

**DRAFT: Environmental Literacy Plan for New York**  
**August 2011**

Please send comments to:

## Section 1: Introduction

*“Right now, in the second decade of the 21st century, preparing our students to be good environmental citizens is some of the most important work any of us can do. It is for our children, and our...children’s children, and generations yet to come.”*

—U.S. Secretary of Education Arne Duncan, September 2010

More than ever before, America’s youth are disconnected with the natural world around them. The consequences—for individuals and our nation as a whole—have been well-chronicled, especially in Richard Louv’s groundbreaking book, *Last Child in the Woods*. The obesity epidemic, a rise in Attention Deficit Hyperactivity Disorder, impaired cognitive functioning—all have been attributed in part to the hours children spend each day in front of TVs, computers and other media, as opposed to the handful of *minutes* they devote to outdoor activities. The less time our young people interact with nature, the less likely they will develop the sense of respect essential for becoming future environmental stewards. As one writer put it, “If they don’t care about nature now, they won’t preserve national parks, wilderness or farmland tomorrow.”

The key to reconnecting our children with nature is providing more opportunities for them to learn about it, both in the classroom and via firsthand experience. Promoting environmental literacy through education offers myriad benefits. These include: improved student achievement in core subject areas such as science, math, reading and social studies; creating an informed workforce critical for developing environmentally sustainable businesses that will drive America’s future economy; alleviating the host of physical and psychological stresses associated with “nature deficit disorder”; and ensuring the next generation of dedicated advocates for America’s irreplaceable natural treasures.

The Environmental Literacy Plan for New York State offers the framework for enhancing outdoor and environmental education in schools, both through the formal curriculum and in partnership with non-formal educators. Created to coincide with federal No Child Left Inside legislation and President Obama’s America’s Great Outdoors Initiative, it has been developed by the New York State Outdoor Education Association consisting of a team of university faculty, elementary and secondary teachers, as well as environmental educators from the state Department of Environmental Conservation and leading non-profit environmental organizations.

The plan’s recommendations seek to achieve the following goals:

- New York students become lifelong stewards of their environment and community, willing and able to exercise the rights and responsibilities of environmentally literate citizenship and choose to interact frequently with the outdoor environment.
- Pre K-12 education in New York will provide resources, funding and tools to graduate environmentally literate students.

## Draft document August 2011

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- Teacher education programs will provide current and future teachers with the knowledge, skills, abilities and resources to develop environmentally literate students.
- Promote the capacity building of non-formal educators (persons teaching outside the framework of the formal education system) and organizations.
- Increase the EE professional development of non-formal educators to support consistent use of best practices in EE for diverse audiences.

Childhood experiences with nature—whether taking a hike, fishing or spotting a bald eagle—leave indelible memories. So do lessons about the environment learned in the classroom. It is hoped that the Environmental Literacy Plan for New York State will contribute to creating more outdoor memories; healthy, involved citizens; and a bright future for the natural world that sustains us.

### **Working Definition of Environmental Literacy (ELP committee)**

*An environmentally literate citizen has a connection to the outdoor environment and a sense of place, understands the interconnectedness of all Earth systems, and is engaged and empowered to address environmental issues and their impact.*

*“An environmentally literate citizen has a connection to and an appreciation of the natural (and built) world, key content and knowledge in environmental processes and applies that knowledge towards solving environmental problems and the creation of a sustainable planet.”*

An environmentally literate citizen:

- **Understands the interconnectedness of all Earth systems:**
  - Is able to apply their knowledge of ‘sustainability’ to their daily lives
  - Understands the interconnection between economic, ecological and social/cultural in sustainable systems
  - Understands how the world works from an ecological perspective
  - Comprehends basic scientific principles, environmental history, processes, etc.
  - Sees humans as one of many species, as a part of the ecological world
  - Understands human impact/influence on earth systems
  - Appreciates that everything is connected
- **Is engaged and empowered to address environmental issues and their impact:**
  - Is a life-long learner
  - Can apply environmental knowledge to solve problems
  - Considers ethics in decisions
  - Engages in service learning
  - Exhibits behaviors of stewardship
  - Takes action on environmental issues

Source: NYSOEA website <http://nysoea.org/environmental-literacy/>

## Section 2: Pre K -12 Education

Education is essential to the development of sustainable communities and a healthy environment that will provide for future generations. A healthy environment supports the development of economically viable, sustainable and vibrant communities.

