

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**  
**INFORMATION EXCHANGE FOR MARINE EDUCATORS**  
**FEBRUARY 2010**

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

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

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

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

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### **Notable Reference**

#### **Economic Analysis for Ecosystem-Based Management of Ocean and Coastal Resources: An Introduction**

This document from the Massachusetts Ocean Partnership provides an introduction to the use of economic analysis for ecosystem-based management. Environmental and natural resource economics utilizes tools such as cost-benefit analysis, cost-effectiveness analysis, economic-impact analysis, and models using market and non-market data to quantify values and predict behavior.

<http://www.waterviewconsulting.com/files/Economic-Analysis-for-EBM-of-Ocean-and-Coastal-Resources-An-Introduction.pdf>

## **INITIATIVE OF THE MONTH(S)**

### **Species of the Day**

The United Nations has declared 2010 the International Year of Biodiversity. In order to increase awareness of the enormous variety of life and raise the profile of threatened species across the globe, the IUCN Red List of Threatened Species has launched the *Species of the Day*. For each day of 2010 this initiative will highlight a different species being featured on a range of websites and through various other media channels. The 365 species selected will represent the entire range of groups and cover all regions, with daily fact sheets providing information on the threats to their existence.

<http://www.iucnredlist.org/species-of-the-day>

## **WEBSITES OF THE MONTH**

### **Exploring Earth Website**

This website was developed by TERC, a non-profit educational research and development firm in collaboration with McDougal Littell, with funding provided by the National Science Foundation. The investigations and visualizations on this site are designed to accompany the high school textbook *Earth Science*. Visualizations and investigations on the site are designed to build students' knowledge of Earth Science concepts described in the textbook, and to raise student awareness of Earth as a system of interconnected components and processes. The website includes Investigations, Visualizations, Data Centers, and more. Topics range from geodesy through waves and currents, to plate tectonics, and more. Visitors can also browse by chapters, which include Earth's Oceans and Atmosphere and Weather.

[http://www.classzone.com/books/earth\\_science/terc/navigation/home.cfm](http://www.classzone.com/books/earth_science/terc/navigation/home.cfm)

### **NOAA Climate Services Portal**

NOAA has launched the NOAA Climate Services Portal prototype. The portal offers climate data and services, articles and information, education resources, and tools for engagement and decision-making. *ClimateWatch Magazine* is designed for the public user, hosting stories and images for a broad audience. Data & Services targets advanced users with easy access to data and the data library, how to utilize climate data, and information on partners. Understanding Climate provides numerous climate resources, including research publications, fact sheets, presentations, and a calendar of climate-related events. Education is designed to target educators with student activity resources, interactive tools, lesson plans, and opportunities for professional development.

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

## **REQUESTS**

### **Call for Summer Opportunities for Teachers**

The National Marine Educators Association features summer opportunities for teachers in the spring issue of *NMEA News*. If you would like to submit an opportunity for teachers and/or their students, please send a paragraph describing the workshop or field trip and a contact person. Individual articles are limited to 50-60 words--please keep articles concise and refer to websites for more information. These articles are due by February 5, 2010. The newsletter will be posted to website mid-March.

Mail articles to [nmea@usm.edu](mailto:nmea@usm.edu)

### **Seeking Testers for Fisheries Unit – Alaska, Washington**

Renee is a graduate student working towards a Masters of Science Education at the University of Washington. She is developing a middle school unit of curriculum about the role of the halibut fishery within the ocean ecosystem. It will be a 4-5 day inquiry based unit, with each lesson lasting about 1 hour. She is looking for teachers within Washington and/or Alaska who would be willing to review or pilot the lessons or would be open to having her come into their classroom and teach them in mid-late February. Contact Renee Rensmeyer at [rrensmeyer34@hotmail.com](mailto:rrensmeyer34@hotmail.com)

## **GRANTS AND OPPORTUNITIES**

### **Be the Change!**

Peace Child International's "Be The Change!" is a youth-led sustainable development program related to the Millennium Development Goals, which aims to empower young people around the world to be the change they want to see in the world. The program supports young people under age 25 with projects that concentrate on the development of local communities. The deadline for application is March 31, 2010.

<http://www.peacechild.org/btc/startown>

### **Bezos Scholars Program**

The Bezos Scholars Program @ the Aspen Institute is a seven-day, all-expense-paid scholarship that brings together twelve of the country's top public high school juniors at the Aspen Ideas Festival each summer. They are searching for independent thinkers, demonstrated leaders, and engaged community members: curious and inspired high school juniors and exceptional educators. Upon selection of student scholars, an educator from each represented school is invited to participate, thereby offering a unique leadership development opportunity for principals, teachers, college counselors, and curriculum coordinators. The deadline for application is February 12, 2010.

<http://www.bezosfamilyfoundation.org/scholars/>

### **Captain Planet Foundation Grants**

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

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

### **Community Action for a Renewed Environment Grants**

The EPA's Community Action for a Renewed Environment (CARE) is a competitive grant program that offers an innovative way for a community to organize and take action to reduce toxic pollution in its local environment. Through CARE, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them. The deadline for application is March 9, 2010. There will be information session webcasts in February to answer questions about the RFP process.

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

### **Danielle de St. Jorre Scholarship**

The International Ocean Institute presents an annual scholarship for one woman from Small Island Developing States (SIDS) involved in marine related research activities, to improve their knowledge in the subject by attending training or a university degree program. The deadline for application is February 14, 2010.

[http://www.ioinst.org/categories.php?category\\_no=47](http://www.ioinst.org/categories.php?category_no=47)

### **Disney Planet Challenge**

The Disney Planet Challenge Project-Learning Environmental Competition is an opportunity for teachers and students to join a project-based learning competition inspiring environmental stewardship. Students identify an environmental issue in their local community and offer a solution that they manage and document from start to finish. The deadline is February 26, 2010.

