

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

**MARCH 2009**

This update is funded by the National Marine Sanctuaries Foundation in partnership with NOAA's Ocean Exploration and Research Program, with additional support from the 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.

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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](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 References**

**Environmental Research and Education Needs**

The National Council for Science and the Environment has released a new report, Environmental Research and Education Needs: An Agenda for a New Administration. It identifies research needed to improve scientific knowledge, and education needed to improve public understanding, professional capacity, and a strong workforce. The report organizes the recommendations relating to environmental and sustainability research and education policy from eight National Conferences on Science, Policy and the Environment.

<http://ncseonline.org/NCSEconference/>

### **Marine and Coastal Fisheries Journal**

The newest online journal from the American Fisheries Society is *Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science*. This open access online journal will add new articles as they are accepted, and its online-only format allows for new features such as video, databases, and discussion forums to be included in articles. <http://afs.allenpress.com/perlserv/?request=get-archive&ct=1>

### **Monitoring Manual**

Manual and Field Guide for Monitoring Coral Reef Ecosystems, Fisheries, and Stakeholders is available for downloading from this website. The manual was developed for monitoring coral reefs, associated fisheries, resource users and their larger communities, and managers based on the long-term monitoring programs of the Wildlife Conservation Society. The manual was developed to disseminate this information more widely and save investigators time in developing methods and the spreadsheets that are used to do the preliminary analyses of these data. The authors have made an effort to keep the files small and also to break up the manual into chapters; the appendix, or field guide, can be downloaded and opened and used separately, as can the spreadsheets and forms. Click on each folder to expand the options. <http://idisk.mac.com/trmcclanahan-Public?view=web>

## **WEBSITE OF THE MONTH**

### **National Marine Sanctuaries Media Library**

NOAA's Office of National Marine Sanctuaries has launched an online multimedia library offering public access to thousands of high-resolution, ocean-related photos, and videos taken by NOAA scientists, educators, divers, and archaeologists. The National library database contains a collection of high-quality still images and video footage featuring all 13 national marine sanctuaries and the Papahānaumokuākea Marine National Monument. The database is fully searchable by keyword, category, and location, and all the images are tagged with relevant information including resolution and usage rights. The media library is part of a continuing NOAA effort to enhance public awareness, understanding, and appreciation of the marine environment. It was created to provide a resource for numerous audiences, including students, educators, publishers, conservation organizations, and individuals looking for compelling marine-related images.

[https://marinelife.noaa.gov/media\\_lib/index.aspx](https://marinelife.noaa.gov/media_lib/index.aspx)

## **MESSAGE FROM THE BRIDGE**

### **Plan Your Summer with the Bridge**

It is time to start planning your summer opportunities, and the Bridge can help. The Bridge contains summer opportunities and year-round courses, workshops, and other programming for educators and students. The summer is a great time for students and teachers to learn outside of the classroom, meet new friends and colleagues, see new places and build those resumes. Each program on the Bridge is complete with a link and brief description, and because we are constantly adding new resources and opportunities, we suggest checking back often. To find these opportunities, visit the Bridge and under Professional Development mouse over to the Summer Opportunities; for student opportunities, click on the Guiding Students section. Those with new,

exciting summer programs that are not currently found on the Bridge are encouraged to submit their website for inclusion.

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

## **REQUESTS**

### **Derelict Fishing Gear Survey**

The Gulf and Caribbean Fisheries Institute is collecting information on Derelict Fishing Gear in the wider Caribbean. If you have pertinent data, please fill out the online survey, which will be used to assess the type, amount, geographic range, and causes of derelict fishing gear in the region.

<http://www.gcfi.org/Debris/DebrisEngPage1.php>

## **GRANTS AND OPPORTUNITIES**

### **21st Century Museum Professionals Grants**

The Institute of Museum and Library Services call for proposals is for museums, museum service organizations, and universities to submit grant proposals for projects designed to enhance the professional development of museum staff. Funding will support projects involving core management skills and/or projects that focus on collections care and management, interpretation, marketing and audience development, staff retention, visitor services, governance, and other areas of museum operations. The deadline for submission is March 16, 2009.

<http://www.ims.gov/applicants/grants/21centuryMuseums.shtm>

### **America's Greenest School Contest**

America's Greenest School Contest invites essays about a K-12 school that is committed to going green. The submission should describe how the school shows its commitment to going green, how it teaches its students the value of green living, how it shows its dedication to green transportation, or how it embodies the spirit of a greener planet. The deadline for entry is April 30, 2009.

