DRAFT: Environmental Literacy Plan for New York
December 2013
Forward

New York is endowed with vast natural resources that have contributed to our growth and development as a state. We are proud of our forests, mountains, rivers, lakes, and estuaries. The diversity of our natural areas ranges from the scenic wonders of Niagara Falls to the peaks of the Adirondack Mountains down through the Hudson Valley that leads us into to the vast stretches of wetlands that make Jamaica Bay one of the largest coastal National Parks in the country. Within New York’s 47,000 square miles we have over 70,000 miles of rivers and streams and over 200 miles of coastline that contribute to our biodiversity, economic growth, and well being.

As New Yorkers we are committed to preserving our natural heritage and have a long and rich history of environmental education.

Our government agencies, public and private organizations, and our academic institutions all work towards creating a vibrant and economically sustainable New York so that future generations may enjoy the same high quality of life as generations before. In order to achieve this, we will need to make sustainability one of our overarching educational frameworks.

With climate change looming in our future, we need to educate the next generation of New Yorkers in ways that will help them address a variety of environmental challenges while protecting our natural resources to insure quality of life for all.

The Environmental Literacy Plan for New York State offers a framework for enhancing environmental literacy in formal and non-formal settings throughout New York State. The plan provides a blueprint for action to develop capacity to increase environmental education for students in PreK-12 schools as well as colleges and universities in an effort to create an environmentally literate citizenry who will have to address climate change impacts and who will have to make decisions about natural resources, and take an active role in developing sound environmental policies to help develop sustainable communities and a bright sustainable future for the citizens of New York State.

The plan was created to coincide with federal No Child Left Inside legislation and President Obama’s America’s Great Outdoors Initiative. Under the leadership of the New York State Outdoor Education Association, a broad coalition of individuals consisting of university faculty, elementary and secondary teachers, environmental educators, and individuals from government agencies including the New York State Department of Environmental Conservation and leading non-profit environmental organizations have contributed to the development of this document to help us attain our goals.
The Plan identifies 10 overarching goals and recommendations to enhance education for PreK-12 Education, Teacher Education, Higher Education, Non-Formal Education and the ongoing professional development of teachers and environmental educators. We hope to join the ranks of 14 other states that have adopted environmental literacy plans.
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Section 1: Executive Summary

The NYS ELP will serve as a roadmap for achieving environmental literacy. Childhood experiences with nature – whether taking a hike, fishing or spotting a bald eagle – leave indelible memories. So do lessons about the natural and built environment learned in the classroom. An 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.

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

- New York students become lifelong stewards of their environment and community, and are willing and able to exercise the rights and responsibilities of environmentally literate citizenship.
- Provide support systems for school districts implementing EE that include access to resources, funding, and curricular tools.
- Teacher education programs should provide current and future teachers with the knowledge, skills, abilities and resources to develop environmentally literate students.
- Graduates of New York State institutions of higher education should be better prepared for creating and living in healthier, and more resilient communities.
- Promote the capacity building of non-formal educators and environmental organizations to increase and support statewide environmental literacy efforts.
- Higher Education faculty should develop the capacity to teach and promote education for sustainability and environmental literacy for higher education audiences.
- Increase the EE professional development of PreK-12 educators to support consistent use of best practices in EE for PreK-12 students.
- Increase the EE professional development of non-formal educators to support consistent use of best practices in EE for diverse audiences.
- Research will be conducted to investigate the best practices of educating students to develop the knowledge, skills, and abilities required to become environmentally literate and to inform program design and policy.
• In order to meet the needs of educators, a mechanism for compiling and providing access to the vast amount of environmental resources available in New York State needs to be developed and maintained.

**Working Definition of Environmental Literacy**

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:

- **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
Section 2: PreK-12 Education

Education for environmental literacy needs to be integrated throughout the PreK-12 curriculum in New York State classrooms. It is essential to the development of sustainable communities and a healthy environment for current and future generations. The New York State Learning Standards already include environmental literacy concepts that are infused throughout the PreK-12 curriculum.

