

DRAFT

THE NORTH CAROLINA ENVIRONMENTAL EDUCATION PLAN, 3RD ED.

Second draft / 03.03.09

“We often forget that all education is environmental education -- by what we include or exclude, we teach the young that they are part of or apart from the natural world. An economist, for example, who fails to connect our economic life with that of ecosystems and the biosphere has taught an environmental lesson all right, but one that is dead wrong. Our goal as educators ought to be to help students understand their implicatedness in the world and to honor mystery.”

- Dr. David Orr

Third Edition Development Process

The N.C. Office of Environmental Education's staff collaborated with members of the N.C. Environmental Education Advisory Council to draft the Third Edition of the North Carolina Environmental Education Plan. The Environmental Educators of North Carolina, the N.C. Environmental Education Fund and other stakeholder groups will review the draft plan and provided input. The Office also plans to place the plan on its Web site for public comment. The current edition of the North Carolina Environmental Education Plan recommends statewide goals for environmental education and identifies areas that need strengthening. The plan describes strategies to improve environmental literacy and provide people the necessary tools for making informed decisions about environmental challenges in North Carolina.

The North Carolina Environmental Education Advisory Council

The N.C. Environmental Education Advisory Council is made up of representatives from the academic, business, cultural arts and environmental communities. The Council advises, consults with and makes recommendations to the N.C. Office of Environmental Education on the programs and policies of the Office. The Council also advises the Office on its educational efforts, strategic direction and policy decisions and updates the Office on trends in education, government, business and the nonprofit sector. The Office works closely with Council members to determine how it can effectively provide quality environmental education programs and materials that improve academic achievement and increase environmental literacy among the state’s citizens. For more information on the Council and its members, visit www.eenorthcarolina.org.

Introduction

The North Carolina Office of Environmental Education published the first N.C. Environmental Education Plan in 1995 following an 18-month process that included a statewide conference and regional meetings. However, the roots of the plan date back to the 1973 Environmental Education Act, the resulting 1974 Master Plan for Environmental Education and the 1993 North Carolina Environmental Education Act. The purpose of the plan is to provide goals and objectives for environmental education in North Carolina and strategies for reaching those goals.

The 1995 Environmental Education Plan allowed the state's environmental education community to provide input in defining and interpreting the legislated mission of the N.C. Office of Environmental Education and the overall direction of environmental education in North Carolina. The plan outlines a broad, long-range vision, and it has performed extremely well as a guiding framework for the Office and other environmental educators in North Carolina. In 1999, minor edits were made to a Second Edition of the plan, and photographs were added.

In fall of 2006, members of the N.C. Environmental Education Advisory Council began the process of drafting the Third Edition of the Environmental Education Plan. The Council met over the next 16 months to develop a draft plan. Though the Third Edition retains the core goals and definition of environmental education reflected in the 1995 Environmental Education Plan, the plan is enhanced by the perspectives and ideas of a broader selection of academic, environmental, cultural arts and agricultural contributors. The result is an effective guidebook for environmental education in the 21st century.

The Case for Environmental Education

In the classroom and beyond, the desired outcome of environmental education is environmental literacy.¹ People who are environmentally literate understand how natural systems function and how humans and the environment are bound. To that end, environmental education strives to provide learners with sound scientific information and the vital skills of problem-solving, critical thinking and decision-making. At one time or another, individuals will be compelled to address and solve complex environmental problems affecting the economy, public health or shared natural resources. Environmental education provides the necessary tools.

The National Science Foundation's Advisory Committee for Environmental Research and Education noted that "in the coming decades, the public will more frequently be called upon to understand complex environmental issues, assess risk, evaluate proposed environmental plans and understand how individual

decisions affect the environment at local and global scales. Creating a scientifically informed citizenry requires a concerted, systematic approach to environmental education.”²

For Children

In the PreK-12 classroom, environmental education takes its cue from children's natural curiosity about animals, plants and other elements of nature. Teachers report that environmental education captures their students' attention more readily than many other topics. In addition, environmental education has consistently engaged students who are hardest to reach.³ Its value is not limited to students—environmental education reduces burnout among educators and invigorates their teaching.⁴

Environmental education holds great promise for improving the quality of learning in America's classrooms.⁵ When teachers use the environment as a context for learning, they report better student performance on standardized measurements of academic achievement in reading, writing, math, science and social studies; reduced discipline and classroom management problems; increased engagement and enthusiasm for learning; and greater pride and ownership in accomplishments.⁶

Environmental education in schools can help produce motivated students, high-performance lifelong learners, effective future workers and problem-solvers, thoughtful community leaders and individuals who care about the people, creatures and places that surround them.⁷

