



Environmental Education at EPA

by Terry Ippolito

In 1990, when I was in my third year at the U.S. Environmental Protection Agency (EPA) regional office in New York City, a colleague mentioned that the region was looking for someone who had a background in teaching for a new program. That short message catapulted me into the embryonic Environmental Education (EE) program at EPA. Beginning with the signing of the National Environmental Education Act of 1990, EPA has conducted EE on the national and local stages ever since, despite limited resources.

EPA is a federal agency and my assigned area, Region 2, consists of New Jersey, New York, Puerto Rico and the U.S. Virgin Islands. Many of you probably know something about the EE focus of EPA through e-mail messages you get from me and the interactions we have had on the phone or at EEAC meetings over the past 16 or so years. With the regional office located in New York City and with EEAC's networking, you probably know something about what EPA has to offer environmental educators. A considerable part of the business of EE at EPA is conducted on a one-to-one basis, as we interact with callers and writers daily. But there is more to EPA's programming.

The following is a summary of what EPA, charged in 1990 with taking the lead among federal agencies for EE, offers the environmental education community:

EE Grants: Each year the agency solicits applications requesting support funding for EE projects within its regional jurisdiction. This program is hugely popular and very competitive because the funding is limited, the need is great and the number of excellent applications is large. Many EEACers were also part of the peer review process. Some of those reviewers ended up as applicants in succeeding years. More information is available at: www.epa.gov/enviroed/grants.html

EE Outreach: EPA participates in educational/environmental/public outreach events ranging from "meet and greet" general audience exhibitions, such as Brooklyn Green, to educator-specific conferences, like the New Jersey Education Association Convention, to a range of workshop presentations on EE at national and local conferences.



Classroom visits: Depending on the need and programming of the requesting teacher, EPA staff visit classrooms to do age-appropriate presentations for students pre-K through high school.

Faculty workshops: EPA will come to a school to meet with faculty to familiarize them with EPA's EE materials or to assist in planning their environmental education programming.

Environmental Education publications and materials: "The Quest for Less", "The Planet Protectors" and "Your Environment, Your Choice" are examples of the materials developed and distributed by EPA to help formal and non-formal educators teach Kindergarten through high school students about natural resources, waste reduction and conservation. You can download the above at: www.epa.gov/epawaste/education/kids/planetprotectors/
www.epa.gov/osw/education/quest/quest.htm
www.epa.gov/osw/education/teens/index.htm

Environmental Education Web sites: The agency supports four sites that are specifically designed to assist educators and enable their students to learn about the environment. Check out: www.epa.gov/kids for K through 4th grade
www.epa.gov/students for middle grades
www.epa.gov/highschool for high school.
Plus there is a teacher site loaded with activities and materials that can be downloaded from www.epa.gov/teachers.

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EEAC NEWS.....

Steering Committee Meetings

EEAC Steering Committee members meet on the third Wednesday of every other month (except August). Upcoming EEAC Steering Committee meetings are March 17 and May 19.

Steering Committee meetings are usually held at New York University, Pless Building, 32 Washington Square Park East and Washington Place in the 5th floor Conference Room. Steering Committee meetings are open to anyone interested in learning about environmental education in New York City and sharing information about special programs and projects.

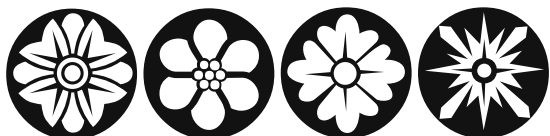
Meetings are also occasionally held at New York City sites associated with our members. Please be sure to contact an EEAC Steering Committee member or visit the EEAC website at www.eeac-nyc.org to confirm meeting location and schedule.

Newsletter Deadlines

If you would like to submit an article for the newsletter, please email it as a Microsoft Word attachment to lmiller296@aol.com. The newsletter deadlines are the first Monday in April, July, October and January. We would love your ideas!

