



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

APRIL 2005

This update is provided as a service 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 in the MPA Information Exchange.

The information included here has been compiled from many different sources, including SeaSpan, NSTA Express, edinfo at FREE, EE-NEWS@NAAEE, CREEC, Scuttlebutt, EEinGEORGIA, the Scout Report, 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://www.mpa.gov/information\\_tools/education.html#InfoExchange](http://www.mpa.gov/information_tools/education.html#InfoExchange). Contact the MPA Center's education coordinator 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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### **MPA Virtual Library**

The National Marine Protected Areas Center, in collaboration with the NOAA Central Library, hosts the MPA Virtual Library to facilitate access to information on MPAs. The MPA Virtual Library serves as a searchable database of print, electronic, and web-based resources on U.S. and international marine protected area issues.

The resources described and linked to in the MPA Library are organized into four basic collections:

- Bibliography (books, reports, journal articles, conference proceedings, etc.)
- Conferences and Workshops (descriptions of and links to MPA conference web sites)
- Institutions and Organizations (descriptions of functions with useful links to Federal/National, State, Multistate, Academic & Research, Nongovernmental and International sites)

- Web Sites (descriptions and links to sites/pages offering bibliographies, GIS tools, international information, legislation, listservs and online discussions, multimedia, news/newsletters, and projects)

The MPA Library is searchable by collection type, author, title, date, or keyword, and also features a browsable set of keywords to help with selection of search terms.

(Provided courtesy of Kathy Kelly, MPA Librarian, NOAA Central Library)

[http://www2.mpa.gov/mpa/mpaservices/virtual\\_library/virtual\\_library.lasso](http://www2.mpa.gov/mpa/mpaservices/virtual_library/virtual_library.lasso)

### **Notable MPA Literature**

#### **Marine Sanctuaries Issue of *Current***

The education program of NOAA's National Marine Sanctuary Program is featured in the upcoming quarterly issue of the National Marine Educators Association's *Current: The Journal of Marine Education* (Volume 21, Number 1, 2005). The issue illustrates how national marine sanctuaries serve as living classrooms where learners of all ages can see, touch, and learn about America's ocean and Great Lakes treasures. Education programs specifically highlighted include student environmental monitoring, maritime heritage education, bringing NOAA data, science, and images to classrooms and homes through "Telepresence," and more.

Contact Michiko Martin at [Michiko.Martin@noaa.gov](mailto:Michiko.Martin@noaa.gov)

#### **Fisheries sustainability via protection of age structure and spatial distribution of fish populations**

An article on fisheries sustainability asserts that interconnected networks of marine reserves are the best way to ensure old-growth age structure and complex spatial structure in groundfish populations.

<http://www.fisheries.org/html/fisheries/F2908/F2908p23-32.pdf>

Berkeley, Steven A. et al., "Fisheries sustainability via protection of age structure and spatial distribution of fish populations", *Fisheries* 29, 8 (August 2004): 23-32.

Main MPA Library URL:

[http://www2.mpa.gov/mpa/mpaservices/virtual\\_library/virtual\\_library.lasso](http://www2.mpa.gov/mpa/mpaservices/virtual_library/virtual_library.lasso).

## **INITIATIVE OF THE MONTH**

### **Promoting Lifelong Ocean Education Using Ocean Observing Systems**

Ocean Observing Systems, both in-water and space-based, are becoming a reality. The ocean education community has begun to plan for the application of these systems' assets to science and technology learning for citizens of all ages, ethnicities, and locales and in learning environments from classrooms to sanctuaries to media. Two newly published workshop reports provide a comprehensive set of recommendations.

The report, *Promoting Lifelong Ocean Education: Using the Integrated Ocean Observing System (IOOS) to Shape Tomorrow's Earth Stewards and the Science and Technology Work Force* (<http://www.ocean.us/documents/workshop.jsp>) focuses on strategic structures and functions to unite ocean science education and to expand the impact of the education efforts. The ORION Ocean Research Interactive Observatory Network report ([http://www.geo-prose.com/projects/orion\\_report.html](http://www.geo-prose.com/projects/orion_report.html)) addresses strategic

structures and also includes categories of individual education efforts that can be carried out using ocean observing systems. An example of a recommended strategic structure is an education network with regional offices and a national coordinating office, while an example category is citizen science projects.

Lighthouse projects that identify and illuminate the path for future observatory allied education projects are underway across the country. Some projects address use of these data streams in informal learning environments frequented by the public such as science centers and aquaria; others focus on training practitioners with placed-based management responsibilities in the use of these data for decision making; and still others focus on classroom learning of students and educators. Two examples of classroom learning that address the National Science Education Standards are the Gulf Stream Voyage and the DataStreame Oceans programs. Both are on-line, inquiry-and-standards based learning programs that incorporate continuous streams of data from ocean observing systems.

The Gulf Stream Voyage (<http://www.k12science.org/curriculum/gulfstream>) is a comprehensive set of learning materials with lessons and activities targeted to specific grade levels in grades 6-12, with additional materials for educators to deepen their understanding of the science concepts in the lessons. Data are from both in-water and space-based ocean observing platforms. DataStreame Oceans (<http://66.208.12.20/amsedu/DS-Ocean/home.html>), on the other hand, is an educator professional development program and an educator support network offered as an on-line course through institutions of higher education and supported by the American Meteorological Society.  
<http://www.ocean.us/>

## **CONFERENCE OF THE MONTH**

### **Maritime Heritage Education Conference**

The Maritime Heritage Education Conference will be the first of its kind to bring formal and informal educators together to promote the sharing of maritime heritage related education partnerships, programs and products. The conference will take place November 18-20, 2005 at Nauticus: the National Maritime Center in Norfolk, Virginia.

