

FOSTERING STEWARDSHIP THROUGH CONSERVATION EDUCATION

A Best Practices Guide

A Project of the Association of Fish and Wildlife Agencies' North American Conservation Education Strategy

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P R E F A C E

Welcome! This resource is the next generation of a product that was created by the Association of Fish and Wildlife Agencies in the early 2000's. The Education Working Group of the Education, Outreach, and Diversity committee received a multi-state grant in 2020 to update this resource and several others from the North American Conservation Education Strategy toolkit and make it relevant to educators today.

This resource is an update to the work of generations of wildlife educators from across the country. We honor their work by updating, not replacing, this incredibly useful resource that can be used by conservation educators and classroom teachers across North America. A sincere thank you to everyone who created the original resource as well as DJ Case & Associates who brought this resource into the current era of education.

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INTRODUCTION

Most people involved in outdoor education of any kind will agree that as the expansion of human development puts more and more pressure on the natural world, stewardship of our natural resources is critically important.

But what does *environmental stewardship* mean?

“Environmental stewardship [is] the responsible use and protection of the natural environment through conservation and sustainable practices to enhance ecosystem resilience and human well-being” (Chapin et al., 2011).

For the purposes of this Planning Guide, *environmental stewardship* is defined as:

Informed, responsible action/behavior on behalf of the environment and future generations.

Large-scale studies including the “Nature of Americans” and “America’s Wildlife Values” demonstrate that Americans’ relationships with the natural world are changing in profound ways. A key takeaway from both studies is that most Americans value nature, but sometimes there is not enough time or easy access to experience nature as people would like. The Outdoor Industry Association conducted a study to understand impacts of the COVID-19 shutdown of 2020 on outdoor participation. They found high levels of participation in the outdoors and that many people intended to continue enjoying the outdoors once the pandemic shutdowns lifted.



Most importantly, research shows that Americans do care deeply about the natural environment; they find it in their parks, backyards, and school yards. They experience nature as social beings and are eager for more opportunities to engage with the natural world. Conservation stewardship-focused education is a fantastic way to provide pathways for engagement with the natural world for people living across the United States. People do care about the natural world, but they often do not know how to get involved, where to learn more, or how they can help. Utilizing this guide to create better programming is one way that educators can provide that avenue for engagement that many are seeking.



CONSERVATION EDUCATION: AFWA TOP CORE CONCEPTS

The Association of Fish and Wildlife Agencies has identified a set of Core Concepts in Conservation Education that support the North American Model of fish and wildlife management. The North American Model is unique from the rest of the world in that fish and wildlife are public trust resources managed by governmental agencies. The public retains ownership and shared responsibility for the conservation of fish and wildlife resources. Stewardship of resources is a key objective for the North American Model, and this guide is grounded in the first eleven of these core concepts.

1. In North America fish and wildlife are public trust resources managed by governmental agencies.
2. Since most wildlife live on private lands, private landowners play an important role in sustaining and improving habitat.
3. Sustainable natural resources depend on the support of an informed and responsible citizenry.
4. The health and well-being of fish, wildlife, and humans depend on the quality of their environment.
5. Loss and degradation of habitat are the greatest problems facing fish and wildlife; therefore, enhancing and protecting habitat is critical to managing and conserving them.
6. Conserving biodiversity is important.
7. Fish and wildlife can be conserved and restored through science based management which considers the needs of humans as well as those of fish and wildlife.
8. Everyone impacts fish and wildlife and their habitats and as human populations grow, impacts on natural resources increase.
9. Regulated hunting, fishing, and trapping are important tools for managing some wildlife populations and habitats.
10. Within the U.S., state fish and wildlife management is funded primarily through hunting, fishing and trapping licenses and through federal excise taxes collected from the sale of hunting, target shooting, and fishing equipment and motor boat fuels.
11. Wildlife-based activities, such as hunting, fishing, viewing, and photography provide people with millions of days of outdoor recreation each year and generate billions of dollars for the economy.

These top concepts are part of a larger set of Core Concepts that provides foundational knowledge and context for better understanding.



THE ROLE OF CONSERVATION EDUCATION

Conservation education is a process to help individuals acquire and learn to apply stewardship skills while building the capacities needed to enable them to make informed choices and take environmentally responsible actions.

A stewardship ethic is at work when people feel an obligation to consider, not only their own personal well-being, but also that of their surroundings and human society as a whole.