For Adults and Families

American adults, many of whom may have missed opportunities to receive environmental education in school, have a hunger for environmental literacy. In a survey of 2,000 American consumers ages 18 and older, half said they "do not have the information to be personally involved in increasing their green behavior."⁸ Forty-nine percent stated they would do more for the environment if they only knew how. Fifty-two percent of respondents seek environmental education so they can protect their personal/family health; an equal number said that they want the information so they can "personally protect the environment."⁹

In the sphere of public health, environmental education plays a profound role. Environmental education is a promising conduit for reducing obesity, particularly among children. Besides its immediate benefits, physical fitness can help children develop lifelong healthy habits. A 2001 survey commissioned by the National Environmental Education Foundation found that the public's top environmental concern is the

protection of health and family health. Sixty percent of adults responding said that the main reason to protect the environment is to keep people safe from pollution.¹⁰

For the Workforce

Environmental education can provide hands-on environmental learning experiences that translate into job skills—whether or not this knowledge applies to a career in science. Charles O. Holliday, Jr., Chairman and CEO of DuPont, declared that “an environmentally sustainable business is just good business, given the growing concern for environmental problems across America. A key component of an environmentally sustainable business is a highly educated work force, particularly involving environmental principles.”¹¹

For the Community

Environmental literacy gives individuals the tools to be good stewards of the environment in their neighborhoods and communities. Educated citizens are vital engines for addressing, preventing and solving local environmental problems—be it through monitoring local streams for pollution or participating in strategic planning for sustainable development. Environmental education also frequently spurs interest and participation in public service and leadership projects with multiple beneficiaries, e.g., schools, faith-based organizations, public parks, impoverished neighborhoods, senior citizens.

The Office of Environmental Education

The N.C. Office of Environmental Education in the N.C. Department of Environment and Natural Resources was established to increase environmental literacy and natural resource stewardship in North Carolina by encouraging, promoting and supporting environmental education programs, facilities and resources throughout the state. The office serves as North Carolina's clearinghouse, or central source, for all the environmental education resources in the state and is responsible for disseminating information on those resources to PreK-12 schools, colleges and universities, government agencies, non-profit organizations, environmental education centers, citizen groups, business and industry, libraries and the general public. The office is responsible for implementing the N.C. Environmental Education Act; establishing policies to guide the development of environmental education materials and programs; and drafting North Carolina's Environmental Education Plan and achieving the goals of the plan through community involvement, innovative partnerships and collaboration.

Mission Statement: The mission of the N.C. Office of Environmental Education is to encourage, support and promote environmental education programs, facilities and resources in North Carolina for the purpose of improving the public's environmental literacy and stewardship of natural resources through planning, policy development, community involvement, innovative partnerships and collaboration.

The Definition, Principles and Goals of Environmental Education

The field of environmental education owes its origins to two United Nations-sponsored meetings held in the 1970s and the two seminal documents that emerged. The International Workshop on Environmental Education, held in Belgrade, Yugoslavia in 1975, produced the Belgrade Charter, which stated a single goal for environmental education. In 1977, delegates to the Intergovernmental Conference on Environmental Education in Tbilisi, Georgia (USSR) built on the Belgrade foundation in adopting the Tbilisi Declaration¹².

The Tbilisi Declaration expressed three broad goals for environmental education:

- Foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas.
- Provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment.
- Create new patterns of behavior among individuals, groups and society as a whole toward the environment.

The Tbilisi Declaration defined environmental education as:

"A process aimed at developing a world population that is aware of and concerned about the total environment and its associated problems, and which has the knowledge, attitudes, motivations, commitments, and skills to work individually and collectively toward solutions of current problems and the prevention of new ones."

As the field of environmental education has evolved, so have its definition and principles.¹³ Yet in their many iterations, the goals and principles of environmental education still contain core concepts expressed at the very beginning.

Some critics have questioned whether environmental education should include the promotion of advocacy or be based solely on scientific principles. The U.S. Environmental Protection Agency revised its definition in 1996 to specify objectivity:

"Environmental education enhances critical thinking, problem solving and effective decision-making skills. It also teaches individuals to weigh various sides of an environmental issue to make informed and responsible decisions. Environmental education does not advocate a particular viewpoint or course of action." (Federal Register, Dec. 10, 1996, p. 65106)

According to the Tbilisi principles, environmental education should:

- Consider the environment in its totality—natural and built, technological and social (economic, political, cultural-historical, ethical, aesthetic).
- Be a continuous lifelong process, beginning at the preschool level and continuing through all formal and non-formal stages.
- Be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective.
- Examine major environmental issues from local, national, regional and international points of view so that students receive insights into environmental conditions in other geographical areas.
- Focus on current and potential environmental situations while taking into account the historical perspective.
- Promote the value and necessity of local, national and international cooperation in the prevention and solution of environmental problems.
- Explicitly consider environmental aspects in plans for development and growth.
- Enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences.
- Relate environmental sensitivity, knowledge, problem-solving skills and values clarification to every age, but with special emphasis on environmental sensitivity to the learner's own community in early years.
- Help learners discover the symptoms and real causes of environmental problems.
- Emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills.
- Utilize diverse learning environments and a broad array of educational approaches to teaching, learning about and from the environment with due stress on practical activities and firsthand

experience.

