Strategies for Motivating Watershed Stewardship:

A Guide to Research-based Practices

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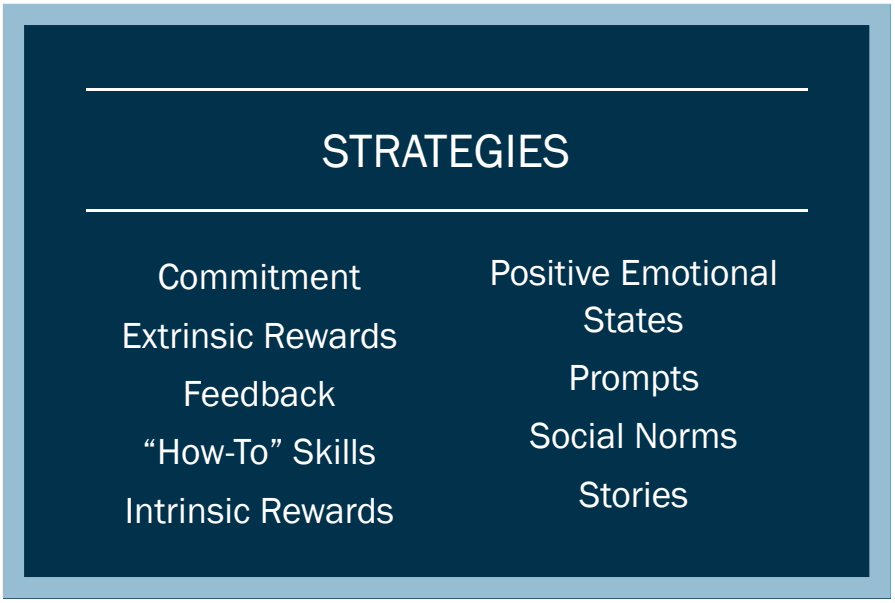
Have you ever attempted to encourage a homeowner to cut back on lawn fertilizer use? Or a neighbor to pick up after his or her dog? How about motivating your coworkers to properly dispose of hazardous materials? Despite the fact that Chesapeake Bay Watershed residents are generally concerned about the 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.



Commitment

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 p. 12: *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.

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

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)

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.

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)

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 (BRRC) 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. BRRC, 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, BRRC 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 BRRC, who has had over 1,500 volunteers. In addition, BRRC estimates that about 70% have volunteered more than once. Keep the feedback coming!

"How-To" Skills

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

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

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)

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.

FORESTRY FOR THE BAY
A Healthy Woodlands Partnership

Positive Emotional States

Definition:
Appealing to positive emotions, such as hope and enjoyment, as a way to change individuals' behaviors (See p. 12: *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 p. 8: *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

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.

BLUE WATER BALTIMORE

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:

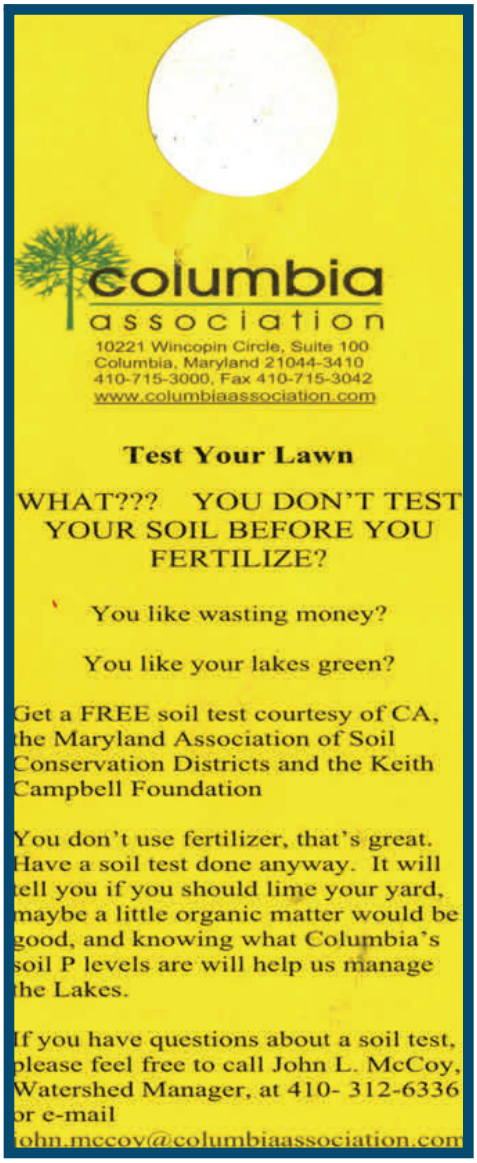
- Prompts posted in university restrooms for two to four weeks led to a 54% decrease in the percentage of lights left on (Katzev & Johnson, 1987)
- Waste containers with specialized lids showing which materials should be recycled increased beverage container recycling behavior by 34% (Duffy, 2009)

