

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
INFORMATION EXCHANGE FOR MARINE EDUCATORS

OCTOBER 2008

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

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

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

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

PROGRAM OF THE MONTH

Estuaries 101 Curriculum

Estuaries 101, the new on-line science curriculum from NOAA's National Estuarine Research Reserve System, provides powerful ways for students to learn fundamental concepts in science, develop scientific thinking skills, and explore the nation's biologically rich and economically important estuaries. From flying over an estuary with Google Maps to tracking the path and impact of a hurricane, Estuaries 101 modules feature hands-on learning, experiments, field-based activities, and data explorations.

The Estuaries 101 curriculum comprises four two- to three-week modules. Designed for grades 9-1 classrooms with the flexibility to adapt to higher or lower grades. Estuaries 101 meets key National Science Education Standards and can be readily aligned to all

state standards. Each module tells the estuary story through one of three domains - earth, life, or physical science. With the emphasis on these domains, teachers can weave the study of estuaries into existing earth, life, or physical science courses, all of which can be used together or separately.

<http://www.estuaries.gov/estuaries101/Teachers/Home.aspx>

WEBSITE OF THE MONTH

Estuaries.Gov

The revamped Estuaries.Gov site is a hub for exploration and discovery of our nation's estuaries. In addition to the Estuaries 101 Curriculum and links to other educational materials, students and educators can access:

- Videos which bring to life the different concepts taught in the Estuaries 101 Curriculum
- Animated interpretations and other easy-to-use visualizations that can help students understand concepts, visualize processes, and observe changes in an estuarine system
- Fact sheets which provide useful information on threatened estuarine species, including a picture of the species, a range map, quick facts, conservation notes, and life history information
- Scientific and educational reports which provide a wealth of information on teaching and learning about coastal and ocean concepts
- News highlighting current events and activities in the research reserve system.

<http://www.estuaries.gov/>

MESSAGE FROM THE BRIDGE

Mercury is Rising

Mercury (Hg), toxic to most organisms, is present in the natural environment in small quantities. However, through industrial activities such as coal-burning power plants, humans cause the release of mercury into the atmosphere at concentrations higher than would naturally occur. The mercury then rains down with precipitation and is deposited on land and in water. The Bridge can help you incorporate scientific data on mercury levels from the Environmental Protection Agency, with the Data Analysis Teaching Activity (DATA), *Mercury is Rising*. In this activity, students will learn about the sources and effects of mercury in our waters, and the reasoning behind limiting the amount of some fishes we eat. By calculating how much methylmercury is safe for humans to consume, students will be able to share this important information with their families, and as a result, make safer eating decisions. *Mercury is Rising* is one of many Bridge DATAs that has been reformatted to more closely match a formal lesson plan, complete with summary, objectives, and list of vocabulary words. And is the case with all Bridge DATAs, Mercury is Rising is aligned to the National Science Education Standards.

http://www2.vims.edu/bridge/DATA.cfm?Bridge_Location=archive1203.html

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

REQUESTS

Seeking Reviewers

NASA offers an opportunity for educators to review Global Climate Change grants.

Contact Diedre Adams at diedre.adams-1@nasa.gov

GRANTS AND OPPORTUNITIES

4imprint In-Kind Grants

4imprint is now accepting applications for its 2008 charitable giving program. The retailer will award an in-kind grant every business day of 2008 to a charitable organization in the United States or Canada. Applications are due two months before the requested donation is needed.

<http://onebyone.4imprint.com/default.aspx>

B-Wet Grants - California

The NOAA California Bay Watershed Education and Training (B-WET) Program provides funds to support environment-based education throughout the watersheds of San Francisco Bay, Monterey Bay, and the Santa Barbara Channel. Funded projects provide meaningful watershed educational experiences to students, teachers, and communities. Hurry - the deadline for submission is October 6, 2008.

<http://sanctuaries.noaa.gov/news/bwet/welcome.html>

California Coastal Art and Poetry Contest

The California Coastal Commission invites California K-12 students to submit artwork or poetry with a coastal or marine theme to the annual Coastal Art and Poetry Contest. The deadline for entry is January 31, 2009.

<http://www.coastal.ca.gov/publiced/poster/poster.html>

California Whale Tail Grants

The California Coastal Commission's Whale Tail Grants Program is now accepting proposals for coastal and marine education projects. This program funds projects encouraging people to value and take action to improve the health of California's coast, marine life, or watersheds that connect with the coast. Educational coastal habitat restoration and beach maintenance projects are also eligible. Emphasis is on reaching underserved students and members of the public. The deadline for application is November 15, 2008.

