



**NATIONAL MARINE PROTECTED AREAS CENTER  
INFORMATION EXCHANGE FOR MARINE EDUCATORS**

**DECEMBER 2005**

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.

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Collected archives of the information presented in past newsletters are available at [http://www.mpa.gov/information\\_tools/education.html#InfoExchange](http://www.mpa.gov/information_tools/education.html#InfoExchange). 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 ARTICLES**

### **Politics and Socio-Economics of Ecosystem-Based Management of Marine Resources**

The journal Marine Ecology Progress Series has published 13 papers under the theme "Politics and socio-economics of ecosystem-based management of marine resources."

Although the journal is traditionally available by subscription only, this theme section is available online for free.

[http://www.int-res.com/articles/meps\\_oa/m300p241.pdf](http://www.int-res.com/articles/meps_oa/m300p241.pdf).

## **TOPIC OF THE MONTH – Environmental and Ocean Literacy**

Environmental literacy is key to preserving the nation's natural resources for current and future use and enjoyment. An environmentally literate public results in increased stewardship of the natural environment. Many organizations are working to increase the understanding of students, teachers, and the general public about the environment in general, and the oceans and coasts in particular. **Please check out the final pages of this newsletter** for some of the organizations and initiatives that are working towards improving environmental and ocean literacy in our nation and abroad. The lists are far from inclusive. Please send additional entries for inclusion in future newsletters.

Contact Phyllis Dermer at [phyllis.dermer@noaa.gov](mailto:phyllis.dermer@noaa.gov)

## **MESSAGE FROM THE BRIDGE**

### **BRIDGE Data Survey**

The BRIDGE has developed several classroom-ready activities using coastal and ocean observing system technologies and features them as the September, October, and November BRIDGE Data Activities. In order to make coastal and ocean observing systems more education-friendly, the BRIDGE has created a brief online survey asking educators to comment on observing systems and how they integrate ocean observing data into their curricula. The information collected from the survey will be used to develop additional BRIDGE resources, as well as to facilitate collaboration between educators, observing system scientists, and technology specialists. In exchange for your input, the BRIDGE is offering a reward to the first 50 respondents who provide feedback that is useful for analysis.

[http://www.marine-ed.org/bridge/survey\\_oos\\_2.html](http://www.marine-ed.org/bridge/survey_oos_2.html)

## **GRANTS AND OPPORTUNITIES**

### **Adobe Community Action Grants – Specific Locations**

Adobe Systems awards grants for one year general operating and program support to non-profit organizations and schools, which must be located in one of the following areas: San Jose/Silicon Valley, California; Seattle/King County, Washington; and Ottawa, Ontario, Canada. Focus areas include Creativity in Education and Commitment to Community. Grant deadlines are quarterly, with upcoming grant applications due by December 31, 2005.

<http://www.adobe.com/aboutadobe/philanthropy/commgivingprgrm.html>

### **Biology and Conservation of Sea Turtles Scholarships – North Carolina**

The summer course, Biology and Conservation of Sea Turtles, July 10 – August 11, 2006, in Beaufort, North Carolina, offers the essential biology of sea turtles (evolution, anatomy, physiology, behavior, life history, population dynamics) and their conservation needs, with an emphasis on the role turtles play in marine ecosystem structure and function. Competitive scholarships are available. The deadline for application for US applicants is April 1, 2006; for international applicants the deadline is February 15, 2006.

<http://www.env.duke.edu/marinelab/programs/scholarship.html>

### **Christopher Columbus Awards Program**

This annual award is sponsored by the Christopher Columbus Fellowship Foundation in cooperation with the National Science Foundation. With the help of an adult coach, students in grades 6-8 work in teams to identify a community issue and use science and technology to develop an innovative solution. The application deadline is February 13, 2006.

<http://www.christophercolumbusawards.com>

### **CiviConnections Grants for Service-Learning Projects**

The National Council for the Social Studies offers a grant to a team of three educators who teach in grades 3-12 for their support of students in linking local history inquiry with community service-learning activities. The deadline for application is February 24, 2006.

[www.civiconnections.org](http://www.civiconnections.org)

### **Coral Reef Conservation Summer Internship**

The Governor Tause P.F. Sunia Memorial Coral Reef Conservation Summer Internship Award is offered to two students from Guam, the Commonwealth of the Northern Mariana Islands, Hawai'i, American Samoa, the Freely Associated States, Puerto Rico, or the U.S. Virgin Islands. The students receive a three-month, expenses-paid summer internship working on coral reef management initiatives with NOAA. Applications are due February 17, 2006.

<http://www.centerfortropicalecology.org/Pages/StudentSupport/Practicum/S0006F212-0006F213>

Contact Beth Dieveney at [beth.dieveney@noaa.gov](mailto:beth.dieveney@noaa.gov) for more information.

### **EETAP Scholarships for Online Courses**

The Environmental Education and Training Partnership (EETAP) has a limited number of scholarships available to EE leaders interested in taking the online *Applied EE Program Evaluation* (February 20 – May 5) or *Fundamentals of EE* (February 6 – April 21) courses. The deadline for application is December 16, 2005.