Our nation was settled via the oceans, lakes, oceans, lakes, rivers and streams that run through our vast land. Maritime heritage celebrates the unique traditions we have created through the connections to our coasts. The stories and traditions passed on from generation to generation help us to better learn how we must sustain that heritage to create a better future for us all.

Come together with participants from all over the country for guest plenary speakers, concurrent sessions, a book room, and social gatherings related to the following maritime heritage topics:

- Lighthouses/lifesaving stations,
- Whaling and fishing heritage,
- Native canoe cultures,
- Shipping and port heritage,
- Shipboard education programs, and

- Shipwrecks and other submerged sites.

<http://www.sanctuaries.noaa.gov/education/mhec/welcome.html>

## **REQUESTS**

### **NASA Product Review**

The NASA Science Mission Directorate-Earth Science education review occurs every six months and includes formal and informal education products. The notice of intent to submit is due April 14, 2005, and products are due by May 2, 2005.

[http://www.strategies.org/SMD\\_EarthScienceReview/Call\\_Sum2005.htm](http://www.strategies.org/SMD_EarthScienceReview/Call_Sum2005.htm)

### **Seeking Reviewers for Conference Proposals**

Due to the overwhelming response to their call for proposals, the North American Association of Environmental Educators (NAAEE) continues to seek reviewers of proposals for sessions at the 34th Annual Conference. Reviewers will be able to evaluate proposals on-line following established criteria.

<http://naaee.org/conferences/call4reviewers.php>

### **Seeking Teacher Review - Oceanography for 6th Graders**

Dan Logan has developed an oceanography course for 6th graders. It includes classroom materials, homework, and laboratory assignments. He would like to put it in a format useable for teachers or guest lecturers (e.g. CD or notebook) for ease of use in a classroom.

Contact Dan Logan at [dan.logan@noaa.gov](mailto:dan.logan@noaa.gov)

### **Seeking Sailing School Vessel Collaborations**

Todd Brennan of the Sailing School Vessel *Denis Sullivan* seeks educational program development opportunities for their vessel. The *Dennis Sullivan* is a platform for experience-based education and scientific research in the Great Lakes, Atlantic Ocean, Caribbean Sea, and Gulf Stream Islands. She represents a link to the past, but as a fully equipped, state of the art science based vessel she also represents a link to the future. The vessel stops at various locations along the Atlantic seaboard and Todd is interested in collaborating with educators to extend their programming potential.

Contact Todd Brennan at [tbrennan@pierwisconsin.org](mailto:tbrennan@pierwisconsin.org)

## **GRANTS AND OPPORTUNITIES**

### **Alaska Native Education Program Funds**

The purpose of this program is to develop and support supplemental educational programs to benefit Alaska Natives. Permissible activities under this program include development and implementation of plans, methods, and strategies to improve the education of Alaska Natives; curricula and educational programs; professional development activities for educators; and more. Application deadline is April 18, 2005.

<http://www.ed.gov/legislation/FedRegister/announcements/2005-1/030305b.html>

### **American Birding Association Youth Scholarships**

The American Birding Association provides scholarships to help young people who are interested in birds to attend summer camps, workshops, conventions, and other bird-related activities. Application deadline is April 30, 2005.

<http://americanbirding.org/yb/schol/index.html>

### **Dominian Foundation K-12 Grants**

The Dominion Foundation, the giving arm of energy producer Dominion, will award educational partnership grants in their five-state service area, to encourage the development of new education programs in grades K-12. One of the targeted areas for program development is environmental education. The deadline for application is May 2, 2005.

<http://www.dom.com/news/dom2005/pr0228.jsp>

### **Environmental Literacy Grants**

NOAA's Office of Education and Sustainable Development is soliciting proposals for environmental literacy projects. Applications are due May 12, 2005. Funded projects will further NOAA's education goals articulated in the NOAA Education Plan ([http://www.oesd.noaa.gov/NOAA\\_Ed\\_Plan.pdf](http://www.oesd.noaa.gov/NOAA_Ed_Plan.pdf)). Funding is available to encourage the development of partnerships and to support existing, or foster growth of new, environmental literacy projects. The funding priorities for this year are partnerships that promote systemic change in NOAA-related science education, and innovative presentation of NOAA science and earth observing data through educational data visualizations and other educational tools.

[http://www.oesd.noaa.gov/funding\\_opps.html](http://www.oesd.noaa.gov/funding_opps.html)

### **Horace Mann Scholarship Program for Educators**

The Horace Mann Companies is offering scholarships for public and private school educators to take college courses. The deadline for application is May 14, 2005.

<https://www.horacemann.com/edscholarship/>

### **International Paper Environmental Awards**

International Paper, in partnership with The Conservation Fund, recognizes the efforts of people across the country working to protect the future of America's outdoor heritage. Each year, the partners honor two individuals whose work demonstrates that a healthy environment and a healthy economy are mutually supportive. The International Paper Conservation Partnership Award recognizes an individual who has achieved significant results in the protection of habitat through a cooperative relationship with a business or corporation. The International Paper Environmental Education Award honors educators who have shown special skills in giving their students a better understanding of the complex relationship between environmental protection and economic growth.

Nominations are due April 15, 2005.

<http://www.conservationfund.org/?article=2331>

### **NAAEE Awards - Call for Nominations**

The North American Association of Environmental Educators Awards Committee announces its call for nominations for the annual awards that will be presented this year in Albuquerque, New Mexico at the Association's conference in late October. Recognize individuals and organizations by nominating those who deserve wider recognition for their accomplishments in the field of environmental education. The nomination deadline is June 1, 2005.

