

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**  
**INFORMATION EXCHANGE FOR MARINE EDUCATORS**

**JUNE 2007**

This update is provided with support from NOAA's Office of Education and by the National Marine Protected Areas Center to share information pertinent to the marine educator community. It is intended to encourage exchange of information and programs. We hope that it will also promote collaboration among the different educators addressing similar issues in their programs.

Please share this email with your colleagues and constituents. If you request materials or respond to a request for information, please mention that you learned about it from NOAA's Information Exchange.

The information included here has been compiled from many different sources, including EE-NEWS@NAAEE, EEinGEORGIA, CREEC, the Scout Report, edinfo at FREE, scuttlebutt, NSTA Express, and others. We have verified web addresses, but make no guarantee that they will remain active. The Department of Commerce/NOAA does not necessarily endorse or promote the views or facts presented on these sites.

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Collected archives of the information presented in past newsletters are available at [http://mpa.gov/helpful\\_resources/education\\_training.html](http://mpa.gov/helpful_resources/education_training.html). Contact the editor directly at [phyllis.dermer@noaa.gov](mailto:phyllis.dermer@noaa.gov), or by phone at (865) 932-5074, to discuss further enhancements or to contribute information for future issues.

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**Notable References**

**Marine Protected Areas**

Recently, two useful documents for those interested in marine protected areas issues have been made available for downloading.

**Establishing Marine Protected Area Networks**

The IUCN World Commission on Protected Areas (WCPA-Marine) has released a new guidebook summarizing key points in building MPA networks. The 16-page guide, *Establishing Marine Protected Area Networks: Making It Happen*, offers a concise synopsis of factors necessary for effective network design, including ecological criteria, best practices for planning, and other considerations. It is intended to show briefly how to transform policy aspirations into practical action, and is not meant to be exhaustive. A

full technical report to flesh out the summary report's framework is expected to be released later in 2007.

<http://www.iucn.org/themes/wcpa/biome/marine/mpanetworks/networks.html>

### **Proceedings from the First International Marine Protected Areas Congress**

Proceedings from the First International Marine Protected Areas Congress, held October 2005 in Australia, are now available. The document totals 665 pages and includes abstracts from all congress presentations, as well as full text of the meeting's plenary addresses. A full range of MPA issues is covered, including planning, management, science, and more. The file, 19 MB in size, is searchable by author, keyword, theme, and other criteria. It also includes a list of delegates with e-mail contact information.

<http://www.impacongress.org/proceedings.htm>

## **PROGRAM OF THE MONTH**

### **Deep-Sea Images and SERPENT**

The SERPENT (Scientific and Environmental ROV Partnership using Existing Industrial Technology) project, hosted at the University of Southampton, UK, collaborates with the oil and gas industry to carry out deep-sea scientific research on habitat mapping, seabed recovery rates from disturbance, and a variety of other experimental approaches to document biodiversity in the deep sea. The program interacts with science and conservation groups globally to transparently communicate the project to the public, increasing the awareness of fragile marine resources. Through their partnership, they gain access to industrial Remotely Operated Vehicles (ROVs) to carry out this work. One of the valuable aspects to having cameras on these robots is that they have collected hundreds of photos and videos of fascinating deep-sea creatures. These photos and videos are available online through their image and video database.

The website also hosts Education pages for teachers with lesson plans and more. The Kids pages include fun facts and interviews with the SERPENT team members and partners. The Gallery pages link to additional video and image galleries, while Publications hosts both SERPENT newsletters and a bibliography with many downloadable articles.

<http://www.serpentproject.com/>

## **WEBSITE OF THE MONTH**

### **COSEE-West Online**

The COSEE-West website offers a rich and diverse set of resources for teachers interested in bringing ocean sciences into the classroom. Some of the free available resources include:

***Online streaming video lectures and Powerpoint presentations.*** Presentations by scientists during COSEE-West events are taped and made available to educators online through the College of Exploration. These lectures provide background information on a variety of ocean research topics as well as data and discussions on the state of current research projects. Click on the Online Lectures button and after creating a login, go to the COSEE-West Lecture Hall at the bottom of the page.

**Classroom resources.** Lesson plans, activities, and articles featured during COSEE-West education workshops are available for downloading on the Resources page, listed by topic and workshop date. The resources cover a wide range of coastal issues, from the deep sea to the shallow coasts, from policy to seabirds and whales. Also included are a California marine science field trip guide and a long list of commercially available (and rentable) marine science videos. Other marine science lessons and information resources are also available on the Curricula and Ocean Literacy pages.

**Archived Online workshops.** COSEE-West hosts online workshops for educators on current ocean topics. The forums offer information, discussion topics, ideas for lessons, and classroom resources for teachers of all levels and audiences. All of the material is archived online and accessible through the Online Lectures page (hosted by College of Exploration).

**Ocean science animations.** Created in collaboration with graduate students in the USC School of Cinema Division of Animation and Digital Arts, fun short animations on various ocean science topics are available on the Ocean Tube link from the homepage. Animated shorts appropriate for both secondary and elementary levels are featured (and more are in the planning stages).

<http://www.usc.edu/org/cosee-west>

## MESSAGE FROM THE BRIDGE

### End of Year Ideas from the Bridge

As the school year draws to a close, now is a perfect time to incorporate the oceans into those end-of-year projects. Find science fair-style project ideas in the Bridge's Guiding Students section, or take your students on a virtual ocean expedition to a hydrothermal vent system. Information on local aquaria and research institutions is also available to schedule that last minute field trip. Perhaps have your students research a marine habitat and relate it to the biology, chemistry, physics, or geology concepts they learned this year. Whatever projects you choose, why not include some great ocean science resources from the Bridge?