<http://www.uwsp.edu/natres/rwilke/eetap/#Scholarships>

### **EDS Technology Grant Program**

Get money for computers, digital cameras, technology training, and more for your K-12 classroom with the Electronic Data Systems grant. Successful applicants must be able to demonstrate how they will innovatively use this equipment for class projects and activities. Grants are awarded to teachers and school librarians through their schools, and schools applying for a grant must be located within 50 miles of a sponsoring EDS team.

[www.eds.com/about/community/grants](http://www.eds.com/about/community/grants)

### **Graduate Fellowships in University of New Hampshire Marine Program**

The Marine Program at the University of New Hampshire is offering six graduate fellowships in the marine sciences for the summer of 2006. Fellowships are available through specific centers and cooperative institutes. The disciplinary breadth of these program/center areas will permit support for students with interests ranging from fisheries management and mariculture to coastal mapping technology and application, estuarine ecosystem health, coastal ocean observing, and more. The application deadline is February 3, 2006.

<http://marine.unh.edu/>

### **Igniting Creative Energy National Student Challenge**

The Igniting Creative Energy Challenge is an educational competition designed to encourage students to learn more about energy and the environment. Students may express their ideas in the form of science projects, essays, stories, artwork, photographs, music, video, or website projects. They may also submit recent service projects or results from Energy Patrol activities. The deadline for entry is February 18, 2006.

<http://www.ignitingcreativeenergy.org/index1.html>

### **ING Unsung Heroes Award for K-12 Educators**

ING Financial Services provides funds for K-12 teachers pioneering new methods and techniques that improve student learning. Applications are judged on innovative teaching methods, creative educational projects, and ability to make a positive influence on the children they teach. The deadline for application is May 1, 2006.

<http://www.ing.com/us/aboutING/communityconnections/ineducation/unsungheroes/index.htm>

### **Intel and Scholastic Schools of Distinction Awards**

The Intel and Scholastic Schools of Distinction awards recognize K-12 schools that demonstrate excellence in implementing innovative, replicable programs supporting positive educational outcomes. There are nine award categories, including science achievement, technology, and collaboration. The deadline for entry is January 5, 2006.

<http://www.schoolsofdistinction.com/index.php>

### **Morris K. Udall Scholarships**

Eighty scholarships are available for sophomore and junior undergraduate students studying in fields related to the environment or tribal public policy or health care and are Native American or Alaska Native. An Udall faculty representative must nominate students. The deadline for nomination is March 3, 2006.

<http://www.udall.gov/scholarship/default.asp>

### **River of Words Art and Poetry Contest**

River of Words is an international environmental poetry and art project designed to nurture respect and understanding of the natural world. The contest is open to youth ages 5-19. U.S. entries must be postmarked by February 15, 2006.

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

### **Science & Technology Policy Fellowships**

The American Association for the Advancement of Science is now recruiting for the 2006-07 Science & Technology Policy Fellowships, which begin September 1, 2006. These year-long fellowships in Washington D.C. provide scientists and engineers with a unique public policy learning experience and an opportunity to apply their knowledge and analytical skills to national and international issues in the policy realm.

Opportunities are available with Congress and more than a dozen federal agencies, including NSF, EPA, and more. The deadline for application is January 10, 2006.

<http://fellowships.aaas.org/>

### **Talent Search Program**

The purpose of the Department of Education's Talent Search Program is to identify qualified youths with potential for education at the postsecondary level and encourage

them to complete secondary school and undertake a program of postsecondary education. Eligible applicants for the program funds include institutions of higher education; public or private agencies or organizations; and combinations of institutions, agencies, and organizations. The deadline for application is January 6, 2006.

<http://www.ed.gov/legislation/FedRegister/announcements/2005-4/111405a.html3>

### **United Kingdom Scholarships for International Research Students**

Applications are encouraged from international students commencing a full time postgraduate research program at the University of Exeter in the academic session 2006-2007. Outstanding merit and research potential are the criteria required for these awards. The awards may be held in any field of study. The deadline for application is February 3, 2006.

<http://www.admin.ex.ac.uk/gradschool/ors-ers.htm>

### **Water Art Contest - Alaska**

The Alaska Department of Fish and Game invites Alaska students in grades 3-6 to participate in the annual Alaska Water Education Poster Contest. This year's theme is *Water Flowing Through Our Lives*. The entry deadline is February 25, 2006.

<http://www.sf.adfg.state.ak.us/statewide/instflow/WCentry.cfm>

## **INTERNSHIPS AND TEMPORARY OPPORTUNITIES**

### **Hutton Junior Fisheries Biology Program Internship**

The Hutton Junior Fisheries Biology Program, sponsored by the American Fisheries Society, is designed to stimulate interest in careers in fisheries science and management among groups underrepresented in the fisheries professions, including minorities and women. Students in grades 10-12 are matched with a professional mentor in their area for a paid, summer-long, hands-on experience in a marine or freshwater setting. Note that 63 students participated in 2005. The deadline for application is February 15, 2006.