### Goal 1

New York students become lifelong stewards of their environment and community, willing and able to exercise the rights and responsibilities of environmentally literate citizenship and choose to interact frequently with the outdoor environment.

**Objective 1:** Integrate EE into the formal education system (pre-K through post-secondary schools).

**Strategy 1:** Identify where environmental education already exists

**Strategy 2:** Expand availability of environmentally based curriculum material

**Strategy 3:** Establish environmental education as a listed alternative for the three credits of science required for graduation (like anatomy or honors biology) for New York High School Graduation Requirements.

**Strategy 4:** Provide meaningful outdoor experiences that including structured and unstructured time.

**Objective 2:** Use the existing New York State Department of Education Standards and the Common Core standards for science when released, as a basis for further incorporating environmental literacy into school practices.

**Strategy 1:** Integrate environmental education that makes social, historical and science connections into curriculum

**Strategy 2:** New York schools will provide students with meaningful opportunities to learn outside the classroom, including classes, field trips, service learning projects that have environmental applications, and other delivery methods.

**Strategy 3:** Provide relevant first-hand field-based outdoor experiences that are grade level appropriate

**Strategy 4:** Provide opportunities for citizen science and community engagement

**Strategy 5:** Increase first-hand experiences outdoors

**Objective 3:** New York high school graduates are prepared to be successful in post-secondary, career and life opportunities as environmentally literate citizens who:

- develop attitudes of appreciation and concern for the environment
- take individual and collective action toward addressing environmental challenges in their every day choices
- consider environmental related career options

**Strategy 1:** Develop high school electives focusing on environmental research

### Goal 2

Pre K -12 education in NY will provide resources, funding and tools to graduate environmentally literate students.

**Objective 1:** Develop and decimate an environmental clearinghouse

**Objective 2:** Develop dedicated and consistent funding source for environmental field trips

## Section 3: Teacher Education

### Goal

Teacher education programs will provide current and future teachers with the knowledge, skills, abilities and resources to develop environmentally literate students.

**Objective 1:** Incorporate components of environmental literacy into NYS teacher certification requirements.

**Strategy:** Include environmental content knowledge section on state certification tests.

**Objective 2:** To provide pre-service and in-service teachers with access to high quality environmental resources that are age appropriate and relevant to the students they teach.

**Strategy 1:** Conduct an asset inventory and develop a database of environmental resources across NYS, including community-based groups, cultural organizations, environmental organizations, etc.

**Strategy 2:** Promote awareness of and make effective use of local community resources for effective teaching and learning.

**Objective 3:** NYS will adopt the NAAEE Environmental Literacy Learning Standards and Professional Development Standards.

**Strategy 1:** Map/crosswalk (correlate) the NAAEE Environmental Literacy Standards to NYS standards

**Objective 4:** Incorporate environmental literacy into all NYS teacher preparation programs.

**Strategy 1:** Incorporate environmental literacy into methods courses throughout all discipline areas

**Strategy 2:** Pre-service teachers engage in meaningful outdoor environmental experiences within the community during their course work.

**Strategy 3:** Offer a cognate or concentration in environmental literacy

**Objective 5:** Provide environmental literacy professional development for faculty

**Strategy 1:** Create statewide professional development opportunities

**Strategy 2:** Provide incentives for development of content courses in environmental literacy

**Strategy 3:** Provide opportunities for cross-disciplinary collaboration

**Strategy 4:** Provide funding opportunities for research in environmental literacy

**Objective 6:** Provide environmental literacy professional development opportunities for all NYS teachers.

**Strategy 1:** Provide a system of credits for workshops and conferences in environmental literacy

**Strategy 2:** Provide a state-wide system of endorsement for environmental literacy PD providers

**Strategy 3:** Provide a clearinghouse of endorsed environmental literacy PD providers

**Strategy 4:** Call for 30 of the required 175 hours of PD every 5 years to be in environmental literacy. They can include any of the following but not limited to:

- Strategies/methods for environmental literacy
- NYS DEC PD opportunities
- Outdoor environmental experiences
- Environmental content knowledge

### **Objective 7:**

Create assessment tools to measure the effectiveness of environmental literacy

**Strategy 1:** Teacher preparation programs provide evidence of environmental literacy (TBD by each teacher preparation program)

**Strategy 2:** Use NAAEE guidelines in the assessment of professional development

**Strategy 3:** Identify existing metrics for environmental literacy

**Strategy 4:** Create effective metrics for assessing environmental literacy

## **Section 4: Non-formal Education**

### **Goal**

Promote the capacity building of non-formal educators (persons teaching outside the framework of the formal education system) and organizations.