A good steward:

- Has knowledge of basic ecological concepts.
- Has knowledge of pertinent problems and issues.
- Feels a personal connection to natural resources.
- Has skill in employing systems-thinking and a systems-based approach to identifying, analyzing, investigating, and evaluating problems and solutions (thinks of the world as a system of interconnected, interacting parts; considers how affecting a part affects the whole).
- Seeks to understand all aspects of an issue (e.g., environmental, scientific, social, political, historical, and economic).
- Has acquired a knowledge of and demonstrated skill in using action strategies essential to sound stewardship.
- Reflects a sense of obligation to future generations and the earth.
- Recognizes the difference between intention and consequence (does the action truly have the desired effect?).
- Has an internal “locus of control” (the belief and/or feeling that working alone or with others, an individual can influence or bring about desired outcomes through his actions) and takes personal responsibility.
- Acts in an informed and responsible manner.
- Is willing and able to pass stewardship concepts on to peers and others.



The background of the page features a light green color with a faint, stylized illustration of fern fronds. The fronds are depicted with multiple leaflets along a central stem, rendered in a simple, sketch-like style. The illustration is positioned behind a white rectangular box that contains the main text of the page.

THREE IMPORTANT STEPS TO STEWARDSHIP

Conservation education for stewardship helps learners move through three levels from initially learning about the environment and conservation to action for the natural environment.

1. **Knowledge** - Ecological awareness and knowledge are not enough to cause long-lasting behavior changes, but they can provide a basis or readiness for learning and participation.
2. **Connection** – Engendering a personal connection with one or more natural areas is critical to responsible environmental behaviors.
3. **Agency** - Instruction and experiences intended to foster a sense of being able to make changes and resolve important problems and use critical issues investigation skills to do so provide participants with the agency needed to act for environmental stewardship.

The best practices in this *Planning Guide* are based on and flow through these critical steps to stewardship.

BEST PRACTICES FOR CONSERVATION EDUCATION

Effective Programs:

- Have organizational mission, strategic vision, education program goals, and instructional objectives aligned with one another.
- Address each stage of a participant's progression from knowledge to connection to agency culminating in stewardship behaviors.
- Consider the role that ethical principles and reasoning can play in supporting stewardship.
- Provide opportunities for individuals to have positive and repeated contact with the outdoors over a long periods of time.
- Provide programming that is accessible and inclusive.
- Consider the social context in which the education takes place and provide avenues to enhance social support for learners.
- Help learners consider all aspects of the natural resource issue of interest (including historical, social, scientific, political, ecological, and economic) with a systems-based approach.
- Encourage long-term stewardship behavior.
- Structured with curricula that gives learners a well thought-out and data-supported sequence of educational opportunities.
- Evaluate all program outcomes to determine what is working and where improvement is needed.

WORKSHEETS AND HOW TO USE THIS GUIDE

Worksheets provided within this Planning Guide allow you to apply the best practice information to your own situation. By completing these as you go, you'll have the basis or blueprint for outstanding conservation education for stewardship programs. All programs should be geared to their audiences' ages, learning styles, learning level, and provide a pathway through three steps leading to sustained stewardship behaviors: Knowledge, Connection, and Agency.

To cut down on printing costs, additional resources and appendices can be readily found and downloaded from AFWA's website. In particular, this document draws heavily on Chapter 9 of the Recreational Boating and Fishing Foundation's Best Practices Workbook for Boating, Fishing, and Aquatic Resources Stewardship (Seng and Rushton, 2003), which is available for download at www.rbff.org.

**WORKSHEET 1:
MISSION, GOALS, AND OBJECTIVES**



WORKSHEET 1: MISSION, VISION, GOALS, AND OBJECTIVES

Best Practice: Effective programs have an organizational mission, strategic vision, education program goals, and instructional objectives.

Focus Questions:

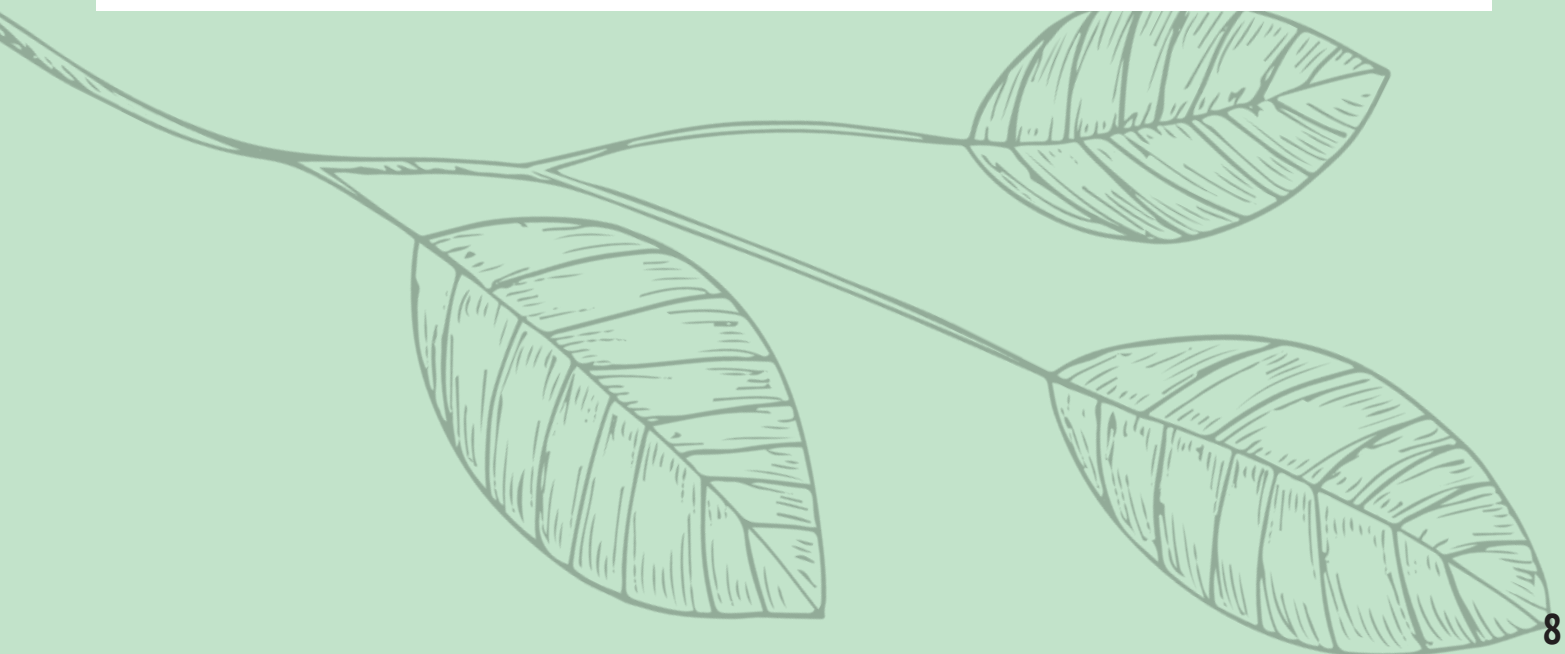
1. What is my organization's mission?
2. What is my vision statement?
3. What are my organization's goals and objectives?
4. How does this program support that mission?

There may not be anything you can do that will have a greater impact on your program's chances for success than to identify your mission, vision, goals, and specific objectives regarding stewardship. If you don't know why your organization or program exists, any parameters can define you, and if you don't know where you're going, any road will get you there. Think strategically to identify why your program exists, what sets you apart from similar organizations, what you want your program to accomplish, and then get agreement from others who will help you implement a plan to achieve it.

- The mission statement is a broad, philosophical statement about what the program hopes to contribute. It provides overall guidance for program goals and objectives. It answers the questions: Why is this program in existence? What is it trying to do?
- The vision statement paints a picture of a future where you want to be. It is clarifying and often inspirational.
- Goals help define how the program will help achieve the mission. Goals explain why you are using a particular program or approach. Goals can be short, medium, or long term in nature.
- Objectives spell out what specifically you want to accomplish. Objectives should be measurable, and generally—though not always—are set up on a relatively short timeframe. “As a result of this program, participants will be able to ____.”

Sometimes, the differences between missions, visions, goals, and objectives can get fuzzy, especially when you're working in partnership with other organizations. Also, goals and objectives may overlap. Regardless of what you call the various levels, it is critical to ask the questions:

“Why are we doing this program?” and “What do we want to accomplish with this program?”



WORKSHEET 1: MISSION, GOALS, AND OBJECTIVES

1. How does your program define the characteristics of stewardship?
2. List the characteristics of a steward.
3. List the mission, vision, goals, and objectives of your program related to stewardship.
4. Write out your stewardship mission statement. Remember, this statement answers the two questions: Why is this program in existence? What is it trying to do?
5. Write out your stewardship vision statement. Remember, this statement paints a picture of where you want to be. It is clarifying and often inspirational.
6. Define your first stewardship goal. Remember, goals help define how your program will help achieve the mission.
 - a. Stewardship Objective #1: As a result of this program, participants will be able to...
 - b. Stewardship Objective #2: As a result of this program, participants will be able to...
7. Define your second stewardship goal.
 - a. Stewardship Objective #1: As a result of this program, participants will be able to...
 - b. Stewardship Objective #2: As a result of this program, participants will be able to...
8. Describe how the mission statement, vision statement, goals, and objectives align to reflect stewardship education.
9. How could you refine them to better accomplish the purpose of environmental stewardship through conservation education?

WORKSHEET 2: DEVELOPING STEWARDSHIP



WORKSHEET 2 : DEVELOPING STEWARDSHIP

Best Practice: Effective programs address each stage of a participant's progression from knowledge to connection to agency culminating in stewardship behavior.

Focused Questions:

1. What stage of stewardship is my program focused?
2. How can my program grow to move participants through the stages?
3. Does my program ultimately support long-term stewardship behavior?

These three stages contribute to environmentally responsible behavior.