<http://www.fisheries.org/html/hutton.shtml>

### **Marine Science Education Internship**

Newfound Harbor Marine Institute, a nonprofit, residential, environmental educational organization in Big Pine Key, Florida, seeks individuals to lead interpretive programs in tropical marine science for visiting schools and participate in support services required to run a residential facility. Extensive training is provided to the interns. Applicants must be at least a college sophomore with one year of college biology, working towards a degree in biological science, environmental science, or education. Currently hiring for spring 2006 (January - May)

<http://www.nhmi.org/staff.htm>

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

### **American Museum of Natural History's Seminars on Science - Online**

Deepen your knowledge with Seminars on Science courses from the American Museum of Natural History. Winter 2006 registration is open until January 2, 2006, with classes held from January 16 – February 26, 2006. Offerings include the integrated science

course on the Ocean System, the Diversity of Fishes, and more. All courses are taught by museum scientists and educators, and highlight cutting-edge research.

<http://learn.amnh.org/courses/courses.php>

### **Education Programs for Youth: School's Out! – West Virginia**

This three-day course from the Fish and Wildlife Service, March 20-22, 2006 in Shepherdstown, West Virginia, presents participants with the elements of designing outdoor programs for youth in a non-formal setting, such as wildlife refuges, parks, and elsewhere. The course offers opportunities to create or modify natural resource focused youth programs and staff training for these programs that help to address site missions and/or management objectives. Participants will use a program design model to work on their own youth program during the course, then complete and implement it as a required post-course assignment. Apply on-line (program OUT 8162) or contact Georgia Jeppesen at [Georgia.jeppesen@fws.gov](mailto:Georgia.jeppesen@fws.gov) for an application. The registration deadline is January 23, 2006.

<http://training.fws.gov/applic.html>

### **Environmental Communication for Behavior Change - Online**

This course, from January 17 – February 24, 2006, provides environmental professionals with a practical introduction to the strategies, methods, and tools of environmental communication that effectively lead to changes in behavior. The field-based skills gained through this course will benefit all practicing environmental professionals faced with the challenge of changing behaviors. The course is facilitated by the Duke Environmental Leadership Program. The registration deadline is December 30, 2005.

<http://www.nicholas.duke.edu/del/continuinged/envcommunication.html>

### **Great Barrier Reef Study Program - Australia**

The Great Barrier Reef Study Program offers field intensive, academic short courses providing students the opportunity to undertake field-based experiential learning in Queensland's marine environment. The courses are offered in the Australian mid-year semester break (June to August), during the northern hemisphere summer, in a classroom which includes the Great Barrier Reef and Moreton Bay Marine Parks. Courses include coral reef ecosystems, marine neurobiology, coastal resource management, and more. Apply by February 4, 2006.

<http://www.cms.uq.edu.au/GBRSP/whatis.htm>

### **Holbrook Global Field Expeditions**

Holbrook Global Field Expeditions partners with organizations such as the Jean-Michel Cousteau Ocean Futures Society, the Geological Society of America, Project Wet, and others to offer a series of international professional development workshops. Designed for K-16 instructors, the workshop participants experience environments and communities around the world, while covering new techniques and applications within science curriculum and instruction. The programs are designed to support the bridge between field inquiry and the full incorporation of new themes and topics in the classroom, providing educators a highly motivational and content-rich opportunity to experience the world.

<http://holbrooktravel.com/educationexpeditions>



### **Informal Science Education Association of Texas Conference**

The Texas Informal Science Education Association is preparing for its 2006 annual conference, February 22-24, 2006, in Junction, Texas. Members provide unique learning environments that increase appreciation and understanding of science, mathematics, and technology and their applications through voluntary and often self-directed experiences for individuals of all ages and backgrounds.

<http://www.statweb.org/ISEA/>

### **International Conference on School and Popular Meteorological and Oceanographic Education**

The seventh International Conference on School and Popular Meteorological and Oceanographic Education will be held July 3-7, 2006 in Boulder, Colorado. Abstracts are due February 15, 2006. Abstracts for workshops and demonstrations featuring hands-on activities for educators, students, and the public are of particular interest.

<http://www.ametsoc.org/meet/fainst/ewoc2006.html>

### **Key to the Sea Teacher Workshop - California**

*Key to the Sea* is a marine environmental education program designed for teachers and elementary school children throughout Los Angeles County. At this workshop on January 7, 2006 in Santa Monica, California, teachers will receive a free curriculum guide aligned to state standards, supply-filled tote bag, and more. After the workshop, teachers can then take their students on a field trip to the beach where they will learn about stormwater pollution prevention and marine conservation through hands-on educational activities on the sand and at one of the four partnering aquariums.

<http://www.healthebay.org/key2sea>

### **Managing Risk in the 21<sup>st</sup> Century**

This forum on earth observations will be held February 15-16, 2006 in La Jolla, California. The theme is how to manage environmental and economic risk in the 21st century. This event brings together businesses, academia, government, and nongovernmental organizations. Education and outreach should be essential components of these initiatives.

