

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

**MARCH 2011**

This update is funded by the National Marine Sanctuary 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, 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/resources/education/#exchange>. Contact the editor directly at [phyllis.dermer@noaa.gov](mailto:phyllis.dermer@noaa.gov), or by phone at (865) 932-5074, to discuss further enhancements or to contribute information for future issues.

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## **Notable Reference**

### **Economic Incentives for Marine Conservation**

Using natural and social sciences, the Science-to-Action partnership offers a variety of publications with recommendations for successful implementation of marine conservation to maximize the benefits to people and nature. A guidebook (Economic incentives for marine conservation) and policy brief (Case Studies of Three Economic Incentive Approaches in Marine Conservation) offer guidance on how to select and implement incentive-based solutions including buyouts, conservation agreements, and alternative livelihoods, and outlines how to design an incentive approach.

<http://www.science2action.org/component/content/article/143#economicincentives>

## **OPPORTUNITIES OF THE MONTH**

### **Ocean for Life Field Study**

Ocean for Life: One World, One Ocean, the Ocean for Life field study brings together high school students of diverse backgrounds and cultures to discover marine science, conservation, and how the ocean connects us all. The program increases cultural understanding through ocean science by providing high quality, immersive ocean field studies and follow-on education opportunities. The Ocean for Life program is designed around three main themes: a sense of place, interconnectedness, and ocean conservation and stewardship. These themes are highlighted through activities focusing on ocean science, cultural sharing, and youth media projects. The field study is hosted by Channel Islands National Marine Sanctuary, from July 14-26, 2011 in Santa Barbara and on Santa Cruz Island, California. Hurry – the deadline for application is March 7, 2011.

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

### **TED Fellows Program**

The TED Fellows Program is an international fellowship bringing entrepreneurs into the TED community. They seek 20 young innovators to be a part of the 2011 TEDGlobal Fellows class. The deadline for application is March 11, 2011.

<http://www.ted.com/fellows/apply>

## **MESSAGE FROM THE BRIDGE**

### **The Bridge at NSTA**

Those of you attending the NSTA National Conference in San Francisco next week should visit the Bridge exhibit at the NMEA Whale of a Share-a-thon, Thursday, from 9:30-10:30am in Yerba Buena Salon 9 of the Marriott San Francisco Marquis; and at the NESTA Ocean and Atmosphere Share-a-thon, Friday from 11am-12pm in Meeting Room Hall D of the Moscone Center. There will be great resources for the taking. On Saturday morning, the Bridge's Chris Petrone will be demonstrating the Data Analysis Teaching Activity *Satellites and Storms* during the second session of the day-long COSEE Program, which runs from 9am-4:30pm in the Marriott SF Marquis Willow Room.

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

## **GRANTS AND OPPORTUNITIES**

### **Alaska Native Education**

The purpose of the Alaska Native Education program is to support innovative projects that enhance the educational services provided to Alaska Native children and adults. The deadline for application is April 1, 2011.

<http://www2.ed.gov/legislation/FedRegister/announcements/2011-1/013111g.html>

### **American Wilderness Leadership School Scholarships**

The American Wilderness Leadership School was established with the vision of providing educators with a useful, hands-on experience that they can use in the classroom. Teachers will have the opportunity to attend an eight-day course on wildlife conservation, land management issues, and more. Teachers can apply to their local Safari Club International chapter for sponsorship by April 1, 2011.

[http://www.safariclubfoundation.org/content/index.cfm?action=view&content\\_id=231](http://www.safariclubfoundation.org/content/index.cfm?action=view&content_id=231)

### **Camp Scholarships – Alaska, Alabama, and Mississippi**

Four scholarships are available for the Ocean Science and Leadership Expedition in Alaska on July 14-23, 2011. Two Totem Ocean Trailer Express scholarships are for Alaska students currently enrolled in the Anchorage School District. The Mississippi-Alabama Sea Grant Consortium is also sponsoring two scholarships for students who will be in grades 10-12 in the 2011-2012 school year and reside in Alabama or Mississippi. The camp, offered by the Prince William Sound Science Center and based in Cordova, Alaska, will include ocean-science learning on oil spills, oceanography, climate change, and more. The deadline for application is April 1, 2011.