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

### **Annenberg Foundation Grants**

The Annenberg Foundation provides support for projects within its grantmaking interest areas of education and youth development; arts, culture and humanities; civic and community; health and human services; and animal services and the environment. Letters of inquiry that address the Foundation's interests are accepted throughout the year.

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

### **Brower Youth Environmental Awards**

The Brower Youth Awards recognizes six young people (ages 13-22) for their outstanding activism and achievements in the fields of environmental and environmental justice advocacy. The deadline for application is May 15, 2009.

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

### **CoastLines**

CoastLines introduces fundamental concepts about information technologies to grade 7-12 schools. It is a three-year project involving teachers and students using geographic

information systems and global positioning system technology to conduct scientific studies of coastal ecosystems in the National Science Foundation's Long-Term Ecological Research network. Applications are now being accepted for CoastLines 2009. Priority is given to teachers from the Maryland/Virginia region, but others may apply. The deadline for application is March 15, 2009. Check out the downloadable lessons on the website.

<http://www.coastlines.ws/>

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

The EPA funds Community Action for a Renewed Environment (CARE) grants, 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 16, 2009.

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

### **Earth Day Photo Contest**

The Institute for Global Environmental Strategies is holding an Earth Day Photo Contest for students in grades 5-8. The theme is *Capture Your Changing World*. During the week of Earth Day, April 22-29, 2009 take a photograph of something that is changing in your local environment. Submit the photo and explanation. The deadline for entry is May 9, 2009.

<http://www.strategies.org/education/index.aspx?sub=education&sub2=earthday&sub3=contest2009>

### **Earth Day Youth Project**

Spikes Running Company is offering funds for projects by or for youth 18 years or younger which aim to recycle, renew, and conserve natural resources. The application deadline is April 30, 2009.

<http://www.eeingorgia.org/net/content/go.aspx?s=80031.0.68.4863>

### **Edward C. Roy, Jr. Award for Excellence in K-8 Earth Science Teaching**

This award recognizes one teacher of grades K-8 each year for his or her leadership and innovation in Earth science education. The deadline for application is May 31, 2009.

<http://www.aqiweb.org/education/awards/ed-roy/>

### **Jordan Fundamentals Grants**

Jordan Fundamentals accepts applications from middle and high school educators for Innovation and Inspiration Grants. The Jordan Fundamentals Grant Program supports improved student academic achievement through student engagement, student teacher relationships, and/or building the capacity of teachers in public secondary schools that serve economically disadvantaged students. Grants will be awarded to individual teachers for projects that will impact classroom innovation and improve instruction. The deadline for application is March 30, 2009.

<http://www.nike.com/jumpman23/features/fundamentals/guidelines.html#code>

### **Kohl's Kids Who Care**

The Kohl's Kids Who Care Scholarship Program recognizes and rewards young volunteers (ages 6-18) who help make their communities better places. The deadline for application is March 15, 2009.

<http://www.kohlscorporation.com/AboutKohls/AboutKohls01.htm>

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

The American Association for the Advancement of Science (AAAS) offers the 2009 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 nominations is April 24, 2009.

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

### **Marine Technology Society Scholarships**

The Marine Technology Society offers scholarships to graduating high school seniors, undergraduate and graduate students, and students attending two-year institutions who are studying a marine science/engineering/technology field. The deadline for application is April 15, 2009.

<http://www.mtsociety.org/education/scholarships.aspx>

### **NMEA Awards**

The National Marine Educators Association Awards honor educators and individuals who have shown exceptional leadership in the field of marine education.

- Outstanding Teacher Award - For educators who have shown effective and innovative classroom teaching at all levels.
- James Centorino Award - For individuals who have shown distinguished performance in marine education by professionals not in the classroom setting.
- Marine Education Award - For outstanding leadership and work in any aspect in marine education on the local, regional, or national level.

The deadline for nomination is April 1, 2009.

<http://www.marine-ed.org/docs/nomform.pdf>

### **RBC Water Stewardship Projects**

The RBC Blue Water Project was established to help foster a culture of water stewardship around the world. To apply for RBC Blue Water Project Funding, set up an account online at Donors Choose and submit project requests for tools and materials that will help your students learn about clean water and watersheds. Additional information can be found on the RBC website.