Knowledge Level

Knowledge-level characteristics include a person's environmental sensitivity and knowledge about ecology. When individuals have little knowledge of or sensitivity toward the environment, programs must provide information and teach basic ecological concepts.

Without some understanding about the living and nonliving components of the environment and how they influence one another, individuals most likely will not progress to the next stage. Building awareness, relevance, and meaningful threshold experiences will provide a good foundation toward the next stage, developing a sense of ownership.

Connection Level

A sense of connection occurs when individuals and groups personalize environmental problems and issues, and thus take ownership of them. These characteristics include a personal connection with one or more natural areas, an in-depth understanding of the issues, and personal investment in and identification with an issue.

Individuals and groups who develop knowledge and apply skills, investing their own time, energy, and resources in addressing a particular problem or issue, often develop a sense of personal connection and even ownership of that area and issue. When people feel connected to a given place or environmental issue, they are more likely to act and to move into the next level, agency.

Agency Level

Empowering experiences give people a sense that they can make changes and help resolve important environmental issues and be agents of change. Feelings of agency include perceived skill in using environmental action strategies and skills, knowledge of action strategies, an internal locus of control, the intention to act, and assumption of personal responsibility. Programs should help participants develop guidelines and foster internal motivations for responsible behavior toward other people and the natural world.

Given enough time, experience, and opportunity to act, people truly become stewards of the natural environment. They internalize stewardship—it becomes a part of them.

WORKSHEET 2: DEVELOPING STEWARDSHIP

1. How does your program address stewardship and how can you enhance:
 - a. Knowledge characteristics (information, awareness, interest)?

 - b. Connection characteristics (environmental sensitivity, attitudes, increased commitment)?

 - c. Agency characteristics (intention to act, in-depth knowledge, skill development)?

2. What local programs might your program partner with to provide sequential and developmentally appropriate conservation education experiences that will lead to long-term stewardship?



WORKSHEET 3: ETHICAL PRINCIPLES AND REASONING



WORKSHEET 3 :

ETHICAL PRINCIPLES AND REASONING

Best Practice: Effective programs consider the role ethical principles and reasoning can play in supporting stewardship.

Focused Questions:

1. How does this program promote an ethical approach to stewardship?
2. Does this program support feelings of responsibility towards the natural world?
3. How does this program expand beyond individual issues to understand larger scale environmental concerns and responsibility?

Often, people exhibit behaviors based on their personal ethics. So, in addition to developing critical thinking and decision-making skills and empowering participants to take action, conservation education for stewardship should consider how an individual's ethics support natural resources stewardship. Programs should encourage personal ethical competence, including feelings of responsibility, fairness, honesty, respect, tolerance, and caring. More specifically, programs can seek to promote:

- Sensitivity to recognize when a situation poses one or more ethical considerations.
- Knowledge of what behaviors are legal versus what behaviors might be ethical in a given situation.
- Willingness to contribute, participate and act in an ethical manner.
- Judgment to weigh various considerations where there are no laws or other guidelines for action.
- Humility to seek advice and additional knowledge to guide action.
- Ability to discern needs versus wants, and the various different contexts for decision-making.
- Awareness of and sensitivity for social and environmental justice.

An education program should incorporate these core values and should look for ways to impart them to participants. Many states provide codes of ethics towards fish and wildlife and demonstrate how these codes apply to individual behaviors and programming.

WORKSHEET 3: ETHICAL PRINCIPLES AND REASONING

1. What is your program doing currently to help participants gain ethical competence?

2. What is your program doing currently to help participants identify and consider how the role of their personal ethics affect their behavior regarding natural resources?

3. How might your program help participants become more ethically competent?

4. How do your programs incorporate:
 - a. Responsibility:

 - b. Fairness:

 - c. Honesty:

 - d. Respect:

 - e. Tolerance:

 - f. Caring:

**WORKSHEET 4:
POSITIVE AND REPEATED CONTACT**



WORKSHEET 4 : POSITIVE AND REPEATED CONTACT

Best Practice: Effective programs provide opportunities for individuals to have positive and repeated contact with the outdoors over a long period of time.

Focused Questions:

1. How long can my program be offered?
2. What is the sequence of programs that encourage continued contact with the natural world?
3. How can we support stewardship behaviors after the program ends?

Environmental sensitivity refers to an increased level of empathy toward the natural environment. Research shows that environmental sensitivity is developed through significant, positive contact with the outdoors over a long period. For example, adults who are leaders in conservation or involved in environmental careers usually share a common set of childhood experiences involving the outdoors.

To have a meaningful environmental ethic, a person must have a fundamental sense of affection for and identification with nature, and see himself as an integral, necessary member of the ecological community.

Unethical behavior often is associated with feelings of alienation from nature, which allows an individual to abuse and exploit the resource without feelings of personal guilt or long-term responsibility.