<http://www.pwssc.org/blog/summer-programs/ocean-science-and-leadership-expedition/scholarships>

### **Christine Stevens Wildlife Award**

This award program from the Animal Welfare Institute provides grants to help spur research on humane, non-lethal tools and techniques for wildlife conflict management and the scientific study of wild species. The deadline for application is March 25, 2011.

[http://www.awionline.org/ht/d/sp/i/22907/pid/22907/cat\\_id/640/cids/640](http://www.awionline.org/ht/d/sp/i/22907/pid/22907/cat_id/640/cids/640)

### **Craig Tufts Environmental Education Fund**

The Family Summits, Inc. and partners offer the annual Craig Tufts Educational Scholarship Award, given to a young person 8-18 years old, to attend a week-long, summer outdoor educational adventure camp with a parent or guardian. This year's summit will take place in the Ozark Mountain Region of Missouri, August 1–7, 2011. The deadline for application is March 31, 2011.

<http://www.familysummits.org/craigtufts.php>

### **Discovery Education 3M Young Scientist Challenge**

The Discovery Education 3M Young Scientist Challenge is for students in grades 5-8. Students are challenged to create a one- to two- minute video on an everyday problem related to the way we move, the way we keep ourselves healthy, or the way we make a difference. The idea must be a new innovation or solution. The deadline for entry is April 15, 2011.

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

### **EcoStar Grants**

EcoStar Grants are offered to local communities where Constellation Energy does business (see the website for details). Projects should fit at least one of five environmental focus areas, including Pollution Prevention, Education, Conservation, and more. The deadline for application is March 10, 2011.

<http://www.constellation.com/portal/site/constellation/menuitem.999b6fed85785a2399084010016176a0>

### **Fulbright Specialist Program**

The Fulbright Specialist Program promotes linkages between U.S. academics and professionals and their counterparts at overseas universities or institutions with education focused programming. The program is designed to award grants to qualified U.S. faculty and professionals to engage in short-term collaborative 2 to 6 week projects at higher education institutions in over 100 countries worldwide. Eligible activities include teacher training, short-term lecturing, conducting seminars, special conferences or workshops, as well as collaborating on curriculum planning, institutional and/or faculty

development. U.S. faculty and professionals apply to join a Roster of Specialists for a 5 year term. See the website for complete details.

<http://www.cies.org/specialists/>

### **Grants for Education in Microbial Science**

The Center for Microbial Oceanography: Research and Education at the University of Hawaii awards grants to foster education in microbial science. Any educator from any of the 50 states may apply, but preference is given to public school teachers, non-profit organizations, and first-time applicants. The next deadline for application is May 2, 2011.

<http://cmore.soest.hawaii.edu/education/teachers/gems.htm>

### **Gulfstream Navigator Award**

The Savannah Ocean Exchange will offer the Gulfstream Navigator Award 2011 to the person or group whose work demonstrates the greatest potential for this year's theme, *Shaping the Future of Our Coasts*, represents excellence, and fulfills purpose through the solution's feasibility and ease of implementation. The website offers examples of possible solutions and help with the submission process. The deadline for submission is April 15, 2011.

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

### **Improving Literacy Through School Libraries**

The purpose of this program funded by the U.S. Department of Education, is to improve student reading skills and academic achievement by providing students in public schools increased access to up-to-date school library materials; well-equipped, technologically advanced school library media centers; and well-trained, professionally certified school library media specialists.

<http://www2.ed.gov/programs/lsl/index.html>

### **Leadership in Science Education Award**

The American Association for the Advancement of Science offers the AAAS Leadership in Science Education Prize for High School Teachers. The prize honors a high school science teacher who has contributed to the AAAS goal of advancing science education by developing an innovative and effective strategy, activity, or program. The deadline for nomination is May 27, 2011.