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

### **North Cascades Institute Birding Seminars - Washington**

The North Cascades Institute offers a variety of winter birding seminars. Led by experienced naturalists, most seminars are one day with transportation provided. The three-day retreat not only addresses birds but looks at Skagit Delta winter ecology, land use and habit conservation by landowners.

- January 7, 2006: Bald Eagles and Salmon of the Skagit River
- January 14-16, 2006: Skagit Delta Naturalists Retreat: Lowlands, Rich Lands
- January 21, 2006: Winter Birds of the Skagit and Samish Deltas
- February 4, 2006: Water Birds of Bellingham Bay aboard the Snow Goose
- February 5, 2006: White Birds of Winter
- February 11, 2006: Trumpeter Swans: Ecology and Conservation

<http://www.ncascades.org>

### **Project Soundwise Teacher Workshops - Connecticut**

Schooner Inc. offers Project Soundwise, a marine education curriculum, to New Haven area schools. This hands-on curriculum covers a variety of topics including oceanography, water chemistry, and marine biology. With funding from the NewAlliance Foundation, they are offering free teacher workshops and educational resources. Two workshops will take place, on December 13, 2005 and January 24, 2006, in New Haven, Connecticut. In addition, the 71 foot schooner Phoenix will be at the Long Wharf Dock in New Haven during the summer, and may be available for use.

Contact Heather Blankenstein at [educator@schoonerinc.org](mailto:educator@schoonerinc.org)

### **Restore America's Estuaries National Conference**

The program committee invites you to submit a proposal for a dedicated session for the Restore America's Estuaries 3rd National Conference, *Forging the National Imperative*, to be held December 9-13, 2006, in New Orleans, Louisiana. Dedicated sessions generally consist of three or four presenters sharing best practices and lessons learned within one or more of the conference themes and topics, must include multiple perspectives, and are strongly encouraged to address multiple aspects of restoration within the chosen topic. Themes include education and outreach, human dimensions of restoration, measuring and communicating results, and more. The deadline for submission of a proposal for the dedicated session is February 15, 2006. A general call for proposals will be available soon.

<http://www.estuaries.org/?id=4>

### **Student Conference on Conservation Science**

The Nicholas School of the Environment and Earth Sciences at Duke University will host the Student Conference on Conservation Science, March 15-17, 2006, in Durham, North Carolina, aims to build links among young conservation scientists from biological, environmental, and geography, departments of universities as well as conservation and resource management agencies. Attendees will include students from around the world, as well as conservation practitioners from leading U.S. and international conservation groups. The submission deadline for presentations is December 16, 2005. A small number of scholarships may be available for students from Central or South American countries.

<http://www.nicholas.duke.edu/scs/>

### **Taking Conservation to the Public Workshop - California**

The American Cetacean Society and Blue Ocean Society for Marine Conservation will be co-hosting a workshop in conjunction with the Society of Marine Mammology's biennial conference on December 10, 2005 in San Diego, California. The workshop, *Taking Conservation to the Public: Strategies for Getting the Message out there*, will be discussion-based to allow participants to discuss how they connect people to their experiences in conservation.

<http://www.blueoceansociety.org/workshop/>

### **Waterfowl Workshop - Georgia**

Learn to identify the many species of waterfowl that find their way each winter to the ponds, reservoirs and wetlands of the Clayton County Water Authority in metro Atlanta, February 04, 2006, in Hampton, Georgia. Naturalist and Audubon field trip leaders will discuss the species, their habitat requirements and migration patterns, with resource materials. The majority of time will be spent in field observation and learning identification techniques.



<http://eeingeorgia.org/net/calendar/details.aspx?c=28017&s=36190.0.68.4863>

## **EDUCATIONAL RESOURCES**

### **AmphibiaWeb**

AmphibiaWeb is an online system created in conjunction with the Digital Library Project at the University of California, Berkeley, enabling search and retrieval of information relating to amphibian biology and conservation. Their ambitious goal is to establish a "home page" for every species of amphibian in the world; they hope to accomplish this with the help of volunteers and specialists. The website offers general background information about amphibians, species vulnerability, links to additional websites, and more.

<http://elib.cs.berkeley.edu/aw/index.html>

### **Bay Grasses in Classes**

The Bay Grasses in Classes project is a joint partnership with the Maryland Department of Natural Resources and the Chesapeake Bay Foundation. Since its inception in 1998, over 1,269 classes and 32,000 students have been involved with Bay Grasses in Classes. During this time students have planted over 2.5 acres of bottom surface in the Bay with the 425,000 plants grown in their classrooms. The website includes maps, photos, and classroom activities.

[http://www.dnr.state.md.us/bay/sav/bgic/grass\\_class.html](http://www.dnr.state.md.us/bay/sav/bgic/grass_class.html)

### **Career Guides List**

This one-page website from the Scripps Institution of Oceanography Library offers a list of resources for those looking for information about careers in oceanography, marine science, and marine biology. The directory is divided into three sections: general guides for oceanography and marine science; guides for marine biology, marine mammals, zoos and aquariums; and other guides covering all of science.