<http://disney.go.com/planetchallenge/discover.html>

### **Do Something Grant Awards**

DoSomething.org honors the nation's best young world-changers, age 25 and under. Do Something Award nominees and winners represent pivotal doers in their field, cause, or issue. The deadline for nomination is March 1, 2010.

<http://www.dosomething.org/programs/awards>

### **Do Something Growth Grants**

DoSomething.org gives out Do Something Growth Grants every week to help young people age 25 or under take an already successful sustainable community action project, program, or organization to the next level. Applications are accepted year-round.

<http://www.dosomething.org/grants/growthgrants>

### **Earthwatch Educator Fellowships**

Fellowships are available to sponsor participation in International and U.S. Earthwatch Conservation Expeditions. The Earthwatch Institute and its partners offer a number of Educator Fellowships every year to elementary, middle, and high school educators and administrators. Applications are accepted on a rolling basis, but those received after February 8, 2010 are subject to fewer projects and more limited funding.

<http://www.earthwatch.org/aboutus/education/edopp>

### **Ecosystem Service Methodologies and Tools Call for Proposal**

The U.S. Department of Defense (DoD) Environmental Security Technology Certification Program is seeking proposals for demonstrations of ecosystem service methodologies and tools for DoD installations. Tools and methodologies to assess ecosystem services are needed to effectively manage natural assets on DoD installations. Demonstrations should focus on the validation of ecosystem production functions that relate the supply of a service from a particular ecological system, including how those functions change with ecosystem condition, and frameworks and tools that evaluate trade-offs between services, including those that directly relate to the support of the military mission and the impacts on biological diversity based on different land-use scenarios. The deadline for submission of pre-proposals is March 4, 2010.

<http://www.estcp.org/opportunities/>

### **Everyday Young Heroes Awards**

Each week, Youth Service America features an Everyday Young Hero to highlight the achievements and commitment of a young person to service. Nominations are accepted on an ongoing basis.

<http://www.ysa.org/awards/hero>

### **Geoscience Education**

The Geoscience Education Program is part of a portfolio of programs within NSF's Directorate for Geosciences that seeks to increase public understanding of Earth system science and foster recruitment, training, and retention of a diverse and skilled geoscience workforce for the future. The program achieves these goals by supporting innovative or transformative projects that improve the quality and effectiveness of formal and informal geoscience education at all educational levels, increase the number of students pursuing geoscience education and career paths, broaden participation of traditionally underrepresented groups in the geosciences, and promote public engagement in Earth system science. The deadline for submission is March 8, 2010.

[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5505](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5505)

### **Girls Going Places**

Guardian offers the Girls Going Places® Entrepreneurship Award Program, an annual initiative designed to reward the enterprising spirits of girls ages 12-18. Winners demonstrate budding entrepreneurship; are taking the first steps toward financial independence; and make a difference in their schools and communities. The deadline for entry is February 26, 2010.

[http://www.guardianlife.com/womens\\_channel/girls\\_going\\_places/girls\\_going\\_places.html](http://www.guardianlife.com/womens_channel/girls_going_places/girls_going_places.html)

### **Gloria Barron Prize for Young Heroes**

The Gloria Barron Prize recognizes young people ages 8 to 18 who have shown leadership and courage in public service to people and our planet. The deadline for nomination is April 30, 2010.

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

### **Green in 3**

Duke University's Nicholas School of the Environment invites participants to show in just three written words how to better the environment and create a 30-second (or less) video showing how. Nothing is off the table: silly or serious, sizeable or small. A total of up to fifteen first-place winners and up to fifteen honorable mentions will be chosen over a period of three months. Deadlines for entry are February 12, March 12, and April 9, 2010.

<http://www.nicholas.duke.edu/greenin3/>

### **Horace Mann Educator Scholarships**

The Horace Mann Companies is offering scholarships for public and private school K-12 educators to take college courses. Educators employed by U.S. public or private schools with two or more years of teaching experience are eligible to apply. The deadline for application is March 1, 2010.

<https://www.horacemann.com/resources/scholarships/default.aspx>

### **Informal/Nonformal Environmental Literacy Grants**

NOAA's Office of Education has issued a request for applications for informal/nonformal science education projects that engage the public in activities that utilize emerging and/or advanced technologies and leverage NOAA assets to improve understanding and stewardship of the local and global environment. Projects should use emerging and/or advanced technologies to (1) facilitate outdoor experiences involving scientific inquiry and exploration of the natural world apart from formal K-12 curricula and (2) visualize, display, and interpret data to improve understanding and provide a systems perspective of Earth's dynamic processes. See the website for specifics. The deadline for letters of intent is February 16, 2009.

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

### **ING Unsung Heroes Awards**

The ING Unsung Heroes program helps K-12 educators and their schools fund innovative classroom projects. At least one award will be granted in each of the fifty states, provided one or more qualified applications are received from each state. The deadline for applications is April 30, 2010.

<http://www.ing-usa.com/us/aboutING/CorporateCitizenship/Education/INGUnsungHeroes/index.htm>

### **Innovation Awards**

PBS Teachers Innovation Awards recognize teachers who use innovative and effective methods of teaching in their classroom. Submissions include a video clip or photograph showing a demonstration of innovation with students (inside or outside of a classroom) or an innovative project that was the result of an instructional activity you conducted. The deadline for submission is March 12, 2010.

<http://www.pbs.org/teachers/innovators/>

### **International Children's Painting Competition**

The United Nations Environment Programme's International Children's Painting Competition invites young people (ages 6-14) to submit their paintings on the theme of Biodiversity: Connecting with Nature. The competition encourages children from all parts of the world to focus on particular environmental issues and how these issues affect their communities. The deadline for submission is April 15, 2010.