<http://www.marine-ed.org/bridge>

## REQUESTS

### Seeking Education Representative for Advisory Council – North Carolina

The Monitor National Marine Sanctuary seeks to fill the education seat on their sanctuary advisory council. They are seeking formal and informal educators with strong ties to educational institutions or organizations in North Carolina and specifically the Outer Banks. Member terms are two years and with meetings every six months, typically alternating between Virginia and North Carolina. The deadline for application is June 30, 2007.

<http://monitor.noaa.gov>

### PreK-4th Grade Activities Needed

U.S. EPA is looking for preK-4th grade activities to be used in its new Kids Club. In the club, kids receive recognition for completing environmental projects and activities. Previous activities have been on home-based water conservation and energy

conservation. They are also looking for activities a teacher can do within their classroom.

Contact: Megan Gavin at [gavin.megan@epa.gov](mailto:gavin.megan@epa.gov)

### **Seeking Reviewers**

Earthwise Media is seeking teachers from all grade levels and all regions to review a draft of its new DVD video presentation and Teacher's Guide about crabs. The reviews will be used to correct any factual errors and to make improvements so that the DVD will be more useful to teachers.

Contact Dr. Wesley Nicholson at [wes@earthwisevideos.com](mailto:wes@earthwisevideos.com)

## **GRANTS AND OPPORTUNITIES**

### **Apprentice Ecologist Initiative**

The goal of the Apprentice Ecologist Initiative is to elevate young people (including disadvantaged and at-risk youth) into leadership roles by engaging them in environmental stewardship projects. A scholarship will be awarded annually to the author of the top Apprentice Ecologist essay. Check the website for complete details and a list of upcoming events.

[http://www.wildernessproject.org/volunteer\\_apprentice\\_ecologist](http://www.wildernessproject.org/volunteer_apprentice_ecologist)

### **Captain Planet Foundation Grants**

The Captain Planet Foundation provides grants to school and community groups to support hands-on environmental projects for youth in grades K-12. The objective of the foundation is to encourage innovative programs that empower youth around the world to work individually and collectively to solve environmental problems in their neighborhoods and communities. Deadlines for submitting grant applications are March 31, June 30, September 30, and December 31 of each year.

<http://www.captainplanetfdn.org/grants.html>

### **DISCOVER Magazine Cover Design Contest**

DISCOVER magazine is holding a nationwide contest among third through eighth graders to design an image for the cover of its October issue, *The State of Science in America*. The winning entry will be the design that best captures the wonderment and possibilities of science. In addition to the winning entry, six finalists will be profiled in that issue and on the magazine's home page. The deadline for submission is June 20, 2007.

<http://discovermagazine.com/2007/may/you-design-the-magazines-cover>

### **Fund for the Improvement of Postsecondary Education - Comprehensive Program**

The Comprehensive Program supports innovative grants and cooperative agreements to improve postsecondary education. It supports reforms, innovations, and significant improvements of postsecondary education that respond to problems of national significance and serve as national models. Eligible applicants include institutions of higher education or combinations of those institutions and other public and private nonprofit institutions and agencies. Invitation priorities include projects improving the mathematics and science proficiency of postsecondary students including preservice math and science teachers. The deadline for application is June 13, 2007.

<http://www.ed.gov/legislation/FedRegister/announcements/2007-2/051407c.html>

### **Future Leaders Awards**

The K. Patricia Cross Future Leaders Awards recognizes doctoral level graduate students who show exemplary promise as future leaders of higher education; demonstrate a commitment to developing academic and civic responsibility in themselves and others; and whose work reflects a strong emphasis on teaching and learning. The deadline for nomination is October 5, 2007.

<http://www.aacu.org/meetings/annualmeeting/AM08/crossaward.cfm>

### **Global Warming Challenge**

Created by a Washington middle school teacher, this challenge invites youth age 19 and under and their leaders from around the world to come up with a project that reduces greenhouse gas emissions, heavy metal pollution, or ground-level ozone. Projects will be judged based on how well they meet and document the challenge chosen. The deadline for submission is June 10, 2007.

<http://www.facingthefuture.org/GlobalWarmingChallenge.htm>

### **Groundwater Foundation Awards**

The Groundwater Foundation offers four awards for educating and motivating people to care for and about groundwater. The Groundwater Educator Award recognizes educators who understand the importance of groundwater, motivate others to protect groundwater, and lead by personal example. The Youth Award for Excellence and Leadership in Groundwater is open to any student, age 12-17, in the U.S. that gives time, energy, and knowledge to promote the protection of groundwater in his or her community. Additional awards recognize groundwater heroes and government service promoting groundwater stewardship. The deadline for nominations is July 14, 2007.

<http://www.groundwater.org/aw/awards.html>

### **Judith A. Towle Environmental Studies Fund – Virgin Islands, St. Kitts and Nevis**

Applications are now being accepted by the Community Foundation of the Virgin Islands for the Judith A. Towle Environmental Studies Fund. The fund supports activities that address environmental concerns which transcend the boundaries of a single island or island state, particularly in the U.S. and British Virgin Islands and in the dual-island state of St. Kitts and Nevis. Any individual who is a resident of, or a not-for-profit institution based in, the U.S. or British Virgin Islands or in the Federation of St. Kitts and Nevis may submit a grant application. Graduate students whose research focuses on the Virgin Islands or St. Kitts and Nevis may also submit grant applications.

<http://www.cfvi.net/>

### **Maritime Museum Education Grants - California**

The Ventura County Maritime Museum offers education program grants to qualified local schools and youth-serving social-service organizations. These grants will enable the Museum to greatly reduce the cost of its elementary education programs. Available programs include grade-specific, curriculum standards-based social science programs that utilize the museum's extensive collection of marine art, ship models, and artifacts; marine science programs onboard the Channel Islands Marine Floating Lab afloat in Channel Islands Harbor; and *All About Whales*, combining a shore-side program with a whale-watching excursion off the Channel Islands.