[http://www.aaas.org/aboutaaas/awards/hs\\_scied\\_leadership/](http://www.aaas.org/aboutaaas/awards/hs_scied_leadership/)

### **Lloyd Bridges Scholarship**

This year's recipient of the Lloyd Bridges Scholarship will join REEF's Field Survey of the Roatan Marine Park. The annual scholarship enables a qualified educator to participate in a CEDAM (Conservation, Education, Diving, Awareness, and Marine-research) -sponsored or -sanctioned expedition. REEF Field Surveys are led by REEF staff or expert volunteers; participants have the opportunity to collect data, participate in daily talks, and interact with REEF members, staff, and local partner organizations. The deadline for application is May 1, 2011.

<http://cedaminternational.wordpress.com/lloyd-bridges-scholarship/>

### **Marc Hershman Marine Policy Fellowship - Washington**

The Hershman Fellowship places graduate students or recent graduates with state agencies in Olympia, Washington, working on ocean and coastal science and management issues. The program offers a first-hand experience in crafting marine and

natural resource policies and enables fellows to share their academic expertise with state decision makers. The deadline for application is April 29, 2011.

<http://wsg.washington.edu/education/fellowships/hershman.html>

### **Marine Debris Art Contest**

NOAA's Marine Debris Division offers the 2011 Marine Debris Art Contest, *Keep the Sea Free of Debris*, for K-8 students in all states and U.S. territories. The deadline for submission is April 16, 2011.

<http://marinedebris.noaa.gov/outreach/artcontest.html>

### **Native Hawaiian Education Program**

The purpose of the Native Hawaiian Education program is to support innovative projects that enhance the educational services provided to Native Hawaiian children and adults. The deadline for application is April 11, 2011.

<http://www2.ed.gov/legislation/FedRegister/announcements/2011-1/020911b.html>

### **Ocean Awareness Essay Contest**

The Gulf of Maine Marine Education Association announces a contest to increase ocean literacy and student awareness of the Gulf of Maine, engaging high school students in an essay contest. The deadline for entry is September 15, 2011.

<http://www.fromthebowseat.org/contest/index.php>

### **Project Blue Planet**

This contest from the Smithsonian National Zoological Park challenges kids nationwide to get their schools and communities involved to improve the environment for marine life. Depending on the school's environmental priorities, there are four ways to achieve a "Seal" of Approval. Project categories include waste, energy, habitat, and lifestyle. The project deadline is April 30, 2011.

<http://nationalzoo.si.edu/Education/BluePlanet/default.cfm?fonzref=makewaves.htm>

### **State Farm Youth Advisory Board Grant Program**

The State Farm Youth Advisory Board Grant Program funds student-led service-learning projects throughout the U.S. and Canada. Specific areas of interest include natural and societal disasters, environmental responsibility, and more. Educators interacting with students in public K-12 schools are eligible to apply. The deadline for application is May 2, 2011.

<http://www.statefarmyab.com/apply/national-grants/>

### **Thacher Environmental Research Contest**

The Institute for Global Environmental Strategies offers the Thacher Environmental Research Contest for grades 9-12 for students whose projects demonstrate the best use of satellites and other geospatial technologies or data to study Earth. The deadline for entry is April 11, 2011.

<http://www.strategies.org/education/index.aspx?sub=education&sub2=scholars&sub3=scholars2011>

### **Windland Smith Rice International Youth Photography Competition**

The Windland Smith Rice Youth competition is now accepting photographs for its Youth Photography Competition. Photographers must be 18 years old or younger. The deadline for submission is May 2, 2011. Note that there is an entry fee for submission.

[http://www.naturesbestphotography.com/competition\\_overview.php](http://www.naturesbestphotography.com/competition_overview.php)

### **Youth Birding Scholarships**

The American Birding Association offers scholarships to help young people attend bird-related summer camps, workshops, training programs, conventions, and other activities. The deadline for submission is April 1, 2011.

<http://www.aba.org/yb/schol/index.html>

### **Youth Engagement Zones Grants**

The Learn and Serve America Youth Engagement Zones grants funds schools and organizations to help students come to class eager to learn and graduate ready to succeed. The grants provide up to three years of funding to partnerships that connect high schools, community colleges, and community organizations in a close collaboration. Youth will learn and serve in a defined geographic area, a Youth Engagement Zone, that includes schools and school districts in which 70% or less of the students graduate and 70% or more live below the poverty level. The deadline for application is March 31, 2011.