• **Key Characteristics of Environmental Education**¹⁴

- Relates to an environmental topic or issue.
- Uses the outdoors as a learning environment.
- Is a lifelong learning process.
- Is interdisciplinary and draws upon many fields of study and learning.
- Is relevant to the needs, interests and motivations of the learner.
- Is based on accurate and factual information.
- Presents information in a balanced, unbiased manner.
- Inspires critical thinking and decision-making.
- Motivates people to take responsible action.
- Improves learner achievement and outcomes.

History of Environmental Education in North Carolina

In 1969, Congress passed the National Environmental Policy Act "to encourage harmony between humans and the environment, promote efforts to prevent or eliminate damage to the environment, stimulate the health and welfare of humans and enrich the public's understanding of ecological systems and natural resources nationwide." In 1970, Congress passed the National Environmental Education Act "to promote teaching about the environment in K-12 classrooms."

These laws stimulated leaders at the state level, North Carolina included, to develop strategies to address environmental literacy among their residents. In 1971, then-Governor James Holshouser, Jr., established an Environmental Education Task Force to develop a formal plan for environmental education. In 1973, the General Assembly passed the North Carolina Environmental Education Act to encourage, promote and support the development of programs, facilities and materials for environmental education in North Carolina.

With the support of the N.C. Department of Administration and a grant from the federal agency then known as the Department of Health, Education and Welfare, the task force published *A State Master Plan for Developing Environmental Education Programs in North Carolina* in 1974. The plan identified several priorities for environmental education, including recommending the creation of a central

coordinating agency. The plan called for better coordination of environmental education efforts and information; a cataloging of existing programs, materials and facilities; and a statewide program to train teachers in environmental education.

In 1989, Bill Cobey, the Secretary of the agency that is now the N.C. Department of Environment and Natural Resources, announced that environmental education would be the highest priority in the department. He asked that immediate steps be taken to review the effectiveness of current educational efforts, to identify opportunities for new or expanded activity and to recommend a plan of action.

In March 1990, an agency Environmental Education Team presented its *Final Report and Recommendations* to the Secretary. Building on the previously published Master Plan, the report called for these actions:

- Eliminating the duplication of delivery of environmental education to public officials and the general public.
- Creating a central office that could supply answers to public inquiries about environmental education resources.
- Providing a means of communication between programs.
- Developing a set of commonly acceptable guidelines to be used by everyone who plans environmental education programs.
- Conducting a systematic evaluation of environmental education materials, and supplying guidelines for teachers trying to select materials.
- Creating a comprehensive catalog of existing personnel, materials or facilities that would be useful in environmental education.
- Creating a central record of environmental education sources.
- Assigning responsibility for the planning of environmental education.
- Developing a statewide program for training teachers in environmental education.
- Producing a cadre of teachers in each independent school administrative unit who are qualified and experienced in using environmental education materials.
- Producing a standardized requirement for environmental education proficiency on a statewide basis.
- Delivering environmental information to a larger sector of the citizenry than is normally reached through formal education programs.

- Establishing a repository for bibliographies and reference materials on environmental education.

The report recommended, among other things, the establishment of an Office of Environmental Education, a long-term funding base for environmental education programs, and designated education specialists in each division of the department. In April 1990, then-Governor Jim Martin asked Linda Little, the director of the Governor's Waste Management Board, to start up the Office, which was to be the state's clearinghouse for environmental education.

In 1993, the General Assembly passed the second generation Environmental Education Act and authorized continued funding in the state budget for the Office of Environmental Education's staff and operations. North Carolina was among more than 30 states that passed similar legislation.

In 1995, the Office of Environmental Education presented the first North Carolina Environmental Education Plan to Martin's successor, Gov. Jim Hunt, and the General Assembly. The plan was developed over an 18-month period. During that time, the Office solicited input from more than 1,300 people at seven regional public meetings.

For more than a decade, the Office of Environmental Education has guided and supported the work of individuals and organizations that provide environmental education in North Carolina. The state's environmental education plan has served as guiding framework for its work.