<http://www.donorschoose.org/homepage/main.html?zone=114>

<http://www.rbc.com/environment/bluewater/index.html>

### **Save our History Grants**

Museums, historic sites, historical societies, preservation organizations, libraries, and archives are invited to partner with a local school or youth group and apply for funding to help preserve the history of their communities. The grants help organizations that partner with schools or youth groups on community preservation projects that engage students in learning about, documenting, and preserving the history of their communities. The deadline for application is June 5, 2009.

<http://www.history.com/content/saveourhistory/grant-program/grant-application>

### **Students' Igniting Creative Energy Competition**

This competition, developed by Johnson Controls and the National Energy Foundation, encourages students to learn more about energy and the environment. Entries demonstrating what can be done by individuals or groups to conserve energy in their

homes, schools, or communities, may be submitted in any one of many creative formats. Service projects are also accepted. The deadline for submission is March 13, 2009.

[http://www.johnsoncontrols.com/publish/us/en/products/building\\_efficiency/solutions\\_for\\_your/k-12/igniting\\_creative.html](http://www.johnsoncontrols.com/publish/us/en/products/building_efficiency/solutions_for_your/k-12/igniting_creative.html)

#### **Teens for Planet Earth Service Awards**

The Teens for Planet Earth Service Awards recognize teens (13 to 19) around the world for service-learning projects that demonstrate their commitment to the environment. The deadline for application is April 15, 2009.

<http://www.teensforplanetearth.org/serviceawards>

#### **TogetherGreen Conservation Leadership Program**

TogetherGreen is a National Audubon Society program with support from Toyota, to build conservation leadership, engage people in conservation action, and achieve lasting conservation results. Each year, 40 new fellows will receive professional development opportunities, a grant to help support an innovative Conservation Action Project, and an opportunity to network with a cadre of committed leaders. The deadline for submission is April 15, 2009.

<http://www.togethergreen.org/People/fellows.aspx>

#### **Wild Gift Wilderness Experience**

The Wild Gift is open to all students and young professionals, ages 21 to 30. It provides a compelling experience in deep wilderness and encourages a commitment to a self-designed leadership project that will advance wildlands stewardship and the development of sustainable human community and lifestyle. The 17-month program is provided to Wild Gift recipients at no cost. The most important requirement is a record of accomplishment that reflects leadership talent. Five applicants are chosen each year. Applications are due on April 1, 2009.

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

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

The Windland Smith Rice Youth competition is now accepting photographs for its Youth Photography Competition. Photographers must 18 years old or younger. The deadline for submission is May 4, 2009.

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

#### **Youth Birding Competition - Georgia**

The 4th annual Youth Birding Competition is a 24-hour bird count, where teams of kids compete against others their age to find as many species of birds in the state of Georgia as they can. The event is Apr 25-26, 2009. The deadline for registration is March 31, 2009.

<http://www.georgiawildlife.org/content/displaycontent.asp?txtDocument=458>

#### **Youth Investment Programs - 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.

[http://www.stewardshipcouncil.org/youth\\_investment/rfps\\_and\\_applications.php?v=0](http://www.stewardshipcouncil.org/youth_investment/rfps_and_applications.php?v=0)

## **INTERNSHIPS AND TEMPORARY OPPORTUNITIES**

### **Dauphin Island Sea Lab Internships**

The Marine Ecology Lab at the Dauphin Island Sea Lab has internship opportunities available to undergraduates looking for experience in marine ecology. The deadline for application to the summer internship is March 30, 2009.

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

### **Earth Explore 2009**

Working with naturalists of the University of Hawaii, Earth Explore teachers and students will study environmental issues on Hawai'i. Opportunities also remain available to experience environmental education in Alaska. Dates are still available for the summer of 2009.

<http://www.earthexplore.com/index.html>

### **Marine Science and Nautical Training Academy**

Marine science And Nautical Training Academy (MANTA) scientists and instructors will teach high school students marine science in a "flippers on" manner aboard a sailboat. The program is offered from July 18-Aug 1, 2009 in the British Virgin Islands. The syllabus includes lectures and labs on marine science, active participation in publishable marine research, PADI scuba certification, and instruction on sailing and seamanship. There are opportunities for both students and teachers.

<http://www.manta-online.org/>

### **MarineQuest Educator Positions**

The University of North Carolina at Wilmington's MarineQuest invites you to become part of their marine and environmental education summer academic enrichment programs. They are currently looking for staff to fill both day instructor and evening staff positions.