<http://scilib.ucsd.edu/sio/guide/career.html>

### **Benthic Habitats and the Effects of Fishing**

This 890-page book from the American Fisheries Society Symposium 41 offers an understanding of the effects of fishing activities on benthic habitats necessary to address the pressing issues of habitat alteration that challenge managers, practitioners, and ocean scientists. Complimentary copies may be available in limited quantities while they last from the National Marine Fisheries Service, Office of Habitat Conservation; contact Dr. James Thomas at [james.thomas@noaa.gov](mailto:james.thomas@noaa.gov). They are also available for purchase from the American Fisheries Society's website.

<http://www.fisheries.org/html/publications/catbooks/x54041.shtml>

### **Biodiversity and Conservation**

This book is by Peter J. Bryant of the School of Biological Sciences, University of California, Irvine. The book covers the origin, nature and value of biological diversity, threats to its continued existence, and approaches to preserving what is left. The book itself is on-line, and most of the links leave the book in order to take advantage of documents produced and updated elsewhere. Ocean resources are covered, with chapters on whaling and fishing, endangered aquatic habitats, and islands.

<http://darwin.bio.uci.edu/~sustain/bio65/Titlepage.htm>

### **Bonneville Power Administration's Resources for Teachers**

The Bonneville Power Administration offers lessons on energy conservation, water and electricity, stream environments and stream health, aquatic macroinvertebrates, and the life cycle of salmon. High school students can conduct an energy audit of their school. The website must have undergone a recent update – note that some of the links aren't working, but a Google™ search finds the materials.

<http://www.bpa.gov/Corporate/KR/ed/page6.htm>

### **Christmas Bird Count**

The Audubon Christmas Bird Count, December 14, 2005 – January 5, 2006, is part of the oldest and largest citizen science event in the world. For over a hundred years, people have gathered together during the winter holiday season to count birds. Your local count will occur on one day between those inclusive dates. Check out the lesson plans at the North American Bird Project.

<http://www.audubon.org/bird/cbc/getinvolved.html>

<http://birdcentral.net/lessonplans.htm>

### **Cool Science**

The National Energy Technology Laboratory's Cool Science website offers lessons and experiments on a range of energy-related topics including carbon dioxide sequestration, phytoremediation, environmental management, and more.

<http://www.netl.doe.gov/coolscience/teach.html#LESSONPLANS>

### **Environmental Education for Kids**

The Wisconsin Department of Natural Resources offers the EEK! website for kids and teachers, grades 4-8. A quick review shows that Nature Notes includes information about habitats and phenology; Our Earth covers water wonders, invasive and endangered species; Career Zones introduces park naturalists and hydrogeologists; and the Teacher Pages have activities and educational resources. The website is formatted for the younger student and includes plenty of useful information.

<http://www.dnr.state.wi.us/org/caer/ce/EEK/index.htm>

### **Excellence in Environmental Education – Guidelines for Learning**

The National Project for Excellence in Environmental Education, an initiative of the North American Association for Environmental Education (NAAEE), has recently revised and reprinted Excellence in Environmental Education – Guidelines for Learning (Pre K-12) and its companion publications, Excellence in Environmental Education – Guidelines for Learning (Pre K-12) Executive Summary and Self Assessment Tool. The guidelines provide a common framework for promoting environmental literacy and support state and local environmental education efforts by setting expectations for performance and achievement in grades 4, 8, and 12. For more environmental initiatives, see the section at the end of this newsletter.

<http://naaee.org/pages/npeee/>

### **Fire eFieldTrip**

The Bureau of Land Management has sponsored an eFieldTrip on Fire's Role in Ecosystems: A Hot Topic! The trip takes place from the National Interagency Fire Center in Boise, Idaho. The program has four major components: a virtual visit, a trip journal worksheet, ask the experts, and a live webchat. Archives of the questions and answers are posted on the website.

[www.eFieldTrips.org](http://www.eFieldTrips.org)

### **Fish Olympics**

This interactive website allows kids to learn about different species of fish and their areas of expertise. It's up to the students to guess who the winners will be in each of 4 categories, based on what they learn as they go.

<http://www.liverpoolmuseums.org.uk/nof/fish/index.html>

### **Human Dimension Wheel**

The Coastal Services Center has created an educational tool called the "Human Dimension Wheel." It provides information about many of the social science tools used to address coastal resource management issues. It's a good way to introduce your students to the benefits of understanding the human dimensions of resource management.

[http://ekman.csc.noaa.gov/socialscience\\_2/wheel.jsp](http://ekman.csc.noaa.gov/socialscience_2/wheel.jsp)

### **Marine and Ocean Sciences ePrints @ Plymouth**

The Marine and Ocean Sciences ePrints @ Plymouth is a digital archive providing access to papers produced by the staff of the Marine Biological Association of the United Kingdom, Plymouth Marine Laboratory, and the Sir Alister Hardy Foundation for Ocean Science. Articles from 1887 to 1938 have been loaded so far, along with a few more recent additions. You can run searches and access the full text at sabella, or download a particular document by following the links from the second website.