<http://www.coastal.ca.gov/publiced/plate/plgrant.html>

Ciba Science Teaching Awards

Ciba Specialty Chemicals Exemplary Middle Level and High School Science Teaching Awards recognize teachers who have demonstrated exemplary science teaching in one or more of the following areas: creativity using science teaching materials; design and use of innovative teaching plans and ideas; development and implementation of department, school, or school-community programs that improve science instruction and/or stimulate interest in science and the learning of science; and reflecting the National Science Education Standards. The deadline for application is November 30, 2008.

<http://www.eeingorgia.org/net/content/go.aspx?s=75512.0.0.4863>

Coastal Storms Program

The Mississippi-Alabama Sea Grant Consortium, in cooperation with NOAA, announces a request for proposals for the *Coastal Storms Program, Community Risk and Resiliency* to fund community resiliency related projects. Local governments, non-profits,

homeowner associations, business organizations, and community/university partnerships are eligible. The deadline for Letters of Intent is October 20, 2008.

<http://masgc.org/pdf/coastalstorms/csprfp08.pdf>

ExploraVision Contest

The Toshiba/NSTA ExploraVision Awards challenge students to use their imaginations and the tools of science to propose scientifically feasible technologies that could exist 20 years into the future. The program encourages K-12 students of all interest, skill, and ability levels to create and explore a vision of future technology by combining their imaginations with the tools of science. The deadline for submission is January 28, 2009.

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

Georgia Outdoor Classroom Photo Contest

The Georgia Outdoor Classroom Photo Contest offers the opportunity to show the world that your outdoor classroom shines. The deadline for entry is October 15, 2008.

<http://eealliance.org/net/content/go.aspx?s=75346.0.0.7182>

Goody's Good Deeds for Schools

Goody's Good Deeds for Schools is a grant program designed to help local schools pay for needed materials. The grants are open to schools in communities where Goody's stores are located. The deadline for application is November 1, 2008.

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

Graduate Research Fellowship

The National Estuarine Research Reserve System's Graduate Research Fellowship provides master's degree students and Ph.D. candidates with an opportunity to conduct research of local and national significance that focuses on enhancing coastal zone management. Fellows conduct their research within a National Estuarine Research Reserve and gain hands-on experience by participating in their host reserve's research and monitoring programs. The deadline for application is November 1, 2008.

<http://www.nerrs.noaa.gov/Fellowship/welcome.html>

International Children's Painting Competition on the Environment

The International Children's Painting Competition on the Environment is organized annually by the United Nations Environment Programme (UNEP) and others. This year's competition focuses on climate change - actions we can take now to reduce our negative impact. The children's (ages 5-13) paintings can focus on concrete actions such as using renewable energy, introducing energy saving light bulbs at home, sharing vehicles and using public transport, planting trees, and more. The deadline for application is January 15, 2009.

<http://www.unep.org/Tunza/paintcomp/>

International Coral Grants

The NOAA Coral Reef Conservation Grant Program provides matching grants of financial assistance for international coral reef conservation projects. The program solicits proposals under four funding categories: (1) Promote Watershed Management in the Wider Caribbean, Brazil, and Bermuda; (2) Support Planning for Effective Marine Protected Area Management; (3) Encourage the Development of National Networks of Marine Protected Areas in the Wider Caribbean, Bermuda, Brazil, Southeast Asia, and the South Pacific; and (4) Promote Regional Socio-Economic Training and Monitoring in Coral Reef Management in the Wider Caribbean, Brazil, Bermuda, the Western Indian

Ocean, the Red Sea, the South Pacific, South Asia, and Southeast Asia. The deadline for pre-application is November 3, 2008. Search on NOS-IPO-2009-2001458.