<http://naaee.org/members/profiles.php>

### **National Association for Interpretation Professional Awards**

Through its awards program, the National Association for Interpretation recognizes outstanding achievements and showcases the successes of its members and others working to advance the profession of interpretation. The nomination deadline is May 31, 2005.

<http://www.interpnet.com/home.htm>

### **National Neighborhood Day Film Contest**

National Neighborhood Day sponsors are hosting a film contest for both professional and amateur filmmakers to illustrate, through a film running five minutes or less, what their neighborhood means to them. K-12 students, as individuals, in groups, or through classroom projects, are especially invited to participate. The film should focus on expressing a feeling about a place, a sense of place, a mood - a film that looks at where you live and how your understanding of neighborhood influences the way you experience this part of your personal world. The deadline for entries is June 1, 2005.

[www.neighborhoodday.org/film.asp](http://www.neighborhoodday.org/film.asp)

### **Nature of Learning Environmental Education Grants**

The National Fish and Wildlife Foundation solicits applications from organizations interested in initiating or expanding The Nature of Learning in their communities. The Nature of Learning is a community-based environmental education initiative. It uses National Wildlife Refuges as outdoor classrooms to promote a greater understanding of local conservation issues; encourage an interdisciplinary approach to learning that seeks to enhance student academic achievement; utilize field experiences and student-led stewardship projects to connect classroom lessons to real world issues; and involve a partnership among local schools, community groups, natural resource professionals and local businesses. The deadline for application is June 15, 2005.

<http://www.nfwf.org/programs/tnol.htm>

### **Radical Renovation: School Edition**

Ford Motor Company and National Geographic offer the Radical Renovation: School Edition initiative, a program that asks elementary school students how they would make their school more environmentally friendly. Teachers are encouraged to submit their students' vision of a sustainable, eco-friendly school. Applicants must be kindergarten through sixth grade teachers at a public or private school entering the contest on behalf of his/her class. Hurry – the submission deadline is April 7, 2005.

<http://www.nationalgeographic.com/gogreen/ford/>

### **Star Schools Program**

The purpose of the Star Schools program provides grants to eligible telecommunications partnerships to encourage improved instruction in mathematics, science, and other subjects, and to serve underserved populations including disadvantaged, illiterate, limited English proficient populations, and individuals with disabilities. The deadline for notice of intent to apply is April 7, 2005; applications are due May 9, 2005.

<http://www.ed.gov/legislation/FedRegister/announcements/2005-1/030805f.html>

### **Targeted Watersheds Grants**

The Environmental Protection Agency is calling for nominations for projects to compete for Targeted Watersheds Grants. These grants support projects that protect watersheds valued for drinking water, fisheries, recreation, and other important uses. The deadline for submitting nomination proposals is May 19, 2005. Nominations must be submitted

by a governor or tribal leader. Watershed organizations interested in pursuing a grant should contact their state or tribe as soon as possible to ascertain its internal procedures.

<http://www.epa.gov/owow/watershed/initiative/2005/2005grantsolicit.html>

### **Teacher Quality Enhancement Grants**

Teacher Quality Enhancement Grants afford an opportunity for states and partnerships to address the challenge of America's teacher shortage by making significant and lasting systemic changes in the way that teachers are recruited, prepared and supported to teach in high-need schools. The deadline for application is May 2, 2005. Eligible applicants are partnerships of states, an institution of higher education with an eligible teacher preparation program, a school of arts and sciences, and a high-need local educational agency.

<http://www.ed.gov/legislation/FedRegister/announcements/2005-1/032105c.html>

### **Watchable Wildlife and Wildlife Educational Projects - Georgia**

The Georgia Department of Natural Resources, Wildlife Resources Division is accepting proposals for nongame educational and watchable wildlife projects. Applicants may include local governments and non-profit organizations. Educational projects can be programs, facilities, exhibits or other activities whose goal is to educate students, teachers, or the public about nongame wildlife conservation. Watchable wildlife projects can include facilities improvements or other activities that will develop or improve opportunities to observe nongame wildlife on lands accessible to the public, such as county or local parks. Proposal deadline is April 22, 2005.

<http://www.georgiawildlife.com/content/displaycontent.asp?txtDocument=351>

### **Write On! Wetlands Challenge**

Environmental Concern, Inc. is celebrating American Wetlands Month this May by creating a children's book about wetlands. We already have the authors - eighth graders in Maryland submitted stories, and the story we've selected will be posted on our website in early April. Now, we need illustrators! Elementary students from around the country are invited to submit drawings. Each drawing must be colorful, original, and must correspond to a particular page of the book, as indicated on the webpage. The submission deadline is May 13, 2005.

[www.wetland.org](http://www.wetland.org), or contact Suzie Hershberger at [pow@wetland.org](mailto:pow@wetland.org)

## **INTERNSHIPS AND TEMPORARY OPPORTUNITIES**

### **Environmental Educators for Summer Field Studies for Children**

The Dorr Museum of Natural History in Bar Harbor, Maine seeks program leaders and assistants for their summer field study program. The season runs June 16-August 21, 2005.

Contact Dianne Clendaniel at [sfs@ecology.coa.edu](mailto:sfs@ecology.coa.edu)

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

### **Advanced Project Wild Workshops – Georgia**

Join Georgia Wildlife Resources Division biologists for two advanced Project Wild Workshops. WILD Bird, May 20-22, 2005 will provide a look at migratory songbird

conservation and management. The Aquatic Ecology Workshop, June 10-12, 2005, will study the wildlife in ponds and streams.