Side bar piece from DENR Secretary Freeman on EE and importance in the state/department

The Status of Environmental Education in North Carolina

The National Environmental Education Advancement Project has identified key components of state-level comprehensive environmental education programs.¹⁵ These components have been designated as critical for successful development of state-level environmental education programs that increase environmental literacy. North Carolina has many of these key components in place, including a strong infrastructure for environmental education, with more than 800 certified environmental educators, more than 180 Environmental Education centers, a state Office of Environmental Education, a state master plan and a state association. Notably absent, however, is a dedicated funding source, such as a trust fund, for supporting existing and future environmental education programs and providers.

The components of a comprehensive state-level environmental education program fall under three categories: Structure, Program and Funding.

Structure Components:

Components provide support to environmental education through policy, funding, administration and implementation.

1. State EE Master Plan
2. State EE Board or Advisory Council
3. State EE Office
4. State-level EE Centers
5. State Interagency Committee
6. State EE Association
7. Online Database of EE Resources
8. State Curriculum/Resource Guides
9. K-12 EE Instruction Requirements

Program Components

Components provide support to environmental education through instructional requirements, teacher resources, training programs and other elements.

10. EE Correlations to State Standards
11. EE Guidelines and Standards
12. State Assessment that includes EE
13. Coordinated Teacher Inservice Program
14. EE Training for Preservice Teachers
15. EE Training for Teacher Educators
16. EE Training for Nonformal Educators
17. EE Model or Resource Schools

Funding Components

Components are related to sources, strategies and training that support both the programming and structured components of environmental education.

18. Fees, Fines, Taxes and Lottery
19. Public/Private Grants and Donations
20. EE Grants Program
21. EE Trust Fund
22. General Revenue

1. North Carolina has had an Environmental Education Plan in place since 1995.
2. The Office of Environmental Education established the N.C. Environmental Education Advisory Board in 2006. The diverse council includes members from organizations and agencies representing the academic, agricultural and environmental communities. Members represent teachers, universities, business and industry, environmental nonprofit organizations and government agencies (including the N.C. Department of Public Instruction and the N.C. Department of Commerce).
3. The N.C. Office of Environmental Education was established in 1993, within the Department of Environmental and Natural Resources.
4. The Office has identified more than 180 Environmental Education Centers. An Environmental Education Center is defined as a facility that is open to the public and provides a variety of environmental education experiences. North Carolina's Environmental Education Centers include facilities within the Department of Environment and Natural Resources (including state parks, educational state forests, aquariums, coastal reserves, the N.C. Zoological Park, the Museum of Natural Sciences and Prairie Ridge Ecostation for Wildlife and Learning); national parks and refuges, city and county parks and nature centers; university-operated learning centers; private attractions; and nonprofit and corporate-sponsored facilities. The Office hosts an online searchable directory of Environmental Education Centers on its Web site.
5. An interagency committee was established in the Department of Environment and Natural Resources in 2008. The Environmental Education and Outreach Working Group consists of educators, public information officers and other employees from approximately 22 agencies within the Department. In addition, the Department of Environment and Natural Resources and the Department of Public Instruction have partnered to develop an Environmental Literacy Plan for the state.
6. The Environmental Educators of North Carolina (EENC) is North Carolina's state association, and it is the affiliate of the North American Association for Environmental Education. Since 1990, EENC has been enhancing the work of individuals by establishing a network of environmental educators across the state.

7. The Office of Environmental Education's Web site hosts a searchable online database of environmental education resources and a calendar of environmental education events and programs. Georgia's Department of Natural Resources selected the Office's Web site as the pilot for a U.S. Environmental Protection Agency grant that connects seven Southeastern states through interactive Web sites. The Office's Web site now serves as a model for these other states.
8. North Carolina does not have an environmental education curriculum guide or other state publication providing direction for the development of an environmental education program at the school district level. The state has numerous resources for teachers and administrators who want to integrate environmental education into the curriculum. Many local and state agencies offer national environmental education programs, including Project WET (Water Education for Teachers), Leopold Education Project, Project WILD , PLT (Project Learning Tree) and FLP (Food, Land and People), and numerous state-specific programs. The Department of Public Instruction also provides support documents that list resources for the high school Earth/Environmental Science course.
9. North Carolina does not have a requirement for K-12 environmental education instruction. However, the State Board of Education made a significant step for environmental education in 1997, when it approved a change in high school science graduation requirements to include one unit in Earth/Environmental Science. North Carolina is thought to be the first state to require such a course. The new graduation requirement was effective in the fall of 2000. The course will help increase environmental literacy and will equip every high school graduate with knowledge about the importance of the environment to our economic development, health and well-being. The course will also help students develop the skills to deal with ever-increasing earth/environmental issues facing our state and nation. The Department of Public Instruction has not developed an End-of-Course test for the Earth/Environmental Science course. The K-8 science standards provide the underpinning for the Earth/Environmental Science course.
10. The majority of program providers in North Carolina have correlated their curriculum guides and programs to the state's Standard Course of Study. The Office of Environmental Education serves as a resource for facilitators and program providers interested in correlating their programs and curricula to state standards.
11. The Office of Environmental Education adopted the North American Association for Environmental Education's Guidelines for Excellence in Environmental Education in 2006. The Office encourages organizations across the state to apply the guidelines in the development of programs, materials and services. The Office promotes the guidelines among its members and constituents and supports the implementation of the guidelines in the education field. The Office

also has staff members trained in using the guidelines, and they serve as consultants for program providers.

