

A GreenPrint for Minnesota

State plan for environmental education, third edition



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A GreenPrint for Minnesota: State plan for environmental education, third edition, was prepared by the Minnesota Pollution Control Agency (MPCA) under the direction of the Minnesota Environmental Education Advisory Board (EEAB).

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Thank you

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How to Use *A GreenPrint for Minnesota: State plan for environmental education, third edition*

The attitude that nature is chaotic and that the artist puts order into it is a very absurd point of view. All that we can hope for is to put some order into ourselves.
— Willem de Kooning

Minnesota's state plan for environmental education, *A GreenPrint for Minnesota: State plan for environmental education, third edition* is designed for those of you who make or influence policy or who develop and deliver environmental education (EE) programs. *A GreenPrint for Minnesota: State plan for environmental education, third edition*, is divided into three parts for ease of use.

Part 1 gives a foundation of what environmental education in Minnesota and the state plan is all about. From the Preface to the Executive Summary to the Introduction, it's a great place to start.

Part 2 contains information on and strategies for the Minnesota Environmental Education Community and the Environmental Education Outcomes for Minnesota section. Those who make or influence environmental education policy, such as elected officials, state agencies, federal agencies, private foundations, tribal governments, and funders will find this section especially helpful as it lists the four main outcomes to work toward to achieve environmental literacy in our state. These outcomes emerged from the work done with environmental educators around the state in focus groups, one-on-one conversations, and online. For the next 10 years, these four outcomes are central to environmental education efforts across the state.

Also in the second part of the *GreenPrint, third edition* is the Program Planning for Environmental Education Audiences section. Those who are program staff—educators, naturalists, program coordinators and others who deliver educational programming about our environment—will find this section vital to program planning efforts. With the assistance of the audience-specific outcomes and sample indicators of success, you can more easily develop and evaluate programming to help your audiences achieve the state environmental education goals (Minnesota Statute § 115A.073; see page 5) and work together for environmental literacy.

Part 3 defines the roles of the Environmental Education Advisory Board (EEAB) and the Minnesota Pollution Control Agency (MPCA) and outlines strategies toward achieving Minnesota's goals for environmental education over the next 10 years. The final section highlights progress made toward the statewide outcomes listed in *GreenPrint, second edition*.

As you jump into the *GreenPrint, third edition*, whether as policymakers or on-the-ground educators, please make good use of this document. Mark up the pages with notes, dog-ear corners, highlight pieces until they glow. No plan, especially one as important as this one, should ever look brand new.

To find out more about the *GreenPrint, third edition*, contact Michael J. Kennedy at 218-529-6258; 800-657-3864; mike.kennedy@pca.state.mn.us; www.mnseek.net/greenprint.

To find more resources that support working with *GreenPrint, third edition*, go to www.mnseek.net/greenprint.

Part 1

*We stand now where two roads diverge.
But unlike the roads in Robert Frost's
familiar poem, they are not equally
fair. The road we have long been
traveling is deceptively easy, a smooth
superhighway on which we progress
with great speed, but at its end lies
disaster. The other fork of the road—
the one "less traveled by"—offers
our last, our only chance to reach
a destination that assures the
preservation of the earth.
— Rachel Carson*



Preface

*A goal without
a plan is just a
wish.*

— *Antoine de
Saint-Exupery*

GreenPrint, third edition is the third state plan produced under the direction of the Minnesota Environmental Education Advisory Board, a state board of 20 members representing state agencies and congressional districts. The Board's goal for this 10-year plan is that, "Users of *GreenPrint, third edition* create, deliver, and support environmental education in Minnesota that promotes healthy natural and social systems and their relationships." Its intent is to offer guidance to those helping Minnesota citizens achieve the state goals for environmental education (Minnesota Statute § 115A.073; see page 5) and ultimately attain environmental literacy—the understanding of natural and social systems and their interactions.

As Minnesota's environmental education continues to evolve, the statement made in the original 1993 *A GreenPrint for Minnesota* continues to ring true today:

"Although an understanding of ecological systems is essential to, and the basis of, a good environmental program in Minnesota, environmental education is viewed as more than just science education. An environmentally educated citizen must not only understand the scientific basis of an issue or concept, but must also know how social systems interface with environmental issues and be willing to take action as a responsible citizen."

This philosophical foundation of environmental education gives us all the opportunity and responsibility to expand our partnerships, our issues, and our reach. We hope that you make great use of *GreenPrint, third edition* to do that, and more.

Michael J. Kennedy and Denise M. Stromme
Minnesota Pollution Control Agency

Online resources

Over the past eight years, since the second edition of the *GreenPrint* was published, other valuable resources have been produced to further the work of environmental education in Minnesota. A few key resources are listed below and all can be found at www.mnseek.net:

- ▶ The *Environmental Literacy Scope and Sequence: Providing a systems approach to environmental education in Minnesota* gives the framework on which environmental education programs and lessons should be built.
- ▶ For naturalists and environmental educators who are interested in working with young children, *Natural Wonders: A Guide to Early Childhood for Environmental Educators*, offers guidelines for designing developmentally appropriate programs and activities.
- ▶ To keep abreast of Minnesotan citizens' environmental knowledge, attitudes, and behaviors, the *Minnesota Report Card on Environmental Literacy* provides data and analysis.



Executive Summary

Minnesota's natural and social environments are changing. These changes provide wonderful opportunities and complex challenges for our communities and environment. To keep our communities healthy and our environment vibrant, Minnesotans need to think critically and act responsibly to meet current needs and future expectations.

To address emerging issues, Minnesota needs an environmentally literate citizenry. People who are environmentally literate:

- ▶ understand the complexity of natural and social systems and their interrelationships.
- ▶ demonstrate the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.
- ▶ have the capacity to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

However, according to the *Second Minnesota Report Card on Environmental Literacy*, 60% of Minnesota adults believe that they are knowledgeable about environmental issues and problems, yet only 47% of the state's adults have above-average knowledge about the environment. Only 11% received an A grade. In other words, Minnesotans think they know more than they actually do.

One essential way to increase the knowledge, attitudes, and behaviors needed to become environmentally literate is through environmental education. *A GreenPrint for Minnesota: State plan for environmental education, third edition*, is designed to serve those who educate, provide funds, develop programs, support efforts, and set policies that affect environmental education in this state. The plan's intent is to offer guidance from 2008-2018 to those helping Minnesota citizens achieve the state goals for environmental education, Minn. Statute § 115A.073, and ultimately attain environmental literacy.

Minnesota Statute § 115A.073

(a) Pupils and citizens should be able to apply informed decision-making processes to maintain a sustainable lifestyle. In order to do so, citizens should:

- (1) understand ecological systems;
- (2) understand the cause and effect relationship between human attitudes and behavior and the environment;
- (3) be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action; and
- (4) understand the effects of multiple uses of the environment.

(b) Pupils and citizens shall have access to information and experiences needed to make informed decisions about actions to take on environmental issues.

We are fortunate that environmental education in Minnesota is expansive. Minnesota has a strong history of environmental education and the state plan is an integral part of its strength. Our environmental education has goals in statute, a framework on which it can be constructed (*Environmental Literacy Scope and Sequence*), periodic assessments (*Minnesota Report Card of Environmental Literacy*) and countless committed people developing and delivering programs across the state.

Education is the most powerful weapon which you can use to change the world.

— Nelson Mandela

The more we teach environmental education based on the understanding of natural and social systems and their interrelationships, the more issues environmental education encompasses. As Minnesotans seek ways to lessen their impacts on the natural world, sustainability topics such as energy efficiency, living locally, organic foods, alternative transportation, green building, and climate change need to be taught.

To help Minnesotans address current and emerging environmental issues, environmental educators and interested individuals around the state offered their expertise and insight as to what four outcomes the environmental education community should work toward in the next 10 years. Achieving these four outcomes through collaboration and partnerships will provide significant strides in forwarding environmental education efforts to tackle the environmental issues ahead.



Outcome 1: Minnesotans have the knowledge, skills and attitudes to make individual and collective lifestyle choices that support a sustainable environment.

Outcome 2: Environmental education in Minnesota is of the highest quality and is ensured through the development of standards and common definitions.

Outcome 3: Minnesota Academic Standards include Minnesota *Environmental Literacy Scope and Sequence* benchmarks across ALL disciplines and grade-levels.

Outcome 4: Minnesota has a dedicated sustainable funding mechanism for environmental education for all ages and audiences.



With *GreenPrint, third edition's* help, program planners and deliverers can shape activities and programs around specific outcomes for their audiences. By targeting specific audiences in the four locations where most environmental education is delivered—Home, Work, School and Play—*GreenPrint, third edition* gives assistance to educators to ensure that these numerous efforts work together to provide targeted, but comprehensive learning.

A GreenPrint for Minnesota: State plan for environmental education, third edition's success lies in those of us who work in and support environmental education in Minnesota and in our desire to work in concert toward a common goal. *GreenPrint,*

third edition should be used as a foundation on which to build environmental literacy in this state. To do that, we must work with one another to achieve comprehensive, effective environmental education in Minnesota.

Introduction

GreenPrint, third edition is the state plan for environmental education for 2008-2018. It is the third GreenPrint and fourth state plan since the early 1970s. Minnesota has a strong history of environmental education and the state plan is an integral part of its strength. *GreenPrint, third edition* is designed to serve those of you who educate, provide funds, develop programs, support efforts, and set policies that affect environmental education in this state.

Minnesota environmental education goals

A *GreenPrint for Minnesota: State plan for environmental education, third edition* and the state plans before it have all been written to help educators bring their audiences closer to the state goals for environmental education found in Minnesota Statute § 115A.073. These goals, at this time, are as follows:

- (a) Pupils and citizens should be able to apply informed decision-making processes to maintain a sustainable lifestyle. In order to do so, citizens should:
 - (1) understand ecological systems;
 - (2) understand the cause and effect relationship between human attitudes and behavior and the environment;
 - (3) be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action; and
 - (4) understand the effects of multiple uses of the environment.
- (b) Pupils and citizens shall have access to information and experiences needed to make informed decisions about actions to take on environmental issues.

When planning for a year, plant corn. When planning for a decade, plant trees. When planning for life, educate people.
— Chinese proverb

Working toward environmental literacy

Because of the evolving nature of environmental education, *GreenPrint, third edition* also recommends that environmental educators target their programs and plans toward achieving environmental literacy for all Minnesotans. People who are environmentally literate:

- ▶ understand the complexity of natural and social systems and their interrelationships.
- ▶ demonstrate the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.
- ▶ have the capacity to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

As environmental education continues to expand and grow, *GreenPrint, third edition* remains the guiding document on which to build comprehensive educational efforts in Minnesota. It's time to explore the possibilities.