[http://www.nationalservice.gov/for\\_organizations/funding/nofa\\_detail.asp?tbl\\_nofa\\_id=86](http://www.nationalservice.gov/for_organizations/funding/nofa_detail.asp?tbl_nofa_id=86)

## **INTERNSHIPS AND TEMPORARY OPPORTUNITIES**

### **Dauphin Island Internships**

The Marine Ecology Lab at the Dauphin Island Sea Lab in Alabama offers internship opportunities to qualified undergraduates looking for experience in marine ecology. The deadline for summer internship applications is March 25, 2011; for fall internships, June 24, 2011.

<http://marineecologylab.disl.org/>

### **Marine Education Internship - Florida**

The Smithsonian Marine Ecosystems Exhibit, a public aquarium located in Ft. Pierce, Florida, is seeking applicants for their summer Marine Education Internship, a paid, full-time position, May-August 2011. The deadline for application is March 11, 2011.

[http://www.sms.si.edu/Get\\_Involved.html](http://www.sms.si.edu/Get_Involved.html)

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

### **Coastal Ecology Teacher Workshop - Georgia**

Join educators for an in-depth look at Georgia's coastal systems and discover the abundance and variety of wildlife found along the shores in this Coastal Ecology Teacher Workshop, June 21-24, 2011 on Sapelo Island, Georgia. Emphasis is placed on estuarine and marine ecology, coastal species identification and adaptations, commercial and recreational fisheries, and management. The deadline for registration is May 1, 2011.

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

### **Connecting People with Nature through Birds – West Virginia**

Explore activities that engage people in bird watching, June 6-9, 2011 in Shepherdstown, West Virginia. Even non-birders will find these activities easy to implement. Participants will learn to teach others basic bird identification; explore a variety of programs that connect people to nature including citizen science and mist

netting birds; discuss current bird conservation issues; and discover the possibilities of inspiring interest in birds through Flying WILD. The deadline for registration is May 6, 2011; call for availability after this date.

<http://www.birdday.org/education/training>

### **LiMPETS Introduction to Rocky Intertidal Monitoring - California**

Learn to participate in this in-depth science education program for students during the free LiMPETS Introduction to Rocky Intertidal Monitoring workshop, March 26, 2011, in San Francisco, California. Participants will receive the new LiMPETS Curriculum, learn to correctly identify algae and invertebrates, and practice the monitoring methods used in the field.

[http://limpetsmonitoring.org/resources\\_workshops.php](http://limpetsmonitoring.org/resources_workshops.php)

### **Mini-Conference and Teacher Sleepover - Maryland**

The Mid-Atlantic Marine Education Association is sponsoring the Mini-Conference and Teacher Sleepover, *Biodiversity is Life, Is Our Life* at the National Aquarium, March 11-12, 2011 in Baltimore, Maryland. Participants will explore the biodiversity of local environments as well as examine the diversity of life in one of the Aquarium's exhibits. Hurry - the deadline for registration is March 4, 2011.

[http://www.aqua.org/downloads/pdf/registration\\_teacherovernight.pdf](http://www.aqua.org/downloads/pdf/registration_teacherovernight.pdf)

### **Ocean Exploration Workshops - Various**

NOAA's Ocean Exploration Program and partners offer professional development workshops for science teachers. Participants will receive the curriculum with CD-ROM's, certificates of participation, and more. Contact the noted educator or check out the website for registration and more information.