12. North Carolina does not have a state assessment that includes environmental education.
13. The North Carolina Environmental Education Certification Program provides quality environmental education training and professional development for inservice, preservice and nonformal educators, including many educators who train teachers. The certification program is a partnership with numerous local, state, public and private agencies that provide quality environmental education programs including many national programs. Program providers in the state often work directly with university professors to provide programs for preservice training. Some North Carolina universities, including UNC-Greensboro and UNC-Charlotte's College of Education, provide specific environmental education workshops for their inservice and preservice teachers each semester. The Department of Environment and Natural Resources provides a vast amount of environmental education to teachers each year—in 2007 alone, the Department's workshops served 4,688 teachers and non-formal educators and provided 289 environmental education workshops for formal and nonformal educators.
14. See 13.
15. See 13.
16. See 13.
17. The Office lists model Environmental Education Schools on its Web site. Such schools are models and resources for other private and public schools throughout the state. The certified environmental educators that teach at a variety of schools in the state also serve as resources for other teachers and schools.
18. The Office is funded through a state appropriation and other state agencies that provide environmental education programming. There are no fees or fines specifically dedicated for environmental education.
19. In 1998, the Environmental Education Fund, a nonprofit organization, was formed as a conduit for foundations, business and industry and the public to provide financial support for quality environmental education programs.
20. North Carolina does not have an environmental education grant program in place. Several agencies have received grants from the U.S. Environmental Protection Agency's Office of Environmental Education, but funding for these grants is limited and extremely competitive. At one time, the Office received a state appropriation to provide grants for environmental education library collections at schools, public libraries and Environmental Education Centers throughout

the state. Funding for this program was eliminated in 2001 due to state budget cuts. The EPA continued to provide funding for the grant program until 2005.

21. North Carolina does not have a trust fund for environmental education.

22. See 18.

Accomplishments since 1995

The Office of Environmental Education has accomplished many of the major goals expressed in the original Environmental Education Plan and has become a powerful mechanism through which program providers and educators communicate.

Goal: Improve Access to Environmental Education

Established an environmental education clearinghouse

The Office created an online environmental education clearinghouse that many other states have modeled. Any individual or educator now has easy access to environmental education programs, events, resources and facilities in North Carolina. The Web site receives more than 390,000 visits annually. It won the American Association of Webmasters 2007-2008 Bronze Web Award and the World Wide Web Awards 2007 Gold Web Award.

Any North Carolina educator or program provider can add events to the Web site's online interactive calendar, which promotes environmental education events across the state. The calendar usually lists more than 100 events each month. More than 270 organizations involved in environmental education have joined the Office's online database.

Georgia's Department of Natural Resources selected the Office's Web site as the pilot for a U.S. Environmental Protection Agency grant that connects seven Southeast states through interactive Web sites. The Office's Web site includes searchable databases of resources, schools, facilities and events in all of these states.

Integrated environmental education into the N.C. Department of Public Instruction's Standard Course of Study

One of the objectives in the 1995 Environmental Education Plan was to correlate environmental education curricula to North Carolina's Standard Course of Study (SCOS). Since that time, the Office has broadened this objective to focus on initiatives that not only correlate to the SCOS but also encourage integration of environmental education across PreK-12 disciplines.

In 1997, the Office was instrumental in effecting a major change in graduation requirements for North Carolina students. High school students must now take an Earth/Environmental Science course before

they can graduate. The Office was part of a diverse coalition to bring about this achievement, including educators from industry, the North Carolina public school system, the N.C. Department of Public Instruction, the North Carolina Aggregates Association, the North Carolina Geological Survey, North Carolina State University and sister agencies in the Department of Environment and Natural Resources. The Office coordinated input from the Department and helped develop the Earth/Environmental Science course outline.

The Earth/Environmental Science requirement took effect with the freshman class of 2000 and has boosted the number of teachers providing environmental education in the formal PreK-12 classroom. Environmental education providers have successfully correlated their programs and materials to the SCOS, which has made it easier for teachers to use environmental education in an interdisciplinary manner in many subject areas. The Office has also advised the Department of Public Instruction in the development of support documents for the Earth/Environmental Science course. These documents provide practical lessons and resources for teachers to use as they implement the Earth/Environmental Science standards in their classroom.