Goal 1: New York students become lifelong stewards of their environment and community, and are willing and able to exercise the rights and responsibilities of environmentally literate citizenship.

Objective 1: Strengthen the integration of EE into the formal education PreK-12 system
   Strategy 1: Identify areas in the curriculum where environmental education already exists
   Strategy 2: Integrate environmental education that makes social, historical and science connections into curriculum
   Strategy 3: Expand availability of environmentally based curriculum materials and courses
   Strategy 4: Support efforts by schools to expand meaningful and age-appropriate outdoor experiences for PreK-12 students
   Strategy 5: Encourage and promote use of a variety of instructional methods including field trips, service learning, citizen science and place-based education
   Strategy 6: Expand opportunities to enable students to be college and career ready for environmentally related careers

Goal 2: Provide support systems for school districts implementing EE that include access to resources, funding, and curricular tools.

Objective 1: Facilitate access to nationally recognized as well as state specific and local resources to support schools in attaining environmental literacy goals
   Strategy 1: Districts can use social media and other networks to inform educators about resources and opportunities

Objective 2: Provide dedicated and consistent funding sources for environmental literacy for indoor and outdoor programming
   Strategy 1: Districts can identify and make available to educators private and public funding sources
Section 3: Teacher Education

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

Objective 1: Provide preservice and inservice teachers with access to high quality environmental education resources that are age appropriate and relevant to the students they teach
   - Strategy 1: Institutions of Higher Education can use social media, other networks, and coursework to inform educators about resources and opportunities
   - Strategy 2: Promote awareness of and make effective use of local community resources for effective teaching and learning

Objective 2: Support the inclusion of environmental literacy into all NYS teacher preparation programs in one or more of the following strategies:
   - Strategy 1: Incorporate environmental literacy into methods courses throughout all discipline areas
   - Strategy 2: Engage preservice teachers in meaningful outdoor environmental experiences within the community during their course work
   - Strategy 3: Offer a cognate or concentration in environmental literacy
   - Strategy 4: Introduce the NAAEE Environmental Literacy Learning Standards in their programs and correlate them with NYS Learning Standards and Common Core State Standards

Section 4: Higher Education

This section was developed from the Call to Action put forth by the NYS Sustainability Education Working Group. This group seeks to integrate sustainability curriculum on all college campuses across disciplines in New York State.

Goal: Graduates of New York State institutions of higher education should be better prepared for creating and living in healthier, and more resilient communities.

Objective 1: Each campus in NYS should improve and/or implement strategic planning for sustainability education
   - Strategy 1: All NYS institutions that are signatories to the American College and University President’s Climate Commitment
should have reviewed the commitments they made to assess their progress and take remedial action, if needed

**Strategy 2:** All NYS private and public boards of Trustees and Regents should become familiar with Education for Sustainability and its relevance and importance in higher education

**Strategy 3:** All NYS institutions of higher education should include sustainability in their strategic documents

**Strategy 4:** Each institution of higher education should form Presidential Sustainability Advisory committees that bring together staff, faculty, and students to influence institutional effort toward sustainability

**Objective 2:** Each institution of higher education in NYS will improve and expand sustainability curricular offerings for all students

**Strategy 1:** Work toward a goal of having a minimum of ten percent of all higher education courses that help students understand the interaction between social, environmental and economic forces and how to apply that knowledge to real world problems

**Strategy 2:** Encourage the development of cross-discipline collaborations

**Strategy 3:** Consider developing core courses in sustainability for all first-year students and sustainability courses within each major

**Objective 3:** Create opportunities for collaboration among regional institutions to provide a support network and forum for sharing strategies for Education for Sustainability

**Strategy 1:** Create bioregion (e.g. watershed) initiatives as tools for expanding Education for Sustainability

**Strategy 2:** Create a website to facilitate sharing of best practices, sample curricula, service learning opportunities and other sustainability related learning matters

**Strategy 3:** Encourage collaboration with the NY Campus Compact and other service learning and civic engagement professionals to include sustainability in their strategic plans.
Section 5: Non-formal Education

Non-formal education plays a critical role in supporting statewide environmental literacy initiatives. Non-formal educators represent a broad cross-section of educators who work in non-profits, cultural institutions, and governmental agencies that have knowledge, skills and access to natural settings and other resources that support PreK-12 environmental education.