For questions, contact International.coral.grants@noaa.gov.
<http://www07.grants.gov/search/basic.do>

Knauss Fellowship

The Knauss Fellowship provides a unique educational experience to students who have an interest in ocean, coastal, and Great Lakes resources and in the national policy decisions affecting those resources. The deadline for application is February 20, 2009.
<http://www.seagrant.noaa.gov/knauss/>

Lewis Hine Service to Youth Awards

The National Child Labor Committee presents the Lewis Hine Service to Youth Awards to ten recipients, five professionals and five volunteers, for their unheralded and exceptional service to young people. Teachers may be nominated, but not for regular classroom teaching. The deadline for nomination is October 22, 2008.
<http://www.eeingorgia.org/net/content/go.aspx?s=45183.0.0.4863>

Protect Our Reefs Mote License Plate Grants – Florida

This Request for Proposals offers eligible organization funds to support projects related to research, education and outreach, and/or conservation of the Florida coral reef ecosystem. The deadline for proposals is December 15, 2008
<http://www.mote.org/index.php?src=gendocs&link=Reefplategrantapp&category=Main>

Prudential Spirit of Community Awards

The Prudential Spirit of Community Awards honor young people in middle and high school grades for outstanding volunteer service to their communities. The deadline for application is October 31, 2008.
<http://www.prudential.com/spirit>

Sea World-Busch Gardens Conservation Fund

The Sea World-Busch Gardens Conservation Fund is now accepting proposals. The fund's primary focus is to support conservation efforts directly benefiting wildlife in their native ranges involving government-managed lands, sites, and programs with broad community/constituency support, based on scientific and conservation principals. The deadline for applications is December 1, 2008.
http://www.swbg-conservationfund.org/get_involved.html

State Farm Good Neighbor Service-Learning Grant

The State Farm Companies Foundation offers grants, available from Youth Service America, for teachers, youth, and school-based service-learning coordinators to implement service-learning projects for Global Youth Service Day April 24-26, 2009. The deadline for application is October 16, 2008.
<http://servenet.org/Toolkit/ContentManagement/ServiceWireNews/tabid/122/articleType/ArticleView/articleId/750/Default.aspx>

Student Achievement Grants

The National Education Association Foundation provides grants to improve the academic achievement of students in U.S. public schools and public higher education institutions in any subject area. The proposed work should engage students in critical thinking and problem solving that deepen their knowledge of standards-based subject

matter. The work should also improve students' habits of inquiry, self-directed learning, and critical reflection. Applications are reviewed three times each year; the next deadline for application is February 1, 2009.

http://www.neafoundation.org/programs/StudentAchievement_Guidelines.htm

Target Field Trip Grants

The Target Field Trip Grants Program offers funds to allow teachers to offer valuable experiential learning gained from field trips to enhance students' classroom studies. Funds may be used to cover cost of transportation, entry fees, supplies and equipment and resource materials. The deadline for application is November 1, 2008.

<http://www.target.com/teachers>

Thacher Scholars Award

The Institute for Global Environmental Strategies announces the 2009 Thacher Scholars Award, to be given to secondary school students (grades 9-12) demonstrating the best use of geospatial technologies or data to study Earth. The deadline for entry is April 6, 2009.

<http://www.strategies.org/education/index.aspx?sub=education&sub2=scholars&sub3=scholars2009>

Voices and Visions – Youth Video Contest

The National Council for Science and the Environment will provide a forum for young people to share their actions, perspectives, and passion for biodiversity through new media channels by hosting a video contest, *Voices and Visions from the Next Generation of Conservationists*, as part of the 9th National Conference on Science, Policy, and the Environment: Biodiversity in a Rapidly Changing World December 8-10, 2008 in Washington, DC. Youth (ages 12-25) are invited to submit a short video focusing on how today's youth are and will be addressing the challenges that threaten biodiversity. The entry deadline is October 31, 2008.

<http://ncseonline.org/Conference/Biodiversity/cms.cfm?id=2549>

INTERNSHIPS AND TEMPORARY OPPORTUNITIES

Multicultural Initiative in the Marine Sciences: Undergraduate Participation

The Shannon Point Marine Center invites applications for *Multicultural Initiative in the Marine Sciences: Undergraduate Participation*, a program designed to increase diversity within the next generation of marine scientists. Students spend two quarters (January 6-June 12, 2009) at the center taking introductory and specialized courses in the marine sciences, attending seminars and workshops, exploring career opportunities, and engaging in supervised research. Applicants must be in an academic program leading to a bachelor's degree. Funding is available from the National Science Foundation. Applications are encouraged, in particular, from U.S. citizens belonging to groups currently underrepresented in the marine sciences. The deadline for application is November 12, 2008.