As it has since its inception, the Office continues to work closely with the Department of Public Instruction in developing North Carolina's science standards. Using the environment as the context for inquiry-based learning, North Carolina's students have benefited in all science areas. The Office provided input on the National Assessment of Educational Progress (NAEP) content standards for science, a significant contribution because the North Carolina Excellent Schools Act mandates that state performance standards align with NAEP's. The Office is also providing expertise to the Department of Public Instruction as a member of the writing team for North Carolina's new Essential Standards in Earth/Environmental Science. These new standards are part of the overall revision of the SCOS in response to the State Board of Education's *Framework for Change*.

Most recently, the Office has partnered with the Department of Public Instruction to create an environmental literacy plan for the state. This plan's purpose is to ensure that environmental education is fully, efficiently and appropriately integrated into formal education. It will enable school systems to expand and improve their environmental education programs and to produce graduates who are environmentally literate.

Developed a model for environmental education library collections

The Department of Environment and Natural Resources Library, which is part of the Office, is a collection of environmental education resources, including books, journals, electronic media and curriculum guides. The library is a model for other school libraries and public libraries across the state. The collection is available through an online catalog that is promoted to educators in a wide variety of academic settings. The library hosts online resource lists and bibliographies categorized by audience, grade level and topics. A reference librarian is available to assist teachers, nonformal educators, universities, libraries, government agencies and the public in finding and accessing quality environmental education materials and resources.

The Office supported the development of environmental education library collections across the state through the Project Tomorrow Environmental Education Model Library Grant Program. The Project Tomorrow grants were awarded to schools, libraries and environmental education centers to help build environmental education library collections and to encourage the integration of environmental education into the teaching of North Carolina's Standard Course of Study. From 1995 to 2005, the Office provided \$685,050 in funding to 492 recipients in 92 counties. The grants were awarded to 388 K-12 public and private schools, 41 libraries and 62 Environmental Education Centers.

Goal: Build Leaders and Organizations throughout the State that Provide Quality Environmental Education

Established the first Environmental Education Certification Program in the nation

Under the Office's leadership, North Carolina became the first state to create a professional development program for environmental educators. Other states have followed North Carolina's lead, using the program as a model for creating their own.

More than 800 North Carolina educators, both formal and non-formal, have completed the Environmental Education Certification Program, which establishes standards for professional excellence. The goals of the program are to improve environmental literacy among educators, provide practical environmental education teaching methods and foster community leadership. The program requires that teachers complete seven instructional workshops, 50 hours of outdoor environmental education experiences and 30 hours of experiences that promote awareness of the state's environmental education resources.

The North Carolina Environmental Education Certification Program has:

- Helped institute a set of commonly acceptable guidelines to be used by everyone who plans environmental education programs and helped develop guidelines by which to evaluate materials.
- Helped teachers find professional development opportunities and environmental education curricula.
- Helped create a catalog of existing programs and materials available to teachers and non-formal educators for professional development.
- Trained educators to teach Earth/Environmental Science, which has recently become a required course for graduating high school students.
- Improved environmental education outreach to non-formal educators in the state.

North Carolina has recently modified its certification program to align with guidelines that the North American Association for Environmental Education developed for accrediting state-level environmental education certification programs. The revisions became effective January 2009. The changes will strengthen North Carolina's program in several areas, including teaching methods and foundations of environmental education.

A major newspaper in North Carolina lauded the Office's efforts to create a certification program, remarking on the importance of "teaching concepts rather than advocating positions. There's nothing wrong with provoking students to think by exposing them to a point of view. But there needs to be balance, and they need the tools of critical analysis. Otherwise, we shortchange their education and ill-equip them to earn a living and play a civic role as adults."¹⁶

Identified the state's Environmental Education Center.

The N.C. Environmental Education Act of 1993 directed the Office to "utilize existing programs, educational materials or facilities, both public and private, wherever feasible." The best way to accomplish this was to find and identify existing facilities that offered environmental education programs and exhibits, and then assist and promote them. The Office now supports and promotes more than 180 Environmental Education Centers throughout North Carolina.

The Office defines an Environmental Education Center as a place that offers quality environmental education programming for the public, including outdoor experiences and exhibits. An eligible facility must be committed to professionalism and cooperation with other environmental education facilities and

programs. The Office publishes and frequently updates *The Guide to Environmental Education Centers in North Carolina* and hosts an online searchable directory of these Centers.

In 1996, the Office helped found the N.C. Association of Environmental Education Centers. Representatives from Centers comprise the board, which meets annually. The Association is a valuable partner of the Office, providing an essential infrastructure for environmental education in North Carolina.