Newly acquired behaviors require follow-up support to maintain. Research clearly shows that, even when strong, short-term behavioral change occurs, long-term change is doubtful without continued reinforcement.

As you plan your program, consider how you might provide opportunities to reach a given target audience in multiple ways (such as through formal and non-formal learning), as well as over a span of time. Partnership efforts among schools, agencies, and non-governmental organizations will play an essential role in reaching target audiences over time.

WORKSHEET 4: POSITIVE AND REPEATED CONTACT

1. How does your program currently provide positive contact with the outdoors?
2. List additional ways your program can provide positive contact with the outdoors.
3. What might you include in your program so participants are comfortable returning to the outdoors?
4. What might you include in your program to encourage participants to return to the outdoors?
5. How can your program provide multiple outdoor exposures over an extended time period? (Include opportunities to partner with others involved in outdoor education.)



WORKSHEET 5: ACCESSIBILITY AND INCLUSIVITY



WORKSHEET 5 : ACCESSIBILITY AND INCLUSIVITY

Best Practice: Provide programming that is accessible and inclusive.

Focused Questions:

1. Have I considered issues of access for potential program participants?
2. Is my program purposely inclusive so as to not leave any groups out?
3. Are my program's staff and volunteers representative of the community and those the program is serving?

Access

Program developers must try to understand and identify barriers and constraints to stewardship behaviors and then design programs to minimize or eliminate them.

Sample constraints include:

- Not feeling able to engage in or perform the activity or behavior due to lack of knowledge, skill, and/or confidence.
- Not having social support—others with whom to engage in or carry out the activity or behavior, or having others who are discouraging them from taking part.
- Lack of time, money, or access to a site to perform the activity.

Inclusivity

Program developers must ensure that programs are inclusive across a multitude of variability in lived experience, abilities, orientations, races, and ethnicities. Inclusive programming feels welcoming to all and must assure that speech that is not welcoming is not tolerated.

Demonstrations of inclusivity can be made in programming advertisements and hiring practices that assure diversity of staff and volunteers.



WORKSHEET 5: ACCESSIBILITY AND INCLUSIVITY

1. What barriers and constraints prevent your participants from adopting stewardship behaviors?
2. How does your program help participants overcome these barriers and constraints?
3. How might your program better address these barriers and constraints?
4. How does your program demonstrate inclusivity across race, class, ethnicity, gender, and orientation?
5. Can you demonstrate how your program is inclusive through hiring and volunteer recruitment practices?

**WORKSHEET 6:
SOCIAL CONTEXT AND SOCIAL SUPPORT**



WORKSHEET 6 :

SOCIAL CONTEXT AND SOCIAL SUPPORT

Best Practice: Effective programs consider the social context in which education takes place and provide avenues to enhance social support for learners.

Focused Questions:

1. Can the program include multiple ages as a way to encourage family involvement?
2. Does the program link to other activities happening in the community?
3. Is there a role for community volunteers as a way to increase involvement in the program?

Research clearly shows that the social context in which education occurs is at least as necessary as the methods by which stewardship concepts are taught. If not grounded within the particular community and cultural context of the learner, stewardship education will remain abstract, outside the scope of experience of the learner, inconsistent with cultural norms, and ultimately irrelevant.