Newsletter Committee & Contributors

Meg Domroese
Kim Estes-Fradis
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Jane Jackson
Regina McCarthy
Lenore Miller, Newsletter Editor
Betsy Ukeritis



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(DEP) for helping to produce the EEAC newsletter. Visit the DEP website at www.nyc.gov/dep, email educationoffice@dep.nyc.gov or call (718) 595-3506 for information about DEP's education resources for students and teachers.

ENVIRONMENTAL EDUCATION ADVISORY COUNCIL

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This newsletter is a publication of the Environmental Education Advisory Council (EEAC), a voluntary organization of educators, classroom teachers, administrators and other professionals in active support of quality environmental education.

EEAC Officers

Michelle Fufaro Beach, Acting Chairperson
Barry Weinbrom, Vice-Chair for Programs
Terry Ippolito, Membership Secretary
Jay Holmes, Treasurer
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Barry Weinbrom, After School Activity Programs
Mike Zamm, Council on the Environment of New York City

*Affiliations for identification purposes only.

GET CONNECTED!

If you are a member of EEAC and want to be part of information sharing and on-line discussion on the EEAC listserv, contact:

cfranken@nyc.rr.com

Message from the Chair

Happy New Year! After former Chair, Jill Weiss, left in 2009 to pursue doctoral studies, I was thrilled to have been elected Chair of EEAC until the next election in the fall. Even though it will be a short run in this role, I expect it will most definitely keep me on my toes. This new year looks like it will be a great one for EEAC, with many exciting endeavors and events on the horizon. I'll go over just a few things we have to look forward to in 2010.

This past year, some members of the Steering Committee carefully reviewed and assessed EEAC and came up with some great ideas to improve our organization. First, the schedule of our monthly meetings has changed. Meetings will now be held **every other month** from 5:00-7:00pm. This new schedule is actually more closely aligned with our bylaws. The agenda for the meetings has also been restructured so that our time will be used more efficiently. Committee reports will be kept brief to allow more time for program sharing and networking opportunities. As always, we strongly encourage guests to attend our meetings.

Other significant highlights of the upcoming year are our programs. Hybrid meetings— a mixture of social, educational and organizational business— will continue to take place on alternating meeting dates and the Program Committee is currently crafting up quite a remarkable calendar of events. Our first hybrid meeting is in March and will be at One Bryant Park, the new Bank of America Tower. This building is the first skyscraper designed to achieve Platinum LEED, (Leadership in Energy and Design Certification), which means that the building meets the highest standard in environmentally sustainable construction and we will get a tour of the facility. Details on this and the rest of the hybrid meetings will be shared during our scheduled meetings and via our listserv. Stay tuned.

This is just a taste of what is to come in this new year. Please come to our meetings to learn more and to connect with folks in the field of Environmental Education. I wish everyone a wonderful winter and am looking forward to working with you all very soon!

Sincerely,
Michelle Fufaro Beach
Chair of EEAC, 2010

EEAC Member Vandra Thorburn's

New Composting Service, VOKASHI, Wins Award

The 2009 PowerUp! Business Plan Competition, sponsored by Citi Foundation and the Brooklyn Public Library, announced its 2009 winners. Vokashi, a composting service using EM—effective microorganisms for recycling organic household waste, won \$5,000 for its start-up business plan. The service provides customers with EcoSmart recycled plastic airtight buckets and bran. Vokashi produces the bran, inoculated with effective microorganisms to ferment the food waste which prevents putrefaction...thus no rotting food, no smells, odors, pests or flies. This simple, natural solution to disposing of kitchen refuse will give residential households and small catering companies the tools to recycle their food waste. Using innovative technology, the business creates a product that quickly ferments discarded food and distributes it to composting sites where it becomes organic soil. The process is natural and easy and sure to appeal to eco-friendly residents.

Congratulations, Vandra!