[http://www.unep.org/tunza/children/inner.asp?ct=competitions&comp=int\\_comp&int\\_com\\_p=19th](http://www.unep.org/tunza/children/inner.asp?ct=competitions&comp=int_comp&int_com_p=19th)

### **Ittleson Foundation Grants**

The Ittleson Foundation supports innovative pilot, model, and demonstration projects that will help move individuals, communities, and organizations from environmental awareness to environmental activism by changing attitudes and behaviors. Initial letters of inquiry are due by April 1 or September 1 each year.

<http://www.ittlesonfoundation.org/enviro.html>

### **JOIDES Resolution Teacher at Sea**

The JOIDES Resolution offers this special call for educators, artists, writers, and science communication professionals to apply for limited positions on the Integrated Ocean Drilling Program's *Expedition 327, Juan de Fuca Hydrology*, sailing July 5-September 4, 2010. If selected, educators have the opportunity to learn shipboard science alongside the expedition's science party and translate their learning experiences for students, families and the general public through creation of blogs, videos, social networking sites,

live video conferencing from the ship, and classroom activities. The deadline for application is March 10, 2010.

<http://joidesresolution.org/node/453>

### **Junior Duck Stamp Art Contest**

The U.S. Fish and Wildlife Service oversees the Federal Junior Duck Stamp Program. Each year, students are invited to create duck stamp drawings to show what they have learned about wetlands habitat and waterfowl conservation. Check the website for details. Most state deadlines for submission are March 15, 2010.

<http://www.fws.gov/juniorduck/>

### **Knauss Fellowship**

The Knauss Fellowship provides experience to students who have an interest in ocean, coastal, and Great Lakes resources and in the national policy decisions affecting those resources. The program matches highly qualified graduate students with hosts in the legislative and executive branch of government located in the Washington, D.C. area, for a one year paid fellowship. The deadline for application is February 19, 2010. Contact your state Sea Grant program director.

<http://www.seagrant.noaa.gov/knauss/>

### **Learn and Serve America Higher Education Grants**

The Corporation for National and Community Service announces the new Learn and Serve America Higher Education grants. The purpose of the program is to support institutions of higher education that use innovative service-learning programming to meet the needs of local communities. The deadline for application is March 9, 2010.

[http://www.learnandservice.gov/for\\_organizations/funding/nofa\\_detail.asp?tbl\\_nofa\\_id=76](http://www.learnandservice.gov/for_organizations/funding/nofa_detail.asp?tbl_nofa_id=76)

### **Mangrove Calendar Competition**

The Mangrove Action Project invites artwork from children ages 6-14 from mangrove nations to show why mangroves are important to them and their community. Artwork will be published in the project's 2011 calendar, which will be distributed internationally to raise awareness about mangrove forest wetlands. This contest aims to promote and listen to creative voices of children living in mangrove areas. The deadline for submission is August 15, 2010. Visitors can order the 2010 calendar from the website.

<http://www.mangroveactionproject.org/map-programs/childrens-art-calendar/map-2008-childrens-art-calendar-info>

### **Marine Wildlife & Seascape Photo Contest**

Ocean Conservancy invites you to enter the 2010 Marine Wildlife & Seascape Photo Contest with your best ocean seascape and marine wildlife images. The deadline for entry is February 28, 2010.

[http://www.oceanconservancy.org/site/News2?news\\_iv\\_ctrl=1&page=NewsArticle&id=13855&s\\_src=photo2010](http://www.oceanconservancy.org/site/News2?news_iv_ctrl=1&page=NewsArticle&id=13855&s_src=photo2010)

### **National High School Challenge**

Classroom Earth's mission is to increase the ability of high school teachers to integrate environmental education into curricula so that students are prepared to be a part of environmental solutions. The 2010 National High School Challenge encourages teachers to incorporate environmental education into all subject areas through innovative teaching strategies. The deadline for entry is February 22, 2010.

<http://classroomearth.org/challenge/2010>

### **Oregon Marine Habitat Fellowship**

Oregon Sea Grant and Oregon Department of Fish and Wildlife have partnered to create this postgraduate Natural Resources Fellowship with a marine habitat focus. The one-year fellowship is intended to provide work experience and training while contributing to the Oregon Department of Fish and Wildlife mission to protect and enhance Oregon's fish and wildlife habitats for use and enjoyment by present and future generations. The objective of this project is to enhance understanding of the ecology of Oregon's reefs for conservation and resource management purposes. The deadline for application is March 1, 2010.

<http://seagrant.oregonstate.edu/funding/ODFWfellowshipmarinehabitat.html>

### **Pearson Tropical Biology Scholarship**

High school biology teachers can apply for a scholarship for the summer of 2010 to join in research and exploration of tropical biology concepts with the Organization for Tropical Studies in Costa Rica. Submit an essay on how this experience would change the way you teach biology. The deadline for entry is March 1, 2010.

<http://www.phschool.com/tropicalbiology/>

### **Presidential Award for Excellence in Mathematics and Science Teaching**

NSF is now accepting nominations for the 2010 Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST). This year, the PAEMST will recognize outstanding mathematics and science teachers (grades K-6) for their contributions to improving teaching and learning. The deadline for nomination is April 1, 2010.

<http://www.paemst.org/controllers/home.cfc?method=view>

### **Purpose Prize**

The Purpose Prize provides awards to exceptional individuals over 60 who are taking on society's biggest challenges, including education and the environment. The deadline for nomination is March 5, 2010.

<http://www.encore.org/prize>

### **Stewardship Council Grants - California**

The Pacific Forest and Watershed Lands Stewardship Council offers Youth Investment Programs Grants to improve the lives of underserved youth by providing greater access to outdoor experiences. The first round of proposals is due in February. See the website for complete details.

<http://youth.stewardshipcouncil.org/grants/C4/grantmaking-overview/>

### **Wildlife Forever State-Fish Art Project**

The Wildlife Forever State-Fish Art Project challenges young artists to create an illustration of their state fish and a written composition on its behavior, habitat, and efforts to conserve it. The deadline for entry is March 31, 2010.