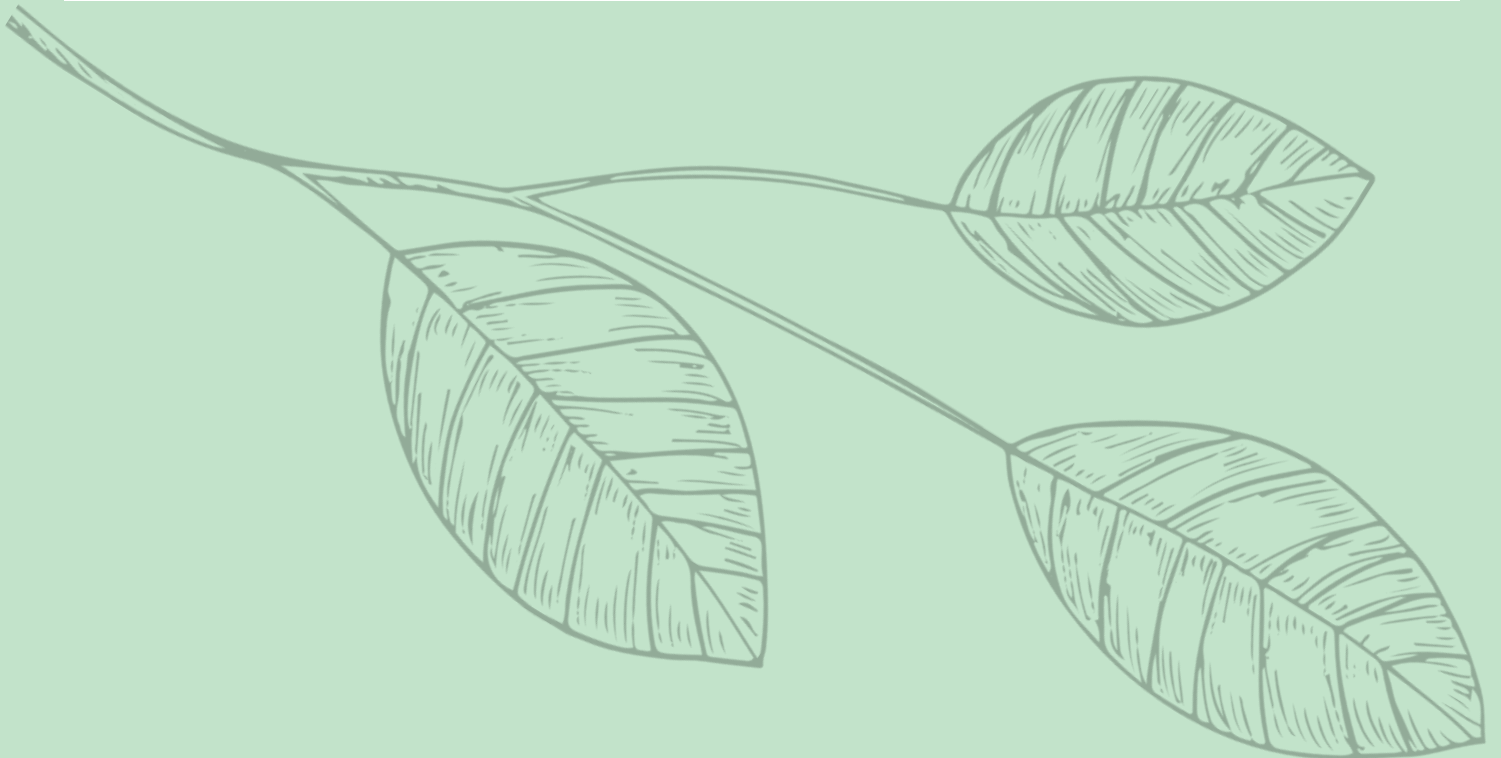
Family, peers, and others in the community transmit their attitudes, beliefs, and values to participants in stewardship programs. Group members can encourage or discourage stewardship behaviors.

Stewardship programs are most effective in reaching behavioral goals if they incorporate parents, family, and neighborhoods as part of the learning community. Participants also can be given guidance on how to involve family and other peers in stewardship behavior. One of the premier illustrations for this technique is David Sobel's book, *Place-based Education: Connecting Classrooms and Communities*. The book offers research and practical examples of how schools and communities have incorporated the environment to facilitate learning, strengthen communities, and foster an appreciation for the natural world and a commitment to citizenship engagement (www.orionsociety.org).

The influence of the social context also may explain why the most effective service learning projects for schools are those that share information with the community.

WORKSHEET 6: SOCIAL CONTEXT AND SOCIAL SUPPORT

1. To what communities or peer groups do your participants belong?
2. What are the primary social influences on your participants (family, peers, media, school, organizations, community norms, etc.)?
3. How can you enlist socially influential groups to help achieve your program goals?
4. How have you incorporated peer activities into your program?
5. How can you help create social support for participants' actions?



**WORKSHEET 7:
CONSIDER ALL ASPECTS OF AN ISSUE**



WORKSHEET 7: CONSIDER ALL ASPECTS OF AN ISSUE

Best Practice: Effective programs help learners consider all aspects of the natural resource issue of interest (including historical, social, scientific, political, and economic) with a systems-based approach.

Focused Questions:

1. Does the program demonstrate issues beyond the ecological?
2. How can the program relate to participants' daily lived experience of the issue?
3. How can my program best incorporate other issues into the program?

Effective programs help participants look at and review all sides of an environmental issue. It is just as important that individuals understand and weigh the historical, social, political, and economic aspects of an issue as it is for them to understand the scientific and environmental issue itself (see, for example, AFWA's Sustainable Guidebook: Systems Thinking Guidebook). Understanding and weighing different cultural and social values of stakeholders, and identifying and managing potential conflicts, is critical. Understanding the interactions between all of these issues demonstrates a systems-based approach to the conservation of natural resources.



WORKSHEET 7: CONSIDER ALL ASPECTS OF AN ISSUE

1. How does your program currently incorporate the influence of social, scientific, historical, political, and economic implications on environmental issue decisions?
2. How might you better address social, scientific, historical, political, and economic implications on environmental issue decisions?
3. How does your program help students consider all social, scientific, historical, political, and economic implications on environmental issue decisions?
4. How does your program encourage learners to consider compromise and consensus as they reach conclusions/solutions to issues?