- May 7, 2011 with New England Aquarium, Boston, Massachusetts, a follow-up Learning Ocean Science Through Ocean Exploration workshop. The deadline for registration is April 22, 2011. Contact Gina Cerrito at [gcerrito@neaq.org](mailto:gcerrito@neaq.org)
- May 14, 2011 with South Carolina Aquarium, Charleston, South Carolina, a follow-up Learning Ocean Science Through Ocean Exploration workshop. The deadline for registration is April 29, 2011. Contact Jaime Thom at [jthom@scaquarium.org](mailto:jthom@scaquarium.org)
- May 14, 2011 with Aquarium of the Pacific, Los Angeles, California, a follow-up Learning Ocean Science Through Ocean Exploration workshop. The deadline for registration is April 29, 2011. Contact Alie Lebeau at [alebeau@lbaop.org](mailto:alebeau@lbaop.org)
- June 16, 2011 with J.L. Scott MEC and Aquarium, Ocean Springs, Mississippi, an
- Introductory Professional Development Institute for Teachers. The deadline for registration is June 2, 2011. Contact Shelia Brown at [shelia.brown@usm.edu](mailto:shelia.brown@usm.edu)
- June 17, 2011 with J.L. Scott MEC and Aquarium, Ocean Springs, Mississippi, a follow-up Learning Ocean Science Through Ocean Exploration workshop. The deadline for registration is June 2, 2011. Contact Shelia Brown at [shelia.brown@usm.edu](mailto:shelia.brown@usm.edu)

<http://oceanexplorer.noaa.gov/edu/development/development.html>

### **On-Island Teacher Professional Development - Florida**

The Pigeon Key Foundation and Marine Science Center offers all inclusive marine science based environmental education teacher workshops June 17-19 and July 1-3, 2011 in Marathon, Florida. Teachers will be housed on island with all programs, snorkel gear, collecting resources, and meals provided.

<http://www.pigeonkey.net/events.html>

### **Salish Sea Expeditions Teacher Trainings - Washington**

Salish Sea Expeditions invites teachers to free teacher trainings geared for classroom educators. The workshops are aimed at helping students make valuable connections between the ecology of their local watershed and the Puget Sound. The professional development workshops will assist K-12 educators and non-profit outreach and education specialists with resources and curriculum ideas for increasing their effectiveness in facilitating field science education, including marine, watershed and stormwater education experiences.

- March 26, 2011 from Lacey
- April 2, 2011 near North Bend
- April 3, 2011 from Seattle

Contact Nikken Palesch at [nikken@salish.org](mailto:nikken@salish.org)

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

Join biologists from Georgia and South Carolina who will share their knowledge of the anatomy and life history, conservation, and management of the Loggerhead Sea Turtle and Diamondback terrapin in this workshop, June 13-17, 2011 on Sapelo Island, Georgia. Participants receive curriculum and resource materials. The deadline for registration is May 1, 2011.

<http://www.georgiaseaturtlecenter.org/education-programs/group-programs/teacher-professional-development/>

## **EDUCATIONAL RESOURCES**

### **Advanced Technology Environmental and Energy Center**

The Advanced Technology Environmental and Energy Center promotes and supports environmental and energy technology education to address the needs of the national and global workforce. They offer a variety of downloadable resources for teaching about energy and the environment. Materials include Developing Water Quality Index, Invasive Species, and more. Free registration is required.

<http://www.ateec.org/store/index.php>

### **All of Earth's Water in a Single Sphere**

This illustration shows the size of a sphere that would contain all of Earth's water in comparison to the size of the Earth.

<http://ga.water.usgs.gov/edu/2010/gallery/global-water-volume.html>

### **Bigelow Lab Resources**

The scientists at the Bigelow Laboratory for Ocean Sciences share their discoveries with educators, students, and the public through a variety of programs. Their website offers on-line education resources available for teachers to use in a range of grade levels, in addition to other resources and networks for further information.

<http://www.bigelow.org/education/>

### **Box Office at Sea Level from Space**

NASA's Jet Propulsion Laboratory's Sea Level from Space website offers two short videos, *Earth: the Water Planet* and *Frozen Earth*.

<http://sealevel.jpl.nasa.gov/newsroom/featurearchive/index.cfm?FuseAction=ShowNews&NewsID=369>

### **Climate Adaptation**

EcoAdapt has released a report on climate adaptation, *The State of Marine and Coastal Adaptation in North America: A Synthesis of Emerging Ideas*. The downloadable report summarizes climate impacts and provides summaries and examples of adaptation actions implemented throughout Canada, United States, and Mexico.