BOOK BUZZ

Regina McCarthy

Wilderness Warrior by Douglas Brinkley

This recent addition to the Theodore Roosevelt historical literature focuses on his contributions to preserve and protect our disappearing landscape and wildlife. Although he was not the creator of national parks, he did more than any other president, before or since, to create a culture that honors and respects our 'sense of place'.

Brinkley takes us to the places within Roosevelt's life that brought him to this mindset. As educators, we know that time and place are important, but more importantly, it is who formed you and whom you admire that shapes the course of your life. This book picks up in detail where Dave McCullough's *Mornings on Horseback* leaves off. Although McCullough spends much time on Theodore Sr., this new book explores some of the other family influences.

By TR's time, the Roosevelts, who were an early Dutch family in New York City, were part of a leisure class that could afford the comforts of home but remained with a strong sense of responsibility for those less fortunate by birthright. His father, who was one of the early founders of the American Museum of Natural History, showed Teddy a role model for fatherhood that the son carried with him as he fathered his own children. That would make an interesting next book: what was the legacy of his children and did they carry that torch of good parenting with them?

His uncle, Robert Roosevelt, was a playboy who caused a bit of scandal for the Roosevelt clan. Uncle Robert, however, gave "Teedy" another great role model. When Uncle Robert was not sending 'green gloves' to his lady friends to show his affection, he was fighting for causes that were just beginning to reach a critical point. Robert was instrumental in founding the ASPCA and also championed conservation causes such as over-fishing.

Some additional books about TR for children are noted for classroom use:

Elementary School

- *Teddy Roosevelt's Elk*, Brenda Z. Guiberson, Illustrations, Patrick O'Brien. Based on a true life experience of TR in the west.
- *The Boyhood Diary of Theodore Roosevelt: 1869-1870*. Excellent resource for encouraging students to record nature.
- *Bully for You, Teddy Roosevelt*, Jean Fritz

Interesting adult readings:

- *Letters to his Children*, Theodore Roosevelt
- Available on Kindle
- *Mornings on Horseback*, David McCullough

EE News...

New York City:

Friends of Van Cortlandt Park, NYS Department of Environmental Conservation, and Bronx River Alliance (BxRA) are teaming up to offer a 30-hour NYC Dept. of Education-approved professional development course for NYC teachers. The course will introduce teachers to environmental education curricula (Project Learning Tree, Project WILD, Project WET, the Butterfly Curriculum and BxRA's Inside Track for Educators), how to bring these curricula into the lessons they are already teaching, expose teachers to EE resources in the City and help them plan field trips within NYC. The course will be offered in the summer as a one-week course. Please check the NYCDOE's After School Professional Development Program's course catalog in late May.

www.schools.nyc.gov/Teachers/aspdp

New York State:

TEEP (Teacher EE Preparation) will be holding a state-wide meeting at the North American EE Association/NYSOEA conference in Buffalo, NY, on September 29th, to discuss the next steps: how to incorporate teacher preparation into the creation of a state Environmental Literacy Plan (needed to access No Child Left Inside Act money when it is passed), and highlight EE efforts going on in the state legislature.



Arbor Day is coming! April 30, 2010

Mark your calendars and look for the brochure which is in preparation.

Green Horizons, one of EEAC's most successful programs, has set the date for 2010. It will take place on October 14 at the Brooklyn Botanic Garden. A great day!

Environmental Literacy Initiative in New York State

by Mary Leou and Christine Coughlin,
New York University

In response to No Child Left Inside legislation, (NCLI) the New York State Outdoor Education Association (NYSOEA) established an Environmental Literacy Committee (ELC) to begin working on a state-wide environmental literacy plan for New York State. States that have Environmental Literacy Plans will be eligible for federal funding when NCLI legislation is passed. NYSOEA invited Professors Mary Leou and Beth Klein to help start the committee and develop a plan of action. Currently chaired by Susan Hereth from Scenic Hudson and Tim Stanley from the Fresh Air Fund, the committee consists of over 30 members across the state and continues to grow.