WORKSHEET 8: ENCOURAGE LONG-TERM STEWARDSHIP BEHAVIOR



WORKSHEET 8 : ENCOURAGE LONG-TERM STEWARDSHIP BEHAVIOR

Best Practice: Effective programs encourage long-term stewardship behavior.

Focused Questions:

1. How does my program demonstrate future behaviors?
2. Does my program move participants from knowledge to connection to agency?
3. How can I help participants connect to other programs for sustained commitment?

Effective programs utilize strategies that result in long-term stewardship behavior. Many contemporary stewardship education efforts seem to take the form of short-term program modules or individual lessons. These piecemeal approaches need to be replaced or combined with in-depth and sustained programs. Program developers must be aware that some strategies provide for only short-term behavior changes.

Research indicates that goal setting, commitment, and practicing positive citizenship behavior demonstration strategies can encourage environmentally responsible behavior.

So how do you change behavior? A body of knowledge from the social sciences called Community-Based Social Marketing has identified a series of tools that can effectively achieve behavior change. Some of these tools include:

- Commitment – Get participants to commit to doing one or more target behaviors. Research shows that commitment—even to small behaviors—predisposes people to accepting bigger commitments over time.
- Prompts – People forget things. Provide noticeable, self-explanatory, positive prompts to remind them of their commitments (e.g., stickers to turn off lights).
- Norms – Make stewardship behavior the acceptable thing to do within your community. If stewardship is the norm in a community, it can strongly influence behavior, even among people who have not made a personal commitment.
- Communication – Use lively, engaging communications to get the word out about stewardship efforts. Select and understand specific target audiences, customize your information to those audiences, and deliver it through sources your audiences will find credible. Be cautious about using threatening messages (e.g., your water is polluted); these can be effective but may lead to backlash or hopelessness among your audience.
- Incentives – Rewarding people for taking stewardship actions can be very effective, but if not coupled with other methods to encourage stewardship behavior, people may stop taking the appropriate action when the incentive is removed.

More information on each of these tools can be found on <https://cbsm.com>.

To create long-lasting outcomes, stewardship programs must be sustained over time. There must be follow-up support to help maintain change. Even when strong, short-term behavioral change occurs, long-term change still is highly doubtful without continued reinforcement. Learners need in-depth educational experiences over time.

WORKSHEET 8 : ENCOURAGE LONG-TERM STEWARDSHIP BEHAVIOR

1. How does your program:
 - a. Get the learner to commit to doing one or more target behaviors?

 - b. Prompt participants to participate in the target behaviors?

 - c. Help create community norms for stewardship behaviors?

 - d. Actively communicate with target audiences?

 - e. Provide incentives to encourage stewardship behaviors?

**WORKSHEET 9:
STRUCTURED AND
DATA-SUPPORTED CURRICULA**



WORKSHEET 9 : STRUCTURED AND DATA-SUPPORTED CURRICULA

Best Practice: Effective programs structured with curricula give learners a well thought-out and data-supported sequence of educational opportunities.

Focused Questions:

1. How will I select activities and curricula for my program?
2. How can I create programs that build on one another?
3. How can I support program participants to take stewardship actions?

It is important to provide learners a well thought-out sequence of opportunities to help them develop, build upon or practice, and eventually apply their awareness, knowledge, skills, and participation strategies. Utilize curricula that incorporate best practices and that will:

- Result in an in-depth knowledge of issues.
- Teach learners the skills of issue investigation and analysis as well as provide time to learn to apply these skills.
- Teach learners the citizenship skills needed for issue remediation and provide the time needed to learn to apply these skills.
- Provide an instructional setting that helps learners develop an internal locus of control.

The Association of Fish and Wildlife Agencies has identified a set of Core Concepts that support the North American Model of fish and wildlife management. The North American Model is unique from the rest of the world in that fish and wildlife are public trust resources managed by governmental agencies. The public retains ownership and shared responsibility in the conservation of fish and wildlife resources. Stewardship of resources is a key objective for the North American Model.

The Core Concepts outline basic wildlife, ecological and wildlife management concepts. The concepts follow the vision of the AFWA Conservation Education Strategy for an informed and involved citizenry that:

1. Understands the value of our fish and wildlife resources as a public trust;
2. Appreciates that conservation and management of terrestrial and water resources are essential to sustaining fish and wildlife, the outdoor landscape, and the quality of our lives;
3. Understands and actively participates in the stewardship and support of our natural resources;
4. Understands and accepts and/or lawfully participates in hunting, fishing, trapping, boating, wildlife watching, shooting sports, and other types of resource-related outdoor recreation; and
5. Understands and actively supports funding for fish and wildlife conservation.

The full set of Core Concepts may be found on AFWA's website and may be used as a framework for conservation education programs. Furthermore, the North American Association for Environmental Education (NAAEE) provides several tools to help educators select, evaluate and implement stewardship-related programs. These resources can be found at <https://naaee.org/> and searching, "Guidelines for Excellence."

