptly at 5:00 pm. To use this system, applicants must register at least 24 hours in advance of submitting an application. **Applicants are strongly encouraged to submit at least a few days prior to the deadline** given potential for high website traffic on the due date. The Trust cannot guarantee availability of Online Grant System technical assistance on the deadline date.

Grant awards will be announced in February 2012.

All applicants will receive a letter stating the funding partnership's decision. An application may be declined, partially awarded, or fully awarded. If approved, the Trust will send a grant agreement letter with grant conditions and due dates of status and final reports. Grantees must sign and return the grant agreement letter with original signatures. The Trust will mail the check to the requesting organization following (a) the Trust's receipt of the signed grant agreement and (b) satisfaction of any award contingencies. In cases where the grantee fails to submit a status report or final report by the due date, the Trust reserves the right to terminate the grant agreement and require a refund of funds already transferred to the grantee.

Projects should be completed within approximately one year upon receipt of the grant award; project timelines that exceed one year must be justified.

When the project is complete, grantees are required to complete final reports. Organizations with outstanding final reports will not be awarded additional grants.

Contact

Contact Kacey Wetzel at (410) 974-2941 ext. 104 or kwetzel@cbtrust.org

Proposal Instructions

When completing the online application process, you will be asked for the following information:

Applicant Information

- 1) Mission of Organization
- 2) Name of Executive Officer of Requesting Organization
- 3) Title
- 4) Address, phone, email
- 5) Name of Project officer
- 6) Title
- 7) Address, phone, email

An Executive Offer and Project Lead must be identified for all proposals and must be different individuals. Both individuals must be staff or board members of the applicant organization. Individuals associated with for-profit entities to be engaged in the project cannot serve in either role.

Grant Information:

- 1) Amount of Trust funding requested:
- 2) Grant Period: enter project start and end dates
- 3) In which stream, river or watershed will the project be located?
- 4) In which county will the project be located?

Project Abstract:

In a text box, you will be asked to provide a brief summary of the project not to exceed 100 words, including details such as type of project, location, and main objectives. You may copy and paste from a word processing document, but you **MUST** use the paste plain text button in the rich text tool bar at the top of this box, necessary to remove all formatting (such as bullets, indentations, bold, etc.). You may format in the text box after pasting.

Project Timeline:

You will be asked to fill in a project timeline including major tasks and their associated start and end dates. You are limited to eight entries (though not required to use all eight), and are welcome to combine steps if necessary.

Project Deliverables:

You will be asked to fill in a number of project outputs, including number of people reached, media hits, workshops held, volunteers engaged, trees planted, etc.

Volunteer Involvement:

You will be asked to complete a form that includes the following: Description of volunteer activities, total # of volunteers engaged in each activity and an estimated amount of hours contributed by those volunteers.

Project Partnerships and Qualifications

You will be asked to enter into a table, project partner organizations, individuals, their areas of expertise, and their role(s) in your project. Applicants are encouraged to upload a letter of support for the project from each partner outlining the partner's role in the project; letters of support can be uploaded in the project narrative file attachment component.

Project Narrative File Attachment

You will be asked to upload an MSWord or PDF file containing a project narrative not to exceed five pages. We prefer, and our reviewers prefer that all documents be merged into one file for ease of reviewing; however, up to four

additional file attachments may also be uploaded through this component. Only a total of five attachments will be reviewed. Additional attachments (more than five total) will not be reviewed. You are encouraged to organize your narrative by the following points:

- 1) **Track:** Identify the track to which you are applying: Behavior Change Program Track or the Awareness Project Track.
- 2) **Goal:** Define the specific objectives of the proposed project.
- 3) **Demographic Information:** In light of the Trust's commitment to the advancement of diversity in its grant-making, please provide demographic information about the community or population involved in or served by the project. Will the project engage traditionally underrepresented groups and/or a wide audience regardless of ethnicity, nationality, origin, culture, education, or socioeconomic status? If so, describe how. Please provide your organization's experience working within the specific communities that you will be targeting. If you have not had significant experience within your targeted demographic, please explain how you intend to address this issue; the Trust encourages applicants to establish partnerships with local organizations that may have greater cultural competencies within the targeted demographic(s).
- 4) **Behavior Change Program Track Only.** Have any of the following elements been completed, and if so, describe how and detail the results of each (for more detailed descriptions of each, see above):
 - a) Audience segmentation and assessment – Identify subgroups and conduct an assessment (ex. survey work)
 - b) Message creation – Create the message to be communicated based on target audience assessment
 - c) Methodology – Design project and select medium to deliver the message based on target audience assessment
 - d) Pilot Communications Campaign – Test your communications campaign on a small scale
 - e) Broad Implementation of Communications Campaign and evaluation of program based on audience response
- 5) **Awareness Project Track Only.** Address the following points:
 - a) **Target Audience:** Define your target audience(s). Think about the types and groups of people most relevant to your goal. Who is most likely to benefit from your message and /or most likely to transfer the message to others?
 - b) **Message:** Identify the intended message of the project. (i.e., don't litter and clean your stream; use native plants). State the message in your own terms, as if you are writing it for your target audience. Think about why this project matters to the audience.
 - c) **Methodology:** Clearly explain and justify the methodology/tactics chosen to deliver the message to the target audience(s). Explain why the tactics are an effective way to reach your target audience(s). You are encouraged to rely on known outreach, engagement, and media best practices. Provide examples of similar programs that have demonstrated success and reference your organization's experience with these tactics. Examples include but are not limited to: workshops, innovative media, individual outreach, demonstration planting projects etc.).
- 6) **Communications Plan:** Indicate how this project supports the broader goals of your organization. Do you have an outreach, watershed, or communications plan for your organization? If so, how does this project support the plan? If applicable, describe how this project complements other activities led by your organization in support of the same goals.
- 7) **Community Context:** Please indicate how this project fits into other watershed stewardship activities occurring in the community. For example, are neighboring schools who may already be undertaking environmental education activities to be engaged in this project? Will this project complement a nearby restoration activity? For information on other watershed projects funded by the Trust in your community of focus, please reference the recently funded projects map on the Chesapeake Bay Trust website.