Contact the museum at [vcmm@aol.com](mailto:vcmm@aol.com)

### **The Ocean Fund**

Royal Caribbean Cruises Ltd., which operates Royal Caribbean International and Celebrity Cruises, established the Ocean Fund to support marine conservation organizations working to preserve the world's oceans. Ocean Fund grants are made to nonprofit groups and institutions conducting activities, including research, and education, directly related to marine conservation. The mission of the fund is to support efforts to restore and maintain a healthy marine environment, minimize the impact of human activity on this environment, and promote awareness of ocean and coastal issues and respect for marine life. The deadline for funding requests is June 30, 2007; select organizations will be requested to submit a formal application by September 30, 2007. <http://www.royalcaribbean.com/ourCompany/environment/oceanFund.do>

### **Olympus and Tool Factory Classroom Grants and Contest**

Olympus and Tool Factory award grants to educators whose classroom projects and curriculum ideas illustrate the effective and creative use of digital cameras and software resources. The Classroom Grants program is designed to strengthen education through digital imaging and the power of visual learning. The Student Photo Contest includes two categories, photography and art. The Special Education grants are available for projects with special students or inclusive classrooms. Also check out the Podcasting and Special Education grants. The deadlines for submission are in June or July, 2007; see the website for details.

[http://www.toolfactory.com/olympus\\_contest/](http://www.toolfactory.com/olympus_contest/)

### **Richard C. Bartlett Environmental Education Award**

The National Environmental Education Foundation announces the Richard C. Bartlett Environmental Education Award honoring an outstanding educator who has successfully integrated environmental education into his or her daily education programs. The deadline for nomination is June 30, 2007

<http://www.neefusa.org/bartlett/index.htm>

### **Society for Conservation Biology Memberships**

The Society for Conservation Biology Freshwater Working Group has initiated a commitment to enlist 50 members (new or renewing) from developing countries for scientists who could benefit from membership (journal access, scholarships, and more). The cost for the two-year membership is being sponsored by The Nature Conservancy. Contact Aventino Kasangaki at [aventinok@yahoo.com](mailto:aventinok@yahoo.com)

## **INTERNSHIPS AND TEMPORARY OPPORTUNITIES**

### **Curatorial Internships**

As part of its role of education center for the Great Barrier Reef Marine Park Authority, Reef HQ Aquarium in Townsville, Australia, offers four curatorial internships, starting in February/March and August/September 2008. Each position carries a specialist research project, as well as water quality and laboratory duties, that will be the core duties of the candidate. However, interns may also assist Reef HQ staff with animal husbandry responsibilities of all exhibit areas, including feeding, diving, field trip assistance, maintenance of aquarium systems, and other related duties. This program is designed for individuals intending to undertake a technical or professional career in marine science, aquaculture, or a closely related discipline. Overseas applicants are encouraged to apply. The deadline for application is June 30, 2007.

[http://www.reefhq.com.au/home/get\\_involved/internships/curatorial\\_and\\_research\\_internships\\_2008](http://www.reefhq.com.au/home/get_involved/internships/curatorial_and_research_internships_2008)

### **Eco-Camp: Swamp Adventures - Georgia**

Southeastern Natural Sciences Academy promotes environmental stewardship through education, research, and public outreach. The Academy operates Phinizy Swamp Nature Park, an 1,100-acre urban nature preserve. The 5-day eco-camp for rising 4-6th graders, June 18-22, 2007 in Augusta, Georgia, explores hands-on activities on animal habitats, wetland values, water quality, and more.

<http://www.eeingorgia.org/net/content/go.aspx?s=6277.0.68.4863>

## **CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT**

### **California Summer Professional Development Opportunities**

The following are just some of the professional development opportunities available in the California area for educators interested in marine and coastal issues.

- **Coastal Ecosystem Workshop:** The Coastal Ecosystem Workshop, June 20-22, 2007 in San Francisco, California, will focus on the physical and biological oceanography of the Gulf of the Farallones and our coastal ocean. Participants will take part in a research cruise aboard the *R/V Fulmar* and will receive a unit of activities and materials from the sanctuary's Coastal Ecosystem Curriculum.  
[http://farallones.org/education/teacher\\_workshops.php](http://farallones.org/education/teacher_workshops.php)
- **Sloughs and Stewardship:** Join Save The Bay staff for a two-day summer workshop, Sloughs & Stewardship, June 26-27, 2007 in San Francisco, as you explore the richness and splendor of San Francisco Bay in two different regions. During the workshop, you will experience the Canoes in Sloughs and Community-based Restoration programs first hand, and will discover how to integrate watershed concepts and San Francisco Bay curriculum into your teaching. Scholarships are available, and participants will receive Save The Bay's Watershed Curriculum and Journal.  
<http://www.saveSFbay.org/workshop>
- **Summer Leadership Institute:** The National Science Education Leadership Associations' annual Summer Leadership Institute, The Rising Tides of Science Education: Preparing Our Students for Global Leadership, will be held June 28-July 2, 2007 in Pacific Grove, California. The institute offers professional development to support both experienced and emerging leaders who serve with schools, school districts, universities, and community colleges, and professional organizations in an instructional and/or leadership capacity. Sessions will be lead by professional organizations, members of the Commission on STEM Education, National Science Foundation, Exploratorium, Lawrence Hall of Science, and many other national leaders in STEM education. The deadline for registration is June 15, 2007. Field trip and special events options include visits to Elkhorn Slough, Moss Landing Marine Laboratories, Monterey Bay Aquarium, and more.  
<http://www.nsela.org/calendar/calendar.html>