<http://www.wvu.edu/mimsup/>

Peace Corps Master's International Program

The Peace Corps is seeking environmental educators for the Peace Corps Master's International program. Prospective students apply simultaneously to the Peace Corps and the graduate program of their choice. Typically, students complete one year of

graduate school and then serve 27 months in the Peace Corps, after which they return to the university to complete any remaining degree requirements. More than 50 universities, 15 of which offer graduate degrees related to the environment, currently partner with the program.

<http://www.peacecorps.gov/index.cfm?shell=learn.whyvol.eduben.mastersint>

CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT

Aquatic and Marine Science for Today's Classroom Teacher – Washington, DC

The National Aquarium in Washington, DC, with funding from the Toyota USA Foundation, is offering a teacher training program, Aquatic and Marine Science for Today's Classroom Teacher. Workshops will be offered in October and November, 2008 and February, March, and May of 2009. Each participant will receive a stipend and resources for their classroom. Space is limited.

<http://nationalaquarium.org/workshops.html>

Beyond the Obituaries: Success Stories in Ocean Conservation – Washington, DC

The International Marine Conservation Congress will take place May 20-24, 2009 in Washington, DC. The Smithsonian's National Museum of Natural History will kick off the conference with one-day public program, *Beyond the Obituaries: Success Stories in Ocean Conservation*. The program will highlight conservation efforts that are making a difference around the world, allow conservation professionals to learn from the success of others, and demonstrate to the public and policy makers that the situation is not hopeless. A call for case studies with clear, tangible results has a deadline of December 15, 2008.

<http://officialmpa.blogspot.com/2008/09/beyond-obituaries-success-stories-in.html>

Classroom Exploration of the Ocean - Online

The College of Exploration, with the support of NOAA's Office of Ocean Exploration and the Marine Sanctuaries Foundation, presents the Virtual Teacher Workshop Series 2008-2009, September 29-October 10, 2008. Week 1 is *Deep Ocean Exploration – New Discoveries and Implications for Our Warming Planet*, September 29–October 3, 2008, with an introduction to the NOAA OE websites and curriculum. Week 2 is *The Okeanos Explorer*, October 6-10, 2008, with a virtual tour of the Okeanos Explorer.

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

Developing Teacher Training – West Virginia

The U.S. Fish and Wildlife Service offers professional development courses at the National Conservation Training Center campus in West Virginia. *OUT8161: Developing Teacher Training* will be held March 30-April 3, 2009; the deadline for registration is January 5, 2009. This course presents the essential components of working with schools and school systems, specifically on conducting teacher training. The course culminates with participants applying their skills at an actual teacher workshop.

Contact Georgia Jeppesen at georgia_jeppesen@fws.gov.

http://training.fws.gov/documents/Section1_NCTC_Sponsored_Courses.pdf

Eco-Art Professional Development via Kayak - Texas

This free professional development workshop, October 11, 2008, is designed to show Galveston County teachers different methods of learning via a science and art integrated

kayak adventure. Learn about Galveston Bay, non-point source pollution, and more while interpreting nature's beauty into a watercolor painting.

Contact Rani Henderson at rhenderson@artistboat.org

Global Climate Change and Informal Earth System Science - Online

SUNY College at Oneonta offers this online, 10-week graduate course, designed to provide professional development for the informal Earth system science education community. The first module, Global Climate Change, defines the topic and discusses recent scientific study on global climate change. The second module, Earth System Science in Your Backyard, provides the tools for creating in-house, inquiry-based Earth science education products focusing on the participants' local geology and existing collections/exhibits/programming. This course will be asynchronous and conducted entirely online.

Contact Carlyn Buckler at csb36@cornell.edu

Learning Ocean Science through Ocean Exploration - Various

NOAA's Ocean Exploration Program and partners will offer introductory and follow-up Learning Ocean Science through Ocean Exploration professional development workshops for science teachers. Participants will receive the curriculum with CD-ROM's, certificates of participation, and more. Contact the noted educator for registration and more information.