**Goal:** Promote the capacity building of non-formal educators and environmental organizations to increase and support statewide environmental literacy efforts.

**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:** Develop a system of support to assist non-formal educators in aligning the EE programs with NAAEE Guidelines of Excellence
- **Strategy 3:** Develop new programs based on needs assessments with formal and non-formal educators that are aligned with NAAEE Guidelines for Excellence in EE and Common Core and other state standards
- **Strategy 4:** Support the development of programs that develop strong partnerships between formal and non-formal educators

**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 and how to improve program quality as a result of the self-evaluation process
Section 6: Professional Development

Professional development in sustainability and environmental literacy for all educators will increase the capacity to develop an environmentally literate citizenry. There is a need for more coordinated professional development opportunities for classroom teachers, higher education faculty, and non-formal educators that is both accessible and cost effective.

**Goal 1:** Higher Education faculty should develop the capacity to teach and promote education for sustainability and environmental literacy for higher education audiences.

**Objective 1:** Increase the sustainability professional development for all higher education faculty

**Strategy 1:** Higher Education institutions should provide incentives for development of content courses in environmental literacy and/or sustainability

**Strategy 2:** Higher education institutions should encourage the development of cross-disciplinary course collaborations

**Strategy 3:** Higher education institutions, state and other grant agencies should provide funding opportunities for research in environmental literacy.

**Strategy 4:** Mechanisms should be developed at higher education institutions to disseminate information about professional development opportunities in EE and sustainability education provided by government and non-government agencies and organizations.

**Goal 2:** Increase the EE professional development of PreK-12 educators to support consistent use of best practices in EE for PreK-12 students

**Objective 1:** Integrate environmental literacy as part of professional development requirements for all NYS teachers

**Strategy 1:** Make better use of the current district approval systems for professional development when promoting workshops and conferences on environmental literacy

**Goal 3:** 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
**Strategy 1:** Assess what non-formal educators currently understand about the NAAEE Guidelines for Excellence and to what extent they are used in developing programs

**Strategy 2:** Develop professional development tools (conferences, workshops, online resource, 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 to stay current with new developments, initiatives, and best practices

**Strategy 1:** Identify components of existing infrastructure and resources of 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, online learning, regional networks, etc.) to expand and strengthen capacity

**Objective 3:** Assist non-formal educators in understanding NYS Learning Standards and Common Core State Standards and new initiatives to support their EE program delivery through the integration of EE across curriculum areas

**Strategy 1:** Initiate a working group comprised of representatives from both the formal and non-formal education system 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 across curriculum areas

**Strategy 3:** Develop a coordinated system to recruit, train and support EE program facilitators (such as Project WILD and Project WET). Facilitators should 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 NYS Learning Standards and Common Core State Standards that address the needs of diverse learners and different 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 NAAEE certification guidelines

**Strategy 1:** Review NAAEE guidelines to determine certification criteria
Strategy 2: Develop infrastructure, processes, and logistics for certification, ongoing maintenance, and continuing education requirements
Section 7: Research

Goal: Research will be conducted to investigate the best practices of educating students to develop the knowledge, skills, and abilities required to become environmentally literate and to inform program design and policy.