- **Watershed Awareness and Sustainable Action:** Formal and non-formal educators, science teachers, environmental program developers, and others are invited to this four-day summer training, July 31-August 3, 2007 in Berkeley, California. The workshop is designed to help formal and non-formal educators to gain the knowledge and skills needed to teach hands-on environmental science curricula indoors and in the field.  
Contact Shefali Shah at [shefali@kidsforthebay.org](mailto:shefali@kidsforthebay.org)

#### **Classroom in the Wild - Alaska**

American University's School of Communications Center for Environmental Filmmaking is hosting this eight-day Alaskan wilderness adventure, August 12-20, 2007, combining survival skill training with wildlife and expedition filmmaking. Students will get hands-on experience under extreme filmmaking conditions.  
<http://www.environmentalfilm.org/>

#### **Cultural Resources Professional Development – West Virginia**

The 2007 Cultural Resource course will be held at the U.S. Fish and Wildlife Service's National Conservation Training Center in Shepherdstown, West Virginia, during the week of August 13, 2007. The course is aimed at project leaders and refuge managers. Contact Eugene Marino at [Eugene\\_Marino@fws.gov](mailto:Eugene_Marino@fws.gov)

#### **Developing Teacher Training – West Virginia**

The National Conservation Training Center will offer Developing Teacher Training (OUT8161), September 10 – 14th, 2007 in Shepherdstown, West Virginia. This face-to-face training presents the essential components of working with schools and school systems, specifically on designing, conducting, and evaluating teacher workshops/trainings. The course culminates with participants working in groups to apply their skills at an actual 2-hour teacher workshop. Upon returning to their sites, each participant is also expected to plan and conduct a workshop for teachers within a year. The deadline for registration is July 16, 2007; call for availability after the deadline.  
<http://training.fws.gov/catalog/coursecontents.html>  
Contact Georgia Jeppesen at [georgia\\_jeppesen@fws.gov](mailto:georgia_jeppesen@fws.gov)

#### **Flying Wild Educator Workshop - Georgia**

This two day Flying Wild Workshop, June 27-28, 2007 or July 12-13, 2007 in Covington, Georgia, demonstrates activities from the Flying Wild Guide, provides instructions on how-to establish a schoolyard wildlife habitat, and helps teachers learn how to integrate bird education into their classroom curriculum.  
<http://www.eeingorgia.org/net/calendar/details.aspx?c=32283&s=52045.0.68.4863>

#### **Fort Fisher Teacher Workshops – North Carolina**

The North Carolina Aquarium at Fort Fisher, located between the Cape Fear River and the Atlantic Ocean, offers opportunities for the public to encounter and experience aquatic life through exhibits, programs, and special events. In addition to daily programming for the general public and school groups, the aquarium offers professional development workshops for classroom teachers and informal educators. The following workshops will be offered July 16-20, 2007.

- **MAURY Project** is a six-hour workshop for middle- and high-school teachers interested in integrating marine research and oceanography into classroom science. July 16, 2007

- ***Aquariums Teacher Workshop*** introduces K-12 teachers to pre- and post-visit activities designed to enhance an aquarium field trip as well as integrate ocean awareness in the classroom across disciplines. July 17, 2007.
- ***Project WET*** provides water-education curriculum for K-12 teachers. Through hands-on activities, participants acquire tools for fun and effective water education applicable across disciplines. July 18, 2007.
- ***Aquatic WILD*** introduces K-12 teachers to innovative and interactive curriculum designed to integrate aquatic environmental education in the classroom. July 19, 2007.
- ***Land of a Thousand Nests*** is designed to introduce participants to colonial nesting water birds. Topics include identification techniques, nesting habitat requirements, and threats and issues related to nesting water birds. This workshop is targeted for the 5th and 6th grades, but can be easily adapted for use with different ages. July 20, 2007.

<http://web.eenorthcarolina.org/net/org/info.aspx?s=43746.0.0.37430>

### **Georgia Adopt-A-Wetland Training**

The Coastal Georgia Adopt-A-Wetland Program is a hands-on education program that promotes wetland conservation through volunteer monitoring. The organization offers chemical and biological Adopt-A-Wetland Training workshops for adults and students. Participants will learn how to assess water quality and then receive all equipment needed to assess environmental health at an adopted site of their choice. Check out the website for the many dates when the courses are offered in Savannah, Georgia. Admission is free, but registration is required.

<http://www.eeingorgia.org/net/content/go.aspx?s=52177.0.68.4863>

### **GLOBE Watershed Project Educator Workshop - Colorado**

GLOBE and The Geographic Data in Education Initiative at Northwestern University are looking for middle-high school science teachers to participate in an Earth system science education project that connects students with real scientific data sets for a workshop August 7-9, 2007 in Boulder, Colorado. The GLOBE Watershed Dynamics Project offers students the opportunity to conduct investigations on watershed behavior on local, regional, and national scales, using near real-time and archival data from a hydrologic database covering the entire continental U.S. Participants use My World GIS™ a geographic information system specifically designed for educational use to investigate the inter-relationships between precipitation, evaporation and surface runoff on a regional and national scale. Emphasis will be placed on water availability in different regions of the country and how these variables change throughout the year. Travel support for the workshop may be available for a limited number of non-local participants.

<http://www.globe.gov/fsl/html/templ.cgi?watersheds&lang=en&nav=1>

### **International Summer Institute - Minnesota**

Join educators from around the world in the Will Steger Foundation Institute for Climate Change Education, August 13-15, 2007 in St. Paul, Minnesota, for an interactive, cross-disciplinary workshop on global warming, its effects on the Arctic and Antarctic, and the scientific and cultural program associated with the International Polar Year.