Since the establishment of the ELC in 2008, six roundtables were held across the state to inform constituents about national and state-wide legislative initiatives related to environmental literacy. These meetings also provided a forum for a discussion of the nature of environmental literacy. They will provide a foundation for the emerging vision of a state-wide environmental literacy plan.

Over 100 stakeholders representing formal and non-formal educators, university faculty, school administrators, non-profit groups and government agencies engaged in this state-wide dialogue in an effort to define environmental literacy and suggest pathways through which one becomes environmentally literate. Participants also discussed ways in which environmental literacy could be assessed.

Results of the initial four roundtables were analyzed by Mary Leou from NYU, Beth Klein from SUNY Cortland and Christine Coughlin, an NYU doctoral student. Preliminary results were presented at the NYSOEA Annual Conference in Fishkill, NY in September 2009.

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All of the entries on these portal sites are screened and have to meet criteria in order to be placed on the site. You can, for example, send 5th graders to the student site and know they will find content that suits their age and interests.

President's Environmental Youth Awards: This program recognizes student efforts, singly or in groups, which make a difference in the environment. All entries receive recognition and the best in each EPA region is recognized at a ceremony in Washington, DC, with either the President or his representative presiding. More info available at: www.epa.gov/enviroed/peya/index.html

National Programs: EPA offers fellowships, teacher

Key findings included the following:

- Environmental literacy entails knowledge of natural systems, as well as an understanding of the interconnectedness of humans and their environment. A relationship with the natural world, supported by outdoor experiences, was a central feature of most definitions of environmental literacy. Furthermore, participants felt that knowledge of and the ability to think critically about both local and global issues was important.
- Pathways to environmental literacy include formal schooling as well as non-formal experiences through a wide range of organizations throughout the state (e.g. government agencies, cultural institutions and environmental organizations). Participants also noted the importance of incorporating environmental education into pre-service teacher education as an important step in achieving environmental literacy.
- Environmental literacy assessment strategies included traditional testing and less traditional methods such as portfolios of student work and project-based assignments. Non-traditional assessments were cited as a way to foster sustainable actions and behaviors.

Complete reports of all roundtables can be found on the NYSOEA website: www.nysoea.org/

The ELC has applied for an EPA grant in an effort to continue capacity building in New York State. Funds from this grant would also aid in the development of a state-wide environmental resource directory, as well as further the committee's work with the NYS Education Department to establish an environmental literacy plan, insuring environmental literacy for all New Yorkers.

training through the Environmental Education and Training Partnership, publications at no cost, background resources on EE and special EE multimedia programs about climate change. Go to www.epa.gov/enviroed

If you have questions about EPA Region 2 (www.epa.gov/region2/) or requests for any of the above, please feel free to contact me.

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TEEP, Moving Forward

by Joy Garland

Something very exciting is stirring in education circles from New York City to Buffalo, and TEEP (Teacher Environmental Education Preparation) is helping to stir the action. TEEP was formed in the fall of 1999 as a partnership between the Council on the Environment of New York City (CENYC), the Wallerstein Collaborative for Urban Environmental Education at New York University's Steinhardt School of Culture, Education and Human Development and the Environmental Education Advisory Council (EEAC). It has since expanded to include a network of university faculty and environmental professionals working together to make environmental literacy an important and required component of teacher pre-service certification.

The State Education Department Syllabus and Curriculum has included environmental concepts in most subject areas and the New York State Board of Regents Standards and its Regents exams have included topics students should know about a healthy environment and a sustainable society. However, the schools of education across the state, with a few exceptions, have not adequately prepared teachers for their task of educating their students about the natural world so students of all ages can become environmentally literate.

Since December 1999, TEEP's network of colleges, non-formal organizations like Audubon and several government agencies have held 6 symposia around the state. At Westchester's Pace University, SUNY Cortland, Teachers College, New York University, the State Education Department in Albany and the SUNY Brockport MetroCenter in Rochester, the TEEP members have been seeking to rectify the situation with important, but limited success. Now, a new development on the federal level has given hope that change is in the air.