<http://eeingeorgia.org/content/ee/docs/WildAdv.pdf>

### **Ambassadors of the Environment Program – Santa Barbara**

The Ambassadors of the Environment Program is an environmental education program from the Ocean Futures Society, based on the National and California State Science Education Standards. It uses experiential education in the marine and terrestrial environments to begin fostering an ecological literacy and inspire curiosity and appreciation for the natural world through exploration and discovery. Visit the spring session at El Capitan Canyon, April 5 or 6, 2005 to learn how your school can participate.

<http://www.aote.org/menu/prog/sb/index.htm>

### **Association of Marine Laboratories of the Caribbean Scientific Meeting**

The scientific meeting of the Association of Marine Laboratories of the Caribbean, June 13-17, 2005 in Curacao, will include poster and verbal presentations, promoting the exchange of scientific and technical information concerning Caribbean marine sciences. Topics include coral reef ecology and research, regional ecological connectivity, public awareness and education, and more.

Click on “Future Meetings” at <http://www.amlc-carib.org/en/>

### **Classroom Exploration of Oceans – Maritime Heritage Online**

This online virtual teacher workshop focuses on maritime heritage: Mysteries and Sirens of the Deep: April 4-17, 2005. The upcoming keynotes are Maritime Heritage: Resources Revealed in the Hawaiian Islands; The Steamship Portland - Discovering and Managing our Maritime Heritage and the Technologies That Take Us Beneath the Blue Horizon; and Exploring Shipwrecks Together: How one program helps scientists and the public connect with the past.

<http://www.coexploration.org/ceo/>

### **Coastlines 2005 - Georgia**

Join educators and research faculty for fifteen days of intensive field and laboratory experience which will prepare teachers to identify water quality issues and conduct studies in their own schools and communities. Twenty middle and high school teachers will work alongside research scientists collecting water samples in the field, conducting both field and laboratory assays, and statistically analyzing results to assess water quality. This is a residential program on Skidaway Island, Georgia from July 6-19, 2005. Funding for this course is provided by the Georgia Teacher Quality Higher Education Program.

<http://www.uga.edu/aquarium/workshops/CL05.html>

### **COASTeam Leadership Institute – South Carolina**

The COASTeam Leadership Institute is a free, three-hour graduate professional development credit course, June 13-17, 2005, in Charleston, South Carolina. Sponsored by the College of Charleston and South Carolina Sea Grant, the COASTeam Program is an integrated course for middle school teachers to learn marine science concepts in the fields of geology, biology, chemistry, and physics. The course teaches these concepts using South Carolina's coast as the classroom, providing teachers with relevant, local examples. All activities are correlated to the South Carolina and National Science Curriculum Standards. Participants will receive materials to take back to their



classroom, and will be partnered with a previous participant to provide their own COASTeam workshop for other in service teachers, called a "COASTeam Day". Contact Sarah McGuire, [COASTeam@cofc.edu](mailto:COASTeam@cofc.edu)

### **Connecting With Visitors - Communication Skills Training**

These Connecting with Visitors Communication Skills Training workshops provide training and strategies to create tours and interpretive programs that connect with visitors. The schedule for spring, 2005, in locations throughout the country, is available on the website, along with several training articles.

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

### **Dive into Education Marine Science Workshop - Georgia**

NOAA's National Marine Sanctuary Program invites educators throughout the southeast to participate in the Dive into Education Program, May 13-14, 2005 on Tybee Island, Georgia. This workshop features presenters from all fourteen sites within NOAA's National Marine Sanctuary Program. Tailored for grades K-4, 5-8, and 9-12 as well as informal groups, the workshop offers sessions that include beach monitoring, mock shipwrecks, satellite oceanography, and watershed activities. Hurry - the application deadline is April 8, 2005.

<http://www.sanctuaries.noaa.gov/education/>

### **Georgia Shore Program**

The University of Georgia presents the Georgia Shore Program: Using the Marine Environment as a Model for Integrating Science and Math, June 7-22, 2005, on Skidaway Island, Georgia. Immerse yourself in a coastal Georgia experience, bring inquiry-based activities back to you classroom, and conduct your own research. The two-week class is supported by an "Improving Teacher Quality" grant to the Marine Education Center and Aquarium.

<http://www.uga.edu/aquarium/workshops/SHORE.html>

### **Gulf Coast Research Laboratory Summer Field Courses - Mississippi**

Explore the plants, animals, and ecology of the northern Gulf of Mexico and the Mississippi coast. A variety of undergraduate and graduate summer field courses are offered at the gulf coast research laboratory campus of the University of Southern Mississippi, including barrier island ecology, marine mammals, elasmobranch biology, coastal ornithology, and more.

[http://www.usm.edu/gcrl/summer\\_field/index.php](http://www.usm.edu/gcrl/summer_field/index.php)

### **Hatfield Marine Science Summer Sessions - Oregon**

The Hatfield Marine Science Center offers seven different courses during two summer sessions. Courses are for upper level undergraduates, graduate students, teachers, and other professionals.

<http://hmsc.oregonstate.edu/classes/summer/>

### **International Heritage Development Conference**

The Alliance of National Heritage Areas presents the 2005 International Heritage Development Conference, June 4-8, 2005 in Nashville, Tennessee. The theme is *Creating Economic Futures, One story at a time*. Sessions include a workshop on Heritage Education Approaches and Programs; Building Relationships with Corporations; and Economic Enhancement, Land Conservation, and Recreation as Tools of Progress.