<http://sabella.mba.ac.uk>

[http://www.mba.ac.uk/nmbi/publications/pub\\_lists/publications.htm](http://www.mba.ac.uk/nmbi/publications/pub_lists/publications.htm)

### **Marine Debris CDs**

The University of Hawai'i Sea Grant College Program and the NOAA Fisheries/Pacific Islands Fisheries Science Center/Coral Reef Ecosystem Division have produced *Marine Debris of the Northwestern Hawaiian Islands: Ghost Net Identification* in an effort to increase public awareness of the Northwestern Hawaiian Islands derelict fishing gear problem. This 2-disc set includes a CD document on marine debris in the Northwestern Hawaiian Islands and a narrated DVD slide show presentation that illustrates the magnitude of the marine debris problem in the NWHI and focuses on the removal process through the eyes of a marine debris diver.

Contact Kerry Irish [irish@hawaii.edu](mailto:irish@hawaii.edu) or Molly Timmers at [molly.timmers@noaa.gov](mailto:molly.timmers@noaa.gov)

<http://www.nmfs.hawaii.edu/cred/mdr.php>

### **NASA Education Website**

The NASA education pages have been updated and can be launched from the new website homepage. Basic navigation includes news, sections for kids, students, and educators, and education programs. The site includes a search engine, which will help you find programs included in previous *Information Exchange* newsletters. Check out Windward, a simulation game that challenges students to outsmart the weather to win a sailboat race around the world.

<http://education.nasa.gov/home/index.html>

### **National Service-Learning Clearinghouse**

The National Service-Learning Clearinghouse offers this website supporting the service-learning efforts of schools, higher education institutions, communities, and tribal nations. Find information and relevant resources, free online resources, a library of service-learning materials, reference and technical assistance services, and more.

<http://www.servicelearning.org/index.php>

### **Nonpoint Source Pollution Discovery Kit**

A new Discovery Kit on nonpoint source pollution has been added to the NOS Discovery Center. The website includes a tutorial describing the categories of nonpoint source pollution, the various pollutants that originate from nonpoint sources, and research and monitoring efforts; links to online resources; and lesson plans designed to be used at the high school level.

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

### **OceanAGE Careers**

NOAA Ocean Explorer is currently hosting another *Ocean Careers to Inspire Another Generation of Explorer*. Through December 9, 2005, they are featuring four scientists from the Deep Atlantic Stepping Stones Expedition and the Lost City Expedition. Dr. Peter Auster, a Fish Ecologist/Conservation Biologist from the University of Connecticut and Dr. Timothy Shank, Associate Scientist from Woods Hole Oceanographic Institution studied seamount chains to help understand the distribution of deep-sea biodiversity during their mission to the North Atlantic. Dr. Robert Ballard and Dr. Deborah Kelley, Professor at the University of Washington use telepresence science, which uses satellites to view and analyze data without being on a ship at sea. Join these scientists for live web chats.

<http://oceanexplorer.noaa.gov/edu/oceanage/welcome.html>

### **Professional Development Guidelines for Environmental Education**

Developed by the National Project for Excellence in Environmental Education, the recently revised "Guidelines for the Preparation and Professional development of Environmental Educators" is a resource to help you design and implement effective high-quality EE professional development programs. For more environmental initiatives, see the section at the end of this newsletter.

[www.naaee.org/npeee](http://www.naaee.org/npeee)

### **Rivers to Reef**

The Rivers to Reef segment of the Gray's Reef Ocean Science Course is now available. It includes a DVD of a feature length program that describes the Altamaha River Watershed and its direct influence on Gray's Reef. The DVD program features underwater footage of Gray's Reef and of inland areas through which the river flows as well as interviews with key players in studying the various links of the watershed. The package also includes a manual of background information and activities that can easily be conducted in the classroom with minimal materials.

Contact Cathy Sakas at [Cathy.Sakas@noaa.gov](mailto:Cathy.Sakas@noaa.gov)

### **Science and Photography through the Microscope**

Dennis Kunkel Microscopy, Inc. presents the Microscopy and Science Education Web Site. This site provides both a fine image bank for general use and general information about the art and science of this scientific field. The education image library database allows you to browse the contents by category or perform a search. Educators and students may request permission for image use through the website.

<http://education.denniskunkel.com/>

## **Sustainability in New Zealand**

Learn about the *Kaitiakitanga* (safeguarding the future) educational and environmental restoration programs; *Tipu Ake*, self-help resources for leadership development, organizational transformation, and sustainability; and Enviroschools in New Zealand.

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

<http://www.tipuake.org.nz/>

<http://www.enviroschools.org.nz/>

## **Water Wonders**

The Wisconsin Department of Natural Resources offers *Water Wonders*, environmental education for young kids (K-3) and their teachers. Topics include the water cycle, groundwater and water facts, and conservation tips. There are also word searches and quizzes.

<http://www.dnr.state.wi.us/org/caer/ce/eeek/earth/groundwater/index.htm>

## **INITIATIVES and MISCELLANEOUS**

### **2006 Calendars**

Check out the following calendars for your holiday gift-giving, and support the education and outreach of these organizations. Don't forget to check out other favorite organizations for their holiday offerings.