- Alabama – with Dauphin Island Sea Lab, November 1, 2008, Dauphin Island with a follow-up workshop March 14, 2009. The deadline for registration is October 17, 2008. Contact Denise Keaton at dkeaton@disl.org
- Louisiana – with the Audubon Zoo, October 11, 2008, New Orleans with a follow-up workshop in Spring, 2009. Hurry – the deadline for registration has been extended to October 7, 2008. Contact Gail Gainey at ggainey@AudubonInstitute.org
- South Carolina – with South Carolina Aquarium, October 18, 2008, Charleston, with a follow-up workshop February 7, 2009. The deadline for registration is October 10, 2008. Contact Brian Thill at BThill@scaquarium.org

MAMEA Conference - Virginia

The Mid-Atlantic Marine Education Association's (MAMEA) Annual Conference will be held October 24-26, 2008 in Virginia Beach, Virginia. The theme is *Mid-Atlantic Coastal Environments: What Do We Know and How Do We Teach It?*

<http://www.mamea.org/conf.html>

MARE New Teacher Workshop - California

Discover MARE (Marine Activities, Resources, and Education) at the Scripps Institution of Oceanography in La Jolla, California. This workshop, December 4, 2008, will provide an overview of the standards-rich, inquiry-based science strategies found in the award-winning MARE curriculum. Explore ideas for hosting your first Ocean Week or Ocean Month at your school site. Discover how to adopt an ocean science program that addresses the needs of your English learners while incorporating technology and literacy into your science program. Scholarships are available.

http://aquarium.ucsd.edu/Education/For_Schools/For_Teachers/Professional_Development/

MARE Workshop Series - California

Discover MARE at the Birch Aquarium at Scripps Institution of Oceanography in La Jolla, California, designed for K–8 teachers, science specialists, and informal educators. The workshops provide training in standards-rich, inquiry-based science strategies for addressing the needs of English learners and ideas for incorporating technology and literacy into any science program. Each workshop focuses on a specific habitat for a span of grade levels, includes a field trip to a related habitat, and more. Scholarships are available. Check the website for dates and topics.

http://aquarium.ucsd.edu/Education/For_Schools/For_Teachers/Professional_Development/

NSTA Conferences – Call for Proposals

Submit a session proposal for a National Science Teachers Association (NSTA) conference in 2009-2010.

- Minneapolis, Minnesota, October 29–31, 2009
- Fort Lauderdale, Florida, November 12–14, 2009
- Phoenix, Arizona, December 3–5, 2009
- Philadelphia, Pennsylvania, March 18–21, 2010

The deadlines for submissions are January 15, 2009, for the 2009 area conferences and April 15, 2009, for the Philadelphia National Conference.

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

Principles of Science Inquiry for the K-8 Classroom - California

The Birch Aquarium at Scripps Institution of Oceanography is hosting this workshop March 5, 2008 in La Jolla, California. Teach your students how to ask scientifically oriented questions and initiate a life-long learning process, developing explanations that connect their science knowledge base to the natural world. Workshop participants will experience easy-to-use examples of hands-on science, and techniques for making subtle shifts that help create a more inquiry-based atmosphere in your science classroom. This workshop includes a trip to a sandy beach field trip for a low-tide investigation. Scholarships are available.

http://aquarium.ucsd.edu/Education/For_Schools/For_Teachers/Professional_Development/

Whales in a Changing World

The American Cetacean Society will hold its International Conference, November 13-16, 2008 in Monterey Bay, California, with the theme *Whales in a Changing World*, with a Gray Whale and Climate Change Symposium following on November 17, 2008. The conference will look at how whales, dolphins, and porpoises are currently adapting to rapid environmental changes and altered ecosystems. Check out the photo contest, with a deadline of October 31, 2008.

<http://www.acsonline.org/conference/changing2008/index.html>

EDUCATIONAL RESOURCES

Climate Time Machine

This NASA website offers a series of visualizations which show how some of the key indicators of climate change, such as temperature, sea ice extent, and carbon dioxide concentrations, have changed in Earth's recent history.

<http://climate.jpl.nasa.gov/ClimateTimeMachine/climateTimeMachine.cfm>

Crustacea.net

The Australian Museum offers Crustacea.net, an interactive information retrieval system for crustaceans of the world. The website offers interactive keys, glossaries, and more.

<http://crustacea.net/>

Earth Learning Idea

The Earth Learning Idea website offers Earth science instruction ideas. Each activity is designed to maximize student participation, learning, and enjoyment while minimizing cost. Strategies promote interactive teaching and students' investigational and thinking skills. Activities are posted in English, Spanish, and more.

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

Freshwater Ecoregions of the World

Freshwater Ecoregions of the World, a collaborative venture between the Nature Conservancy and the World Wildlife Fund, provides a global biogeographic regionalization of the Earth's freshwater biodiversity. This ecoregion map, together with associated species data, can be a useful tool for underpinning global and regional conservation planning efforts, particularly to identify outstanding and imperiled freshwater systems; for serving as a logical framework for large-scale conservation strategies; and for providing a global-scale knowledge base for increasing freshwater biogeographic literacy. Note that not all information is fully populated.