Part 2

A wonderful harmony arises from joining together the seemingly unconnected. — Heraclitus, c. 500 BC



The Minnesota Environmental Education Community

*No one can
whistle a
symphony.
It takes an
orchestra to
play it.*
— H.E.
Luccock

The success of *GreenPrint, third edition* lies in the many dedicated people who work in and support environmental education in Minnesota and in their desire to work in concert toward a common goal. These individuals make up the environmental education community, which encompasses a diverse range of individuals and organizations.

Those of you involved in environmental education know that not only is the EE community growing, but the array of topics being taught is also expanding. As Minnesotans seek ways to lessen their impacts on the natural world, the educational needs of sustainability topics such as energy efficiency, organic foods, alternative transportation, green building, and addressing climate change need to be met. The more we teach environmental education based on the understanding of natural and social systems and their interrelationships, the more issues environmental education includes and the more people needed to provide and support education on them.



People who do not know the field of environmental education often believe that environmental education is taught by classroom teachers to K-12 students or by naturalists scattered throughout Minnesota's wonderful network of environmental learning centers and nature centers. They are not incorrect, just a bit short-sighted. The fact is, people in Minnesota of all ages and demographics are being educated on environmental issues everyday by many of you who regularly take the time, training, and energy to do so. You are important members of this community.

If you are not an educator and are wondering where and if you fit into the environmental education community, ask yourself this question, "Do I promote or support environmental education research, policy, or funding?" If the answer is yes, you are definitely a part of this community. Without you who give a scientific base to the issues; create, sponsor, and promote policy at all levels; and provide funding for programs, materials, staff, and innovation, environmental education would not be the vital field that it is. A community needs to be diverse to be healthy and sustainable, and we're thankful so many of you are part of it.

With so many people and entities involved in Minnesota's environmental education, *GreenPrint, third edition* should be used as a foundation on which to build environmental literacy in this state. To do that, we must work with one another to achieve comprehensive, effective environmental education in Minnesota.

For policymakers, funders, and leaders in environmental education, we suggest the following strategies to address the needs listed in the next section *Environmental Education Outcomes in Minnesota*.

- ▶ Provide easy access to educational and fiscal resources via mechanisms such as SEEK and the Environmental Learning in Minnesota (ELM) Fund for all people in Minnesota.
- ▶ Use the outcomes in this state plan for environmental education, *GreenPrint, third edition*, as guidelines for organizational, regional, and statewide environmental education efforts.
- ▶ Encourage the establishment of environmental education standards and benchmarks in the preK-12 school system by using the benchmarks and concepts of the *Environmental Literacy Scope and Sequence* as a model.

- ▶ Incorporate the principles of sustainability in your policies and teaching. Practice sustainability in your buildings and actions for the long-term health of natural and social systems.
- ▶ Actively participate in and support the work of the Environmental Education Advisory Board and other entities working to further effective environmental education.

For program planners and those delivering environmental education, we propose these strategies to address the audience outcomes listed in the *Program Planning for Environmental Education Audiences* section.

- ▶ Be inclusive in creating and delivering programs that recognize Minnesota's changing demographics.
- ▶ Develop, adapt, and teach preK-adult environmental education that is based on and follows the benchmarks and concepts of the *Environmental Literacy Scope and Sequence*.
- ▶ Create, develop, and deliver fair, science-based, interdisciplinary programs and resources that promote inquiry, critical thinking, problem-solving, and active learning.
- ▶ Create, deliver, and support environmental education that promotes healthy natural and social systems and their relationships.

The environmental education community—its individuals, organizations, and government entities—are central to achieving the outcomes and goals in the state plan. To those of you already involved in environmental education, thank you for all you have done and continue to do. To those of you new to the EE community, thank you for your energy and new ideas. As we move forward together as one vibrant community, we hope that *GreenPrint, third edition* serves you well as your foundation and support.

Environmental Education Outcomes for Minnesota

*We all live under
the same sky,
but we don't
all have the
same horizon.*
— Konrad
Adenauer

In 2006, through a public input process and online survey, environmental educators and interested individuals offered their expertise, insight, and knowledge on what the current leading challenges are in environmental education. To combat these main challenges, four outcomes, listed in priority order, were developed for the environmental education community to work toward over the next 10 years, 2008-2018.

Although this section is for all environmental education community members, those of you who are leaders, policymakers, and funders may find it particularly useful in your endeavors to support environmental education and promote environmental literacy. Achieving these four outcomes through collaboration and partnerships will provide significant strides in forwarding environmental education efforts to tackle the environmental issues ahead.

Outcome 1

Minnesotans have the knowledge, skills, and attitudes to make individual and collective lifestyle choices that support a sustainable environment.

This is a call for grassroots efforts. Individual humans make daily “way of life” choices that contribute to collective local, statewide, nationwide and global effects on water, air, land, animal life, and human health. Effective environmental education can provide citizens with the knowledge, skills, and attitudes to take action to adapt their individual “way of life” choices to support a sustainable environment in which to live and economically prosper. Our motto is: Leave the earth in better condition than when you arrived.

Outcome 2

Environmental education in Minnesota is of the highest quality and is ensured through the development of standards and common definitions.

Environmental education can mean something different to each person depending upon one’s view of the world. Definitions have been developed that can serve as references and models for a Minnesota definition. To move toward a sustainable environment in Minnesota, we need to develop a common concept of environmental education that can be supported by a diversity of interests. In addition to a common understanding, we need to develop standards to ensure the quality of delivery of environmental education is in alignment with Minnesota’s heritage.

Outcome 3

Minnesota academic standards include *Minnesota Environmental Literacy Scope and Sequence* Benchmarks across ALL disciplines and grade levels.

In an effort to ensure a high quality of environmental education in Minnesota, we need to establish systematic guidance for the development of balanced, scientifically accurate, and comprehensive environmental education programs. Environmental education is science-based education. Environmental education is social systems understandings and actions. Science and social systems actions make up environmental education. Effective education programs help to develop a literate citizenry that is better prepared to take action to adapt “way of life” choices. The *Environmental Literacy Scope and Sequence* can easily serve as a baseline source for Minnesota academic standards.

Outcome 4

Minnesota has a dedicated sustainable funding mechanism for environmental education of all ages and audiences.

Education costs. Whether the needs are for materials, infrastructure, staff, programs, or innovation, the fact is, education costs. According to the 2002 *Minnesota Report Card on Environmental Literacy*, over half of Minnesotans believe that environmental education should be financed through special dedicated state funding. An established funding mechanism for environmental education would reduce the time and energy spent on gathering resources and put them back into actual education.

As our environmental and social issues continue to expand and multiply at amazing rates, it is essential that Minnesotans of all ages and walks of life are able to understand, question, and respond to the issues in their individual and community lives. It is through a system of knowledge, attitudes, and behaviors that support healthy environments and communities that Minnesota will thrive. A dedicated financial investment in Minnesota’s environmental education is the right step to ensuring a sustainable environment with a prosperous future.



Program Planning for Minnesota's Environmental Education Audiences

Synergy – the bonus that is achieved when things work together harmoniously.
— Mark Twain

We are fortunate that environmental education in Minnesota is expansive. Our environmental education has goals in statute, (Minn. Statute § 115A.073; see page 5), a framework on which it can be constructed (*Environmental Literacy Scope and Sequence*), and countless dedicated people developing and delivering programs across the state. This section of *GreenPrint, third edition* offers guidance to ensure that these numerous efforts work together to provide targeted, but comprehensive learning.

Although this section will help you in shaping your work to address audience specific outcomes, the *Environmental Literacy Scope and Sequence* should be used to develop the content of your environmental education programs. Using a systems approach, the developmentally appropriate benchmarks and concepts give you the foundation to build strong, effective programs – no matter the age or issue. The *Environmental Literacy Scope and Sequence* can be found at www.mnseek.net.

In the previous section, , you explored the broad outcomes that Minnesota educators feel are important to work toward in the next 10 years in efforts to foster environmentally literate citizens. Now with this section's assistance, you as program planners and deliverers can shape your activities and programs around the stated outcomes for your targeted audiences. Together, environmental education programs can meet the needs of your audiences, your organizations, your communities, and the environment.

Here's how you do it. In this section, you'll find:

- ▶ The four locations in which environmental education is commonly delivered: Home, Work, School, and Play.
- ▶ In each location segment, an example of environmental education taking place in that location.
- ▶ General tips for education in each location.
- ▶ Twelve audiences that are divided among the four locations. Although these audiences may overlap, for the sake of clarity, each is placed in one specific location.
- ▶ Definitions of the 12 audiences.
- ▶ Outcomes for each audience on which your programs can be planned, developed, and delivered.
- ▶ Sample indicators of success for each outcome to be used to assess your education efforts. As these are samples, feel free to create your own indicators of success.