- Mangrove Action Project: [http://www.earthisland.org/map/calendar\\_2006.html](http://www.earthisland.org/map/calendar_2006.html)
- Seas the Day: <http://seastheday.theoceanproject.org/seastheday/order/>
- National Marine Sanctuary Foundation:  
<http://www.ideas4adv.com/nmsf/catalog.cfm>
- Watchable Wildlife:  
<http://secure.watchablewildlife.org/tek9.asp?pg=products&specific=inqmqs0>

### **Before and After Disasters: Federal Funding for Cultural Institutions**

This guide is intended to help cultural institutions prepare for emergencies and disasters that may strike their regions. The latest version of the report, prepared by FEMA and the National Endowment for the Arts, provides summary descriptions and contact information for 15 federal grant and loan programs and additional sources of federal assistance for preparedness, mitigation, and response. Within each resource listing, the report also provides information on which activities might be eligible for support and a listing of potential award amounts.

<http://www.arts.gov/pub/DisasterRecovery.pdf>

### **Teacher Tax Deduction for Classroom Expenses**

The recent tax legislation signed into law by President Bush includes an extension of the tax deduction for teachers for the first \$250 "out-of-pocket" expenses spent on instructional materials and classroom supplies. Remember to keep receipts for classroom materials purchased so that you can take the deduction come tax time.

<http://www.nea.org/lac/edtax/index.html>

## **ENVIRONMENTAL AND OCEAN LITERACY**

Environmental literacy is key to preserving the nation's natural resources for current and future use and enjoyment. An environmentally literate public results in increased stewardship of the natural environment. Many organizations are working to increase the

understanding of students, teachers, and the general public about the environment in general, and the oceans and coasts in particular. The following are just some of the large-scale and regional initiatives which seek to provide standards and guidance for our educational efforts and form partnerships to reach broader audiences. (In the interest of brevity, please forgive the abbreviations, the abbreviated lists of collaborators, and the lack of mention of funding institutions). The lists are far from inclusive. Please send additional entries for inclusion in future newsletters. Contact Phyllis Dermer at [phyllis.dermer@noaa.gov](mailto:phyllis.dermer@noaa.gov)

### **Background Documents**

*Environmental Literacy in America* - What 10 Years of NEETF/Roper Research and Related Studies Say About Environmental Literacy in the U.S.

<http://www.neetf.org/pubs/index.htm>

*The U.S. Commission on Ocean Policy* devoted a full chapter on promoting lifelong ocean education, *Ocean Stewardship: The Importance of Education and Public Awareness*. It reviews the current status of ocean education and provides recommendations for strengthening national educational capacity.

[http://www.oceancommission.gov/documents/full\\_color\\_rpt/08\\_chapter8.pdf](http://www.oceancommission.gov/documents/full_color_rpt/08_chapter8.pdf)

### **Environmental and Ocean Literacy and Standards**

*Mainstreaming Environmental Education* – The North American Association for Environmental Education is involved with efforts to make high-quality environmental education part of all education in the United States and has initiated the National Project for Excellence in Environmental Education. Here are some of the products and initiatives:

- *National EE Certification Initiative* - NAAEE and EETAP are collaborating to explore development of a national certification program for environmental educators.
- *NCATE/NAAEE Program Standards for the Initial Preparation of Environmental Educators* – (in development) to be used by NCATE in their accreditation process of college/university teacher education programs across the country.
- *Higher Education Faculty and Program Directory Development* - electronic directory of EE programs and faculty in the college and university setting (with the National Council for the Accreditation of Teacher Education) - on-line in 2006.
- *Resource Review Program* for educational resources
- Guidelines, including *Environmental Education Materials*, *Nonformal Environmental Education Programs*, *Preparation and Professional Development of Environmental Educators*, and more.

<http://naaee.org/>

*Science Content and Standards for Ocean Literacy* is a product of workshops sponsored by National Geographic, NOAA, COSEE, NMEA, and the College for Exploration. It describes and presents essential principles and fundamental concepts for creating an ocean literate world and aligns them with the National Science Education Standards.

<http://www.coexploration.org/oceanliteracy/index.html>

### **Collaborations and Networks**

*American Zoo and Aquarium Association* members are providers of animal care, conservation, and public education about wildlife, providing the highest standard of



animal care while offering events and activities to help visitors understand how everyone can help keep our oceans and waterways safe.

[www.azasweb.com](http://www.azasweb.com)

*The Centers for Ocean Sciences Education Excellence* is a network of seven regional centers that act locally and regionally, as well as think and act nationally. The goals of COSEE are to promote partnerships between research scientists and educators; to disseminate effective ocean sciences programs; and to promote ocean education to create a more scientifically literate workforce and citizenry.

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

*Coastal America's* designated Coastal Ecosystem Learning Centers (CELCs) comprise a network of informal education institutions. Federal partners provide CELCs with information, expertise, and research vessel access for community education programs. The CELCs educate and involve the public in protecting our ocean ecosystems and coordinate community action projects.

<http://www.coastalamerica.gov>

*The Environmental Education and Training Partnership* is a consortium of leading national EE organizations, delivering environmental education training and support to education professionals for the purpose of increasing public knowledge about environmental issues, and enhancing the critical thinking skills necessary for individuals and their communities to make responsible environmental decisions.