<http://www.ihdc2005.org/>

### **International Marine Bioinvasions Conference**

The fourth International Marine Bioinvasions Conference, cohosted by the New Zealand Ministry of Agriculture and Forestry and the MIT Sea Grant Program, will be held August 23-26, 2005, in Wellington, New Zealand. The meeting will be held in conjunction with the New Zealand Marine Sciences Society. The conference will address a wide range of issues about marine invasions, including ecological and evolutionary consequences, management strategies (prevention, control, and eradication), and education and outreach initiatives. The deadline for abstract submissions is April 29, 2005.

<http://www.vuw.ac.nz/marineconference2005/mbic.html>

### **International MPA Congress**

The first International Marine Protected Areas Congress, October 23-25, 2005 in Victoria, Australia, is intended to be the first of a series of international conferences on improving MPA planning and management. Session themes include shared stewardship, including education and outreach.

<http://www.impacongress.org>

### **Interpreting Parks and Gardens - Online**

This 10-week online course has been developed for the staff, docents, and volunteers of public gardens, parks, zoos, aquariums, and similar institutions. Explore how to create and use interpretive programming to improve visitor understanding. A Certified Interpretive Trainer will use text, participatory assignments, and case studies to guide this web-based class. Course details (HORT 255) are available at

<http://schedule.edcc.edu/search.php?d=hort&quarter=spring05>  
[www.interpconsulting.com](http://www.interpconsulting.com)

### **Invasive Species eFieldTrip - Online**

The U.S. Fish and Wildlife Service presents a live eField Trip on April 5, 2005, on invasive species. Students can ask questions and participate in a live web chat with experts to learn about invasive species. This is a moderated chat and a moderator will screen all input to ensure only appropriate questions are entered into the chat room.

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

### **Mapping Ocean Sanctuaries- Florida**

The free, Mapping Ocean Sanctuaries teacher workshop, June 22-24, 2005 in Key Largo, Florida, will explore the biological, physical, and geological characteristics of our coastlines and national marine sanctuaries. The workshop will include hands-on instruction on how to use geographic information system (GIS) software and global positioning system hand-held units, using the Exploring Data with GIS to Experience Sanctuaries (EDGES) curriculum. The workshop will include a snorkeling trip to collect water quality and fish sighting data in the Florida Keys National Marine Sanctuary. Participants will receive materials and curriculum, including a one-year site license for ArcView GIS software. The application deadline is May 11, 2005.

[http://floridakeys.noaa.gov/edu/gis\\_workshop.htm](http://floridakeys.noaa.gov/edu/gis_workshop.htm)

### **Marine Protected Areas Outreach and Education Workshops – Rhode Island and Maine**

Two 2-day workshops will provide input on the development by the New England Fishery Management Council of a thoughtful policy on the use of marine protected areas for

managing fisheries. The Council is seeking input from the public on the development of an MPA policy while also providing background on basic ecology, the role of habitat in fisheries, and the science of marine protected areas. The public is encouraged to attend the workshops, although seating is limited and pre-registration is required.

- May 5-6, 2005, West Greenwich, Rhode Island
- May 10-11, 2005, Ogunquit, Maine

Contact Woneta Cloutier at [wcloutier@nefmc.org](mailto:wcloutier@nefmc.org)

### **Massachusetts Marine Educators Conference**

Massachusetts Marine Educators and the Woods Hole Oceanographic Institution will hold their annual marine educators conference on April 30th, 2005, Woods Hole, Massachusetts. The conference will include cutting-edge research and hands-on marine science education focused on the theme, *Access to the Sea*.

<http://massmarineeducators.org/whoi2005.shtml>

### **National Interpreters Workshop**

The annual meeting of the National Association for Interpretation will be November 8-12, 2005 in Mobile, Alabama. The conference theme, *Full Speed Ahead*, showcases 13 different tracks, including Cultural and Living History Interpretation; Environmental Education; Interpretation and Tourism; and Zoos, Wildlife Parks, and Aquaria.

[www.interpnet.com/niw2005](http://www.interpnet.com/niw2005)

### **National Preservation Institute Training**

The National Preservation Institute offers a series of professional training seminars for the management, development, and preservation of historic, cultural, and environmental resources related to historic preservation and cultural resource management. The Institute's Training Calendar, along with course descriptions, is available on the website.

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

### **North American Society for Oceanic History Conference**

The joint meeting of the North American Society for Oceanic History, the National Maritime Historical Society, and the Society for Nautical Research will be held May 18-21, 2005 in Savannah, Georgia. This year's theme, *North American Maritime History: Southern Connections*, will provide the backdrop for lectures, presentations, and tours related to maritime and naval history, social history, and underwater archaeology.

<http://www.ecu.edu/nasoh/nasoh%20annual%20meeting.htm>

### **NSTA Annual Convention**

As a reminder, proposals for sessions and presentations at the National Science Teachers Association's 2006 National Convention in Anaheim, April 6-9, 2006, must be submitted by April 15, 2005.

<http://www.nsta.org/sessions>

### **Ocean System: Integrated Science - Online**

This summer, the American Museum of Natural History's award-winning online professional development program, Seminars on Science, is presenting eight standards-based courses, including The Ocean System: Integrated Science. This course explores the origin and evolution of the ocean, as well as its vast diversity of life and ecosystems. Other summer online courses include The Diversity of Fishes and Sharks and Rays - Ecology. Teachers taking courses will discuss current scientific ideas and classroom applications with museum scientists and educators, and take away lesson plans and

resources. Register before May 6, 2005 for any of the courses for a discount; classes begin June 27.

<http://learn.amnh.org>

### **PAST Foundation Field School - Florida**

The PAST Foundation (Partnering Archaeology with Science and Technology) will host its 2005 Field School August 1-12, 2005 in Biscayne National Park, Florida. The field school will teach basic underwater documentation techniques and explore how archaeological information is translated into the creation and management of underwater parks. The application deadline is June 10, 2005.