<http://www.uncw.edu/dpscs/marinequest/employment.htm>

### **MATE At-Sea Internship**

The MATE Center is currently accepting applications for the 2009 At-Sea Marine Science and Technology Internship program. The internship positions will last 1-10 weeks in May through September. Interns receive a stipend and all travel expenses. The application deadline is March 27th, 2009.

[http://www.marinetech.org/education/internships/avail\\_intern.php?phase=2&page=1073949926](http://www.marinetech.org/education/internships/avail_intern.php?phase=2&page=1073949926)

### **Mote Summer Internship**

Mote Marine Laboratory offers summer internships in marine science education. The internships require a 12-14 week commitment beginning in late May, including a training week on marine science topics, education pedagogy, and the work of Mote Marine Laboratory. The deadline for application is March 15, 2009.

<http://www.mote.org/index.php?src=gendocs&ref=College%20Internship%20Opportunities&category=Education>

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

### **AEOE Conference - California**

The registration is now open for the Association for the Environmental and Outdoor Education (AEOE) 2009 Statewide Conference, *Education Unplugged*, April 24-26, 2009 in Petaluma, California.

<http://www.aeoe.org/conference/spring/2009/index.html>

### **American Museum of Natural History's Graduate Science Courses – Online**

Deepen your knowledge with Seminars on Science courses from the American Museum of Natural History. Spring courses (including The Ocean System, Diversity of Fishes, Sharks and Rays, and more) run March 16-April 26; the deadline for registration is March 2, 2009.

<http://www.amnh.org/learn/>

### **American Shore & Beach Preservation Association Conference**

The American Shore & Beach Preservation Association is hosting their 2009 National Coastal Conference on October 14-16, 2009 in St. Pete Beach, Florida. The theme of the conference is *Integrating Coastal Science and Policy*. The deadline for abstract submission is May 8, 2009.

<http://www.asbpa.org/conferences/conferences.htm>

### **Approaches to Scientific Inquiry - Washington**

The Port Townsend Marine Science Center presents a professional development opportunity for teachers, grades 5-10, *Approaches to Scientific Inquiry: Shifting Classrooms Toward Inquiry Learning*, August 18-22, 2009 plus a follow-up meeting, in Port Townsend, Washington. The workshop will offer teacher training, based on methods developed at the Exploratorium's Institute for Inquiry and on new programs developed at the Port Townsend Marine Science Center on inquiry in the natural environment. Enrollment is limited to 24 participants.

<http://www.ptmsc.org/education/teacher.html>

### **Classroom Learning 2.0 - Online**

Classroom Learning 2.0 is a free professional-development tutorial on Web 2.0 tools. The tutorial teaches about Web 2.0 tools that are bringing kids in touch with the world through social networking, wikis, video, podcasting, and gaming sites.

<http://ctapcl2.blogspot.com/>

### **Coastal Summit**

The American Shore & Beach Preservation Association is hosting the Coastal Summit March 25-27, 2009 in Washington, D.C. The conference will provide an in-depth look at critical issues affecting beach preservation and management; enhance media relations and lobbying skills; develop an understanding of federal budgeting and appropriations; and provide networking opportunities.

[http://www.asbpa.org/conferences/sum\\_09.htm](http://www.asbpa.org/conferences/sum_09.htm)

### **Coral Reef Workshop - California**

The Birch Aquarium at Scripps Institution of Oceanography is hosting a Coral Reef Workshop, March 12, 2009 in La Jolla, California. Designed for new and experienced teachers of grades 5-8, science specialists, and informal educators, the workshop will

explore ocean science content centered on coral reefs and how climate change is affecting these delicate ecosystems. Participants will experience inquiry-based science instruction and hands-on teaching strategies. Scholarships are available for those demonstrating financial need.

Contact Birch Aquarium at Scripps at 858-534-7336

### **Down Under, Out Yonder - Texas**

The 2009 Down Under, Out yonder workshops and field expeditions, sponsored by the Gulf of Mexico Foundation and ConocoPhillips, will be held July 11-15, 2009. This unique way to learn about coral reef ecosystems and the National Marine Sanctuary Program, specifically the Flower Garden Banks NMS located in the Gulf of Mexico, consists of two days of land-based workshop followed by three days of SCUBA diving in the sanctuary. All applicants must be previously SCUBA certified and have a fair amount of open water diving experience. This is a competitive application process; applications should be submitted as soon as possible.