<http://eetap.org/>

*The Federal Task Force on Environmental Education*, chaired by the EPA, facilitates communication and collaboration among federal agencies and departments that have common interests in supporting and implementing EE programs with emphasis on supporting joint interagency EE projects that leverage both federal and non-federal dollars.

<http://www.epa.gov/enviroed/ftfee.html>

*The Global Learning and Observations to Benefit the Environment (GLOBE)* is a worldwide network of students, teachers, and scientists working together to study and understand the global environment.

[http://www.globe.gov/globe\\_flash.html](http://www.globe.gov/globe_flash.html)

*National Geographic Oceans for Life Internet Network* - this website offers education resources, news, discussion and more on ocean literacy and bringing the ocean into the classroom.

<http://www.ngsednet.org/oceans>

*National Marine Educators Association*, affiliated with NSTA and the American Association for the Advancement of Science, brings together those dedicated to teaching and learning about the world of water, providing a focus for marine and aquatic studies world-wide. NMEA members are educators and scientists from K-12 classrooms, colleges and universities, museums, aquariums, research science centers, government agencies, and conservation organizations from 17 regional U.S. chapters and from 13 other countries. NMEA promotes awareness, appreciation, and conservation of our aquatic environment.

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

National Oceanic and Atmospheric Administration's mission is to provide science, service, and stewardship to meet the nation's economic, social, and environmental needs. Creating an environmentally literate public is vital to NOAA meeting its mission and supports numerous educational materials and programs for students of all ages.

[www.education.noaa.gov](http://www.education.noaa.gov)

*The National Oceanographic Partnership Program* is a collaboration of fifteen federal agencies to provide leadership and coordination of national oceanographic research and education initiatives. Since 1997, NOPP has invested \$150M to support over 90 research and education projects involving roughly 200 public and private institutions, with comparable in-kind support from the research and education community.

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

*The Ocean Project* works with its broad network of zoos, aquariums, museums and other conservation-oriented organizations to enhance ocean awareness among the public; change attitudes and behaviors for conservation; increase civic involvement in community conservation activities; and generate regional and national policy-focused action. Using values-based communications strategies and tools, their *Seas the Day* initiative promotes ocean awareness and encourages people to take action.

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

*Ocean.US*, the National Office for Integrated and Sustained Ocean Observations was created by NOPP to coordinate the development of an integrated ocean observing system, and includes education and outreach.

<http://www.ocean.us>

*The United Nations Decade of Education for Sustainable Development* - the overall goal is to integrate the principles, values, and practices of sustainable development into all aspects of education and learning to encourage changes in behavior that allow for a more sustainable and just society for all.

[http://portal.unesco.org/education/en/ev.php-URL\\_ID=27234&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/education/en/ev.php-URL_ID=27234&URL_DO=DO_TOPIC&URL_SECTION=201.html)

### **Web Portals**

*The Bridge*, supported by Sea Grant and an official partner of COSEE and NMEA, is a clearinghouse for K-12 ocean science education websites. It includes professional development, lesson plans, ocean science research data, links to aquariums and research institutions, and career information.

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

*The Digital Library for Earth System Education* is an online library of web-based resources at all educational levels for teaching and learning about the Earth as a system. It can be searched by keyword, grade level, resource type, collection, and by national standards, both NSES and National Geography standards.

<http://www.dlese.org>

*EE-Link* from NAAEE provides electronic access to environmental education programs, professional development, jobs, events, organizations and other resources.

<http://eelink.net/>

NASA's *OceanLiteracy.Org* website is dedicated to helping those interested in the development of a populace knowledgeable about our oceans, to find resources that will assist toward that goal.

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

*The National Science Digital Library* is an online library for education and research in science, technology, engineering, and mathematics.

<http://nsdl.org/>

### **Regional Initiatives**

*The Online Guide to Environmental Education in Georgia* provides EE lesson plans based on state standards, a searchable database of Georgia's EE organizations and the resources they offer, a statewide calendar of EE events, monthly e-newsletter, and easy-to-access facts about Georgia's environment. A customized web system for seven additional southeastern states is in development.

<http://www.EEinGeorgia.org>

*Minnesota's Environmental Literacy Scope and Sequence* provides a systems approach to environmental education in Minnesota for pre-K through adult learners. The SEEK website provides a directory of environmental education resources.

[http://www.seek.state.mn.us/eemn\\_c.cfm](http://www.seek.state.mn.us/eemn_c.cfm)

*Ocean Revolution* is a bilingual, international youth-oriented program designed to connect and inspire a new wave of ocean advocates.

<http://www.oceanrevolution.org>

*Public ocean literacy for southern California* - The Aquarium of the Pacific, in partnership with CORE, has begun a project to identify and prototype the best strategies to engage the public in learning about the ocean through a regional initiative based at the aquarium. Initial workshops have been held with scientists and educators, with the workshop findings to be used to engage the general public through education, exhibitry, and the media. Contact Adam Lau at [alau@lbaop.org](mailto:alau@lbaop.org)