### **Objective 1:**

Increase the number of EE professional development programs and materials aligned with the NAAEE Guidelines for Excellence in EE.

**Strategy 1:** Inventory existing professional development programs offered to non-formal educators aligned with NAAEE Guidelines.

**Strategy 2:** Conduct needs assessment with formal and non-formal educators to determine how non-formal educators can best utilize EE professional development, support partnerships and further efforts to provide EE to formal educators.

**Strategy 3:** Develop a system of support to assist non-formal educators in aligning their EE professional development programs with NAAEE Guidelines for Excellence.

### **Objective 2:**

Develop opportunities for self-evaluation of EE programs, materials and resources for non-formal education delivery.

**Strategy 1:** Identify NAAEE resources for self-evaluation of materials and inventory model programs in other states.

**Strategy 2:** Develop regional training opportunities to instruct non-formal educators in the self-evaluation process.

## Draft document August 2011

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**Strategy 3:** Design a system of support to assist non-formal educators in implementing recommendations from the self-evaluation to improve the quality of their programs.

**Strategy 4:** Develop an Online Catalog of Resources with input from formal and non-formal educators.

**Strategy 5:** Include a comprehensive, searchable catalog of resources to include NAAEE Guidelines for Excellence, NYS Learning Standards, EE funding opportunities, resources for engaging formal educators and administrators in EE and assessment and program evaluation resources.

### Goal

Increase the EE professional development of non-formal educators to support consistent use of best practices in EE for diverse audiences.

#### **Objective 1:**

Increase awareness and understanding of NAAEE Guidelines for Excellence and their benefits to EE professional development for non-formal educators.

**Strategy 1:** Assess what non-formal educators currently understand about the guidelines for excellence, and to what extent they are used.

**Strategy 2:** Develop professional development tools (conferences, workshops, online resources, etc.) to address gaps identified in the above assessment.

#### **Objective 2:**

Strengthen the infrastructure for EE professional development and networking to assist non-formal educators in staying current with new developments, initiatives, and best practices.

**Strategy 1:** Identify components of existing infrastructure and resources for ongoing EE professional development.

**Strategy 2:** Survey non-formal educators to understand ways in which they stay current, and to identify needs.

**Strategy 3:** Integrate existing resources and develop new tools (web-based, social networking, on-line learning, conference sessions, regional networks, etc.) to expand and update infrastructure.

#### **Objective 3:**

Assist non-formal educators in understanding New York State Learning Standards and new initiatives to support their EE program delivery through the integration of EE into a multi-disciplinary curriculum.

**Strategy 1:** Initiate a focus group comprised of representatives from both the formal and non-formal education systems to determine how best to correlate standards and new initiatives with EE.

**Strategy 2:** Develop case studies of model programs to provide examples of ways in which EE has been integrated into a multi-disciplinary curriculum.

**Strategy 3:** Develop a coordinated system to recruit, train and support EE program facilitators (Project WILD, PLT, Project WET, etc.). Group members work together to correlate these programs with relevant learning standards and certifications.

**Strategy 4:** Coordinate existing resources to provide lesson plans and web-based resources for EE classroom instruction that are integrated

across curriculum and tied to the New York State Learning Standards and that address the diverse needs of different learners and learning settings.

### **Objective 4:**

Develop an EE certification program to ensure professional and consistent delivery of EE content, skills and methodology; and to provide EE professional development for non-formal educators aligned with NYSED standards.

**Strategy 1:** Review NYSED requirements for professional development and NAAEE Guidelines to determine certification criteria.

**Strategy 2:** Develop infrastructure, processes and logistics for certification, ongoing maintenance, and continuing education requirements.

**Strategy 3:** Incorporate training to teach non-formal educators how to provide EE to diverse populations including special education, gifted, early childhood, underserved and at risk.