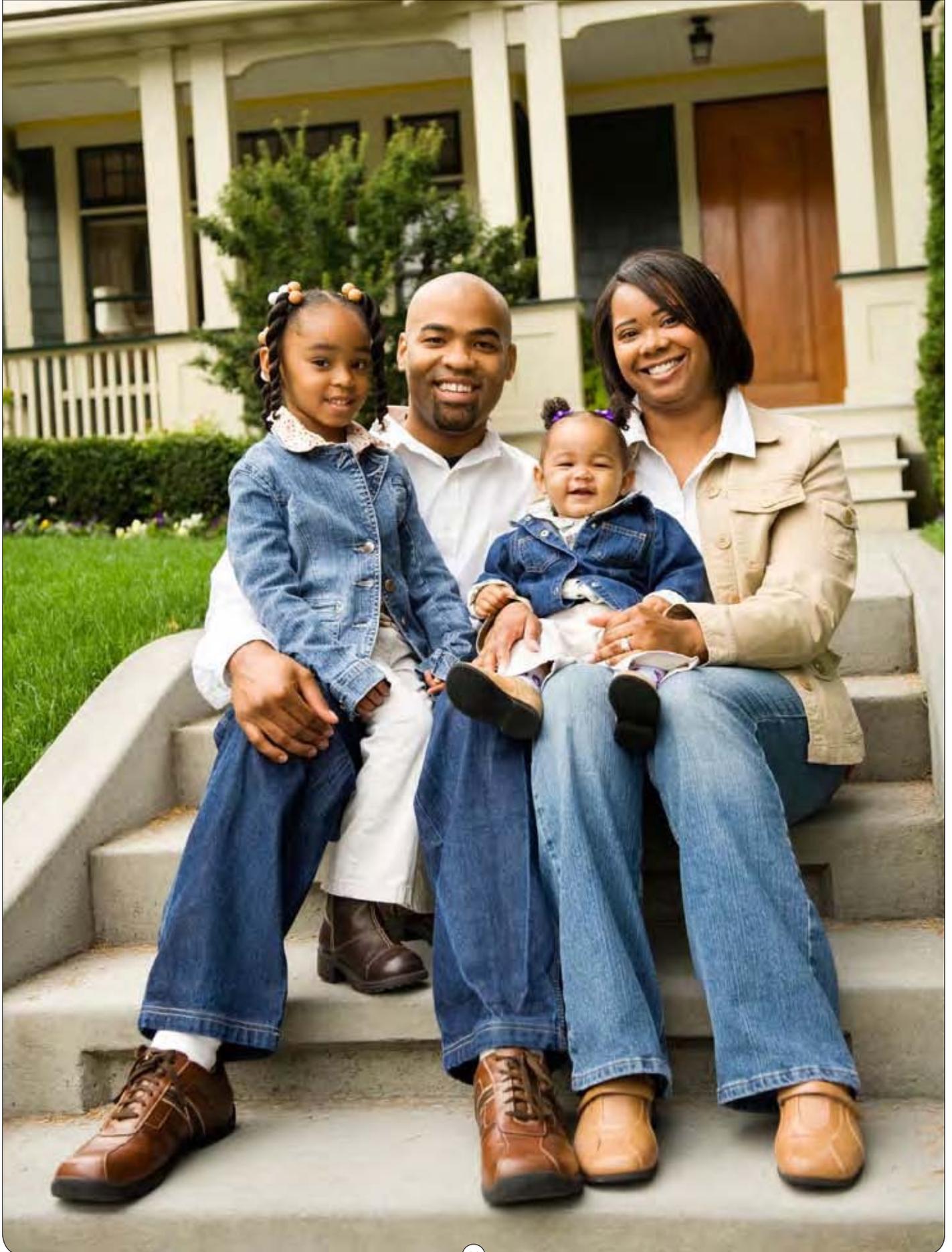
We recommend that you take a few moments to familiarize yourself with what this section has to offer. Then zero in on the audience you wish to work with in your environmental education program and incorporate these outcomes into your planning process. No matter the topic you teach or the audience you reach, using these outcomes and indicators will help your program be an integral part of comprehensive, successful environmental education in Minnesota. Now, that's a great goal for all of us.

Audiences

The four locations in which we commonly deliver environmental education in Minnesota and their audiences are:

- ▶ **Home**
 - Families
 - Faith communities
 - Consumers
- ▶ **School**
 - PreK–12 students
 - Teachers
 - Higher education communities
- ▶ **Work**
 - Business communities
 - Landowners and producers
 - Media
 - Government officials and boards
- ▶ **Play**
 - Outdoor recreation resource users
 - Citizen and youth groups





The Home Location

Environmental education in the home setting is a growing sector of the environmental education field. From the lifestyle choices we make as a family unit, to the purchasing power consumers create by purchasing goods and services, to the often moral and ethical considerations we make in faith communities; our environment is commanding a larger role in each of these settings. Various environmental education organizations and government entities have begun to focus on the home setting.

Environmental education programming at the home location should consider the following:

- ▶ Educational programming in the home must be fairly convenient.
- ▶ Environmental education programming in the home is more effective if it is multigenerational.
- ▶ Multicultural considerations need to be tended to in all educational settings. Programming in the home is an especially effective place to introduce new cultural norms and practices.
- ▶ Programming in the home setting lends itself nicely to projects that can be shared and worked upon over a longer timeframe than one may encounter in other educational settings.

Minnesota's environmental education community recognizes three audiences in the Home location: **Families, consumers, and faith communities.**



Always design a thing by considering it in its next larger context—a chair in a room, a room in a house, a house in an environment, an environment in a city plan.
— Eliel Saarinen

At home, environmental education works to reach people where they live and how they live. Here's one example ...



One organization targeting people at home is the Environmental Association for Great Lakes Education (EAGLE), based in Duluth. EAGLE's mission is to provide education and promote community involvement focused on restoring and protecting the Great Lakes

ecosystem. EAGLE is "a local organization working on local issues in response to local demands. We start at the source of the problem, how we live, because how we live impacts our world and the future of our planet."

EAGLE works on topics such as safe and healthy lawns and gardens, healthy children, climate change, living green, and water protection. Some of the efforts include:

- ▶ **The Great Lakes Environmental Library** currently posts more than 1,000 free Great Lakes environmental articles online. This library is an educational source for the public and provides an opportunity for organizations listed in this directory to post articles regarding Great

Lakes environmental issues.

- ▶ **EcoSource** is a directory of environmental nonprofit organizations, government offices, and businesses. It is printed every year and available for free throughout the region.
- ▶ **The Living Green Conference**, held in Duluth since 1992, highlights nationally renowned speakers, educational workshops, and exhibits hosted by local sustainable businesses, nonprofit organizations, and government offices.
- ▶ **Safe Lawn and Garden** is a joint project of EAGLE and the Duluth Community Garden Program originally funded by the Minnesota Pollution Control Agency. The goal of this campaign is to educate businesses and homeowners about options for simple, nontoxic methods of lawn and garden care.

These efforts use a variety of educational tools and methods: workshops, websites and links, fact sheets, pledges, yard signs, mini-grants, incentives, demonstrations, window displays, how-to manuals, public service announcements, exhibits, and newsletters.

For more information: www.eagle-ecosource.org



Families

Families are defined as those who self-identify themselves as a family. Typically, we are referring to those who share the same dwelling and make collective decisions about the household and their needs. Depending on the cultural background, this could mean many different things, from individuals to extended families with many adults and children.

As educators of families, strive for the following outcomes in your environmental education efforts.

In their daily lives:

- A. Families understand** the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Environmental and neighborhood impacts are considered in daily maintenance decisions in and around the home.
- ▶ Increased use of alternative, effective, energy-efficient transportation modes.

- B. Families demonstrate** the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.



Sample indicators of success:

- ▶ More foods are home grown organically or grown in the nearby communities.
- ▶ Increase in sharing tools, rides, and outdoor chores so that it is not always necessary to buy individual equipment and services.

- C. Families have the capacity** to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ Increase in backyard composting and the use of compost for lawn and garden maintenance.
- ▶ Non- or less-toxic cleaning products are used in place of more toxic products.

- D. Families evaluate** the impact and demonstrate model environmental behaviors related to individual and family activities and the environment.

Sample indicators of success:

- ▶ Families discuss and choose low-impact alternatives to housing choices, transportation, lawn and yard care, recreational pursuits, household waste, etc.
- ▶ Increase in reuse and recycling of household and backyard products.

E. Families take part in environmental activities in their local community.*Sample indicators of success:*

- ▶ Growth in participation in community boards, committees, forums and events that address or include environmental issues and opportunities.
- ▶ Most neighborhood block parties, plans, and meetings include greener alternatives, such as using reusable eating utensils and gathering on non-chemically treated lawns.

F. Families value and promote learning about the environment in a fun and rewarding way.*Sample indicators of success:*

- ▶ More families participate in non-formal environmental learning experiences.
- ▶ Family members who are students consider everyday environmental challenges in their studies and discuss the issues within the family setting.

G. Families engage in energy-efficient efforts and factor in the economic, social, and environmental costs when using energy.*Sample indicators of success:*

- ▶ More homeowners add insulation to their homes and set thermostats lower in the winter and higher in the summer.
- ▶ Energy-efficient lighting replaces the standard lighting options.

Consumers



Consumers are defined as those who purchase, rent, or trade for commodities and services. This includes all levels of consumerism, from individuals and households to organizations, institutions resellers, and governments that purchase the products and services offered by other entities.

As educators of consumers, strive for the following outcomes in your environmental education efforts.

In their daily decisions and activities:

A. Consumers understand the complexity of natural and social systems and their interrelationships.*Sample indicators of success:*

- ▶ Home buyers factor in proximity to green space, access to transportation options, energy-efficiency, and green building principles when purchasing their homes.
- ▶ Due to consumer demand, more manufacturers take back their products for reuse and recycling, and in turn, the amount of electronics going into the waste stream decreases.

B. Consumers demonstrate the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.*Sample indicators of success:*

- ▶ Increased use of efficient and effective transportation modes.
- ▶ Demand for locally grown, organic, or community supported agriculture (CSA) is increased and met.

C. Consumers have the capacity to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.*Sample indicators of success:*

- ▶ Consumer demand for recycled products and certified wood products increases.
- ▶ Measurable decrease in energy consumption.

- D. Consumers purchase and use** sustainable products, transportation modes, and energy sources.

Sample indicators of success:

- ▶ Increase in availability of environmentally sustainable products and services.
- ▶ The location of where the product was grown or manufactured and that impact is taken into consideration before a purchase is made.

- E. Consumers consider** product prices that reflect true environmental cost.

Sample indicators of success:

- ▶ People understand the cost and subsidy of the items they buy and use.
- ▶ Sales of energy-efficient housing products increases.

- F. Consumers factor** waste reduction, reuse, and recycling into all their buying choices.

Sample indicators of success:

- ▶ Reduction in products consumed and wastes generated: increase in composting, recycling, and purchase of recycled products and products with less packaging.
- ▶ Purchase of post-consumer recycled products increases.

- G. Consumers search out** housing and commercial developments that incorporate environmental and sustainability practices, including transportation, energy, water, and land use.

Sample indicators of success:

- ▶ Increased development of conservation design, low-impact development, cluster housing, and eco-industrial parks, as well as increased renovation of existing buildings.
- ▶ Green homes and buildings are considered the desirable norm in the real estate market.



Faith communities

Faith communities are defined as those communities that share common beliefs, rituals, and/or theories. These can be recognized religious groups or local communities of belief.

As educators of faith communities, strive for the following outcomes in your environmental education efforts.

In their endeavors:

- A. Faith communities understand** the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Members of the faith communities acknowledge the environmental impacts of the social justice issues they are addressing and take them into account in their efforts.
- ▶ Local outreach activities from the community of faith include environmental opportunities.

- B. Faith communities demonstrate** the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ Reusable utensils, plates, cups and linens are available and used on a regular basis.
- ▶ Ridesharing, safe routes, and alternative transportation modes are offered as part of the service to the congregation.

- C. Faith communities have the capacity** to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ Audits of the community's buildings, such as energy, water use, waste, and chemicals, are conducted and acted upon to lessen their environmental impacts.
- ▶ Environmental and social issues undertaken by congregations include methods, resources, and tools to help their members and external audiences make informed decisions and take appropriate action.

D. Faith communities understand and support environmental stewardship in their faith tradition.

Sample indicators of success:

- ▶ Congregations take active part in environmental issues based on their shared understanding of the environment, such as climate change and water quality.
- ▶ Members encourage their local and global communities of faith to integrate respect for the environment in their teachings.

E. Faith communities include environmental concerns in their mission, policies and outreach programs.

Sample indicators of success:

- ▶ In the infrastructure of the faith community, there is an established, active committee on environmental concerns and opportunities.
- ▶ Community outreach projects will consider environmental impacts of their design and execution.