<http://www.statefishart.com/index.htm>

## **INTERNSHIPS AND TEMPORARY OPPORTUNITIES**

### **Leatherback Sea Turtle Research Assistant**

Ocean Spirits in Grenada is currently seeking Research Assistant volunteers for its 2010 Leatherback Sea Turtle Conservation Research Program. Volunteers will actively

participate in the night survey monitoring of Levera Beach (currently hosting 800+ nests per year), perform morning surveys of adjacent beaches, and other project activities. Additionally, opportunities also exist to participate in educational programs involving local schools and communities.

<http://www.workingabroad.com/page/24/ocean-spirits-grenada.htm>

#### **Research Experience for Undergraduates - Alabama**

Alabama's Dauphin Island Sea Lab will offer seven undergraduate marine science fellowships, May 17--August 6, 2010, as part of the National Science Foundation's Research Experience for Undergraduates program. The deadline for application is February 12, 2010.

<http://univ-prog.disl.org/nsf/nsfapplication.cfm>

#### **Tropical Marine Biology Summer Course - Australia**

Phoenix College will team up with Australia's University of Queensland to offer this opportunity to study Tropical Marine Biology Class in Australia, June 8-June 29, 2010. The course of study will include corals, invertebrates and fishes, mangrove and eucalypt forests, and Aboriginal natural arts.

<http://www.pc.maricopa.edu/Biology/ppepe/au/auwebnew.htm>

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

#### **American Society of Limnology and Oceanography Summer Meeting**

The American Society of Limnology and Oceanography (ASLO) and the North American Benthological Society (NABS) are hosting their summer meeting June 6-11, 2010 in Santa Fe, New Mexico. The theme of the meeting, *Aquatic Sciences: Global Changes from the Center to the Edge*, is meant to pull all aquatic sciences together and build strong synergy and collaboration between societies and scientists. One of the topics is Education in Aquatic Sciences. The deadline for submission is February 12, 2010.

<http://aslo.org/meetings/santafe2010/index.html>

#### **At Your School Programs - California**

The Gulf of the Farallones National Marine Sanctuary offers San Francisco Bay Area teachers the opportunity to bring Ocean Science to their classroom with one of the *At Your School* programs, including Crab Cab (K-3), Webs Under Waves (3-5), Sharkmobile (4-6), and Science at Sea (7-12).

<http://farallones.noaa.gov/education/welcome.html>

#### **Climate Literacy Conference - California**

The invitational Climate Literacy Conference, February 17-18 in San Diego, California, is designed to bring together educators working in a wide range of informal science environments for a two-day professional development conference that will focus exclusively on climate literacy in all of its dimensions and to provide opportunities for informal science educators to interact on the topic of climate change with scientists and science media who will be participating in the 2010 AAAS Annual Meeting that immediately follows.

<http://www.project2061.org/events/meetings/climate2010/>

### **Coral Reef Task Force**

The public meetings of the 23rd bi-annual meeting of the U.S. Coral Reef Task Force (USCRTF) will be held February 23-24, 2010 in Washington, DC.

<http://quest.cvent.com/EVENTS/Info/Summary.aspx?e=efec63ae-9476-497b-83fa-7530579bf101>

### **GK-12 Program - Texas**

*Tracing a Drop of Water: An Integrated Environmental Approach to K-12 Education*, sponsored by the National Science Foundation and the University of Texas at Austin's Environmental Science Institute, partners graduate students in the sciences with K-12 teachers in Texas to enhance science education through classroom activities, workshops, and field projects. The program provides support for graduate fellows to serve as resources for K-12 science students and teachers emphasizing collaboration in K-12 classrooms, and in field projects on Texas watersheds, estuaries, and ocean-going vessels. The deadline for application is April 1, 2010.

<http://www.esi.utexas.edu/gk12/>

### **International Congress for Conservation Biology**

The Society for Conservation Biology is accepting abstracts for oral, poster, and speed presentations for the 24th International Congress for Conservation Biology, *Conservation for a Changing Planet*, which to be held July 3-7 2010 in Edmonton, Alberta, Canada. Criteria for selection include application to conservation science, management, policy, and education. The deadline for submission is February 15, 2010.

<http://www.conbio.org/Activities/Meetings/2010/?CFID=8087694&CFTOKEN=59689005>

### **LTER Mini-Symposium - Virginia**

The 9th Annual LTER (Long-Term Ecological Research) Mini-symposium, Ecosystem Services in a Changing World: Perspectives from Long-Term Ecological Research, will be held March 4, 2010 in Arlington, Virginia.

<http://lno.lternet.edu/>

### **MATE Summer Institute - California**

The MATE (Marine Advanced Technology Education Center) 2010 Summer Workshop for Faculty on Intermediate Level ROV Building for Classroom Projects will take place July 26-August 1, 2010 in Monterey, California. Participants will work in teams to design and build ROVs to accomplish a set of pre-determined mission tasks. In addition to the instruction and hands-on time, participants will have the opportunity to interact with industry professionals and participate in field trips. Applications should be submitted by April 14, 2010.

[http://www.marinetech.org/education/summer\\_institutes/2010\\_Information.php](http://www.marinetech.org/education/summer_institutes/2010_Information.php)

### **National Conservation Training Center Courses – West Virginia**

The U.S. Fish and Wildlife Service offers professional development courses in Shepherdstown, West Virginia. For more information about a specific course, contact the noted educator.