Objective 1: 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: Investigate various teaching strategies to determine which aspects of programs are working effectively to teach the elements of environmental literacy

Objective 2: Create or revise assessment tools to measure the effectiveness of environmental literacy
   - Strategy 1: Identify existing metrics for environmental literacy in PreK-12 education and teacher preparation
   - Strategy 2: Create and use effective metrics for assessing environmental literacy in research efforts

Objective 3: Research will be disseminated to educators and implemented in both formal and non-formal education settings
   - Strategy 1: Disseminate research findings to educators in a variety of formats including conferences, professional development activities, journal articles and newsletters
   - Strategy 2: Utilize research findings in both formal and non-formal settings to integrate best practices of teaching EE

Objective 4: Development of the NYS EE research community to bring together researchers in the education field
   - Strategy 1: Build a NYS EE research symposium initiative
   - Strategy 2: Disseminate findings at state and national education conferences
Section 8: State-wide EE Resource Clearing House

Goal: In order to meet the needs of educators, a mechanism for compiling and providing access to the vast amount of environmental resources available in New York State needs to be developed and maintained.

Strategy: It is recommended that a comprehensive, searchable online resource guide be developed to include:

- NYS EE organizations and the programs and resources they offer
- EE funding opportunities
- Lists of schools and higher education institutions and the EE related programs they offer
- Curriculum resources
- Assessment and program evaluation resources
- Lesson plans
- Case Studies

A partial list of EE organizations is below:

- Audubon NY, Albany, NY
- Brookhaven National Laboratory, Brookhaven, NY
- Cary Institute for Ecosystem Studies, Millbrook, NY
- Children’s Environmental Literacy Foundation, Westchester, NY
- Environmental Education Advisory Council of New York City
- First Hand Learning, Buffalo, NY
- GrowNYC
- 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
- NYU Wallerstein Collaborative for Urban Environmental Education
- Putnam/Northern Westchester BOCES
- New York State Outdoor Education Association (NYSOEA)
- Scenic Hudson
- Science Teachers Association of NYS (STANYS)
- Sharpe Reservation
- SUNY Cortland Center for Outdoor and Environmental Education
- Teatown Reservation
Section 9: References


http://usp.umfglobal.org/resources/0000/0081/USP_EFS_standards_V3_10_09.pdf


Section 10: NYS Environmental Literacy Committee

A committee 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 Committee members include:

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

New York State Environmental Literacy Plan Update - May 2013

What is the New York State Environmental Literacy Plan?

The Environmental Literacy Plan for New York State offers a framework for enhancing environmental literacy in school and out-of-school settings throughout the state. It provides a blueprint for action to create an environmentally literate citizenry who will be better prepared to address critical environmental challenges while creating vibrant, healthy and sustainable communities. The plan identifies the need for statewide coordination to improve capacity for increased environmental literacy in PreK-12 and higher education settings.

Part of a National Movement

The work to develop a New York State Environmental Literacy Plan (ELP), is part of a national movement currently underway in 49 states and D.C. who are in the process of writing and implementing ELPs. Twenty-four states have finished the writing of their ELPs and 14 of those have had them adopted by their respective state departments of education. This new wave of environmental education (EE) activity was incentivized by the pending Federal legislation entitled No Child Left Inside (NCLI). This new law, when enacted, will provide EE funds to be distributed to the states who have formally adopted environmental literacy plans. So the NYS ELP will also position the State for eligibility for these Federal funds. Support for NCLI and EE by the NYS Congressional delegation is very high, with 71% of the New York State U.S. House delegation returning from the 112th Congress having co-sponsored the No Child Left Inside bill, voted in favor of it, or both.

Who is involved?

North American Association for Environmental Education (NAAEE) has provided guidance to assist states in the development of their Environmental Literacy plans. The development of the NYS ELP is being spearheaded by the New York State Outdoor Education Association (the NAAEE state affiliate). The committee represents a broad section of stakeholders including K-12, higher education, state agencies, environmental centers, cultural institutions, and professional organizations. The latest draft and list of ELP supporters are available on the NYSOEA website.

What are the next steps?

The committee is finalizing the draft and will circulate for public comment via the NYSOEA website. In addition the committee is continuing to work with NYS elected officials to determine the best pathway for adoption (Legislative effort, Executive Order, or other mechanism).

For more information:
NYSOEA website: nysoea.org/environmental-literacy/
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