F. Faith communities include education about the environment, including faith education programs.

Sample indicators of success:

- ▶ Environmental education training programs for faith community leaders, clergy, staff, and volunteers are developed and well attended.
- ▶ The environment is a common component of education taking place at the churches, synagogues, mosques, and other places of worship.

G. Faith communities foster information and community atmosphere that encourages individual lifestyles that lead to responsible environmental actions.

Sample indicators of success:

- ▶ Individuals of the faith community are acknowledged for their environmental behaviors and similar behavior by others is encouraged.
- ▶ Congregations partner with neighborhoods, businesses, organizations, and agencies to offer green living events, tips, materials, and assistance.





The Work Location

Environmental education in the workplace is becoming the norm in Minnesota. Often these programs are driven by external forces or by early adopters of sustainable practices. These programs can be related to a facet of a particular business or industry or could be of special interest to individuals of a group within the workplace. Environmental education in the workplace can affect the health and welfare of employees, productivity of employees, and even, at times, affect profit and loss of the enterprise.

Environmental education programming at the workplace should consider the following:

- Unless related to the nature of a particular business or industry, programming can take place before, after, or during a designated break in the work day, such as lunch.
- One of best ways to reach business audiences is through business-to-business networks, local chambers of commerce, and trade associations.
- Environmental education programming in the workplace should take into account the mission of the business.
- Workplace programming can focus on cooperative partnerships, such as service learning projects.

Minnesota's environmental education community recognizes four audiences in the Work location. These include: **Business communities, landowners and producers, media, and government officials and boards.**



Never interrupt someone doing what you said couldn't be done.
— Amelia Earhart

When it comes to environmental education in the Work setting, innovation is key. Here's one example ...

Syvantis Technologies exhibits innovation in their Fairview Conservancy Office Park, a low-impact development project in Baxter, Minnesota. The Conservancy encourages commercial landowners and developers to implement conservation design alternatives. The goal of Fairview Conservancy is to convince municipalities to create sensible ordinances that support conservation design.

At the beginning of the project, Syvantis pulled together realtors, natural resource professionals, energy experts, community funders, chamber of commerce members, builders, a development commission, educators, and conservation nonprofits for their expertise and support. Having this advisory group from the onset helped Syvantis learn, adapt, and implement low-impact elements throughout their project. The advisory group was also vital to the project's educational efforts.

Design principles incorporated in the office park: easy access; energy-efficient and natural lighting; storm water management through porous pavement and rain gardens; renewable energy with solar panels and wind power; heat redistribution from the computer server room; nontoxic cleaners and low-VOC paint; native plantings; building clusters; and a covenant that the building and land will include space for rest and reflection, remain smoke-free; will recycle and use low-impact signage.

The outreach strategies for the Fairview Office Park:

- Guided tours of buildings and site to explain techniques and benefits.
- Brochures provided a broad overview of demo projects and techniques.
- Website (www.mnbuildsmart.org) was created as a general and technical resource for target audience, with web links to other resources.
- Media outreach included newspaper (feature articles profiling techniques, cost, etc.), TV/radio documentaries, news spots, and public service announcements (PSAs).
- Interpretive signs were placed throughout buildings and site to explain techniques and benefits.
- Workshops presented plans, results and monitoring information to various audiences.
- Partnered with realtors, builders, etc., to offer continuing education units.
- Offered presentations to county commission boards, to local vocational schools, and to local and statewide conferences.

For more information about the Fairview Conservancy Office Park and its educational efforts, go to: www.mnbuildsmart.org.



Business communities

The business communities audience includes all types of business leaders, managers, and employees, from home-spun individual-owned and operated businesses to large corporate settings. This audience also includes staff, leadership, and members of business trade groups and associations.

As educators of business communities, strive for the following outcomes in your environmental education efforts.

In their work:

- A. Business leaders and employees incorporate** sustainable development concepts into their mission and business plan, including the goals of eliminating or reducing waste and emissions, conserving energy and water, using renewable energy, and creating resource-efficient transportation systems and options.

Sample indicators of success:

- ▶ Environmental goals are established, audits are conducted, progress is tracked, and needed improvements are made on a regular basis.
- ▶ Resource conservation programs and renewable energy sources are implemented in company facilities and manufacturing processes.

- B. Business leaders and employees promote** corporate responsibility and competitive advantage relative to the environment.

Sample indicators of success:

- ▶ Growth in percent of resources provided to research and development of environmentally friendly processes and procedures.
- ▶ Establish market incentives that encourage environmentally efficient practices and product stewardship.

- C. Business leaders and employees consider** full costs to the environment and community, both local and global, when assessing their business practices.

Sample indicators of success:

- ▶ Service providers use reusable products, serve local foods, and offer alternative transportation options for events when available.
- ▶ Design for the environment is considered in each step of the life of a product or service.

- D. Business leaders and employees collaborate** with regulators, technical assistance providers, and environmental experts to protect the environment by developing solutions to preventing pollution and helping businesses attain goals below permitting thresholds.

Sample indicators of success:

- ▶ Reduction in number of permits needed.
- ▶ An increased number of companies that promote and implement environmentally responsible practices and products.

- E. Business leaders and employees participate** in and support local environmental education programs.

Sample indicators of success:

- ▶ Businesses sponsor educational events that promote how to reduce our impact on the environment.
- ▶ Businesses support employees volunteering in community efforts that educate citizens and students.

F. Business leaders and employees understand the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Manufacturers reduce their impacts on global climate change.
- ▶ Employees are offered incentives to use transportation alternatives to single-occupant vehicles, and take advantage of them.

G. Business leaders and employees demonstrate the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ Individuals and divisions within business are supported and encouraged to increase the business' positive impact on the environment and community through innovative design, expanded partnerships, and closed loops.
- ▶ Businesses engage in environmentally responsible practices, such as energy efficiency, waste reduction, alternative transportation, native plantings, rain gardens, and environmentally preferable purchasing.



H. Business leaders and employees have the capacity to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ Growth in cleaner technologies, practices, and products designed with the environment in mind.
- ▶ Businesses develop supply chain specifications that encourage suppliers to provide environmentally preferable materials and services.



Landowners and producers

Landowners and producers are defined as people who own or manage land, including those that own land as a production resource. Examples include forestry companies, agricultural crop interests, family farms, hunting clubs, agricultural feedlots, conservation group holdings, developers, and recreation industry interests. This audience also includes individual landowners who own tracts of land, large and small, and land renters for personal and or recreational purposes.

As educators of landowners and producers, strive for the following outcomes in your environmental education efforts.

In their endeavors:

- A. Landowners and producers demonstrate** the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ Management practices that optimize production and harvest in an environmentally sustainable manner, for example certification, maintain a continuous and diverse supply of timber and agricultural products, and still provide a livable wage is implemented.
- ▶ Soil erosion per acre of cropland is reduced on average throughout Minnesota's agricultural region.



- B. Landowners and producers understand** the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Use and sustainability of the land and its resources are considered in conjunction with the health of the immediate and surrounding communities.
- ▶ Forest and agricultural lands are managed using integrated resource management principles and are profitable.

- C. Landowners and producers provide**

environmental information and education to peers, consumers, students, media, citizen and youth groups, and environmental groups.

Sample indicators of success:

- ▶ Increased number of partnerships between producers/landowners and other deliverers of environmental education.
- ▶ Producer/landowners that use sustainable practices present and share their information at meetings, seminars, conferences, and other educational venues.

- D. Landowners and producers understand** environmental regulatory processes and the rationale for regulations and land management.

Sample indicators of success:

- ▶ Increase in compliance with regulations.
- ▶ Landowners and producers are involved in the regulatory process at the onset and include environmental considerations in their plans.

- E. Landowners and producers have the capacity** to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ Decisions in the forestry and agricultural product industries demonstrate an understanding of the economic and social benefits of producing environmentally responsible products.
- ▶ Producers/landowners willingly engage in restoration of natural resources where there is a need for the community and/or environment.

- F. Landowners and producers take into account** critical habitat and community health when developing their land.

Sample indicators of success:

- ▶ Environmental best management practices are implemented throughout land-use decisions and practices.
- ▶ Critical habitats are enhanced or protected.

Media



Media is defined as employees and owners of various print and electronic medium outlets for news and information. Various media outlets exist to provide information to the public-at-large, like a major newspaper, or to serve a small specialty segment of the public. It is important to recognize the Internet as a major facet of the media audience sector. Examples include: newspapers, magazines, trade journals, newsletters, radio, television, websites, listservs, and podcasts.

As educators of the media, strive for the following outcomes in your environmental education efforts.

In their work:

- A. Media raise** awareness and knowledge about environmental issues and topics by developing effective relationships with environmental education providers.

Sample indicators of success:

- ▶ Local radio, television stations, newspapers, websites, and blogs highlight balanced, accurate environmental news stories on a regular basis.
- ▶ Environmental education providers and other objective, credible sources are consulted on stories to help provide more than an either-or aspect.

- B. Media promote** awareness of Minnesota's environmental education goals and efforts.

Sample indicators of success:

- ▶ Increased partnerships between media organizations and environmental education practitioners that result in media coverage about Minnesota's current efforts.
- ▶ Events with an environmental or sustainability focus are given in-depth coverage.

- C. Media understand** the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Media stories on the environment discuss the varied facets of the issue, and include social impacts in the discussion.
- ▶ It is the norm that environmental stories contain a human or community aspect, and vice versa when applicable.

- D. Media demonstrate** the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ Opportunities for public participation and partnerships to address local environmental decisions, activities, and practices are included in stories on the environment.
- ▶ Town hall style public meetings on environmental issues and topics are coordinated and presented as a result of partnerships between public agencies and media outlets.

- E. Media recognize** cultural and ethnic traditions and practices that address environmental issues.

Sample indicators of success:

- ▶ In-depth coverage of international, ethnic, and cultural issues associated with the environment to help Minnesota citizens understand the diversity and challenges to environmental issues.
- ▶ Local cultural events are reported in a way to include the event's environmental aspects.

- F. Media have the capacity** to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ Environmental stories are not reported in a "doom and gloom" light, but include information on how the situation can be improved.
- ▶ Members of the media are given the support to create and deliver in-depth stories on the many facets of our environment and communities, and possible ways that their audiences can get involved.



Government officials and boards

Government officials and boards are defined as those elected and appointed government representatives who function on the regional, township, city, county, state, and federal level. It also includes those paid and volunteer staff members who work for these governmental entities. Examples include municipal staff, county commissioners, watershed management districts and organizations, township supervisors, state agency staff, state agency boards and advisory board members, and others.

As educators of government officials and boards, strive for the following outcomes in your environmental education efforts.