Goal: Enhance Environmental Education for Adults

Launched the Discover Your Ecological Address public education campaign

In 1996, the Office launched the *Discover Your Ecological Address* adult education campaign at the urging of a state legislative committee assigned to investigate water pollution in the Neuse River Basin. In response to a prolonged period of fish kills in the Neuse River estuary in 2005, the public was galvanized to help the beleaguered estuary. The state realized that the surrounding communities needed tools for finding solutions. The Senate Select Committee on River Water Quality and Fish Kills invited the Office to develop an education campaign to help the 1.5 million people in the Neuse River Basin understand how river basin systems function and understand how their actions influence—for better or for worse—surrounding water quality. The resulting campaign—"Do You Know Your Ecological Address?"—raised awareness about the connection between human activity and the health of the river basin. Ultimately, the Office expanded its work in the Neuse into a statewide campaign to provide all North Carolinians with the information and tools necessary to protect their own river basins from harm.

Over the years, the campaign has grown in popularity and expanded the numbers and types of resources it offers and the information channels it uses. The materials, all free, include the *Discover Your Ecological Address* brochure, *North Carolina's River Basins* poster, *Discover North Carolina's River Basins* booklet and supplemental inserts for each of the state's 17 river basins. More than 980,000 of these materials have been distributed since the campaign began.

Originally published in 2002, the river basin booklets and 17 inserts were revised and updated in 2007. To reach a greater adult audience, the Office added information on outdoor recreation opportunities in each river basin. School teachers, non-formal educators, conservation organizations, environmental consulting firms, outdoor gear retailers and the general public continue to enthusiastically request these materials.

In 1999, the Discover Your Ecological Address campaign added signs along major roadways, bearing the name of the river basin. Through a partnership between the Office of Environmental Education and the N.C. Department of Transportation, all 17 basins now have signage at major tributaries identifying river basins and their boundaries. The signs call motorists' attention to the concept that river basins are as much a part of one's address as a zip code or city name.

Established the Informed Consumer Initiative

In 2006, the Office launched the Informed Consumer Initiative as a way to educate adults about the links between everyday choices and natural resources. It does not advocate for any particular choice, but rather informs people about the range of consumer options and the costs and benefits associated with them.

Shortly after the initiative began, the Office developed postcards aimed at dog owners explaining the connection between pet waste left on the ground and polluted runoff into waterways. These postcards were initially distributed through veterinary clinics across the state. More than 80,000 of the post cards have since been requested by veterinarians, homeowners associations, county soil and water offices and the public. A second informed consumer postcard highlighted facts about commercial vegetable production and how to find sources of locally grown produce. The card was distributed at farmers markets and other retailers carrying local goods.

Besides a "Be Smart. Buy Smart. Know Your Choices" Web clearinghouse, the Office continues to use innovative technologies and social marketing/networking strategies to reach the widest possible adult audience.

Launched the Discover the World Outside campaign

The Office began the Discover the World Outside campaign in 2007 with the goal of relaying the benefits of spending time outdoors. The campaign provides resources—including literature and Web-based avenues—to help educators, parents and the public have quality experiences outdoors. The Office developed a series of educational postcards directed at parents and young adults containing information (including current research findings) on the benefits of outdoor activity and a link to resources providing destinations and outdoor events.

The Office has also partnered with several other agencies within and outside of the Department to promote outdoor activities, events and resources. It created and maintains a Web site section specifically

for parents, which contains with many resources aimed at lowering the barriers to taking their children outdoors.

Goal: Support preparation and professional development of teachers

Since its creation, the Office has been a resource for public and private school teachers seeking professional development opportunities and environmental education curriculum materials. In designing the Environmental Education Certification Program, the Office ensured that much of the content/experiences would enable participants to simultaneously earn professional Continuing Education Units for teacher licensure.

Hundreds of teachers have come to rely on the Office's online calendar and the electronic mailing list to find out about professional development opportunities, materials and other resources. The Office also provides an online resource database that gives teachers quick access to a multitude of curriculum materials, resources and programs that can be found in North Carolina. Teachers also have access to a comprehensive listing of potential mentors in environmental fields to help students completing their North Carolina Graduation Project.

Besides lending support to other agencies that provide teacher training, the Office has also coordinated 10 week-long Environmental Education Institutes for classroom teachers. These institutes provide training on environmental topics not addressed by the workshops of other agencies and organizations. The Office networks extensively with these other environmental education providers to conduct the institutes, giving these providers the opportunity to promote their individual programs. Since 2002, the Office has served 222 teachers from more than 50 counties through the institutes.