**Strategy 4:** Instruct non-formal educators in best practices for the effective evaluation of EE programs.

**Strategy 5:** Explore avenues for certification to be recognized, accepted, valued by potential audiences (teachers, administrators, NYSED, NYSOEA, etc.).

## **Section 5: Research**

### **Goal**

Research will be conducted investigating the best practices of educating students to develop the knowledge, skills, and abilities required to become environmentally literate.

**Objective:** Conduct high quality quantitative and qualitative research both evaluating existing EE programs (both formal and non-formal) and investigating best teaching practices in these contexts

**Strategy 1:** Seek and obtain funding/support from both private and public funding sources for EE research

**Strategy 2:** Evaluate existing programs in both the formal and non-formal EE sectors to determine the effectiveness of these programs at teaching the elements of environmental literacy

**Strategy 3:** Investigate various teaching strategies to determine which aspects of programs are working effectively to teach the elements of environmental literacy

### **Goal**

Research will be utilized in the development and implementation of programs designed to help students gain the knowledge, skills, and abilities required to become environmentally literate.

**Objective 1:** Research will be disseminated to practitioners and implemented in both formal and non-formal education settings.

**Strategy 1:** Disseminate research findings to practitioners in a variety of formats, including through conferences, professional development, and journal articles.

**Strategy 2:** Utilize research findings in both formal and non-formal settings to integrate best practices of teaching EE to students

**Objective 2:** Development of the EE research community to bring together researchers in the education field

**Strategy 1:** Continue efforts to build the research symposium at the NAAEE annual conference

**Strategy 2:** Support EE strands at major education conferences including NARST, NSTA, AERA, etc

**Objective 3:** Utilization of EE research by education policy-makers to include best practices of environmental education at the local, state, and national levels

**Strategy 1:** Present research to policy-makers in documents such as the ELP and through lobbying efforts

**Strategy 2:** Make connections with education policy-makers at the local level establishing relationships with school boards and principals/superintendents and share EE research

**Strategy 3:** Support EE organizations in their effort to educate (share research with) policy-makers and promote bills such as the No Child Left Inside Act

### **Section 6: Resources (partial)**

Audubon NY, Albany, NY

Brookhaven National Laboratory

Cary Institute for Ecosystem Studies, Millbrook, NY

Chautauqua Institute

College of Staten Island

First Hand Learning

Hudson River Sloop Clearwater

Huyck Preserve

Mohonk Preserve

New York State Department of Environmental Conservation (NYS DEC), Albany, NY

NYS DEC's Hudson River Estuary Program, Albany, NY

New York University, NYC

NYU Wallerstein Collaborative for Urban Environmental Education

North American Association for Environmental Education (NAAEE), Washington D.C.

Putnam/Northern Westchester BOCES

Sarah Lawrence College

State Outdoor Education Association (NYSOEA)

Scenic Hudson

Science Teachers Association of NYS (STANYS)

Sharpe Reservation

Sommers Intermediate School

SUNY College of Environmental Science and Forestry (ESF)

SUNY Cortland

SUNY Fredonia

Teatown Reservation

Teacher Environmental Education Preparation (TEEP), NYC

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### **Section 8: Environmental Literacy Plan working group**

A working group that formed in January 2009 under the umbrella of the New York State Outdoor Education Association (NYSOEA) has drafted this working document.

The Environmental Literacy Plan Working Group members include:

Non-formal educators and policy makers from : New York State Outdoor education Association (NYSOEA), Scenic Hudson, Sharpe Reservation, Audubon NY, New York

## Draft document August 2011

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State Department of Environmental Conservation (NYS DEC), Mohonk Preserve, NYS DEC's Hudson River Estuary Program, North American Association for Environmental Education (NAAEE), Cary Institute, Teatown Reservation, Hudson River Sloop Clearwater, Teacher Environmental Education Preparation (TEEP), Chautauqua Institute, Huyck Preserve, First Hand Learning, Brookhaven National Laboratory, plus several individual environmental education consultants.

Formal educators from: New York University, SUNY Cortland, SUNY Fredonia, SUNY College of Environmental Science and Forestry (ESF), Science Teachers Association of NYS (STANYS), Putnam/Northern Westchester BOCES, Somers Intermediate School, Sarah Lawrence College, College of Staten Island, and a variety of individual teachers and administrators.