In their positions:

- A. Government officials, boards, and their respective staff work** with other government units and stakeholders to address regional environmental issues that transcend political boundaries.

Sample indicators of success:

- ▶ Proposed trails that cross township, city, county, and state jurisdictions are discussed and debated by all entities affected before considered.
- ▶ Watershed districts find increased citizen and business involvement in long-range planning efforts through a concerted effort to reach stakeholders.

- B. Government officials, boards, and their respective staff understand** their legal authority and responsibilities to ensure sustainable ordinances, policies, and decisions.

Sample indicators of success:

- ▶ Policies and ordinances encouraging pedestrian-friendly practices are written and acted upon.
- ▶ Legislators enact shoreland protection rules in response to increased population pressure on lakes.

- C. Government officials, boards, and their respective staff demonstrate** the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ County commissioners establish a green building program and regulate the energy efficiency, conservation of water, indoor air quality, and recycling of waste in all residential buildings and structures by setting minimum standards.
- ▶ Long-range plans include the development of and adherence to environmental policy statements and plans.

- D. Government officials, boards, and their respective staff understand** the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Planning commissions, city councils, and other elected government bodies use up-to-date GIS maps to determine critical habitats to consider in all planning and zoning decisions.
- ▶ Government officials and boards act as resource managers and role models for the community and reflect environmental values in decision making.

- E. Government officials, boards, and their respective staff inform, educate, and facilitate** the participation of constituents about local and global environmental issues (e.g., importance of stewardship, climate change, waste reduction) through media, such as public participation, events, newsletters, and websites.

Sample indicators of success:

- ▶ All National Night Out events are conducted in a waste-free, green manner and are marketed as such.
- ▶ Greater citizen participation at the onset of committees, councils, and task forces formed to address air and health issues of the area.

- F. Government officials, boards, and their respective staff have the capacity** to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ More cities and counties establish compost opportunities for their residents, with the finished compost product available for use.
- ▶ Township boards and city councils enact “dark sky” ordinances to ensure that lighting of streets, parking lots, commercial buildings, and other development remains energy-efficient, targeted down lighting, which helps eliminate light pollution and preserves the night sky.



The School Location

Developing environmental programming for audiences in the school location is rewarding as we address Minnesota's future and current citizenry and workforce. However, with ever increasing pressures in the formal school system to meet federal and state education mandates in the K-12 school system and increasing costs of higher education, environmental education may be challenging to include. Educators need to provide environmental education that uses a systems approach to make it relevant to all learners and their needs.

Environmental education programming at the school location should consider the following:

- Programs that follow the developmentally appropriate environmental literacy benchmarks and concepts will build learning that grows throughout the school experience.
- Programs should be relevant to the educational/developmental levels of students in order to justify the endeavor.
- Programs need to be planned, developed, and delivered in a manner that includes all learners.
- Environmental education is more effective when integrated into existing traditional and non-traditional discipline arenas.

Minnesota's environmental education community recognizes three audiences in the School location: **PreK–12 students, teachers, and higher education communities.**



Teaching is the greatest act of optimism.
— Colleen Wilcox

Teaching environmental education in the School location goes far beyond the classroom. Here's one example ...

Carleton, founded in 1866 in Northfield, Minnesota, is an independent liberal arts college, with approximately 1,900 students from all 50 states and 39 different countries.

The college's Environmental Statement of Principles "recognizes that Carleton exists as part of interconnected communities that are impacted by personal and institutional choices. We are dedicated to investigating and promoting awareness of the current and future impacts of our actions in order to foster responsibility for these human and natural communities."

Carleton has the Environmental and Technology Studies (ENTS) Program, which grew out of Carleton's conviction that it has a responsibility to prepare students to respond to the threats posed to natural ecosystems by patterns of human development. Course requirements include credits in the natural sciences, social sciences, and humanities, with emphasis on service learning, international perspectives, and laboratory experience. ENTS brings faculty and students together from a broad range of academic departments and backgrounds to address the scientific, economic, ethical, social, political, historical, and aesthetic dimensions of the environment.

Carleton has undertaken a myriad of activities—many of which began as class and student projects of the ENTS Program—to reduce its environmental impact:



- Creating an Environmental Advisory Committee.
- Establishing a Sustainability Revolving Fund to fund renewable energy projects that recoup costs based on higher efficiency.
- Sustainability assistants (student workers) focus on pairing students with a staff mentor to gain technical expertise in certain areas important to the college's footprint.
- Kids for Conservation creates lesson plans and teaches at area elementary schools.
- Student-built green roof projects and a green roof conference.
- Composting and one-stream recycling.
- Creating websites on sustainability and the ethanol debate.
- Promoting green power. Carleton was the first college to own a commercial-sized wind turbine.
- Restoring the local landscape to its natural prairie state in 800 acres of the arboretum.
- Installing many green building options, such as sustainable linoleum, Hardi board instead of vinyl siding, cork flooring, recycled paint, and more.
- Offering local and organic foods and fair trade coffee.

For more information on Carleton College and its environmental education, go to www.carleton.edu.



PreK–12 students

PreK-12 students are defined as students who attend school in formal and nonformal educational settings. These students are engaged in the education process in public, private, or home schools. Examples of these schools include charter schools, cultural immersion schools, Native American schools, religion-affiliated schools, pre-schools, and schools for the sight and hearing impaired.

As educators of preK-12 students, strive for the following outcomes in your environmental education efforts.

By the end of twelfth grade:

- A. PreK–12 students are able** to ask questions, speculate, and hypothesize about the world around them, seek information, and develop answers to their questions.

Sample indicators of success:

- ▶ Students interpret and synthesize information about transportation issues and are able to develop and communicate explanations.
- ▶ Students research the topic of packaging to find the most up-to-date, relevant information about the factors concerning this issue.



- B. PreK-12 students understand** the process, systems, and interactions of natural and social systems as they relate to environmental quality and societal health.

Sample indicators of success:

- ▶ Students articulate through demonstrations, projects, testing, and/or case studies how social and natural systems affect and are affected by population growth.
- ▶ Using concept mapping, students are able to break down the issue of invasive species, revealing its many social and natural connections, causes, and effects.

- C. PreK-12 students define,** research, evaluate, and act on environmental issues.

Sample indicators of success:

- ▶ Students develop, implement, and assess an action plan designed to promote safe drinking water.
- ▶ Students review and evaluate various housing developments for their impacts on the land, water, and community.

- D. PreK-12 students draw conclusions** about what should be done to ensure environmental quality and act on those conclusions.

Sample indicators of success:

- ▶ Students are involved in individual and group discussions on wetlands; their protection, mitigation, and roles. The discussions result in subsequent activities concerning wetlands.
- ▶ Students take local and global news stories and relate these issues to environmental quality concerns.

- E. PreK-12 students understand** the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Classes hold a debate on climate change and discuss possible actions as well as their benefits and consequences.
- ▶ Students demonstrate their understanding of impacts on both human and environmental systems due to development.

- F. PreK-12 students demonstrate** the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ Students identify and partake in grade-appropriate activities to improve or support an environmental situation, such as a neighborhood garden, degraded trails, or school indoor air quality.
- ▶ Students develop, offer, and conduct energy audits of local businesses.

- G. PreK-12 students have the capacity** to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ Through observation and analysis, students identify the status of local community neighborhoods and possible triggers for improvement or degradation.
- ▶ Students take active roles in community green space efforts, from the planning stages to implementation to monitoring.

Teachers



Teachers are defined as educators who work with students in pre-school to post-secondary education. They include teachers in public, private, and home school settings. Examples include a teacher at a Minnesota public school, an adult who serves as an educator in a homeschool setting, a pre-school instructor, a college professor, a teacher in a nature center, an instructor in a residential learning center, or a private school curriculum coordinator.

As educators of teachers, strive for the following outcomes in your environmental education efforts.

In their teaching:

- A. Teachers demonstrate** an understanding of ecological principles and environmental stewardship and have the ability to incorporate environmental education content and activities into curriculum across the disciplines.

Sample indicators of success:

- ▶ An interdisciplinary group of teachers team teach a unit on critical habitats, which includes a community project.
- ▶ Through the urging of its teachers, a school adopts a semester-long environmental theme as its foundation for all subjects to be taught.

- B. Teachers have** the resources necessary to integrate environmental education throughout the curriculum.

Sample indicators of success:

- ▶ Teachers use current research and materials to teach climate change issues in each subject area.
- ▶ Teachers take students out of the classroom setting to experience environmental education, such as population growth issues, in a multi-faceted approach.

- C. Teachers understand** the complexity of natural and social systems and their interrelationships and teach about them in a holistic, balanced manner.

Sample indicators of success:

- ▶ Teachers use the benchmarks and concepts of the *Environmental Literacy Scope and Sequence* as the foundation for the content of their teaching.
- ▶ Teachers in a metro school district include human impacts and influences in their teaching of environmental systems such as local watersheds, air quality, wildlife habitats, and land policies.

- D. Teachers demonstrate** the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ Instructors integrate attitudinal factors in teaching waste reduction, while offering opportunities for the students to be involved in specific examples of the topic.
- ▶ Using internal and external partners, teachers facilitate student learning in exploring, developing, and assessing alternative energy programs.

- E. Teachers have the capacity** to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ In modeling positive behavior, the teacher engages in actions that are lighter on the environment, such as paper reduction in the classroom, reusable containers for lunch, and turning off lights.
- ▶ Teachers assess complex environmental learning situations and develop education opportunities that are inclusive and appropriate for the topic at hand. For example, exploring the issue of mercury in fish and the health of those that eat fish.



Higher education communities

Higher education communities are defined as people engaged in post-secondary education. Members of these communities include students, instructors, administrators, alumni, and staff. Although most of these higher education communities are found at institutions such as tribal, private, community and technical colleges and universities, we must include nontraditional post-secondary education such as online learning and continuing education programs.

Environmental education has an important place in our higher education communities; and Minnesota is fortunate to have an abundance of post-secondary institutions and programs.

As educators of higher education communities, strive for the following outcomes in your environmental education efforts.

In their work and studies:

- A. Members of higher education communities demonstrate** an understanding of ecological principles and the potential complementary nature of multiple uses of the environment, and are able to analyze and evaluate environmental issues.

Sample indicators of success:

- ▶ Students view a community change and argue its environmental, social, and political benefits and consequences.
- ▶ Instructors offer student learning through community projects that intersect social and environmental issues.

B. Members of higher education communities have the knowledge and skills necessary, within their chosen career fields, to minimize actions harmful to the environment and maximize actions helpful to the environment.

Sample indicators of success:

- ▶ Recycling of all possible products is practiced and encouraged throughout the entire institution.
- ▶ Students studying accounting will explore the full-cost accounting approach when assessing costs associated with production, delivery, use, and disposal.