<http://www.globalwarming101.com/content/view/712/88888907/>

### **Leadership Development in Natural Resources – Online**

This new 9-week online course, Leadership Development in Natural Resources: Strategic Planning and Implementation, has been developed by the University of Wisconsin-Stevens Point, the Environmental Education and Training Partnership (EETAP) and Treehaven Environmental Learning Center. The course, from September 17–November 16, 2007, is designed to assist environmental educators and natural resource professionals in learning and applying key elements of successful strategic planning. A variety of strategic planning models will be examined using case studies, simulation, and small group activity. Emphasis will be placed on managing the strategic planning process to build the capacity of organizations to provide effective environmental education programs. Course participants will also have an opportunity for individual consultation time with the course instructor to discuss specific issues and questions they might have regarding strategic planning.

<http://www.uwsp.edu/natres/rwilke/eetap/Website2006/SPandI.htm>

### **Learning Ocean Science through Ocean Exploration - Maine**

NOAA's Ocean Exploration Program will provide a professional development workshop for educators in July in conjunction with the National Marine Educators Association 2007 Conference, July 23, 2007 in Portland Maine. The workshop is offered to grade 5-12 science teachers and other educators interested in ocean exploration. Registration is free, but pre-registration is required and space is limited. The deadline for registration is July 9, 2007.

Contact Dr. Valerie Chase at [vchase529@worldnet.att.net](mailto:vchase529@worldnet.att.net)

### **Learning Ocean Science and Exploration through an Online Environment - Oregon**

Join classroom science teachers of grades 6-12, June 30, 2007 in Corvallis, Oregon, and bring the excitement of ocean science and deep ocean exploration to your students using the resources at NOAA's Discovery Center and Ocean Explorer Web sites. The deadline for registration is June 11, 2007.

Contact Melissa Feldberg at [melissa.feldberg@oregonstate.edu](mailto:melissa.feldberg@oregonstate.edu)

### **Lessons from the Sea – Hawai'i**

Lessons from the Sea is a new marine science curriculum for grades 3-8 developed by the Hawaiian Islands Humpback Whale National Marine Sanctuary, Pacific Resources for Education and Learning, and Hawaii Institute for Biology. The curriculum includes science-based inquiry lessons, integrated art, technology, call to action lessons, and opportunities to get involved in marine related projects and field trips. Workshops are scheduled in Oahu, Kauai, Maui, and Hilo in June and July, 2007; contact Patty Miller for details.

Contact Patty Miller at [patty.miller@noaa.gov](mailto:patty.miller@noaa.gov)

### **NAME Conference - Oregon**

The 2007 Northwest Aquatic and Marine Educators (NAME) Conference, *Where the Watersheds Meet the Ocean*, will be held July 15-18, 2007 in Astoria, Oregon. The four conference themes are Crossing the Bar (Columbia River Bar, where the river of the West meets the Pacific), New Understandings of Watersheds and Estuaries, The Changing Ocean, and Applying New Knowledge in Educational Settings.

<http://www.pacname.org/conference07.html>

### **NTEN Online Courses**

The National Teachers Enhancement Network (NTEN) provides quality online science courses developed just for teachers, created by a collaborative team of scientists and in-service teachers. The courses contain rich science content and emphasize discussion and collaboration among participants. Upcoming courses include Biology of Riparian Zones and Wetlands, Environmental Measurement: Sensors and Electronics, Construction of Curriculum, and more.

<http://btc.montana.edu/courses/asp/ntenindex.aspx>

### **Project WET Workshops - Tennessee**

Project WET (Water Education for Teachers) Tennessee provides free six-hour workshops for teachers and non-formal educators of grades K-12. Participants receive the Project WET Curriculum and Activity Guide with interdisciplinary, hands-on activities and classroom-ready lessons.

- Clarksville, June 5, 2007
- Robertson County, June 15, 2007
- Knoxville, July 16, 2007
- Houston County, July 16 (K-5) and 17 (6-12), 2007

Contact Michelle Rogers at [ogersm@apsu.edu](mailto:ogersm@apsu.edu)

### **Weather Science Workshops for Educators - Pennsylvania**

Applications are being accepted for summer workshops sponsored by NASA and the Pennsylvania Space Grant Consortium. The workshops offer innovative ways to teach science in the classroom, information on the latest science research, and standards-based activities. The 2007 summer sessions include *The Science and Impacts of Weather Prediction: How Weather Forecasts Shape our Daily Lives*, July 8-13, 2007 in State College, Pennsylvania.

<http://teachscience.psu.edu/index.html>

## **EDUCATIONAL RESOURCES**

### **Aboriginal Canada Portal**

Learning about native peoples in Canada has never been so easy as with this website created by the government of Canada, in partnership with the Assembly of First Nations and other stakeholders. Visitors can search the entire site's contents through a search engine on the homepage, or select thematic areas as education, environment and natural resources, and more. Check out the links to kid-friendly games, traditional ecological knowledge, conservation and protection, and much more.

<http://www.aboriginalcanada.gc.ca/acp/site.nsf/en/index.html>

### **After the Storm**

DVD copies of the half-hour television special about watersheds, *After the Storm*, are now available at no charge. The program was co-produced by The Weather Channel and the EPA. The program highlights three case studies – Santa Monica Bay, the Mississippi River Basin/Gulf of Mexico, and New York City – where polluted runoff threatens watersheds highly valued for recreation, commercial fisheries, navigation, and drinking water. *After the Storm* shows the connection between weather and watersheds and the importance of watershed protection. In addition to free DVD copies, the video is available for downloading, complete with on-video text transcript.