<http://www.pastfoundation.org/Field%20School%202005.htm>

### **Schoolyard Habitat Workshop – Virginia**

Educators and community resource professionals are encouraged to attend this free workshop, July 11-13, 2005, in Gloucester, Virginia, to learn how to turn unused portions of your local schoolyard into an area that attracts wildlife, helps protect the Chesapeake Bay, and stimulates student achievement. The U.S. Fish and Wildlife Service, the Maryland Association for Environmental and Outdoor Education, and the Chesapeake Bay National Estuarine Research Reserve in Virginia are cosponsoring this workshop.

[http://www.vims.edu/cbnerr/education/teachers\\_sy\\_2005.htm](http://www.vims.edu/cbnerr/education/teachers_sy_2005.htm)

### **Scientific Photography - Bermuda**

Scientific Photography, July 31-August 20, 2005 at the Bermuda Biological Station for Research, is an intensive class comprised of lectures, required reading, laboratory exercises, demonstrations, and field assignments. This three-week course exposes students to the use of photography as a scientific tool. Photography is frequently used to communicate concepts at meetings, on posters, and in publications. It is also frequently used as a measuring and data recording tool for studies such as growth, percent coverage and camouflage.

<http://www.bbsr.edu/Education/summercourses/photog/photog.html>

### **Streamside Science – Online**

Headlining this summer's online course offerings from the National Teachers Enhancement Network (NTEN) is a new course for teachers of grades 8-12. Streamside Science: Hands-On Approaches to Water Quality Education asks teachers to adopt a local stream and perform lab assignments in the field. There are 18 other online courses in nine disciplines, including biology, chemistry, Earth science, entomology, education, land resources and environmental science, math, microbiology, and physics.

<http://www.scienceteacher.org/courses.htm>

### **Understanding Tsunamis – Online**

The College of Exploration will present *Understanding Tsunamis*, a 3-week online teacher workshop from April 22-May 15, 2005, funded by the National Science Foundation. The workshop will provide educational outreach to teachers, present information about current research, and offer a chance for teachers to interact with scientists about the topic of tsunamis and to gain resources for classroom infusion.

<http://www.coexploration.org/tsunami/>

### **Water Quality Workshop - Virginia**

Please join the Chesapeake Bay National Estuarine Research Reserve in Virginia for a free, two-day water quality workshop for teachers on July 25-26 and August 1-2 in

Gloucester, Virginia. The first day of the workshop will be indoors training on water quality parameters, use of new curricular activities that use water quality data from the York River to answer applied marine science questions, and learning to access water quality monitoring data on the Internet. The second day will investigate water quality during a canoe trip in York River State Park. Teachers can participate in the first day only, or both days of the workshop.

[http://www.vims.edu/cbnerr/education/teachers\\_wq\\_2005.htm](http://www.vims.edu/cbnerr/education/teachers_wq_2005.htm)

### **Wetland Education through Maps and Aerial Photography Workshops - Florida**

The Tampa Bay Estuary Program, the U.S. Geological Survey's National Wetlands Research Center, and other collaborators are sponsoring two Wetland Education through Maps and Aerial Photography (WETMAAP) workshops for middle and high school teachers. Focusing on Weedon Island and the Manatee River, the workshops will

- Introduce educators to wetland habitats, and functions and values
- Introduce educators and students to wetland mapping techniques and technologies
- Explore the changes in wetlands and changing habitats
- Assist educators with the integration of wetland issues, maps, and images into existing curriculum
- Promote public awareness of wetland change issues and provide an understanding of the cause and effect of wetland changes

Participants will receive a variety of materials, including a resource guide, aerial photos, topographic and land cover maps, and educational exercises correlated to national standards. The workshops will take place at the end of June.

<http://www.tbep.org/media/wetmaap.html>

## **EDUCATIONAL RESOURCES**

### **Aquarium Video Library - Online**

The Monterey Bay Aquarium Website Video Library includes over 30 videos about animals, exhibits, and conservation research programs at the aquarium. The videos are in QuickTime<sup>®</sup> or Windows Media Player<sup>®</sup>. The site also offers activities, materials for the classroom, and marine science career information.

[http://www.mbayaq.org/efc/video\\_library/video\\_library.aspx](http://www.mbayaq.org/efc/video_library/video_library.aspx)

### **Billfish Film Documentary**

As part of programming around Earth Day in April, a new documentary, *Billfish: A Challenge for Survival*, is being aired and distributed by the Public Broadcasting Service. Copies of the show, on either VHS or DVD, will be available through each PBS station at the conclusion of the broadcast. In the U.S., viewers can call 1-800-533-8321 to purchase a copy. International distribution to foreign television markets will proceed after six months of U.S. telecasts.

<http://www.billfishdocumentary.com>

### **CIESE Online Classroom Projects**

The Center for Improved Engineering and Science Education (CIESE) sponsors and designs interdisciplinary projects that teachers can use to enhance their curriculum through use of the Internet. The focus is on projects that utilize real-time data from the

Internet, and collaborative projects that reach peers and experts around the world via the Internet. Some of these collaborative projects include "Down the Drain: How much water do you use?", "The Global Water Sampling Project: An investigation of water quality" for grades 9-12, and "The Square of Life: Studies of Local and Global Environments" for grades 1-5. Each project has a brief description and links to the National Science Standards it supports.