<http://www.cakex.org/virtual-library/1615>

### **Coastal Resource Management Customer Trends Survey**

NOAA's Coastal Services Center provides technology, information, and management strategies needed to address complex coastal issues. The center sponsors a survey every three years to gather information to better understand the issues affecting the coastal management community. The latest survey offers an overview of the issues, needs, and priorities of coastal managers, while providing a resource to understand how managers are using data and tools.

<http://www.csc.noaa.gov/survey/>

### **Consumption and the Environment Webinar Series**

This free webinar series is sponsored by EPA's West Coast Climate and Materials Management Forum, with archived presentations available after the webinar. The series, on the first Tuesday of the month, will explore how we can reduce greenhouse gases by making more sustainable choices that support a vital economy.

<http://yosemite.epa.gov/R10/ECOCOMM.NSF/climate+change/consumption>

### **Coral Husbandry Handbook**

This book contains the peer-reviewed contributions of a coral husbandry symposium, offering an overview of results and experiences with coral husbandry in public aquaria.

<http://www.burgerszoo.eu/over-burgers-zoo/coral-husbandry/table-of-contents>

### **Coral Literature, Education and Outreach Program**

The Coral Literature, Education and Outreach (CLEO) Program offers educational modules developed primarily for middle school classes. Each module consists of three segments: background information of the science behind the instrument, a classroom experiment, and a teacher's section. Modules include Coral Spawning, Coral Bleaching, and Effects of CO<sub>2</sub> on Coral Reefs. Note that the website address has changed.

[http://www.coral.noaa.gov/index.php?option=com\\_content&view=article&id=145&Itemid=182](http://www.coral.noaa.gov/index.php?option=com_content&view=article&id=145&Itemid=182)

### **Deep Coral Cruise Virtual Tours**

NOAA scientists launched an interactive Google Earth page documenting a recent research cruise between San Diego and Seattle. Remotely operated vehicle surveys were conducted from 200-600 meters depth to investigate deep-water sponges and corals. The virtual tours are a 'first-look' data product for sharing preliminary cruise results. Fly along with the researchers in your browser by clicking on one of the five virtual tours.

<http://swfsc.noaa.gov/ge.aspx?ParentMenuID=647&TopPG=16838&Project=DeepCoralWC2010>

### **Dolphins in the Classroom**

Bring your students to Dolphin Research Center in Florida. Thanks to webcam and Internet technology, you and your classroom can watch and listen to live or pre-taped

demonstrations and engage in question and answer sessions with experts in the fields of marine mammal care, training, and research. Different options are available.

[http://www.dolphins.org/distance\\_learning.php](http://www.dolphins.org/distance_learning.php)

### **Earth Smarts**

Earth Smarts aims to explore essential ecoliteracy in a transdisciplinary manner, designed to be practical, apolitical, and adaptable across cultures and bioregions.

<http://www.earthsmarts.info/>

### **EE Guidelines for Excellence**

*Environmental Education Materials: Guidelines for Excellence* provides a set of recommendations for developing and selecting environmental education materials. These guidelines aim to help developers of activity guides, lesson plans, and other instructional materials produce high quality products, and to provide educators with a tool to evaluate the wide array of available environmental education materials. They have been revised and reprinted, and are available for downloading from the website.

<http://naaee.org/publications>

### **Estuarine Aquarium Keeping for Beginners**

This is a beginner's guide to keeping brackish water marine life in aquariums. Topics include basic aquarium supplies and set-up for novices; operation and maintenance; monitoring water quality; estuarine animals suitable for beginners, and more.

[http://www.vims.edu/cbnerr/docs/education\\_docs/EstAquKeepwriteup.pdf](http://www.vims.edu/cbnerr/docs/education_docs/EstAquKeepwriteup.pdf)

### **From the Bow Seat**

The Gulf of Maine Marine Education Association and independent film maker Linda Cabot offer to share the film, *From the Bow Seat*. The film profiles a voyage of discovery of a mother and her teenage daughters as they seek out people engaged in understanding and protecting the living resources of the Gulf of Maine. Educators can request a free copy of the DVD.

<http://www.fromthebowseat.org/contest/info.php>

### **Global Climate Change**

This learning module from the Association of American Geographer's Center for Global Geography Education examines how climates have changed historically, and how the climate is currently being influenced by the activities of humans. Four case studies are included in the module, each focusing on a different region - Australia, The United States, Singapore, and Southeast Asia. Free registration is required for complete access to all the resources.