- OUT8113: Developing and Working with Friends Organizations May 19-21, 2010. The deadline for registration is March 10, 2010. Contact Laura Jones at [Laura.Jones@fws.gov](mailto:Laura.Jones@fws.gov)
- OUT8121: Interest-Based Negotiation June 2-4, 2010. The deadline for registration is March 24, 2010. Contact Jim Siegel at [Jim.Siegel@fws.gov](mailto:Jim.Siegel@fws.gov)

- OUT8101: Public Outreach and Education: Overview and Program Planning, June 7-11, 2010. The deadline for registration is March 29, 2010. Contact Sandy Spakoff at [sandy\\_spakoff@fws.gov](mailto:sandy_spakoff@fws.gov)

[http://training.fws.gov/documents/Section1\\_NCTC\\_Sponsored\\_Courses.pdf](http://training.fws.gov/documents/Section1_NCTC_Sponsored_Courses.pdf)

### **Pacific Marine Mammals – California**

Camp Ocean Pines is hosting a seminar on Pacific Marine Mammals for the general public with Pieter Folkens, marine mammal researcher and artist, February 19-21, 2010 in Cambria, California. The weekend includes food and lodging, lectures, field trips, and more. Options are available for those wishing to only attend the lectures.

<http://www.campoceanpines.org/upcoming>

### **Polar Connections Summer Institute - Massachusetts**

The International Polar Year STEM Polar Connections Summer 2010 Institute is designed to promote the teaching of science concepts and processes related to the polar regions, and to emphasize connections to State and National Science Standards for middle and high school. It includes a one-week summer institute, July 12-16, 2010 in Amherst, Massachusetts, along with academic-year online discussion forums.

Participants will be expected to use selected materials in their classrooms and to aid in the dissemination program. The deadline for application is April 1, 2010.

<http://www.umassk12.net/ipy/>

### **Restore America's Estuaries Conference - Call for Proposals**

Restore America's Estuaries announces the Call for Dedicated Sessions, Presentations and Posters for the 5th National Conference on Coastal and Estuarine Habitat Restoration, *Preparing for Climate Change: Science, Practice, and Policy*, November 13-17, 2010 in Galveston, Texas. The conference focuses on the challenges and opportunities for restoration and brings together people who are involved in policy, education, science, strategy, business, and on-the-ground restoration. The deadline for submission is March 2, 2010.

<http://program.estuaries.org>

### **Sea Turtle and Diamondback Terrapin Conservation Teacher Workshop - Georgia**

Join biologists from Georgia and South Carolina, June 14-18, 2010 on Sapelo Island, Georgia, who will share their knowledge of anatomy and life history, conservation, and management of the Loggerhead Sea Turtle and Diamondback terrapin. Learn why the Georgia Coast is so important to these magnificent animals and ways you can help them through educating your students.

Contact Georgia Graves at [georgia.beachwalk@bellsouth.net](mailto:georgia.beachwalk@bellsouth.net)

### **Talking Fire Without Getting Burned - Online**

The National Interagency Fire Center External Affairs staff is offering its first wildland fire communications webinar, February 23, 2010. The webinar can be informative for anyone who communicates with the public about fire and resource management practices. Social science researcher Sarah McCaffrey will also share useful information about how the public views wildfire as well as tips to enhance wildland fire communication strategies.

Contact me for registration information at [phyllis.dermer@noaa.gov](mailto:phyllis.dermer@noaa.gov)

### **Waquoit Bay NERR Workshops - Massachusetts**

Check out the winter and spring courses for teachers sponsored by the Waquoit Bay National Estuarine Research Reserve in Massachusetts. The professional development courses integrate science content, math applications, recent research results, and sample classroom lessons. Upcoming courses include Salt Water Studies: Coastal Science Activities for the Classroom, Wings Over Water, and more. Graduate credit is available.

<http://www.waquoitbayreserve.org/eventcalendar.aspx>

## **EDUCATIONAL RESOURCES**

### **American Samoa and the Pacific Remote Islands Expedition**

Follow the scientists and crew of the NOAA Ship *Hi'ialakai* as they head into the Pacific to explore the coral reef ecosystems of The Phoenix Islands, American Samoa, and the Line Islands, starting January 21, 2010. The three month expedition to Johnston Atoll, Howland and Baker Islands, American Samoa, Jarvis Island, Palmyra Atoll, and Kingman Reef will be the fifth biennial Pacific Reef Assessment and Monitoring Program (Pacific RAMP) expedition to American Samoa and the seventh to the Pacific Remote Island Areas. Track the expedition, read the blogs, and more.

<http://asramp10.blogspot.com/>

### **Aquarium of the Pacific's Lecture Series**

Aquarium of the Pacific offers a live lecture series and posts archived videos from the 2008 and 2009 lectures; this year's series will be added. Each lecture video is accompanied by a short video in which the guest speaker talks about herself/himself.

<http://www.aquariumofpacific.org/multimedia/video/>

### **Banana Slug String Band**

Banana Slug String Band is committed to educational entertainment for children and families through interactive music and performance. They foster positive attitudes about the environment, provide information about natural history and science, promote music appreciation, and more by supporting the arts in education. The website features an educator's page, upcoming itinerary, and more. The band's *Slugs at Sea* CD correlates with the K-8 MARE (Marine Activities, Resources & Education) curriculum out of the University of California Berkeley's Lawrence Hall of Science (LHS) and their upcoming album, *Only One Ocean*, will have associated curricula through LHS and COSEE. Join the email list to get the latest news of upcoming concerts, a free music download, and links to educational resources.

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

### **Climate Change Publications**

Various institutions have recently published reports on the environmental and socioeconomic impacts of climate change, as well as strategies for addressing those impacts. MPA News Volume 11, No. 4 offers a brief publications list of general sources, management of ecosystems as carbon sinks, ocean acidification, adaptation to climate change impacts, sea level rise, and coral bleaching.

<http://depts.washington.edu/mpanews/MPA112.htm>

### **Climate Kids**

NASA offers the Climate Kids: NASA's Eyes on the Earth website, targeted at kids in grades 4-6. It offers online interactives, images, video, and content, along with links to websites with educator resources.