<http://gulfmex.org/duoy.htm>

### **Earth Science Webcast Series**

NASA Langley Research Center, in co-operation with NOAA and the Virginia Department of Education Region 2 Math/Science Coalition, will offer a series of professional development programs for teachers of grades 3-8. The webcasts may be accessed on the NASA Digital Learning Network. Upcoming webcasts include Tides, The Story of Ocean Heat Storage, and Global Warming, Causes and Consequences.

<http://dln.nasa.gov/dln/>

### **Estuaries Education Calendar of Events**

The Estuaries.gov website offers a great variety of useful information, resources, and links. One section to keep an eye on is the Education Calendar of Events, identifying professional development workshops, along with community outreach events. Make sure your students check out the "Muddy Opportunities", too.

<http://estuaries.gov/estuaries101/GetInvolved/Calendar.aspx>

### **Farallones Workshops - California**

The Farallones Marine Sanctuary Association is offering a series of teacher workshops geared for middle and high school science teachers in San Francisco, California. The workshops are free; stipends and CEUs may be available.

- Feeling The Heat: Thermal Biology And Responses To Climate Change, March 21, 2009
- Life & Death, Love & Sex, Drama in the Intertidal Zone, May 2, 2009

[http://www.farallones.org/education/teacher\\_workshops.php](http://www.farallones.org/education/teacher_workshops.php)

### **MARE Summer Institute - California**

The 2009 MARE Summer Institute, *Integrating Marine Science & Literacy: An Inquiry-based Institute for K-8 and Informal Educators*, will be held July 5-9, 2009 in Santa Cruz, California. The Institute is intended for classroom teachers, science resource teachers, literacy specialists, bilingual teachers, curriculum leaders, professional developers, school administrators, and non-classroom educators.

<http://www.lawrencehalloffscience.org/mare/profdev/summer.html>

### **MPA Course - Mexico**

Students and practitioners interested in MPAs in the Caribbean region are invited to enroll in an international course to be held June 28-July 8, 2009 in Quintana Roo, Mexico. The course, *Marine Protected Areas for the South Florida, Mexican Caribbean, and Mesoamerican Region*, will analyze ecological and socioeconomic aspects of MPA design and management, and will be co-led by researchers from the National University of Mexico and Florida International University. Fellowships for the course are available for Latin American students.

Ligia Collado Vides at [colladol@fiu.edu](mailto:colladol@fiu.edu)

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

The U.S. Fish and Wildlife Service offers professional development courses at the National Conservation Training Center campus in West Virginia. For more information about a specific course, contact the individual identified below.

- OUT8163: Connecting People with Nature through Birds, June 1-4; the deadline for registration is March 23, 2009. Contact: Juanita Gustines at [Juanita\\_Gustines@fws.gov](mailto:Juanita_Gustines@fws.gov)
- OUT8121: Interest Based Negotiation, June 15-17, 2009; the deadline for registration is April 6, 2009. Contact Ora W. Dixon at [Ora\\_Dixon@fws.gov](mailto:Ora_Dixon@fws.gov)

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

### **National Marine Educators Association Conference**

NMEA09, the National Marine Educators Association Conference, June 29-July 3, 2009 in Pacific Grove, California, offers the theme, One World Conserving One Ocean. The deadline for early bird registration discount is March 15, 2009.

<http://209.232.236.13/nmea2009/>

### **Ocean Observing System Workshops – Gulf of Mexico**

The Gulf of Mexico coastal Ocean Observing System Regional Association will offer two workshops for Gulf Coast educators. Both will focus on GPS technology and the use of near-real-time data in the classroom. For educators in Louisiana and Texas, the workshop will be held April 23-24, 2009 in Corpus Christi, Texas. For educators in Mississippi, Alabama, and Florida, the workshop will be held April 30-May 1, 2009 at the Dauphin Island Sea Lab. Educational materials, lodging, a stipend, and more are available; space is limited to the first 30 applicants for each workshop.

Contact Chris Simoniello at [simo@marine.usf.edu](mailto:simo@marine.usf.edu)

### **Professional Development Workshop - Pennsylvania**

The Susquehanna Aquatic Biodiversity Network is offering a four-day professional development workshop for environmental educators, middle, and high school teachers of the Chesapeake Bay Watershed, August 3-6, 2009 in Lock Haven, Pennsylvania. Lodging and field trip implementation grants may be available.