<http://www.epa.gov/weatherchannel/>

### **Agua Pura Curriculum**

The University of California Cooperative Extension 4-H program and Adopt-A-Watershed have developed a bilingual curriculum, *Agua Pura: Exploring Salmon and Steelhead in California Communities*. The curriculum teaches children about salmon and steelhead biology, and the critical relationship these fish have to healthy watersheds. Using real-life investigation and problem solving skills, participants investigate the natural history of their local salmon or steelhead populations, find out how human activities have impacted these populations in local rivers and streams, and work with other community members to enhance salmon and steelhead habitat within the community. All of the worksheets and the letter to parents are available as English only or as side-by-side English/Spanish versions. Contact A. Michael Marzolla if you are interested in workshops, advice and support on how to best use the curriculum, or for suggestions and feedback.

Contact A. Michael Marzolla [ammarzolla@ucdavis.edu](mailto:ammarzolla@ucdavis.edu)

<http://www.sns.ucdavis.edu/>

### **Cayman Islands Twilight Zone**

From May 20-June 10, 2007, a scientific team will study coral reefs of the “twilight zone” in the Caribbean Sea between Jamaica and Cuba. This shore-based mission will employ new diving techniques that allow scientists to personally visit deep-water ecosystems without the need for expensive submersibles. NOAA’s Ocean Explorer website coverage for this mission includes Biotechnology, Technical Diving, and Biodiversity content essays written especially for this mission. Web logs, including video and images, written by scientists and other explorers at sea capture daily activities and discoveries. An “Ask an Explorer” feature is also available to submit questions to and receive answers from the explorers while they are engaged in the mission. The education module includes a summary of the purpose of this expedition; lesson plans designed specifically for this expedition; interactive educational multimedia presentations on deep-sea corals and biotechnology; profiles of scientists representing careers featured during this mission; and a list of other resources and links.

<http://oceanexplorer.noaa.gov/explorations/07twilightzone/welcome.html>

### **Center for International Earth Science Information Network**

The Earth Institute at Columbia University hosts The Center for International Earth Science, specializing in on-line data and information management, spatial data integration and training, and interdisciplinary research related to human interactions in the environment. The collection includes climate change resources for the New York metropolitan area, GIS training opportunities, links to educational resources, and, especially, data resources.

<http://www.ciesin.columbia.edu/>

### **Chesapeake Bay Interpretive Buoy System**

The NOAA Chesapeake Bay Interpretive Buoy System is a sensor-to-user information delivery system focused on the Chesapeake Bay and its surrounding estuarine environment. The project promotes awareness of the bay’s condition and supports stewardship efforts of educators, trail users, government, and civic organizations dedicated to the preservation of the bay and its natural environment. “Talking buoys” will serve as interpretive guide posts, linking trail visitors—whether they be right next to the buoy in a kayak or at home on their computer—with information about the buoy location and nearby history and culture via cell phone or Internet-accessible devices. The

website provides real-time environmental data, educational tools, and interpretive information; additional educational materials will be available in the future.

<http://www.buoybay.org/site/public/>

### **Climate Connections**

National Public Radio (NPR) and National Geographic host the Climate Connections website with news items, interesting facts, practical ideas, and a daily podcast. An interactive map allows visitors to follow NPR reporting on areas of the world impacted by global warming, and the Wild Chronicles offers videos on a variety of wildlife and global warming issues.

<http://www.npr.org/templates/story/story.php?storyId=9657621>

### **Communication Toolkit**

A new Communication, Education and Public Awareness toolkit has been developed by the IUCN Commission on Education and Communication. Though aimed at professionals charged with implementing National Biodiversity Strategy and Action Plans, the toolkit offers practical steps that can be used to develop a variety of communication strategies. As an example, there is a checklist for organizing an information meeting, a variety of tracking methods, a communication planning checklist, and much more.

<http://www.cepatoolkit.org/>

### **Communications Tactics for Climate Change**

Futerra Sustainability Communications Ltd. created this publication, *New Rules: New Game – Communications tactics for climate change*, as a communications guide to help in delivering the message of behavior change to impact climate change. The publication offers simple and practical communication techniques to help pull together the most effective strategies for motivating behavior change.

<http://www.futerra.co.uk/downloads/NewRules:NewGame.pdf>

### **Digital History: A Guide to Gathering, Preserving, and Presenting the Past on the Web**

The Center for History and New Media at George Mason University offers this important online resource. Created and written by Professors Daniel J. Cohen and Roy Rosenzweig, the online version of their book, *Digital History: A Guide to Gathering, Preserving, and Presenting the Past on the Web*, serves as an introduction to the web for those “who wish to produce online historical work, or to build upon and improve the projects they have already started in this important new medium.” The work is divided into chapters, including *Becoming Digital*, *Owning the Past?*, and *Preserving Digital History*. The work covers everything from copyright law to site design.

<http://chnm.gmu.edu/digitalhistory/index.php>

### **Discovering Antarctica**

The Royal Geographical Society and the British Antarctic Survey have created this website which explores life on Antarctica. Visitors can watch a short video clip about the continent, test their existing knowledge with a short quiz, and then participate in a “being there” activity. The site lists all of the resources by format, including audio files, video clips, Word documents, and images. The Teachers’ Area offers a number of learning activities for students and teacher notes that are correlated to each of the main sections of the website.

<http://www.discoveringantarctica.org.uk/index.php>

### **Earthman Project**

The Earthman Project comes from a nonprofit organization which uses music, the arts, and technology to inspire people to protect the environment. The Climate Crisis Jam online video is a musical message about global warming offered up in easy rap style. Additional music includes the Earthman Blues and River of Grass. The website also links to lesson plans and additional information.

<http://www.earthman.tv/2004/index.html>

### **Educating Young People About Water**

The Environmental Resources Center at the University of Wisconsin-Madison offers Educating Young People About Water (EYPAW), guides and a water curricula database providing assistance for developing a community-based, youth water education program. These resources target youth and link educators to key community members to build partnerships to meet common water education goals. The resource can help you find and select water education curricula; develop a program appropriate to your situation; train others to design community-based, youth water programs; and more. Search the website from over 150 water-related curricula.