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; Aroson & O'Leary, 1982-83)

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

Social Norms

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

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.

WSA
Anne Arundel County · Watershed Stewards Academy

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

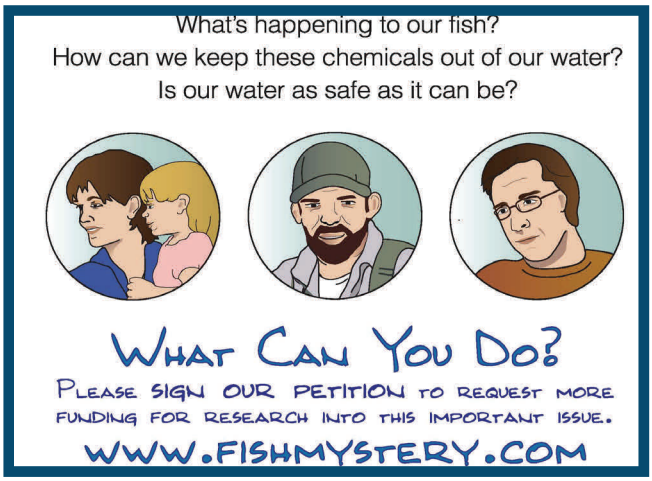
1. **Coherence:** Events within a story should flow together and be understandable
2. **A problem or conflict:** At least one issue in the story that is resolved at the end
3. **Mystery or uncertainty:** When the reader is unsure how the story will end, they are more likely to continue engaging with 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)

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.



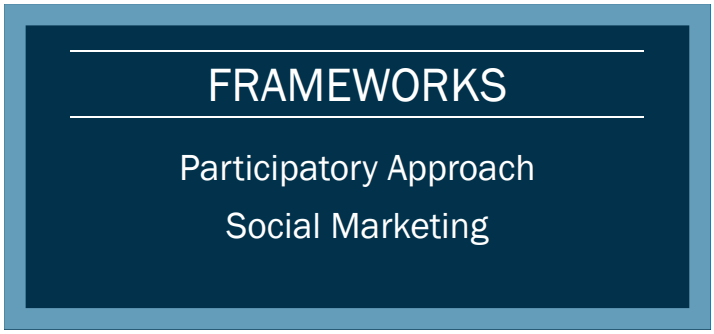
Excerpt from Potomac Conservancy's graphic novel, "The Fish Mystery"

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 *a* document titled *Additional Resources,* which can be found at the end of *Rapid Assessment for Outreach Programs Fostering Environmentally Responsible Behaviors*. This is an accompanying tool to this guide that seeks *to* assist organizations with assessing whether elements of their environmental behavior change programs are being used to their highest potential. 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.



Participatory Approach

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)

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).

Social Marketing

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:

- 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

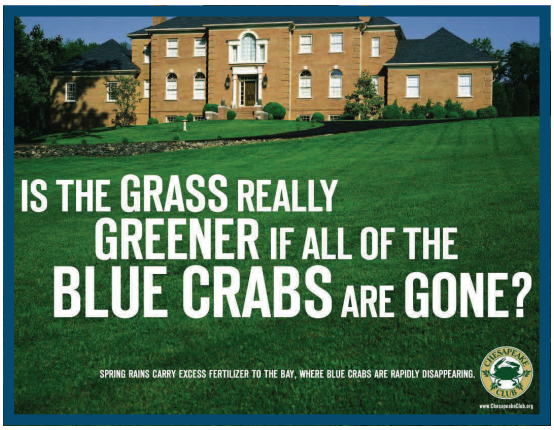
(Adapted from Hastings, 2007 & McKenzie-Mohr, 1999)

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