On April 22, the No Child Left Inside Act of 2009 (S. 866) was introduced by Sen. Jack Reid (D-RI) and Congressman John Sarbanes (D-MD). This bill was to amend the Elementary and Secondary Education Act of 1965. If passed, it authorizes \$100,000,000 for fiscal year 2010 and each of the four succeeding fiscal years for the "development, approval, and implementation of State environmental literacy plans and the establishment of environmental education professional development grant programs along with a grant program to help build national capacity." In the Senate, Kirsten Gillibrand of New York is a co-sponsor, and in the House, New York co-sponsors include Timothy Bishop, Yvette Clarke, Maurice Hinchey and Jose Serrano.

In order to qualify to receive funds, the states must develop environmental literacy plans (ELP) approved by the U.S. Secretary of Education for pre-kindergarten through grade 12 that include environmental education standards and teacher training.

In order to help jumpstart the process, TEEP is working as part of the Environmental Literacy Plan Committee of the NYS Outdoor Education Association (NYSOEA). Besides helping to develop a plan, meetings are proposed with the State Commissioner of Education, the State Regents, State legislators and other stakeholders. From September 29, 2010 through October 3, 2010, the Annual Conference for the North American Association for Environmental Education (NAAEE) will be held in Buffalo, NY and TEEP will hold a special one day meeting of New York State environmental educators to develop a plan for action. Members of TEEP are writing a grant for \$5,000 to help cover costs of speakers, materials, travel and staff time. NYSOEA has applied for a capacity building grant to increase participation and awareness about environmental literacy in New York State.

Governor O'Malley of Maryland was the first to establish the Partnership for Children in Nature by Executive Order in April 2008, charging "...its members with creating an environmental literacy plan for Maryland students, increasing opportunities for structured outdoor learning on state parks and conservation lands, and enhancing school and community natural areas to enable more play and learning outdoors." On November 23, 2009, sixteen governors sent a letter to Education Secretary Arne Duncan endorsing the No Child Left Inside concept, including our own Governor Paterson. (Google: Governors' Letter for NCLI. Check out the 3rd listing www.kaycee.org)

By working now with its diverse environmental educator partners in laying the ground work for an environmental literacy plan with the inclusion of pre-service teacher training, TEEP will help position New York to receive its share of federal funding when it is available. Richard Louv, author of *Last Child in the Woods*, expresses the belief that, "The children and nature movement is fueled by this fundamental idea: the child in nature is an endangered species, and the health of children and the health of the Earth are inseparable." Let's work so our efforts can make a difference for both.

Build a Bug

(Adapted by NYSDEC from Project Aquatic Wild's "Fashion a Fish" activity)

Objectives: Students will classify insects and bugs according to body shape and coloration. Students will be able to describe adaptations of bugs to their habitat. Students will be able to interpret the importance of adaptations of insects and bugs.

Materials: Adaptation Cards (see instructions below), art supplies such as chenille stems, egg cartons, paint, glitter, beads, nuts, bolts, cloth, foam balls or shapes, felt – materials picked up at Materials for the Arts (www.mfta.org), plus paint, clay, paper, crayons, scissors, etc.

Background: Modern invertebrates (animals without a backbone) are the product of countless eons of evolution and adaptation. Those adaptations are features that increase the likelihood of the animal's survival. When a habitat changes, either slowly or catastrophically, the species with adaptations best suited for the changing environment survive. Those with adaptations suited for the former habitat are more susceptible to death or extinction. Some animals are adapted to a very narrow range of conditions. Often, these animals are present in very few locations, or even in only one place. Others are adapted to a wide range of conditions, enabling them to survive in many habitats.

In this activity, the students will design a "bug". Students will choose the adaptations that their creature will have; in reality, each adaptation would take countless generations to develop. As the adaptation becomes part of a bug's physical features, it becomes better suited to the habitat in which it lives. Because of the variety of conditions in any habitat, many species of organisms can cohabitate and flourish.