- 8) Evaluation: Describe how you will assess the effectiveness of your message and the tactics chosen to deliver it. How will you know if this project has been successful (delivery of the message)? How will you learn which specific program / project design elements worked and for whom? How will you collect information from your target audience to refine and improve your program or project? How will you synthesize information collected in order to innovate and strengthen your project in the future? Evaluation and next steps should be based primarily on program recipients' response. Behavior change projects' evaluation should include an evaluation of the number of people who changed their behavior. Awareness projects evaluation should include the number of people who have increased their knowledge. The Trust encourages applicants to plan for and include evaluation in the project timeline and will consider requests for personnel time to conduct robust project evaluation.
- 9) Sustainability: Do you have a sustainability plan for your project or program? E.g. When funding for this project is over, what will last? How will the project continue to be funded in future years? If the project will be replicated in future years or is a re-occurring program, please provide a plan for the project to be sustained beyond the term on the grant.
- 10) Technical Information about Methodology: Please provide *required information* as defined below. If possible, include this information in this section of the narrative as opposed to attaching separate files.
- For workshop requests: Include a recruitment strategy, a sample agenda and/or topics to be addressed, and approximate date(s)
 - For publication requests: Include a detailed dissemination plan, including estimated number of copies for each audience, outline, draft text or mock up of proposed publication, and a list and description of any previously developed publications similar to the proposed. Publication requests without a discussion of how the request compares to other similar publications will not be approved.
 - For website and on-line media request: Include a plan to drive traffic to site, site structure in context with larger site (if applicable), and sample wire frames if available.
 - For event requests: Include promotion plans, location, outline of draft program, and approximate date.
 - For water quality monitoring requests: The Trust has supported the development of sampling and data analysis protocols for tidal tributary indicators in partnership with EcoCheck, a University of Maryland Center for Environmental Sciences and National Oceanic and Atmospheric Administration partnership, and the Mid-Atlantic Tributary Assessment Coalition. Applicants are required to address if/how their monitoring efforts meet the existing protocols. The guidance document can be found here:
http://ian.umces.edu/pdfs/ecocheck_report_313.pdf
 - For demonstration/volunteer planting requests that include a small restoration component: Include (within the same uploaded file):
 - a site plan and conceptual design (site photos are encouraged),
 - a list of any native plants used (funding is restricted to native species only), and
 - for projects planned on properties other than your own, a letter stating that permission has been granted from the entity owning the land on which the project will be completed and that there is commitment to maintain the project (may be attached separately).

**Applicants proposing projects with significant restoration components should consider the Trust's Restoration Grant Program.*

- 11) Technical Context: You have already outlined the technical merits of choosing the particular outreach method by which you will relay key information. Now address the key information itself. Is the practice or behavior that you are promoting new? Is it experimental? Please place it in the larger context of available information. For example, if you are proposing a workshop to change farmer behavior about a particular agricultural best management practice, please briefly discuss what is known about that best management practice. For projects targeting highly technical behaviors,

this section may be longer. For projects targeting well understood or accepted behavior, such as trash clean-up, this section may be very brief.

12) **Mitigation and permit-based projects:** The Trust is unable to fund projects or programs that are required by a separate Federal, state, or locally issued permit, decree, or enforcement action. In some cases, the Trust may elect to fund optional portions of required projects that are in excess of regulatory requirements. Please state:

- a) whether your project is required under any existing or pending permit, decree, or enforcement action, and
- b) whether your proposal exceeds the regulatory requirements, and if so, how.

Budget Upload

You will be asked to upload your budget using the Chesapeake Bay Trust Budget Form, an excel file template. Copies of the form can be obtained in three ways:

- 1) from the "Attachments" section of the Online Funding Opportunity at www.cbtrustgrants.org;
- 2) by copying into your browser window the following link:
www.cbtrust.org/grantforms and clicking on "**Chesapeake Bay Trust Budget Form;**"
- 3) by visiting www.cbtrust.org, clicking on " Grants," the "Grant Forms", and downloading the file "**Chesapeake Bay Trust Budget Form.**"

- Please be as detailed as possible. For example, elements of communications requests (e.g., staff costs, consultants, venue costs, print costs) must be listed separately.
- For any staff cost requests, please list the percentage of overall time devoted to the project by each staff member in the budget item column.
- Be sure to see "Eligible Budget Items" section of Application Instructions above.
- Do not evaluate volunteer hours in terms of dollars; instead, list them separately. Matching/leveraged resources are encouraged. Please indicate whether each match entry is applied for, pledged, or in-hand. Indicate in the narrative whether your organization has requested financial support from any other sources for the project not listed as match in the budget table.

Budget Category Information

The final online grant program component will ask applicants to enter budget category totals. These totals will have been automatically calculated in the **Chesapeake Bay Trust Budget Form**. If personnel and/or contractual costs are requested, use the personnel/ consultant request description table to provide detailed information about the scope(s) of work. Err on the side of providing too much detail. You are limited to 15 entries. For additional tasks, use the Additional Budget Justification Box. Use the budget justification section to provide a several paragraph budget narrative. The narrative should include, in addition to general budget justification information, (a) detailed justification for staff cost requests, if requested, including a specific scope of work, specific tasks, and hours associated with those tasks and (b) the source of any construction cost estimates. Staff cost requests that are not fully justified will not be funded.