<http://www.uwex.edu/erc/ey paw/>

### **Education at AMNH**

The American Museum of natural history has many free online resources useful to those studying marine and coastal environmental issues. Use the search feature to pull up resources using keywords such as ocean, coral, mangrove, and more.

<http://education.amnh.org/>

### **Find-a-Photo Website**

USDA Forest Service's Find-a-Photo website -offers the NatureWatch, Wildlife, Fish, and Threatened and Endangered Species Program's Photograph Library. Find-a-Photo allows you to access thousands of copyright free wildlife, fish, wildflower and environmental education photographs, donated by Forest Service employees and our partners and volunteers. Check back often since new photographs are being added quite frequently. These copyright-free photographs are available for non-profit use; please credit the photographer.

[http://wwwnotes.fs.fed.us:81/wo/wfrp/find\\_a\\_photo.nsf/](http://wwwnotes.fs.fed.us:81/wo/wfrp/find_a_photo.nsf/)

### **Free Copy of Green Teacher**

To celebrate the launch of an electronic edition of their non-profit quarterly EE magazine, Green Teacher invites you to download a copy of the Winter 2006-2007 edition, through July 1, 2007. The electronic issue is searchable and the hot-links provide readers with quick access to additional information about a topic or new educational resources mentioned in that issue. Check out the article, *Discovering Lake Management: Getting Students' Feet Wet*.

<http://www.greenteacher.com/freelssue80.html>

### **Global Warming**

NASA's Earth Observatory features an article on global warming, explaining what global warming is, how scientists know it's happening, and how they predict future climate.

<http://earthobservatory.nasa.gov/Library/GlobalWarmingUpdate/>

### **Great Turtle Race**

Eleven critically endangered leatherback turtles were tagged with a satellite tracking device, and followed through the Great Turtle Race from a Costa Rican beach across the Pacific towards the Galapagos Islands. This public awareness and educational campaign was sponsored by three schools—an elementary school, a high school and a university. Teachers can use the curriculum and background information provided on this website and/or create their own lesson plans around the event.

<http://www.greatturtlerace.com/>

### **Immersion Presents Black Sea 2007**

Live video updates from August 18-26, 2007 from the Black Sea will be offered on the Internet and through Internet2, made possible by Immersion Presents in partnership with the Institute for Exploration, the Institute for Archaeological Oceanography, and NOAA's Office of Ocean Exploration. These updates will feature expedition researchers and will chronicle the exploration of two very different shipwrecks in Turkey and the Ukraine.

<http://www.immersionpresents.org/>

### **NOAA 200 Years for Kids and Educators**

NOAA's 200th Celebration in 2007 highlights the rich history of science, service, and stewardship provided to the American public by NOAA and its predecessors. The website offerings grow daily with new stories, features, and events. The section For Kids and Educators offers links to online resources that have been selected to help teachers, students, and parents learn about our ocean, coasts, and skies. The information is organized into three sections to help you Explore, Understand, and Protect our marine and atmospheric environments. Within each section, you'll find links to websites, downloadable lesson plans, and educational materials. To help identify the most appropriate materials, target audiences are included for all links.

<http://celebrating200years.noaa.gov/welcome.html>

### **NOAA Photo Library**

The new and updated NOAA Photo Library is a significant improvement on the old version, with more than 10,000 new images, new search capability, Hurricane Katrina images, and thousands of ocean exploration, coral reef, and polar photographs. Additions include remarkable lightning photography, a medley of American lighthouses, and thousands of newly digitized historical photographs detailing the work of the Coast Survey, Fisheries Commission, and the Weather Bureau.

<http://www.photolib.noaa.gov/>

### **NOAA YouTube Movies**

NOAA's Ocean Media Center creates high definition video products showcasing the many services that NOAA provides to the public. On the YouTube channel, you'll find many kinds of videos including natural history documentaries about our national marine sanctuaries, industrial documentaries about how NOAA responds to oil spills, and historical documentaries covering wide ranging topics from shipwrecks in the Great Lakes to the history of surveying in the United States. Join a NOAA Sanctuaries team and the Monterey Bay Aquarium Research Institute's expedition to the deep trenches of the Monterey Canyon; follow scientists at sea; and more in the NOAA's YouTube movie of the week.

<http://www.youtube.com/profile?user=NOAAOceanMediaCenter>

### **NOAA's Island on Second Life**

The "Second Life" platform is a three-dimensional online world with a rapidly growing population from 100 countries around the globe. NOAA's Earth System Research Lab ESRL developed one of the first government-sponsored, Earth-science "islands" in the online world of Second Life. This "island" allows users to have the experiences in the virtual world they may not have in the physical world, and learn about the cutting-edge science that NOAA conducts regularly. On NOAA's island, Meteora, one can soar through a hurricane on the wing of a research aircraft, rise gently through the atmosphere atop a weather balloon, or search for a hidden underwater cave on a side trip from a NOAA submarine. A virtual beach demonstrates how to recognize the onset of a tsunami, and eventually the site may enhance public awareness of rip tides, hurricanes, tornadoes and other natural disasters. Science on a Sphere makes its virtual debut with four examples of its 80-plus dramatic visualizations of planetary data, including a view of nighttime lights around the globe and a 3-D panorama of ocean, sea, and lake depths.