<http://climate.nasa.gov/kids/>

### **Climate One Stop**

Researchers attending the United Nations Climate Change Conference in Copenhagen unveiled a website dedicated to gathering and organizing climate data for decision makers, professional scientists, and others. Information search criteria include education, funding, and more. Be sure to add your program to the website.

<http://arcserver4.iagt.org/climate1stop/>

### **Cool Trail Solutions**

The National Trails Training Partnership offers an area of their website devoted to photos and graphics of solutions to a wide array of trail-related problems. The goal is to enhance your resources for trails planning, development, and management with visual ideas from across the country. Share your ideas, or check out how others have solved one of your sticky problems.

<http://www.americantrails.org/resources/cool/index.html>

### **DLESE Teaching Boxes**

Teaching boxes from the Digital Library of Earth System Education are classroom-ready instructional units created by collaboration between teachers, scientists, and designers. The Teaching Boxes contain materials that model scientific inquiry, allowing teachers to build classroom experiences around data collection and analysis from multiple lines of evidence, while engaging students in the process of science, focusing on gathering and analyzing scientific evidence. Boxes include Global Ups and Downs: Changing Sea Level, Living in Earthquake Country, and more.

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

### **DLIST ASCLME**

Widen your perspectives: DLIST ASCLME (Agulhas and Somali Current Large Marine Ecosystem) was created to help provide access to information for stakeholders who have an interest in the welfare of Western Indian Ocean, its coastal areas, and local communities.

<http://www.dlist-asclme.org/>

### **Education and the Environment Initiative Curriculum**

The California State Board of Education unanimously approved the adoption of the Education and the Environment Initiative (EEI) Curriculum. The goal of EEI is to increase environmental literacy for California K-12 students by teaching Science and History-Social Science academic content standards to mastery within an environmental context. PDF versions of all 85 units are available to download.

<http://www.calepa.ca.gov/education/eei/curriculum/>

### **Field Guide to the Nonindigenous Marine Fishes of Florida**

A new field guide is being distributed in South Florida, designed to stem the tide of invasive marine fishes by aiding in the detection of nonindigenous species. The *Field Guide to the Nonindigenous Marine Fishes of Florida* includes biological and ecological profiles and sightings information for 38 species of fish previously identified in South

Florida estuarine and marine waters. The guide was developed in partnership with the National Centers for Coastal Ocean Science, the United States Geological Survey, and the Reef Environmental Education Foundation and provides a “watch list” for future invaders in South Florida and surrounding regions. The website allows users to download the full document, read about specific species, and more.

[http://fl.biology.usgs.gov/Marine\\_Fish\\_ID/index.html](http://fl.biology.usgs.gov/Marine_Fish_ID/index.html)

### **GeoSource K-5**

This website, hosted by the American Geological Institute, offers online Earth science professional development for K-5 teachers. Topics include weather, climate, water, and more. In addition, the website offers classroom activities, career information, assessment tools, and more.

<http://www.k5geosource.org/index.html>

### **Global Warming Survey**

The Yale Project on Climate Change at Yale’s School of Forestry & Environmental Studies has released the results of a new national survey on public responses to climate change.

<http://environment.yale.edu/uploads/AmericansGlobalWarmingBeliefs2010.pdf>

### **Groundwater Educational Flash Animation**

This short flash video stars two singing groundhogs and offers a cute overview of groundwater.

<http://www.leapingmedia.com/groundwater.html>

### **High School Teaching Resources**

The *Life in the Papahānaumokuākea Marine National Monument* High School Teaching Resources were created to allow teachers to create lessons and units that engage their students in the process of discovery. Further, teachers need not be the primary source of information when these resources are used – the lessons were designed so that teachers guide students in the discovery process. Resources include teacher guides, slideshows, lessons, and more. Topics include the reef environment, cultural resources, top predators, and much more.

<http://reinat.com/lpmnm/introduction/>

### **Higher Education Directory**

This online higher education directory from NAAEE is meant to be a comprehensive resource to undergraduate and graduate environmental programs at higher education institutions in North America. The directory provides details about institutions, programs, departments, and faculty. Contact NAAEE to make sure your program is included.

<http://www.naaee.org/programs-and-initiatives/higher-education-directory/>

### **Hohm Press Family Health Series Books**

Hohm Press publishes books that promote self-awareness, the recognition of interdependence, and compassion. *We Like to Nurse Too* uses simple text illustrations of sea mammals feeding their babies. It is a children’s picture book in their Family Health Series which focuses on our kinship with all mammals. You might also check out *We Like to Live Green*. The books are available in English and Spanish, and free samples are available.

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

### **Human Dimensions Website**

HD.gov is a dynamic interagency portal that provides information and tools related to the human dimensions of natural resource management. The website also provides a way for users to share projects and resources by contributing site content and participating in forums. The front page offers a dynamic calendar of events; job, grant and training opportunities; and links to frequently asked questions. Major subdivisions include methods, tools, data, publications, case studies, laws and policies, and issues and topics. The website is a new initiative, and more features will be added.

<http://www.hd.gov/HDDotGov/>

### **K-12 Lesson Plans**

The University of Texas at Austin's Environmental Science Institute offers a variety of downloadable lesson plans covering topics such as mapping, air and water quality, and more. The lessons can be searched by subject, grade level, and alphabetically.

<http://www.esi.utexas.edu/gk12/lessons.php>

### **Learning From the Fossil Record**

These lessons from the University of California's Museum of Paleontology integrate physics, biology, and geology to help high school students understand planetary processes that contribute to climate change, biodiversity, and more through time. The lesson plans include island biogeography, sea floor spreading, using foraminifera to interpret past climates, and more.

<http://www.ucmp.berkeley.edu/fosrec/Learning.html>

### **Marine Ecoregions of North America**

The Commission for Environmental Cooperation offers Marine Ecoregions of North America: a Tool for Ocean Conservation, compiled by specialists from Canada, Mexico, and the United States, describing and mapping the North American oceanic and coastal waters, classifying them into 24 marine ecoregions according to oceanographic features, and geographically distinct assemblages of species. The website offers both downloadable GIS files and an electronic version of the book.