<http://www.k12science.org/currichome.html>

### **Coastal Population Trends**

NOAA's National Ocean Service's Special Projects office has published *Population Trends Along the Coastal United States: 1980-2008*. This report contains useful statistics and highlights the importance of coastal areas. It presents an overview of coastal population trends from 1980 to 2003 and projected change in coastal population by 2008.

<http://oceanservice.noaa.gov>

### **Conservation Databases**

The World Conservation Monitoring Center (UNEP-WCMC) maintains a large and varied collection of databases concerning nature conservation, developed in collaboration with a range of partners. These include species information, protected areas, forest information service, marine statistics and maps, national biodiversity profiles, and a resource center of formally and informally published information on biodiversity, held at the centre.

<http://www.unep-wcmc.org/index.html?http://www.unep-wcmc.org/cis/~main>

### **Cultural Resources Program Website**

The U.S. Fish and Wildlife Service (USFWS) Cultural Resources Program website offers information on the many facets of the program at USFWS, as well as past issues of the *Historical Happenings* newsletter.

<http://historicpreservation.fws.gov>

### **Estuaries Discovery Kit**

NOAA's National Ocean Service Communications and Education Division offers the Estuaries Discovery Kit. The kit explores how estuaries are classified, the various ecosystem services estuaries perform, how organisms have adapted to estuarine environments, human impacts, and the work that the National Estuarine Research Reserve System and its partners conduct to monitor, preserve, and restore estuarine ecosystems throughout the United States.

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

### **Factbook of Economic, Environmental, and Social Indicators**

The online version of the Organization for Economic Co-operation and Development (OECD) Factbook 2005 of economic, environmental and social indicators for the world's core economies is available. The chapters include environment, science and technology, and education.

<http://new.SourceOECD.org/factbook>

### **Fisheries and Aquatic Resources**

The National Biological Information Infrastructure Fisheries and Aquatic Resources website provides information about managed fish populations throughout the U.S., as well as watershed-based data and state-by-state fishing resources. Learn about

freshwater and marine fishes, aquatic invertebrates, water quality and habitats, and dams and fish passage. Make sure to check the teacher resources.

<http://far.nbii.gov/>

### **Florida Shipwrecks**

The National Register of Historic Places has launched a virtual travel itinerary, Florida Shipwrecks: 300 Years of Maritime History. This itinerary is currently the main feature on their homepage and highlights 13 historic shipwrecks listed in the National Register of Historic Places that are accessible to divers. The website includes an interactive map, background information about the wrecks, and an introduction to Florida's maritime history.

<http://www.cr.nps.gov/nr/travel/flshipwrecks/>

### **Florida's Springs**

Rising up from deep within the aquifer, cool clear water flows from hundreds of springs that dot the Florida landscape. This website hosts virtual explorations of some springs, information about threats to the quality and quantity of water in the Florida aquifers, and educational resources, including "Build Your Own Aquifer".

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

### **Fueling the Future**

Help your students understand energy issues using the new Facing the Future activity, Fueling the Future. Students compare energy use and CO2 emissions by sector in the United States and China (and optionally in another country). They research and discuss energy impacts and sustainable energy solutions and present their findings at a "World Energy Summit." Additional materials available from Facing the Future include water trivia, Got Water? and more.

<http://www.teacherscorner.org/activities.html#>

### **Invasive Plant Atlas of New England**

This site includes an atlas with images and descriptive information for the invasive and potentially invasive plants in New England. Visitors can create customized maps that document these species by utilizing the online records database. The website also allows users to browse a list of species for which data has been collected thus far.

<http://invasives.eeb.uconn.edu/ipane/>

### **Let the River Run Silver Again**

*Let the River Run Silver Again* is an environmental conservation story for students ages 10-15 and the teachers, parents, and others who mentor them. It is a source of information and insight for those who want to learn about and benefit from the success of others as well as those who are interested in developing environmental restoration programs in their own watershed. The greater part of the book follows students from one elementary school in Maryland as they take part, over a period of nine years, in a regional conservation initiative to restore populations of American shad to the Chesapeake Bay watershed, allowing the shad to breach numerous dams while migrating to many of their former spawning areas.

<http://www.mwpubco.com/LetRiverRunSilver.htm>

### **New York Public Library Digital Gallery**

This large-scale digital image gallery has been years in the making and currently offers more than 275,000 items for online viewing. You can search for specific images or

keywords, or browse by subject (e.g. fish), collection (e.g. Nature Illustrated or Ocean Flowers), or library division. Set aside time to explore this extensive website.

<http://digitalgallery.nypl.org/nypldigital/index.cfm>

### **Ocean Portal**

The Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) supports a web portal which provides a high-level directory for ocean data and information web sites. Links to MPA resources are currently available from the "Administration, Conservation and Policy" category, while the "Data Resources" links to databases around the world.

<http://ioc.unesco.org/oceanportal/index.php>

### **NOAA Science Camp - Washington**

Join NOAA scientists for a week long summer camp, July 11-15, 2005, in Seattle, Washington. The NOAA Science Camp provides Seattle area youth with an opportunity to experience NOAA science first-hand and learn how it applies to their local and global community. The camp is for youth entering 7th and 8th grades in 2005.

<http://www.nwfsc.noaa.gov/sciencecamp.cfm>

### **Out & About**

Out & About is the quarterly Pacific region outreach e-newsletter from the U.S. Fish and Wildlife Service to highlight outreach success stories around the region, provide resources, offer tips to improve outreach and customer service, and encourage new outreach activities. The articles feature trainings and workshops, resources, case studies, and more. The Winter 2005 issue includes an article about Navigating Change, the Hawaiian canoe voyage with a focus on education.