C. Members of higher education communities understand the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Staff and students assess the use of chemicals in the buildings and on the grounds, and take actions according to their findings.
- ▶ Composting of food waste is the norm on campus, and the students are involved in the process and working to improve it.

D. Members of higher education communities demonstrate the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ Students learn not only the skills necessary to work in trade careers, but also the knowledge of how to close the loop—turning potential waste into a resource.
- ▶ A cross section of the higher education community works together to bring renewable energy options to the school.

E. Members of higher education communities have the capacity to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ Staff and students engage in assessments that address the health of the students and staff, and the relationships to the health of the school community, the local community, and the environment that serves them all.
- ▶ Members of the school community work to offer local foods, through supporting the cost, availability, and transportation of the foods.

F. Members of higher education communities incorporate the principles of sustainability throughout the campus—its infrastructure, education, and surrounding community.

Sample indicators of success:

- ▶ Buildings on campus incorporate green building principles, such as energy- and cost-saving practices with lighting, heating, and cooling; waste reduction and recycling; and water use. Classes are offered to the general student population on these practices.
- ▶ The benchmarks and concepts of the *Environmental Literacy Scope and Sequence* are used throughout the school; for example, in class development, assessing school growth, neighborhood relations, and water use.



The Play Location

Environmental education has taken place in traditional “play-time” locations for well over 100 years—from programming offered by museums and state agencies to nature centers, parks, residential learning centers, and club centers.

Environmental education programming at the Play location should consider the following:

- Programming should be an enjoyable, yet meaningful learning experience.
- Environmental education programs should be inclusive and accessible to varying abilities, age, economic levels, and cultures.
- Programming should be customized for specific age groups.
- Educational programs should be framed as a community quality-of-life asset, one of high public value.

Minnesota’s environmental education community recognizes two audiences in the Play location:

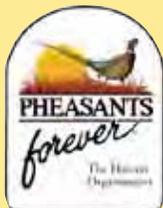
Outdoor recreation resource users and **citizen and youth groups**.



Some national parks have long waiting lists for camping reservations. When you have to wait a year to sleep next to a tree, something is wrong. — George Carlin

In the Play location, environmental education takes on many forms. Here’s one example ...

Pheasants Forever is a nonprofit conservation organization of nearly 100,000 members and over 550 chapters, working to improve habitat conditions for wildlife through prudent land stewardship, public policy, and education. Pheasants Forever sponsors two education projects.

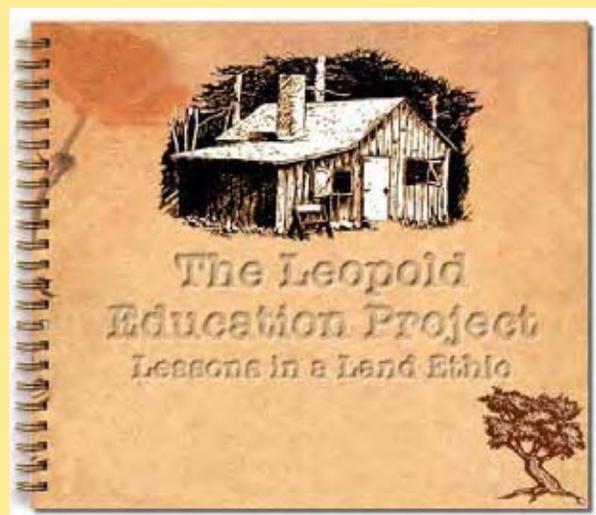


Leopold Education Project (LEP) is an interdisciplinary educational program, based on the classic writings of the renowned conservationist, Aldo Leopold. LEP was developed to teach the public about humanity’s ties to the natural world and to provide leadership in the effort to conserve and protect the earth’s natural resources. The LEP curriculum, *Lessons in a Land Ethic*, aligns with the essays in *A Sand County Almanac* as a springboard for meaningful environmental education. Students

experience the essays as part of each lesson, either before, during, or after the main activities. Although the overriding purpose of the lessons is to promote responsible decision making regarding our impact on ecosystems, LEP does not advocate particular positions on value-sensitive issues such as hunting, using wetlands, or applying pesticides and herbicides. www.lep.org

The Pheasants Forever Ringnecks Program is dedicated to introducing youth to hunting, shooting sports, and outdoor conservation through youth events, education, community service, and cooperation with both governmental and nongovernmental partnerships. Through a variety of programs, such as youth mentor hunts, conservation events, and habitat projects, youth gain knowledge, learn skills, and develop a land ethic necessary to be responsible hunters and conservationists. The program believes that as the participants grow up, they can in turn pass on this ethic to future generations.

www.ringnecks.org





Outdoor recreation resource users

Outdoor recreation resource users are those who use Minnesota's air, land, and water for recreational pursuits. Often these pursuits have a long heritage in Minnesota, dating back to pre-statehood. Examples include hunters and anglers, golfers, aviation enthusiasts, off-road vehicle users, birdwatchers, campers, boaters, snowmobilers, skiers, bicyclists, scuba divers, hikers, wildlife watchers, and photographers.

As educators of outdoor recreation resource users, strive for the following outcomes in your environmental education efforts.

In their activities:

- A. Outdoor recreation resource users understand** the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Decrease in amount of trash found on trails, water bodies, and natural areas.
- ▶ Users are involved in extensive review and assessment of natural areas before new trails are approved, with strong emphasis on preserving the area's environmental health.



- B. Outdoor recreation resource users demonstrate** the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ Laws and regulations pertaining to the conservation and use of the outdoor resources are supported and advocated by the recreational groups using them.
- ▶ Decrease in transfer of exotic aquatic species between lakes and waterways, due to boaters recognizing and removing the exotics from their boats and trailers.

- C. Outdoor recreation resource users perceive** and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ Recreation groups acknowledge the impacts their activities may have on the environment and actively work to lessen them.
- ▶ Increase in land restoration projects established and funded by the groups using the areas.

- D. Individuals and groups that use outdoor recreation resources evaluate** the impact of their activities on the environment and set appropriate guidelines.

Sample indicators of success:

- ▶ Guidelines are developed by individual user groups for sound environmental behaviors when using Minnesota's resources.
- ▶ Trail users know the rules of use—and support and abide by them.

E. Outdoor recreation resource users demonstrate model behaviors that reduce their impact on the environment.

Sample indicators of success:

- ▶ Documented evidence of increased low-impact behaviors.
- ▶ Recreational activity is appropriate for the location and consistent with designated land use.

F. Outdoor recreation resource users respect the opinions and rights of all individuals and groups to use Minnesota's natural resources.

Sample indicators of success:

- ▶ A reduction in conflict between user groups due to respect and understanding of each other's use.
- ▶ An increase in intergenerational use of parks, trails, waterways, and natural areas

G. Individuals and groups that use outdoor recreation resources play a role as environmental educators for others, including parents, teachers, and members, relative to their outdoor recreational activities.

Sample indicators of success:

- ▶ Increase in number of outdoor recreation programs with environmental components incorporated into preK-12 education, community education, and organizations' programs.
- ▶ Environmental education pieces are found on all outdoor recreation groups' websites.

Citizen and youth groups

Citizen and youth groups are defined as those groups of citizens who share common causes, interests, affinities, services, or activities. Examples include youth organizations, lake associations, citizen groups, and outdoor clubs and organizations.



As educators of citizen and youth groups, strive for the following outcomes in your environmental education efforts.

In their pursuits:

A. Citizen and youth organization members and leadership understand the complexity of natural and social systems and their interrelationships.

Sample indicators of success:

- ▶ Youth group projects include both environmental and human aspects, goals, and considerations.
- ▶ Organizational programs, mission, policies, and actions are balanced by sound ecology and social considerations such as health, justice, and economics.

- B. Citizen and youth organization members and leadership demonstrate** the knowledge, skills, attitudes, motivation, and commitment to work individually and collectively toward sustaining a healthy natural and social environment.

Sample indicators of success:

- ▶ An increase in publicity and awards highlighting environmentally sound practices by citizen and youth groups, such as lake-friendly development awards.
- ▶ Articulated viewpoints based on current, valid research and information is demonstrated in organizational projects and activities.

- C. Citizen and youth organization members and leadership have the capacity** to perceive and interpret the health of environmental and social systems and take appropriate action to maintain, restore, or improve the health of those systems.

Sample indicators of success:

- ▶ Increase in number of lake associations that conduct scientific studies of their water bodies to help them maintain and improve the water quality, and that in turn support appropriate uses of the lake and nearby lands.
- ▶ Civic groups and local businesses work together to promote pedestrian-friendly, active living design concepts to improve the health of their communities.

- D. Citizen and youth organization members and leadership include** environmental topics and skills in their programs. Where appropriate, programs are consistent with the *Environmental Literacy Scope and Sequence* and the Minnesota academic standards.

Sample indicators of success:

- ▶ An increase in environmental topics included in the agendas and programs of citizen and youth groups.
- ▶ More organizations become involved in citizen monitoring of community and natural resources.

- E. Citizen and youth organization members and leadership establish** partnerships with elected officials, schools, community leaders, and environmental agencies to organize and support coordinated, environmental, hands-on service projects.

Sample indicators of success:

- ▶ An increase in the number of service learning projects and programs completed by citizen and youth groups that benefit the environment and the community.
- ▶ A greater number of local activities and projects are accomplished through partnerships.