[http://www.cec.org/Page.asp?PageID=122&ContentID=2715&SiteNodeID=437&BL\\_ExpandID=](http://www.cec.org/Page.asp?PageID=122&ContentID=2715&SiteNodeID=437&BL_ExpandID=)

### **Marine Fisheries Curriculum**

The Northwest Center for Sustainable Resources, supported by NSF's Advanced Technological Education program, has completed a comprehensive series of curriculum modules on marine fisheries. The Marine Fisheries Series consists of nine modules covering the background, current status, causes for decline, management approaches, and anticipated future of marine fisheries. The modules are most appropriate for inclusion in undergraduate courses; they can be downloaded from the website or ordered in hard copy (including a CD). Check these out.

<http://www.ncsr.org/materials/index.html>

### **Marine Mammals of the Arctic - Online**

Immersion Learning presents live *Marine Mammals of the Arctic* webcasts February 10-12, 2010. Viewers will have the opportunity to interact with scientists and trainers who work with marine mammals to better understand their behaviors and physiology, as well as the impact of humans and climate change on these animals. Kids watching the programs will also be able to participate in an online question-and-answer session and polling features as they hear from these experts and learn how they can help protect the

oceans. Check out their archived programs, including Dolphins, Life at the Extremes, and more.

[http://www.immersionlearning.org/index.php?option=com\\_content&task=view&id=479&Itemid=231](http://www.immersionlearning.org/index.php?option=com_content&task=view&id=479&Itemid=231)

### **Massachusetts Marine Educators Projects and Curriculum**

The Massachusetts Marine Educators website offers links to projects, activities, and curriculum. Check out Ocean tides, Kelp in the Cupboard, Fish Activity Cards, and more.

<http://massmarineeducators.org/curriculum/>

### **Mesophotic Coral Ecosystems**

Mesophotic.org is an on-line resource database that serves as a repository for information on Mesophotic Coral Ecosystems (MCEs). MCE refers to light-dependent coral communities (and associated communities of algal, sponge and fish species) that occur in the deepest half of the photic zone, often referred to as the twilight zone. The website hosts news, information about technology and management techniques, photos and videos, and more.

<http://mesophotic.org/>

### **Observatorium**

NASA's Observatorium is a public access site for Earth and space data, with picture of the Earth, planets, and more, as well as the stories behind those images. The Educator's Resources includes topics in remote sensing, teacher's guides, and more. Education projects can be browsed by grade level and topic, including atmosphere and water. Recent additions cover hurricanes, wind chill, and more.

[http://physics.ship.edu/~mrc/astro/NASA\\_Space\\_Science/observe.arc.nasa.gov/nasa/core.shtml.html](http://physics.ship.edu/~mrc/astro/NASA_Space_Science/observe.arc.nasa.gov/nasa/core.shtml.html)

### **Online Communications Case Study**

How do you communicate among hundreds of ocean scientists and educators spread across the world? COSEE-Alaska identified the development and support of SeaNET: the Network of Scientists and Educators in Alaska, as a high priority and decided to begin building a communications network with a combination of a listserv and a social networking site. This web page describes what they found about the use of these tools.

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

### **Parkwire**

The George Wright Society is dedicated to the protection, preservation, and management of cultural and natural parks and reserves through research and education. The website offers the daily news service, Parkwire: Protected Area News from Around the World. Most articles consist of 2-3 paragraphs from the beginning of the story and a link to the full story. The focus is on management issues, relevant research, and more.

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

### **Podcast of Life**

Introduce your students to marine biology and biodiversity through the Podcast of Life, brought to you by the Encyclopedia of Life, Smithsonian's National Museum of Natural History, Atlantic Public Media, and a consortium of marine education network partners. Developed for students aged 9-13, the 5-minute podcasts highlight marine species with high student appeal and available relevant classroom resources. The website also

offers educational materials, meet the scientists, and extras. Student contributions are solicited. There will be a new podcast every two weeks.

<http://education.eol.org/podcast>

### **Portal to Papahānaumokuākea**

Duke University's Nicholas School of the Environment students once again visited Hawaii's Papahānaumokuākea Marine National Monument, January 16-30, 2010. Read students' blogs, view their photos and videos, and watch an Albatross chick hatch.

<http://www.nicholas.duke.edu/hawaii/2010/>

### **Quahog Dissection**

This Rhode Island Sea Grant informational page presents a descriptive guide to Quahog dissections. The page accompanies students performing the clam dissection, using colorful images and highlighted vocabulary terms to illustrate special features. In addition to general anatomy, the reference includes informational sections about feeding and digestion, and respiration and circulation. Linked terms direct users to related Sea Grant web pages.

[http://seagrant.gso.uri.edu/G\\_Bay/HabitatEco/Shelffishing/quahog\\_dissect.html](http://seagrant.gso.uri.edu/G_Bay/HabitatEco/Shelffishing/quahog_dissect.html)

### **Reef Relief Founders**

Reef Relief founders Craig and DeeVon Quirolo offer an online resource on coral reefs assembled during their work over the past 23 years in the Florida Keys and the Caribbean. The website hosts educational resources, images, multimedia, and more.

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

### **Save the Whales Outreach Programs**

Save The Whales offers hands-on classroom programs in Monterey and Santa Cruz Counties. Programs include the Land & Sea Watershed Model, Marine Mammals: Adaptations and Communications, Sea Otters: A Story of Survival, and more.

<http://www.savethewhales.org-wow.html>

### **Science Today**

Science Today is a one minute radio program produced by the University of California. The website provides the program on demand, in audio and text, as well as the archives for the program. Visitors can also browse by subject, including air quality, oceanography, and more, and get more in-depth information through the features, including marine mammal, global warming, and fire issues.