The Office is also well-known for providing curriculum materials directly to classrooms. The Love-A-Tree Environmental Education program, a partnership with the International Paper Foundation and the Environmental Education Fund, has supplied upper-elementary teachers with resource packets since 1996. The packets contain inquiry-based, experiential, environmental education lessons and materials that can be used inside and outside the classroom. More than 40,000 resource packets have been distributed to teachers, reaching more than 1 million students. In addition, middle school and high school teachers use the Discover North Carolina's River Basins booklets and 17 inserts to supplement their science courses. Thousands of class sets are distributed each year.

Built an environmental education community

When North Carolina began developing a master plan for environmental education in the 1970s and revisited the task in the 1990s, one of the most pressing concerns was the lack of coordination and communication among the environmental education community. The Office's efforts have focused on building an environmental education community in North Carolina and providing a central source for distributing information for this community. The Office was able to improve communication and distribution of information largely through its Web site and electronic mailing list. It also focused on building a community of environmental educators through statewide conferences and community-based meetings at Environmental Education Centers in every region of the state. Between 1997 and 2007, the Office hosted 53 community-based meetings at Environmental Education Centers, reaching more than 2,300 people, and also hosted three statewide conferences. The Office continues to be the central source for information on environmental education resources, facilities and events.

Our Audience

The N.C. Office of Environmental Education's clearinghouse disseminates information to a broad, diverse audience, including PreK-12 teachers, non-formal educators, home-schoolers, colleges and universities, government agencies, nonprofit organizations, Environmental Education Centers, citizen groups, business and industry, libraries, faith-based organizations, the media and the general public.

Though it has created materials for specific target audiences, such as consumers, families (parents) and outdoor recreation enthusiasts, the Office's primary focus is on providing support to formal and non-formal educators to improve their effectiveness (capacity building) and increasing the number of them who provide environmental education. Professional development by environmental educators is considered key to increasing the breadth and quality of environmental education in formal and non-formal settings and strengthening environmental learning and academic achievement among people of all ages.

Formal education is described as a publicly approved system in which participants are required to learn and demonstrate certain competencies. This type of education takes place in public and private preschools, elementary schools, middle schools, secondary schools, colleges and universities. Home schools are also under the umbrella of formal education. Other types of formal education include courses, seminars and workshops for certification or licensing and trips to Environmental Education Centers or special events as part of a school curriculum.¹⁷

Non-formal education takes place in voluntary learning situations and in environments that are usually less structured than formal education venues. Examples of non-formal education include visits to parks, museums, zoos and nature centers; noncredit courses, seminars, and workshops; summer camps for youth; and Elderhostel programs.¹⁸

Evaluation and Feedback Section (to be completed after input from stakeholders and public)

Footnotes

¹ Setting the Standard, Measuring Success, Celebrating Successes: A Report to Congress on the Status of Environmental Education in the United States. The National Environmental Education Advisory Council, March 2005. p. 10.

² No Child Left Inside initiative.

http://www.cbf.org/site/PageServer?pagename=act_sub_actioncenter_federal_NCLB

³ Environmental Literacy in America, p. 97.

⁴ The study of 40 schools--find citation

⁵ Are We Building Environmental Literacy? A Report of the Independent Commission on Environmental Education. The Marshall Institute.

⁶ Closing the Achievement Gap (<http://www.seer.org/extras/execsum.pdf>)

⁷ Environmental Education: Resources at a Glance. National Education and Environment Partnership, National Environmental Education and Training Foundation. Washington, D.C. September 2002.

⁸ 2007 GfK Roper Green Gauge® Study (<http://www.csrwire.com/News/9473.html>)

⁹ Ibid.

¹⁰ <http://www.neefusa.org/resources/roper.htm> + p. 82 Environmental literacy and better health. Environmental Literacy in America.

¹¹ No Child Left Inside Initiative (include exact reference)

¹² www.gdrc.org/uem/ee/EE-Tbilisi_1977.pdf (original Tbilisi document)

¹³ Environmental Education's Definitional Problem, John F. Disinger + Guidelines for the Preparation and Professional Development of Environmental Educators.

¹⁴ Meredith, J., D. Cantrell, and M. Conner. 2000. *Best Practices for Environmental Education: Guidelines for Success*. Environmental Education Council of Ohio. p. 5

¹⁵ Setting the Standard, Measuring Results, Celebrating Successes. & National Environmental Education Advancement Project, University of Wisconsin-Steven Point.

¹⁶ *The Greensboro News and Record*, July 5, 1996, "Enviro-Advocacy Can Stand Some Balance."

¹⁷ Meredith, J., D. Cantrell, and M. Conner. 2000. *Best Practices for Environmental Education: Guidelines for Success*. Environmental Education Council of Ohio. p. 5

¹⁸ Meredith, J., D. Cantrell, and M. Conner. 2000. *Best Practices for Environmental Education: Guidelines for Success*. Environmental Education Council of Ohio. p. 5