<http://pacific.fws.gov/ea/outreach/out&about.htm>

### **Prince William's Oily Mess**

NOAA's National Ocean Service Communications and Education Division offers the newest Discovery Story entitled *Prince William's Oily Mess: A Tale of Recovery*. Aimed at the high school level, it includes educational materials on the infamous Exxon Valdez oil spill that occurred almost 16 years ago in Prince William Sound, Alaska, and the research conducted there since the accident. Also included are an oil spill primer, a hands-on activity using collected data, an oil spill trajectory model, student and teacher guides, a quiz, and more.

<http://oceanservice.noaa.gov/education/stories/oilymess/welcome.html>

### **Reefs at Risk in the Caribbean**

Reefs at Risk in the Caribbean, in English and Spanish, reflects the culmination of a two-and-a-half-year collaborative effort involving over twenty organizations working in the wider Caribbean region. The project provides a region-wide analysis of human threats to coral reefs and evaluates economic losses likely to result from coral reef degradation. In addition to the summary, the data are downloadable from the website.

<http://reefsatrisk.wri.org/>

### **Save Our History, Save Our Ships**

"Save Our Ships" is the History Channel's effort, in conjunction with National Maritime Historical Society, to stem the tide of deterioration and destruction of historical ships. The website offers a short teacher's manual with lesson plans, as well as a special online exhibit of five ships featured in The History Channel's documentary, *Save Our*



*History: Save Our Ships.* The resource page provides links to websites and books for more information.

[http://www.historychannel.com/classroom/saveourships/default\\_home.html](http://www.historychannel.com/classroom/saveourships/default_home.html)

### **Stop Faking It! Air, Water, and the Weather**

*Air, Water, & Weather* shares the same goal as the other five titles in his award-winning NSTA Press *Stop Faking It!* series. Its content, style, and tone are designed to help every educator who is intimidated by science but tired of relying on avoidance strategies when teaching—including science teachers, homeschoolers, and parents who want to help with homework. The book includes explanations, drawings, and activities that use easy-to-find materials.

<http://store.nsta.org/showItem.asp?product=PB169X6>

### **Taking Action on Climate Change**

This Government of Canada website has student and teacher resources to learn about the science, impacts, and adaptation to climate change and how you can take action by reducing greenhouse gas emissions. Through maps, graphs, and clear text, users can learn the basics of climate change and the greenhouse gases. The site also includes links to other resources.

<http://www.climatechange.gc.ca/english/default.asp>

### **Tijuana Estuary High School Teacher's Guide**

The Tijuana Estuary High School Teachers' Guide is a field-based, inter-disciplinary high school curriculum designed to educate students about the valuable Tijuana River Estuary natural and cultural resources. Chapters include ecology, geology, history, language arts, and more. It has been developed to align to California State Content Standards.

<http://www.tijuanaestuary.com/education.asp>

### **Virtual Take Our Daughters and Sons to Work Day**

The OceanAGE Virtual Take Our Daughters and Sons to Work Day, April 28, 2005, offers students the opportunity to discuss and celebrate oceanography career options. Students will be able to interact with inspiring mentors throughout the day in live webchats and online forums. The complete profiles, video interviews of the scientists, and live event instructions will be available on the website.

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

### **Web Resources for Environmental Educators**

The Web Resources for Environmental Educators from the U.S. Fish and Wildlife Service is a link from the National Conservation Training Center's Conservation Library home page. It has links to a variety of sites that are helpful for educators, including general environmental education links, education standards and terms, resources, and electronic field trips.

<http://training.fws.gov/library/>

### **Wildfowl and Wetlands Trust Education Website**

The Wildfowl and Wetlands Trust presents WWTlearn – Learn from the world's wetlands. This education site includes downloadable lesson plans, data sets, background materials and images about water, wetlands and wetland life. Designed to the English National Curriculum, it is adaptable to U.S. standards. There is also a quarterly e-newsletter.

<http://www.wwtlearn.org.uk/index0.html>

## **INITIATIVES**

### **Earth Day Celebrations**

Learn what you can do to help our ocean planet while celebrating Earth Day. Events will be held throughout the county. Here's a brief sample.

- Aquarium of the Pacific, Long Beach, California, April 23-24, 2005. Join a weekend of family fun while learning simple, everyday tips to protect our environment. Visit booths from various organizations and participate in hands-on learning demonstrations. <http://www.aquariumofpacific.org>
- Florida Goliath Grouper Census, Panama City, Florida, March 19-April 22, 2005. Dive teams will be organized and will receive pre-dive briefings. <http://www.earthday.net/programs/find/eventView.aspx?ID=3012>
- "Earth Today" TV Show, South Carolina Educational TV, April 19, 2005. The student anchors interview adult experts on environmental topics. In addition to the 30-minute show, there are 21 lesson plans that relate to the different segments. <http://www.earthday.net/programs/find/eventView.aspx?ID=2531>
- EE-Link Earth Day Resources. <http://eelink.net/eeactivities-earthday.html>
- NSTA Earth Day Resources. [http://science.nsta.org/nstaexpress/nstaexpress\\_2005\\_02\\_28\\_esteme.htm](http://science.nsta.org/nstaexpress/nstaexpress_2005_02_28_esteme.htm)

### **World Ocean Day – June 8**

World Ocean Day is June 8, when organizations and individuals from around the world come together to celebrate our world ocean; reflect on the ocean's importance in our lives; and take time to do something good for our blue planet. Last year, hundreds of aquariums, zoos, museums and conservation organizations worldwide participated in World Ocean Day activities. The Ocean Project is again working with the World Ocean Network to coordinate World Ocean Day events. Suggested resources, tools, and activities are listed on the website. Continue to check back, as more are added over the coming months.

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