<http://globalgeography.aag.org/GlobalClimateChange1e/index.html>

### **Graduate students for Ocean Education**

COSEE Ocean, one of three new COSEE Centers, has launched Graduate students for Ocean Education (GrOE), a Facebook page intended to be a hub of information for graduate students in oceanography and related fields who are also interested in education and outreach. It includes announcements about jobs, fellowships, research opportunities, and more.

<http://www.facebook.com/COSEEGrOE>

### **HazNet**

The Extension Disaster Education Network (EDEN) is a multi-state effort by Sea Grant Extension Services across the country to reduce the impact of disasters. The Hazard Education K-12 Programs contain information on public awareness and formal educational programs. The Natural Hazards Theme Team has compiled lists of educational resources, lesson plans, and databases on a variety of coastal hazards including wind, flood, erosion, seismic activity, and more. A short review for each entry details content and grade level applicability for easy reference by educators.

[http://www.haznet.org/haznet\\_education.htm](http://www.haznet.org/haznet_education.htm)

### **Michigan Environmental Education Curriculum**

Michigan Technological University has developed eighteen interactive web modules in the Michigan Environmental Education Curriculum. There are six web modules for each unit which may be used to introduce, enhance, or reinforce concepts presented in the lessons. The modules are designed for upper elementary and middle school students, but have also been used for high school and even college-level courses. Topics cover Water Quality, Ecosystems and Biodiversity, and Energy Resources.

[http://techalive.mtu.edu/meec\\_index.htm](http://techalive.mtu.edu/meec_index.htm)

### **National Environmental Education Week 2011: Ocean Connections**

Make sure you register for EE Week 2011, April 10-16, 2011. Check out the resources, register your activities, and more.

[http://www.eeweek.org/ocean\\_connections](http://www.eeweek.org/ocean_connections)

### **National Lab Network**

National Lab Day is now the National Lab Network, connecting teachers with science professionals, local volunteers, and online resources to support and encourage hands-on K-12 STEM projects with project ideas and lesson plans, funding for public school teachers, events, and more.

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

### **National Trails Symposium Presentations**

Dozens of educational sessions and 15 mini-workshops highlighted the theme of the 2010 American Trails National Symposium, *Trails: The Greenway for America*. American Trails offers more than 40 of these presentations on their website. Files include Linking the Landscape: Conservation Strategies Along Land and Water Trail Corridors, Blue Ways: Long Trails, Education Opportunities, Dealing with Obstacles, and more.

<http://www.americantrails.org/2010/concurrent.html>

### **New Jersey Sea Grant Education Resources**

The Education Program at the New Jersey Sea Grant Consortium provides educational activities in marine and related environmental science in an effort to increase environmental stewardship, provide unbiased information for informed decision making, and increase science literacy for all. Lesson plans include marine science, harbor education, and more. Check out beach profiling, seashell mapping, squid dissection, and much more.

<http://www.njmsc.org/gofish.html>

### **PolarTREC in the Southern Ocean**

Follow along with the bilingual (English and Spanish) journals of teacher Juan Botella as he travels with researchers from McMurdo Station, Antarctica to Punta Arenas, Chile aboard the U.S. research vessel *Nathaniel B. Palmer*, February 8-April 20, 2011. They will be collecting data from the Bellingshausen, Amundsen, and Ross Seas and the Southern Pacific Ocean to research seawater property changes in the Southern Ocean. Read the journals and post your questions in the Ask the Team forum.

<http://www.polartrec.com/expeditions/seawater-property-changes-in-the-southern-ocean>

### **Science Since the Spill**

*Changing Tides: A Series of Ocean Discussions* by Smithsonian's Museum of Natural History and the Centers for Ocean Sciences Education Excellence (COSEE), is a series of talks by ocean scientists about current research and how it is helping to change the tide in ocean science and conservation. Live webcasts can be heard online and links to recordings will be posted after the webcast footage is processed. *Science Since the Spill: One Year After the Deepwater Horizon Oil Disaster* will be presented April 19, 2011.