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

Georgia Standards Website

The Georgia Department of Education offers the GeorgiaStandards.Org website, a gateway to education and professional resources to support teaching and learning in Georgia. It offers access to curriculum frameworks by subject and grade along with resources, tools, and web links commonly used by teachers. A variety of environmental education lessons are posted, including *A whale of a movement*, *Water cycle skit*, and much more.

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

Great Whales Curricula

Oregon State University's Marine Mammal Institute offers The Great Whales curricula for grades 6-9. The materials address research efforts to expand our knowledge about marine mammals and explore whale biology, ecology topics, and more. The nominal cost covers shipping and handling.

Contact Vicki Osis at vjosis@peak.org

Journey South

Students get hands-on experiences with nature and wildlife by participating in the international Journey North program. The fall component, Journey South, tracks the migrations of birds, whales, and butterflies, as well as the growth of tulips from bulbs.

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

Lophelia II 2008: Deepwater Coral Expedition: Reefs, Rigs, and Wrecks

NOAA's Ocean Exploration and Research Program has launched the *Lophelia II 2008: Deepwater Coral Expedition* website. It highlights the first cruise of a 4-year project funded by the US Mineral Management Service and the NOAA Office of Ocean Exploration and Research to explore new deepwater coral communities at both natural

and man-made sites in the Gulf of Mexico. Investigators will use a combination of remote sensing, photographic sampling, quantitative community collections, live coral manipulative experiments, geologic characterization, oceanographic measurements, and genetic analyses to further scientific understanding of cold water corals and the communities associated with them. Educators have developed an Ocean Explorer Expedition Education Module for the mission.

<http://www.oceanexplorer.noaa.gov/explorations/08lophelia/welcome.html>

NSDL K-6 Science Refreshers

The National Science Digital Library K-6 Science Refreshers provide quick and easy access to high-quality science content. The refreshers include interactive tutorials, diagrams, and articles that are selected and organized by grade level and subject area. The website is in beta release; help them out by providing your feedback.

<http://nsdl.org/refreshers/science/>

Sanctuary Atlas Maps, Images, and Videos

Download atlas maps, high resolution images, and watch compelling videos from the 14 marine protected areas managed by NOAA's National Marine Sanctuaries Program.

<http://sanctuaries.noaa.gov/pgallery/>

Sands Teach

The recent scuttlebutt discussion on using sand in teaching has generated an exchange of great websites that can help you incorporate sand as a teaching tool in your classrooms. Check out some of these resources, and don't forget to check out the links from the Bridge (search on "sand").

<http://www.sandcollectors.org/ISCSHomeIndexx.html>

<http://www.jaster.20m.com/Trading/TradeList.html>

http://www.educationworld.com/a_tech/tech/tech080.shtml

<http://www.chariho.k12.ri.us/curriculum/MISmart/ocean/sandintr.html>

Teens for Planet Earth and Leadership Institute

Teens for Planet Earth was created by the Wildlife Conservation Society at the Bronx Zoo to help teens who are fascinated by wildlife, nature, and the environment put their passion into practice. The website includes links to background information, service learning information, and more. Adult leaders are invited to participate in a Leadership Institute training, October 16-18, 2008 in Bronx, New York, to explore effective programs providing young people with the skills and support in community conservation-based service-learning projects.

<http://teens4planetearth.com/>

Thunder Bay Sinkholes Expedition

NOAA Ocean Exploration and Research Program launched information about the Thunder Bay Sinkholes 2008 Expedition, September 2–12, 2008. Scientist explored shallow and deep coastal sinkholes to more fully understand chemical and physical properties that contribute to the unique ecology found in these recently-discovered ecosystems in Earth's largest group of freshwater lakes - the Laurentian Great Lakes of the United States and Canada. Check out the web logs, video, background information, and much more.