<http://www.ucop.edu/scientoday/index.php>

### **SciJinks Weather Laboratory**

NOAA and NASA offer the SciJinks Weather Laboratory, an interactive web site for middle school students, teaches about predicting weather patterns. The Educators link at the bottom of the page offers suggestions on how to use the SciJinks resources in the classroom.

<http://scijinks.jpl.nasa.gov/weather/>

### **SeaWeb Resources**

SeaWeb, working to raise awareness of the growing threats to the ocean and its living resources, is a communications-based, international nonprofit organization that utilizes social marketing techniques to advance ocean conservation. Their resources include marine science citations, ocean issue briefs, public opinion research and analysis, and

more. The Marine Science Review offers summaries of new marine science articles, generally focused around a specific theme. (Note that the most recent reviews are posted towards the bottom of the page).

<http://www.seaweb.org/resources/msr.php>

### **Songs and Stories**

Songs and Stories for Kids About Animals and Nature is a blog for teachers and parents from singer/songwriter/storyteller and educator Rosie Emery. The website includes instructive content along with accompanying song and story suggestions, which can provide ideas for lesson plans. Songs and lyrics are posted to her MySpace page.

<http://rainbowdolphin-interconnected.blogspot.com/>

### **Squids4Kids**

Bring a jumbo Humboldt squid into class and engage students of any age in this hands-on activity. Humboldt squid provide an outstanding teaching platform for discussing climate change, ecology, anatomy, physiology, fisheries science, and more.

Squids4Kids supplies frozen specimens of Humboldt squid for use in educational activities at any level and the package includes illustrated background material and dissection guides. Check out the program and resources on the website.

<http://gilly.stanford.edu/outreach.html>

### **Student Science Communication Project**

The Encyclopedia of Earth's science writing initiative aims to help students develop writing skills through the preparation of articles for publication in the Encyclopedia of Earth. Senior level environmental science students and graduate students at several universities and colleges around the nation are writing and publishing articles for the website. The website offers a subset of student articles, a Teacher's Guide, and more.

[http://www.eoearth.org/article/Student\\_Science\\_Communication\\_Project](http://www.eoearth.org/article/Student_Science_Communication_Project)

### **Sustainable Development Resources**

The online PelicanWeb's Journal of Sustainable Development aims to be a research digest on integral human development, education for sustainable development, and related global issues. The January 2010 issue is a directory of selected online resources on sustainable development and related issues, and offers a selective compilation of links previously used in the journal, along with other recently gathered links.

<http://www.pelicanweb.org/solisustv06n01page1.html>

### **Wetland Plants of the Southeast**

This downloadable list compiled by the Swamp School lists plants by their common and scientific names and identifies their wetland indicator status, useful for delineation.

[http://swampschool.org/whitepapers/Wetland\\_Plant\\_Guide\\_Region\\_2.pdf](http://swampschool.org/whitepapers/Wetland_Plant_Guide_Region_2.pdf)

### **Wilkes Land Glacial History**

The JOIDES Resolution scientific ocean drilling vessel has left New Zealand and is heading to the coast of Antarctica on an expedition centered on climate change questions. Students, teachers, and the public can follow the expedition through ship scientists and staff blogs, videos, Ask the Scientist opportunities, and more.

<http://joidesresolution.org/>

## **Writing Guidelines for Engineering and Science Students**

Penn State University provides this web resource for engineering and science students with the models, exercises, and advice. These guidelines for engineering writing and scientific writing are designed to help students communicate their technical work. The website examples include many types of documents students will likely encounter in their schooling and eventual professions. The homepage offers links to both Student and Instructor Resources. Document types include formal reports, presentations, correspondence, and more.

<http://writing.enqr.psu.edu/>

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

### **Energy-Related Laboratory Equipment Program**

U.S. middle and high schools are now eligible to participate in the Department of Energy's Used Energy-Related Laboratory Equipment (ERLE) program. The ERLE Grant Program was established to grant available excess of used energy-related laboratory equipment to middle schools, high schools, universities, and colleges and other nonprofit educational institutions of higher learning in the United States for use in energy oriented educational programs.

<http://www.osti.gov/erle/>

### **Ocean Guardian Classroom**

NOAA's National Marine Sanctuaries are offering classrooms nationwide the opportunity to participate in an educational program to help students understand that no matter where they live, they have an impact on the world's single, interconnected ocean. As an Ocean Guardian classroom, students and their teacher commit to the protection and conservation of local watersheds, the world's ocean, and special ocean areas, like national marine sanctuaries, by proposing and implementing a school- or community-based conservation project.

[http://sanctuaries.noaa.gov/education/og\\_classroom/welcome.html](http://sanctuaries.noaa.gov/education/og_classroom/welcome.html)

### **Run for Water**

The Dow Live Earth Run for Water, April 18, 2010, will consist of events in countries around the world, featuring concerts and water education activities aimed at igniting a tipping point to help solve the water crisis.

<http://liveearth.org/en/run>

### **San Francisco Ocean Film Festival**

The San Francisco Ocean Film Festival will take place February 3-7, 2010 in San Francisco, California. Three short films to be included were created by students in the National Marine Sanctuary and partners' Ocean For Life program this past summer; two will be featured in the main program, and the third in the special Youth Program which should draw up to 1,100 middle- and high-school students from 23 schools.

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

### **Special Days for EE: 2010 Planner**

Environmental Education in Georgia offers this listing of special days set aside for Environmental Education, including National Wildlife Week, American Wetlands Month, and World Ocean Day.

<http://eeingeorgia.org/core/item/page.aspx?s=16215.0.0.4863>

**Wheels of Time and Place**

Wheels of Time and Place is a set of blank circular journals that can be used to explore the details of a place, cycles of day and night, passing of the seasons, or other phenomenon. The website offers a gallery of examples, resources, and more.

<http://partnersinplace.com/wheels-of-time-and-place/>