WORKSHEET 9: STRUCTURED AND DATA-SUPPORTED CURRICULA

1. How does your curricula give learners appropriate sequences of activities that build on one another?
2. How can your programs address the AFWA Conservation Education Core Concepts?
3. How can your program incorporate NAAEE's Guidelines for Excellence to ensure your curricula are effective?



**WORKSHEET 10:
EVALUATION**



WORKSHEET 10: EVALUATION

Best Practice: Effective programs evaluate program outcomes to determine what is working and where improvement is needed.

Focused Questions:

1. How can I use evaluation to test if my program is succeeding?
2. What are the outcomes I am hoping to find?
3. How can I measure those outcomes?

Probably the most neglected component of all educational programs is evaluation. Far too often, programs are based not on research evidence supporting their effectiveness or accepted education theory but only on what another program or agency is doing. And most evaluation efforts rarely report more than simple program outputs such as the number of participants at an event, participant satisfaction, and cost of delivery. What do these simple outputs tell you about how well you are educating your audiences? If you are asked what kind of impact your program is having on your audience's knowledge, attitudes, or behaviors, how will you answer?

The rarity of formal evaluations of the short- and long-term impacts of education programs is somewhat puzzling, given what evaluation has to offer. Programs that implement formal evaluation are successful (or on their way to success), because the evaluation process shows what works and what doesn't. By building on what works and changing or removing what doesn't, you continually work toward and/or achieve your program goals and objectives.

Evaluation provides tangible evidence that your education efforts are based on sound educational theory and accomplish agency/organizational goals and objectives.

Program evaluation is a complex endeavor that requires considerable attention to be done effectively. Evaluation should be considered during the program planning phase, not after program completion.

For more information on program evaluation of all kinds, including tools, resources, publications, and experts, visit the American Evaluation Association website at: www.eval.org.



WORKSHEET 10: EVALUATION

1. Does your program include an evaluation plan?
2. What sorts of data (qualitative and quantitative) could you collect to evaluate program outcomes?
3. How could you incorporate evaluation into your program in a way that is seamless for participants and useful for future program evaluation?

B I B L I O G R A P H Y

- Chapin, F.S.; Power, M.E.; Pickett, S.T.A.; Freitag, A.; Reynolds, J.A.; Jackson, R.B.; Lodge, D.M.; Duke, C.; Collins, S.L.; Power, A.G.; & Bartuska, A. (2011). Earth stewardship: Science for action to sustain the human-earth system. *Ecosphere*, 2, 89.
- Fedler, A.J. (ed.) 2001. *Defining Best Practices in Boating, Fishing, and Stewardship Education*. Recreational Boating and Fishing Foundation. Alexandria, VA. 182pp.
- Hockett, K.S., J.A. McClafferty and S.L. Mullin. 2005. The making of a resource steward: Defining the relationship between aquatic recreation and aquatic stewardship. Recreational Boating and Fishing Foundation. Alexandria, VA.
- Hungerford, H.R. and T.L. Volk (1990). "Changing Learner Behavior through Environmental Education." *Journal of Environmental Education* 21(3): 8-21.
- Kellert, Stephen R., David J. Case, Daniel Escher, Daniel J. Witter, Jessica Mikels-Carrasco, and Phil T. Seng. 2017. *The Nature of Americans: Disconnection and Recommendations for Reconnection—National Report*. Mishawaka, Ind.: DJ Case & Associates.
- Kidder, R.M. 1995. *How Good People Make Tough Choices*. Institute for Global Ethics.
- Manfredo, M.J., Sullivan, L., Don Carlos A. W., Dietsch, A.M., Teel, T.L., Fright, A. D., & Bruskotter, J. 2018. *American's Wildlife Values: The Social Context of Wildlife Management in the U.S.* National report from the research project entitled "America's Wildlife Values". Fort Collins, CO: Colorado State University, Department of Human Dimensions of Natural Resources.
- McKenzie-Mohr, D. and W. Smith. 1999. *Fostering sustainable behavior: An introduction to community-based social marketing*. Gabriola Island, B.C: New Society.
- North American Association for Environmental Education. National Project for Excellence in Environmental Education. www.naaee.org/programs-and-initiatives/guidelines-for-excellence/
- O'Malley, M.F. 1999. *Washington Department of Fish and Wildlife Education Plan*. Washington Department of Fish and Wildlife, Olympia. 63pp.
- Seng, P.T. and S.R. Rushton (eds). 2003. *Best Practices Workbook for Boating, Fishing, and Aquatic Resources Stewardship Education*. Recreational Boating and Fishing Foundation. Alexandria, VA.
- Sobel, D. 2004. *Place-Based Education, Connecting Classrooms and Communities*, Orion Nature Literacy Series Number 4, 2004.