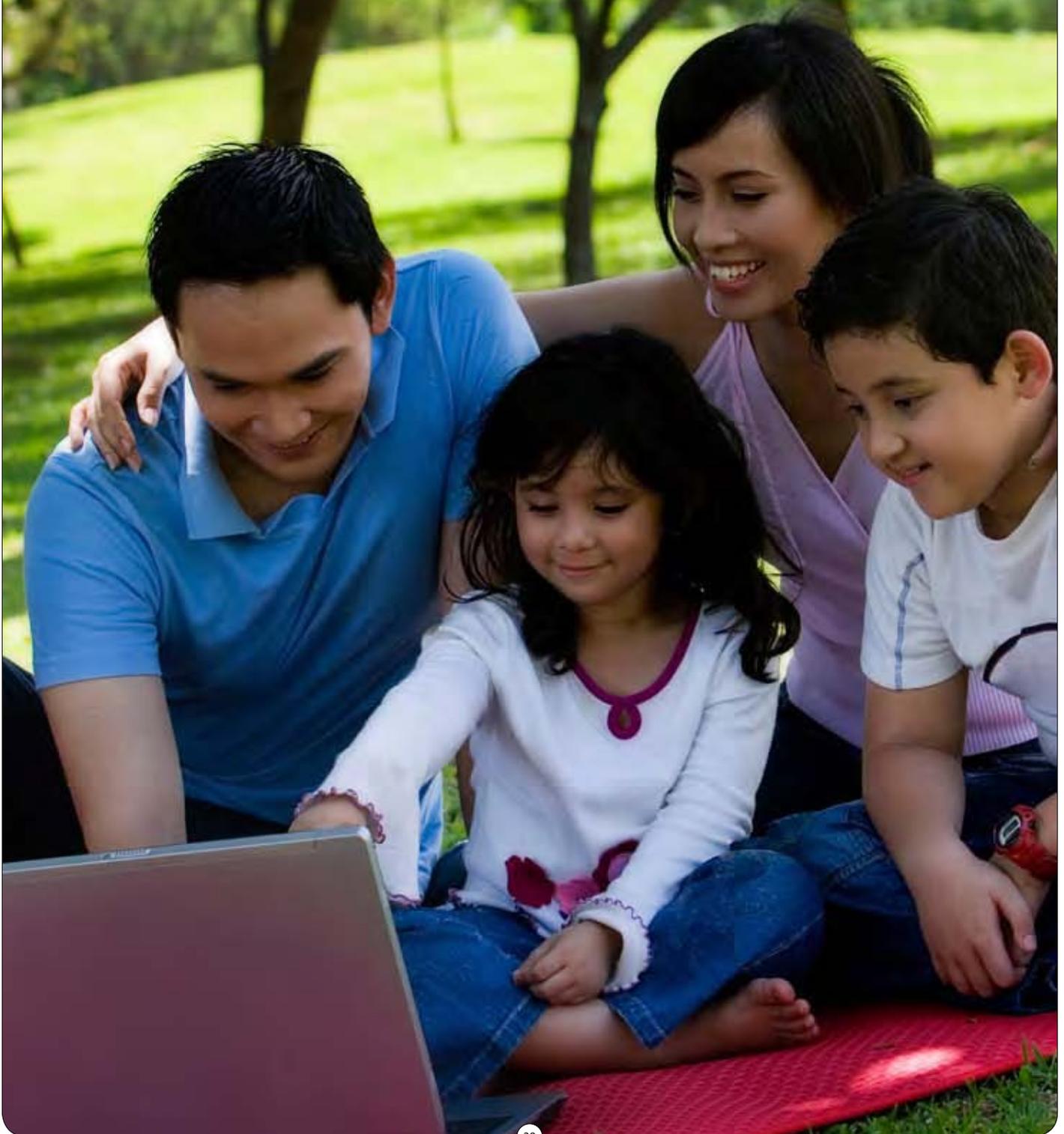
- F. Citizen and youth organization members and leadership use** critical thinking skills and science-based research to make well-informed decisions concerning the environment and their community.

Sample indicators of success:

- ▶ Organizations advocate for and support policies and legislation based on sound science.
- ▶ More groups engage in research concerning topics and issues important to their members and their role in the community.

Part 3

Man's mind, once stretched by a new idea, never regains its original dimensions. — Oliver Wendell Holmes



Roles and Strategies of the Environmental Education Advisory Board and the Minnesota Pollution Control Agency

You got to be careful if you don't know where you're going, because you might not get there.
— Yogi Berra

The Environmental Education Advisory Board (EEAB) and the Minnesota Pollution Control Agency (MPCA) both play fundamental roles in working to achieve state environmental education goals. The responsibilities of the EEAB and MPCA, as they pertain to environmental education, are guided by state statutes (see box below).

To clarify the Environmental Education Advisory Board's and the Minnesota Pollution Control Agency's involvement in environmental education, their roles and strategies are laid out below.

Minnesota Environmental Education Advisory Board

Role

In respect to the statute's directives, the Environmental Education Advisory Board's role in environmental education is to:

- Be an advocate for environmental education.
- Strive to be visionary in efforts pertaining to the environmental education community.
- Serve as a champion for the *GreenPrint, third edition* and the state's goals for environmental education.
- Promote environmental literacy in both the nonformal and formal education realms.
- Advise the Minnesota Pollution Control Agency and all agencies serving on the board on environmental education needs and directions.
- Work to keep policies concerning environmental education current, relevant, and with an eye to the future.
- Provide leadership and direction on timely environmental and sustainability issues.
- Act as a conduit between the environmental education community and the government.

Minnesota Statute § 115A.072

Subdivision 1(a) The commissioner [Minnesota Pollution Control Agency] shall provide for the development and implementation of environmental education programs that are designed to meet the goals listed in section 115A.073.

Subdivision 1(b) The Environmental Education Advisory Board shall advise the commissioner in carrying out the commissioner's responsibilities under this section.

Minnesota Statute § 115A.073

(a) Pupils and citizens should be able to apply informed decision-making processes to maintain a sustainable lifestyle. In order to do so, citizens should:

- (1) understand ecological systems;
- (2) understand the cause and effect relationship between human attitudes and behavior and the environment;
- (3) be able to evaluate alternative responses to environmental issues before deciding on alternative courses of action; and
- (4) understand the effects of multiple uses of the environment.

(b) Pupils and citizens shall have access to information and experiences needed to make informed decisions about actions to take on environmental issues.

Strategies

The Board's strategies to advance efforts toward the outcomes of *GreenPrint, third edition* target both the broad, state-level outcomes and those at the audience-specific program planning level.

In its efforts concerning the *GreenPrint, third edition's* Environmental Education Outcomes for Minnesota (pages 10-11), the Environmental Education Advisory Board proposes to:

- Assess the five year progress of *GreenPrint, third edition* toward Minnesota's goal of environmental literacy and adapt the plan as needed.
- Support and promote programs and organizations that educate on choices that support a sustainable environment.
- Work in partnership with other associations and organizations to strengthen environmental education in Minnesota through the development of standards and common definitions.
- Further systems learning through the *Environmental Literacy Scope and Sequence* and other resources to achieve the state goals for environmental education.
- Work with the formal education system to include the *Environmental Literacy Scope and Sequence's* benchmarks and concepts across all disciplines and grade levels.
- Help form sustainable funding mechanisms for environmental education of all ages and audiences.
- Foster a strong relationship with the Legislative-Citizen Commission on Minnesota Resources.

The Board supports work on Program Planning for Minnesota's Environmental Education Audiences (pages 12-38). It intends to:

- Promote recognition programs for environmental education.
- Foster growth and use of SEEK to provide current, environmental education resources, promote opportunities, and encourage communication among environmental educators.
- Reach out to underserved audiences and help remove barriers to environmental education for various audience groups.
- Advise groups that seek help on specific educational or environmental needs.
- Provide tools to measure progress toward identified outcomes for each audience.
- Advance opportunities for fiscal resources for environmental education.



Minnesota Pollution Control Agency

Minnesota Pollution Control Agency

Role

In following the environmental education statute and *GreenPrint, third edition's* direction, the Minnesota Pollution Control Agency's role in environmental education is as follows:

- Focus on developing effective organizations and individual leaders in order to achieve comprehensive environmental education programs and efforts at the local, state, and national levels.
- Provide environmental education that addresses the agency's environmental topics, such as water, air, waste, and climate change.
- House and work with the Environmental Education Advisory Board in its GreenPrint work.
- Develop, support, educate on, and distribute guiding resources, such as the *Environmental Literacy Scope and Sequence*, *A GreenPrint for Minnesota*, *SEEK*, and the *Minnesota Report Cards on Environmental Literacy*.
- Communicate to the Governor the advice of the Environmental Education Advisory Board concerning timely environmental issues and environmental education concerns.

Strategies

As with the Environmental Education Advisory Board (EEAB), the Minnesota Pollution Control Agency's strategies further efforts toward the Environmental Education Outcomes for Minnesota of *GreenPrint, third edition*. These strategies address both the broad, state-level outcomes and those at the audience-specific program planning level.

The Minnesota Pollution Control Agency's strategies to advance the *GreenPrint, third edition's* environmental education outcomes (pages 10-11) are to:

- Assist the Environmental Education Advisory Board in its assessment of progress toward *GreenPrint, third edition* goals at the five-year mark.
- Continue to develop and partner on programs that educate on and offer choices that support a sustainable environment.
- Facilitate the work to strengthen environmental education in Minnesota through the development of standards and common definitions.
- Promote the *Environmental Literacy Scope and Sequence* in both the formal and nonformal education systems.
- Help establish and facilitate sustainable funding mechanisms for environmental education of all ages and audiences.

The strategies of the Minnesota Pollution Control Agency to further Program Planning for Minnesota's Environmental Education Audiences, (pages 12-38) are to:

- Provide educational and fiscal resources and access to these resources vital to delivering fair, current, and accurate environmental education.
- Further partnerships and cohesive local, regional, and statewide environmental education efforts by offering coordination and acting as a catalyst for environmental education providers.
- Develop and expand communication venues among those in the environmental field working to educate others.
- Build the skills of environmental education providers in order to develop and deliver effective environmental education.
- Further systems learning through the *Environmental Literacy Scope and Sequence* and other resources to achieve environmental literacy.

Progress Since 2000 on *GreenPrint*, Second Edition Outcomes

In *A GreenPrint for Minnesota: Second Edition*, seven outcomes were identified as current, priority areas for Minnesota's environmental education community to work toward to achieve effective, comprehensive environmental education across the state. Members of the environmental education community worked diligently to address the needs identified in the outcomes and have advanced environmental education through their efforts. Here are some examples.

Outcome 1

Enhanced partnerships and coordination between EE providers

Many partnerships and coordinated environmental education efforts have taken place in the past seven years.

- ▶ The University of Minnesota Extension and the Minnesota Department of Natural Resources began to work together in 2005 to develop the Minnesota Master Naturalist Program. The mission of this adult volunteer program is to promote awareness, understanding, and stewardship of Minnesota's natural environment by developing a corps of well-informed citizens dedicated to conservation education and service within their communities. From inception through 2007, over 300 volunteers have participated in the 40-hour class, positively impacting almost 87,000 acres of land and reaching more than 89,000 people.
- ▶ The Minnesota Pollution Control Agency maintains the EE-Events listserv for Minnesota's environmental education community. The list now totals over 1,000 individuals who have participated in workshops and educational offerings across the state. In addition, the Minnesota Association for Environmental Education maintains a listserv for members for advocacy and communication in the environmental education field. That list contains 125 individuals who are active in Minnesota.
- ▶ In 2003, ten organizations, including state agencies, nonprofits, a foundation, and county government, formed the successful Brainerd Area Environmental Learning Network (BAELN) in north central Minnesota. BAELN works to create opportunities for people in the environmental field and the community, to receive timely information on environmental and sustainability issues, along with the chance to network with others through monthly speaker events, tours, and specialty evening events. Since BAELN began, there have been over 2,000 participants.
- ▶ The Minnesota Association for Environmental Education hosted the 2006 North American Association for Environmental Education Conference in St. Paul with the assistance of many other agencies and organizations, such as the Minnesota Naturalists' Association, the Minnesota Pollution Control Agency, and the University of Minnesota Extension. Hosting the NAAEE Conference established coordination of state providers in a national context.