<http://oceanexplorer.noaa.gov/explorations/08thunderbay/welcome.html>

Tortugas Ecological Reserve Cruise

Scientists from NOAA's National Centers for Coastal Ocean Science conducted their eighth research cruise at the Tortugas Ecological Reserve to determine the ecological and economic consequences of establishing marine protected areas. Scientists aboard the NOAA Ship *Nancy Foster* conducted diver and remote sonar surveys of benthic habitat and fishes from July 25-August 5, 2008. Mission logs, Today's science (background information), and Featured scientists & crew are posted on the website. <http://www.ccfhr.noaa.gov/ecosystems/sanctuaries/tortugas2008/welcome.html>

Understanding and Responding to Climate Change

This downloadable National Academy of Sciences booklet presents recommendations from the National Academies' many expert reports on climate change, in an easy-to-read format. The 2008 edition of *Understanding and Responding to Climate Change* includes an expanded section on impacts and updated figures and graphics. http://dels.nas.edu/dels/rpt_briefs/climate_change_2008_final.pdf

Water Quality Curriculum

Changes in water quality conditions have a big impact on organisms living in estuaries. This curriculum guide for grades 6-8 contains five activities that incorporate data from NOAA's National Estuarine Research Reserve System. The activities are organized as a pathway with five levels of increasing sophistication. Students learn how to access and interpret water quality data, and how to look for patterns and changes over time. Students examine the impacts of physical water quality factors on species that live in a given environment, using the Atlantic sturgeon as an example. The goal is for students to experience different kinds of data and data accessing tools, so that, by the end of the module, they can continue to explore data sets driven by their own inquiry. <http://apps.dataintheclassroom.org/water-quality/>

INITIATIVES, JOURNALS, and MORE

Birch Aquarium at Scripps – Teacher Open House

The Birch Aquarium at Scripps Institution of Oceanography is hosting a free Teacher Appreciation and Open House, October 14, 2008 in La Jolla, California. Call 858-534-7336 to RSVP.

http://aquarium.ucsd.edu/Education/For_Schools/For_Teachers/Professional_Development/Appreciation_and_Open_House_Events/

The Canary Project

The Canary Project uses visual media, events, and artwork to visualize global warming in compelling ways, investigate questions about current ecological crises, and cultivate media attention.

<http://www.canary-project.org/>

La Fete d'Ecologie - Louisiana

The Barataria-Terrebonne National Estuary Program and Foundation are gearing up for this year's La Fete d'Ecologie: Barataria-Terrebonne, on November 15, 2008 in Thibodaux, Louisiana. This educational festival highlights the natural, cultural, and historical resources of the Barataria-Terrebonne National Estuary with food, music, educational kids' activities, and more. The goal of La Fete d'Ecologie is to educate

people about the environment that they live in, the history of the region, and the unique blend of cultures found in the estuary in a fun, family-friendly way.

<http://lafete.btnep.org/>

New Scientist

The *New Scientist* website offers news about science and technology, with over 76,000 online content pieces. There are three channels, Space, Tech, and Environment, a YouTube channel, podcasts, blogs, and more. The content is delivered by New Scientist's editors and journalists, citizen journalists, and external bloggers. The archive hosts over 15 years of magazine content online.

<http://environment.newscientist.com/home.ns>

Plant Stalkers

Plant Stalkers is a citizen science program from Duke biologist Julie Reynolds and the Eno River State Park in Durham. Volunteers, many of whom have little or no specific scientific training, help scientists and park rangers monitor the distribution of invasive plants through the use of a GPS unit during routine outdoor activities such as hiking. After training and certification through the project, volunteers mark locations of invasive species and upload the data through the Internet.

<http://www.science-writing.org/citizenscience.html>

ReefBase Pacific

The ReefBase Pacific project supports biodiversity conservation, sustainable fisheries, and reef-dependent communities in the Pacific region. The database contains a wide range of published and grey literature, images, maps, and more. Virtual Marine Resource Education Center offers a searchable database for materials that support reef related education and outreach activities developed by various organizations, and projects working in the region with the aim of mobilizing important information in a non-technical form to communities, school groups, and the general public.

<http://www.reefbase.org/pacific/>

uBio

The Universal Biological Indexer and Organizer (uBio) is a comprehensive database of known scientific and common names of living (and once-living) organisms. The Taxonomic Name Server catalogs names and classifications to enable tools that can help users find information on living things using any of the names that may be related to an organism.

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

Vadlo Search Engine

The Vadlo search engine caters to all branches of life sciences. This beta offering allows users to search within five categories: Protocols, Online Tools, Seminars, Databases, and Software. Seminars are essentially PowerPoint files for presentations, lectures, and talks. Databases will take you to databases, resources, compilations, and more.

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