Note: Not all insects are bugs, but all bugs are insects. Entomologists use the term "bugs" to refer to a specific suborder of insects, the "true bug" suborder or "Heteroptera". For the sake of simplicity, however, we will just call all insects "bugs".

Procedure: Preparation – to be done prior to lesson.

1. Locate pictures of animals, showing a variety of adaptations. Mount on cardboard. Laminate for durability. These will be used for the Warm Up.
2. Use the chart below to create the Adaptation cards on 3x5 index cards, or 5x7 card stock.
3. Write one Adaptation feature on the front of the card. Write the advantage of that feature on the back and a picture of an animal that is an example (see sample card)

FANGS



injects venom,
holds prey

4. Paste a picture of an animal showing the adaptation feature.
5. Laminate for durability.

Warm Up: Show students pictures of animals with adaptation features. For example, giraffes have long necks to reach vegetation in tall trees; owls have large eyes to gather light and aid with night vision.

1. Discuss the value of different kinds of adaptation to animals. As part of the discussion, ask the students to identify some of their own (human) adaptations.
2. Have the students categorize the pictures into the following groups:
 - Protective coloration or camouflage
 - Body shape or form
 - Mouth type or feeding behavior
 - Special defenses
 - Other (one or more that the students establish)

Activity:

1. Take out the adaptation cards you made previously and divide students into groups of two or three.
2. Give each group of students one card from each of the three types of adaptation cards (Feeding Strategy, Body Shape and Coloration).
3. Ask the students to "build a bug" that represents the characteristics of the cards they received. Each group should:
 - Draw their bug (or use materials provided to create their bugs)
 - Name their bug
 - Describe and draw the habitat for their bug
4. Ask each group of students to pick a speaker to describe their bug to the rest of the groups. Include descriptions of the insect's adaptations, and how it lives in its environment.

Evaluation/Assessment:

Assign each group a bug created by a different group, and discuss how it might survive in the habitat they created for their own bug.

ADAPTATION	ADVANTAGE	EXAMPLES
Feeding Strategy (main category of an adaptation)		
1. Fangs	injects venom, holds prey	spiders, scorpions
2. Chewing mouthparts	grinds up plants	grasshoppers, caterpillars
3. Tube-like tongue	draws liquids from food	butterflies, mosquito
4. Detritus feeder	eats decomposing foods	earthworms, sowbugs
Body Shape (main category of an adaptation)		
1. Flat	can fit under objects	sow bugs, cockroaches
2. Large	fewer insect predators	grasshoppers, cicadas, dragonflies
3. Long	varies	centipedes, earthworms
4. Round	better defenses	ladybugs, beetles
Coloration (main category of an adaptation)		
1. Camouflage	blends in for hiding	grasshopper, moth
2. Warning colors	warns of poison	monarch butterfly, black widow
3. Spots or stripes	blends in to surroundings	beetles, moths
4. Mimic	looks like something else	praying mantis, stick insect



MEMBERSHIP APPLICATION 2010

New Member Renewal

Name: _____

Address: _____

Apt. _____ Zip Code _____-____-

If Sustaining Organization, Name of Contact Person

Business Phone () _____

Home Phone () _____

Affiliation (for categories other than Sustaining Organization): _____

Title/Position: _____

Address (for categories other than Sustaining Organization):

E-mail address: _____

Mail completed form and check to:

Jay Holmes, Treasurer, EEAC, American Museum of Natural History, 79th Street and Central Park West, New York, N.Y. 10024

Date: _____

Please check the appropriate calendar year membership category:

- \$ 20 Regular \$ 50 Sustaining Organization
- \$200 Individual Life Membership

Please make checks payable to EEAC.

Thank you!

EEAC is a 501-(c)3 organization.

I would like to become involved in a committee.

Please provide me with information about the following committees:

- Communications Programs Membership
- TEEP (Teacher Environmental Education Preparation)



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