The past is not simply the past, but a prism through which the subject filters his own changing self-image.

— Doris Kearns Goodwin

Outcome 2

Designated funding for EE at the local level

- ▶ The Minnesota Environmental Education Advisory Board and the Minnesota Association for Environmental Education collaborated to further develop the idea of a small grant program to fund environmental education efforts across Minnesota. The Environmental Learning in Minnesota (ELM) fund was launched in summer of 2008 and focuses on the K-12 school audience.
- ▶ A number of private foundations have created a focus for environmental education and had very significant impacts in the state through their financial generosity. The support of foundations such as the Jeffers Foundation and the Donald Weesner Foundation has benefited environmental education centers and schools within the state.
- ▶ The Center for Global Environmental Education at Hamline University is developing a new public education initiative concerning issues related to air pollution and global climate change. It is in coordination with Project Green Fleet which began in 2006 to help school districts and other school bus operators reduce diesel emissions by installing pollution-control equipment on Minnesota school buses at no cost to participating school districts or school bus fleets. Partners include Minnesota Pollution Control Agency, Sierra Club, Flint Hills Resources, Minnesota Power, Rochester Public Utilities, Xcel Energy, Blue Cross and Blue Shield of Minnesota, Mayo Clinic Foundation, Andersen Corporation, U.S. EPA, and Washington County.

Outcome 3

Focus on out-of-classroom EE programs for K-12 students

- ▶ Teachers from the Minnesota DNR School Forest Program provide outdoor lessons to 24,000 K-12 students annually. The program provides outdoor classroom curriculum connections and land management support to over 100 sites throughout the state.
- ▶ The Minnesota DNR MinnAqua Program published a comprehensive, new angling and aquatic education curriculum guide, *Fishing: Get in the Habitat!* This guide is aligned with Minnesota's academic standards for grades 3-5, and is correlated to the *Environmental Literacy Scope and Sequence's* benchmarks for grades K-5. This innovative, interdisciplinary curriculum guide is available to Minnesota educators through hands-on training workshops throughout the state, and it was also incorporated into the new science academic standards and curriculum framework for the St. Paul public school system.
- ▶ The State 4-H Program awarded funding for a project in the Duluth/Cloquet region that specifically focused on out-of-classroom EE programs for K-12. The Youth-driven Environmental Service-learning: A model 4-H After School Program has been underway since fall 2006, and targets youth at Stowe Elementary and Morgan Park Middle Schools, with more than 50 youth from grade 4-8, in long-term experiences. The program has been well received by stakeholders and youth.
- ▶ In 2001, Wolf Ridge Environmental Learning Center sponsored the charter school, North Shore Community School, creating a successful role model of field-based environmental education integration into the formal classroom setting. Over the last five years, Wolf Ridge staff have modeled environmental education in the school. This experience has provided classroom teachers the ability to create a learning environment where the context for learning revolves around the environment. Several other schools in the state have begun efforts to use environmental education as a guiding theme for learning.



Outcome 4

More support for training of environmental educators

- ▶ In 2004, the Minnesota Association for Environmental Education teamed up with the Minnesota Science Teachers' Association to develop a fun, interactive conference for Minnesota's environmental educators and science teachers. Converging on the river town of Mankato, Minnesota, more than 300 participants enjoyed two days of sessions, speakers, banquet, exhibits, and numerous idea-sharing discussions.
- ▶ In April 2003, environmental education staff from the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, and the University of Minnesota Extension attended a Train the Trainer Training Tools for Non-formal Educators workshop at the U.S. Fish and Wildlife Service's National Conservation Training Center in Shepardstown, West Virginia. Staff then partnered to offer three Train the Trainer Tools for Non-formal Educators workshops throughout Minnesota.
- ▶ From 2000 through 2006, the Minnesota Office of Environmental Assistance offered 87 environmental education capacity building workshops around the state. These workshops were open to anyone involved in environmental education and were well attended. Topics included *Integrating environmental education into the framework of faith communities*; *Teaching about controversial issues*; *Encouraging and including diversity in your audiences*; *Authentic assessment*; *Leadership skills*; *Educating the whole person*; and *Facilitation processes: Getting your hands dirty*.
- ▶ In Duluth, the Lake Superior Zoo, Great Lakes Aquarium, and Hartley Nature Center partnered during the 2007 summer season to rotate day camp students to each facility. Each organization had a learning theme, and the other facilities accommodated the theme by providing a program to go with it. Students had the opportunity to visit each facility and learn from other experienced environmental educators. The educators who accompanied the visitors gained the experience of learning from their peers. Plans are to continue this partnership in future years.



Outcome 5

Better educator access to EE information and resources

- ▶ The Minnesota Department of Natural Resources (DNR) continues to fund a stewardship education coordinator position to coordinate environmental education efforts throughout the department's various divisions. The effort has led to coordinated workshops between several divisions and has provided environmental education training, access, and information to many across Minnesota. In addition, internal information exchange and cooperation has been improved.
- ▶ The SEEK program of the Minnesota Pollution Control Agency continues to grow, with over 130 partner organizations from across the state. The SEEK Bulletin bi-monthly e-newsletter reaches a listserv of over 400 participants on the SEEK Listserv and over 1,100 hits per day.

- ▶ In 2005, U.S. EPA Region 5 Environmental Education Program and Minnesota partners gathered masters and doctoral environmental education research from Minnesota colleges and universities. These research papers dating back to 1990 were placed in an online searchable catalog on the SEEK website: www.seek.state.mn.us/eeresearch/index.cfm.
- ▶ Natural Innovations (NI), a nonprofit environmental education organization based in Northwestern Minnesota's Becker County developed the Environmental Literacy Program, a model to help environmental agencies and community organizations connect their programs and resources with the needs and wants of formal teachers and students in their area. The program resulted in an environmental education resource guide, programs aligned with the Academic Standards and the *Environmental Literacy Scope and Sequence*, and better access to environmental education resources.

Outcome 6

Increased education regarding responsible environmental choices

- ▶ In 2002, the first Living Green Expo was held to increase public awareness regarding responsible environmental consumer choices. The partners in this effort were the Minnesota Office of Environmental Assistance, the Minnesota Pollution Control Agency, and the Alliance for Sustainability, along with many other organizations, agencies, businesses, and individuals. The Living Green Expo is now an annual event that creates an opportunity for the general public to learn about and purchase green products and services. The event attracted 5,000 people its first year; by 2007, the Expo attracted more than 22,000.
- ▶ In 2006, the Eco Experience, a 25,000-squarefoot educational exhibit at the 12-day Minnesota State Fair was launched. The goal of the Eco Experience, conducted by the Minnesota Pollution Control Agency, is to increase public awareness regarding critical environmental issues facing Minnesota and the actions that individuals can take to make a difference. The Eco Experience has been the largest environmental event of its kind in the country in the last two decades, with 350,000 visitors in both 2006 and 2007.

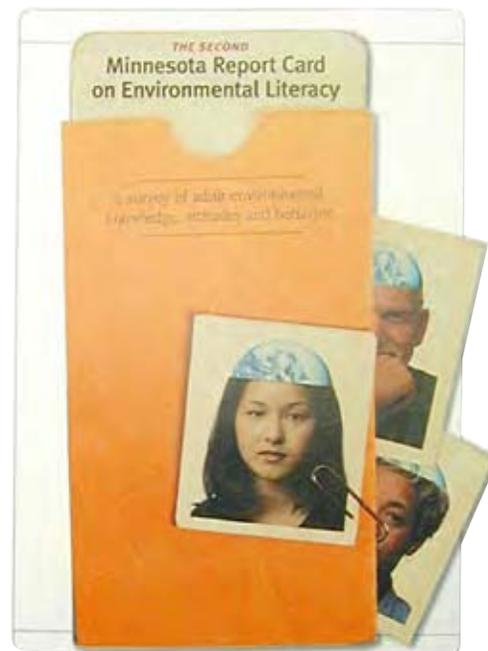


- ▶ In 2001, the Great River Earth Institute received a grant to work with congregations to lessen their environmental impact by changing their behaviors as individuals and organizations. From that work grew the New Earth Partnership and a concerted interest in helping faith communities work together on environmental and sustainability issues. Since 2001, other organizations such as Congregations Caring for Creation have become active in raising awareness and offering assistance in changing behaviors.
- ▶ Since 2000, Do It Green! Minnesota (formerly the Twin Cities Green Guide) has been educating and motivating Minnesotans to live greener and more sustainably and to build healthy communities. The group publishes the Do It Green! magazine and the www.doitgreen.org website; offers community workshops and skill-shares; and is creating a model eco home for educational tours.

Outcome 7

Implementation of EE assessment tools

- ▶ The *Minnesota Report Card on Environmental Literacy* and the *Second Minnesota Report Card on Environmental Literacy* provide timely assessments of Minnesota citizens and their environmental knowledge, attitudes, and behaviors. The data and analysis helps in developing, adapting, and evaluating environmental education.
- ▶ In 2001, the Minnesota DNR MinnAqua Program began an extensive multi-year effort to evaluate its fisheries education program. The MinnAqua Program contracted with a University of Minnesota graduate research assistant to evaluate two projects: the DNR's new landmark angling and aquatic education curriculum guide, *Fishing: Get in the Habitat!* for grades 3-5, and MinnAqua's Angling and Aquatic Education Clinics.
- ▶ In early 2007, the Minnesota Pollution Control Agency and the University of Minnesota Extension began the Minnesota Environmental Education Leadership Initiative (MEELI). This partnership is developing succession planning efforts in Minnesota's environmental education community by assessing the communities' needs, developing various modes of learning opportunities for emerging leaders in the field, and developing a model for other states to use in further developing environmental education leaders in their states.
- ▶ The College of Saint Benedict and Saint John's University were among approximately 90 college and university campuses selected nationally to participate in the pilot phase of a rating system for sustainability in higher education developed by the Association for the Advancement of Sustainability in Higher Education (AASHE). Participating college and university campuses will test the system over the course of 2008, and provide feedback to AASHE. The new rating system should allow people to evaluate campus "green" claims on a level playing field.



Embracing the New

It takes a lot of courage to release the familiar and seemingly secure, to embrace the new. But there is no real security in what is no longer meaningful. There is more security in the adventurous and exciting, for in movement there is life, and in change there is power.
—Alan Cohen

As you continue to educate others, develop policy, fund programs, and create opportunities in environmental education, we hope that this plan addresses your ever-changing needs and guides you in your efforts.

Thank you for your dedication to Minnesota's environmental education.



Notes

Notes