<http://www.esrl.noaa.gov/outreach/sl/>

### **Ocean Currents Tutorial**

NOAA's Ocean Service Education website offers the new Ocean Currents Tutorial, presenting an overview of some of the major factors that cause coastal and open ocean currents including tides, winds, and changes in water temperature and salinity. Longshore, rip currents, and upwelling events are discussed in the context of the coastal environment. Coriolis, the Ekman spiral, and thermohaline circulation are discussed in relationship to the open ocean. Methods for measuring currents and their effects on our lives are also presented. In addition to the tutorial, the Roadmap to Resources presents data and information on ocean currents from a variety of resources, and two inquiry-based lesson plans emphasizing hands-on activities using online data, correlated to National Science Education Standards, have been developed for students at the high school level.

<http://oceanservice.noaa.gov/education/kits/currents>

### **Rachel Carson Online Book Club and Intergenerational Contest**

To mark the 100th anniversary of Rachel Carson's birth and join in the U.S. Fish and Wildlife Service's Centennial celebration, the Friends of the National Conservation Training Center has launched the Rachel Carson Online Book Club. Continuing through November 2007, the book club will focus on the life and work of Rachel Carson including her role as a female leader in science and government. Book club participants will read specific books by and about Rachel Carson, and then use the discussion board to intersect thoughts and ideas. Each month features distinguished guest moderators who will share insights and comments on the text.

The Intergenerational Contest Honoring Rachel Carson is a photo, essay, and poetry contest in honor of Rachel Carson sponsored by the EPA Aging Initiative, Generations United, and the Rachel Carson Council, Inc. The project must involve a person under age 18 and a person age 50 or older. The deadline for entry is June 15, 2007.

<http://rcbookclub.blogspot.com/>

<http://www.epa.gov/aging/resources/thesenseofwonder/index.htm>

### **Satellite Resources**

NOAA's Satellites and Information Service manages data relating to the Earth and solar environments. NESDIS (National Environmental Satellite, Data, and Information

Service) has compiled a website listing resources of interest to students and educators. These materials include posters and slide sets, teacher guides and quizzes, a glossary of terms, and fact sheets and handouts. Links lead to numerous related sites, such as the World Ocean Atlas, the Climatic Data Center, and sources of information on sea ice, ice shelves and glaciers.

[http://www.nesdis.noaa.gov/outreach\\_edu.html](http://www.nesdis.noaa.gov/outreach_edu.html)

### **Smithsonian Education**

Smithsonian Education offers more than 1,200 education resources aligned with standards of learning in every state. Lesson plans emphasize inquiry-based learning using primary sources and museum collections. Each plan is print-friendly and provides all the materials needed—photographs, reproductions, handouts, activities, suggested strategies, standards information, and additional online resources. The searchable database allows you to browse lesson plans by subject area or search by grade levels and keywords. Check out *Ocean Planet: Interdisciplinary Marine Science Activities*, *Contrasts in Blue: Life on the Caribbean Coral Reef and the Rocky Coast of Maine*, and *Decoding the Past: The Work of Archaeologists*. Students can find games, educational materials, and more through the Students pages, including an on-line satellite photo interpretation activity.

<http://www.smithsonianeducation.org/>

### **Song of the Salish Sea**

The award-winning DVD video presentation from Earthwise Media, "Song of the Salish Sea: a Natural History of Northwest Waters" includes a printable teachers' guide and tidal pool curriculum for ages 11-14. The Song of the Salish Sea was produced in partnership with the People For Puget Sound. Additional educational videos from Earthwise Media include *Rainbows in the Sea: a guide to Earth's Coral Reefs*, *Life on the Edge: a guide to Pacific Coastal Habitats*, *World Between the Tides: a guide to Pacific Rocky Shores*, and more.

<http://www.earthwisevideos.com/Earthwise-Media-Products.htm>

### **TeacherTube**

Hoping to fill a need for a more educationally focused, safe venue for teachers, schools, and home learners, TeacherTube provides an online community for sharing instructional videos. It can provide anytime, anywhere professional development with teachers teaching teachers. In addition, teachers can post videos designed for students to view in order to learn a concept or skill. Check out the Mystery of Earth's Tides, Ocean Life images, and more. The website allows viewers to comment and rate videos, so be sure to share your expertise.

<http://www.teachertube.com/>

### **Waterbird Population Estimates**

This publication sets the global standard in presenting estimates of the numbers and trends of waterbird populations throughout the world. This fourth edition provides a comprehensive update on information last provided in 2002 and summarizes population data on 878 waterbird species. The data are downloadable in spreadsheet format.

<http://www.wetlands.org/event.aspx?id=318e62d4-b171-4f99-b77f-fda289041f6a>

## **INITIATIVES, JOURNALS, and MORE**

### **Climate Witness**

Climate Witness is an initiative by the World Wildlife Federation to document the direct experiences of people who are witnessing the impacts of climate change on their local environment. Some people have started to notice shifts in climate and how these changes impact on the local environment. WWF is interested to hear from you about the changes you are seeing. WWF is working with climate scientists through their Climate Witness Science Advisory Panel to establish if the impacts reported are consistent with known trends, and if these stories can be placed in the context of current scientific knowledge of human-induced climate change events in a particular region. Subject to time availability these scientists will give their expert opinion on submitted stories. If reviews are available, these will be placed under each Climate Witness story.

[http://www.panda.org/about\\_wwf/what\\_we\\_do/climate\\_change/problems/people\\_at\\_risk/personal\\_stories/index.cfm](http://www.panda.org/about_wwf/what_we_do/climate_change/problems/people_at_risk/personal_stories/index.cfm)

### **Special Days in June**

- **June: National Oceans Month**
- June: American Rivers Month
- June 2-10: National River Cleanup Week <http://www.nationalrivercleanup.org/>
- June 5: World Environment Day  
[http://www.unep.org/wed/2007/english/About\\_WED\\_2007/index.asp](http://www.unep.org/wed/2007/english/About_WED_2007/index.asp)
- 8: World Oceans Day <http://www.theoceanproject.org/wod/>