<http://ocean.si.edu/ocean-news/changing-tides-series-ocean-discussions>

### **Sea Cucumber Podcast and Google Earth Tour**

Follow host Ari Daniel Shapiro from a Chinatown market to the reefs of Fiji to learn more about Sea Cucumbers in this dual Podcast of Life and Google Earth Tour, from the Encyclopedia of Life.

<http://education.eol.org/podcast/sea-cucumbers-0>

### **Sea Otter Unit**

Kids' Planet from the Defenders of Wildlife offer this teacher's manual on sea otters, including lesson plans on using the web as a research tool; reading and developing writing skills; and a role playing activity in community conflict resolution. The materials include background materials on sea otters, links to additional resources, and more.

<http://www.kidsplanet.org/tt/seaotter/home.html>

### **Ship Mates**

This website from Bigelow Laboratory for Ocean Sciences introduces the principles and technologies of oceanographic research using seasonal data from the Gulf of Maine. Measurements of ocean temperature, salinity, chlorophyll, plus research cruise logs and scientists' insights, are used in data analysis activities. The investigations cover phytoplankton productivity, seasonal layering and mixing of Gulf water, diversity of marine environments, and more.

<http://www.bigelow.org/shipmates/>

### **Species List**

The Flower Garden Banks National Marine Sanctuary species list lists plants, animals and bacteria by their scientific names, with common names and photos when available. Categories include sponges, bony fish, and more, including birds.

<http://flowergarden.noaa.gov/about/specieslist.html>

### **Teaching Earth Science**

This section of Geology.com offers links to materials for teachers covering nine thematic areas, including earthquakes, erosion, plate tectonics, weather, and more, along with numerous categories, including world records and hurricanes. Selection of a topic leads

to numerous links highlighted by a graphic and brief summary statement of what the visitor will find at the site. Spend some time checking this website out – you may discover useful links.

<http://geology.com/teacher/>

### **Teaching the Physics and Math of Oceanography Using Satellite Data**

This joint project between the University of Washington and The Northwest School in Seattle enhances the links between the teaching of physics, math, and physical oceanography by utilizing scientific data. The website features several physics curriculum materials, a virtual flight through the Endeavor Ridge, and more.

<http://www.ocean.washington.edu/people/staff/prs/edu.html>

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

### **International Journal of Wilderness**

The International Journal of Wilderness website offers free access to full copies of past issues of the International Journal of Wilderness. The journal contains peer-reviewed research articles and feature presentations covering wilderness management, research and recreation, sustainability of wildlands, community involvement in protected areas, policy issues, and more.

<http://ijw.org/>

### **National Week of the Ocean - Florida**

The National Week of the Ocean celebration is sponsored by Fort Lauderdale-based National Week of the Ocean, Inc. in cooperation with the City of Fort Lauderdale, Florida. This year's theme is *Exploring and Caring for the Ocean*. The annual event is dedicated to educating young people to develop a sense of stewardship towards the ocean. National Week of the Ocean members encourage year-round ocean study from the arts to commerce, from history to foods, from endangered sea creatures to issues such as offshore drilling or ocean dumping. Check out the schedule of events, to be held on six weekends from March 5-May 7, 2011.

<http://www.national-week-of-the-ocean.org/>

### **Ocean Discovery Day - Texas**

Flower Garden Banks National Marine Sanctuary and the NOAA Fisheries Service Galveston Laboratory will sponsor Ocean Discovery Day, March 26, 2011 in Galveston, Texas. This free event is designed to engage visitors in fun, creative, and educational hands-on activities that illustrate how NOAA programs are relevant to the community.

<http://flowergarden.noaa.gov/newsevents/odd2011article.html>

### **Savannah Ocean Exchange - Georgia**

Savannah Ocean Exchange shares the worldwide solutions that drive sustainable change; improve ecological, economic, and worldwide connectivity; while respecting the unique cultures and sense of place of our coastal communities. The exchange will offer activities throughout September, 2011 in Savannah, Georgia, highlighting Culture & Cuisine, Events & Excursions, Presentations & Performances, and Vessels & Viewings.

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