<http://seagrant.psu.edu/education/workshops.htm>

### **Public Lecture Series – Washington, DC**

The Library of Congress and cosponsors continue a series of free public presentations by scientists on current science topics. All programs will be held in Washington, DC. Webcasts are typically posted for each program a couple of months after the event.

<http://www.loc.gov/rr/scitech/events/events.html>

### **Intermediate Level ROV Workshop - California**

The Marine Advanced Technology Education Center is offering a faculty workshop, *Intermediate Level Remotely Operated Vehicle Building for Classroom Projects*, July 20-26, 2009 in Monterey, California. Educators will work in teams to design and build ROVs and sensors and complete a set of predetermined mission tasks. Participants will have the opportunity to interact with industry professionals and participate in field trips.

[http://www.marinetech.org/education/summer\\_institutes/2009\\_Information.php](http://www.marinetech.org/education/summer_institutes/2009_Information.php)

## **EDUCATIONAL RESOURCES**

### **Alaska CoastWatch Manual**

The Center for Alaskan Coastal Studies offers a downloadable Alaska CoastWatch manual and other online resources for identification of Alaskan seaweeds and fishes, in the teacher and community resource sections on their website.

<http://www.akcoastalstudies.org/teacherresources.htm>

### **California Current Marine Laws Database**

All of the laws pertaining to the management of the California Current ecosystem have been compiled into a single, searchable, online database, publicly accessible through the Governance of the California Current Large Marine Ecosystem website. The data includes state laws from Washington, Oregon, and California, along with federal laws from the United States and Mexico.

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

### **Complete Hawaiian Reef Fish Coloring Book**

The Complete Hawaiian Reef Fish Coloring Book complements any marine science, biological science, or other classes that covers topics on local ecosystems. The table of contents and about 30% of the book is viewable on Google books. Check this out.

<http://books.google.com/books?id=B0c6dn2w540C&printsec=frontcover>

### **COSEE NOW**

The Centers for Ocean Sciences Education Excellence Networked Ocean World (COSEE NOW) is comprised of institutional partners who are using real time information from ocean observing systems to enhance public understanding of the ocean. The mission of COSEE NOW is to use ocean research and effective education practices to inspire students and the general public in ocean exploration, discovery, and stewardship. Central themes of the website include Ocean Literacy, Virtual Community Collaborations, and Ocean Observing Systems.

<http://coseenow.net/>

### **COSEE SE**

COSEE SE combines efforts with scientists and educators to improve science education, facilitate awareness of ocean sciences careers, increase outreach and understanding of research, and bring ocean sciences to students and the public. The website offers news and events, along with teacher's and scientist's sections with links to background about the South Atlantic Bight. COSEE SE partners in the southeast (North Carolina, South Carolina, Georgia, Florida, and Mississippi) have developed a new publication for middle school educators on marine debris – check it out.

<http://www.cosee-se.org/>

### **Derelict Fishing Gear Mission**

NOAA scientists complete a 6-day research mission exploring the remote habitats of Cordell Bank National Marine Sanctuary and testing methods of removing derelict fishing gear from the seafloor using a Remotely Operated Vehicle (ROV). The website offers background information and mission logs.

<http://sanctuaries.noaa.gov/missions/2008cordellbank/>

### **Discovering the Living Ocean Manual**

Bent Tree Press offers *Discovering the Living Ocean: Laboratory and Field Activities in Marine Biology*, a manual for use in high school and undergraduate marine biology classrooms and suitable for students who have no previous background in biology. The book's 17 chapters of laboratory exercises and 5 chapters of field studies expose students to a broad range of activities in taxonomy, microbiology, invertebrate zoology, ichthyology, oceanography, and more. All the chapters, appendices, and glossary are viewable online as .pdf files. There are also an accompanying instructional DVD and Instructor's Guide.

[http://benttreepress.com/products/labs/marinebio\\_labs.htm](http://benttreepress.com/products/labs/marinebio_labs.htm)

### **Diving Deeper Podcasts**

NOAA's National Ocean Service offers Diving Deeper, a bi-weekly audio podcast featuring discussions with NOS scientists on a wide variety of ocean topics. Current topics include marine debris, MPAs, and eutrophication.

<http://oceanservice.noaa.gov/podcast.html#dd>

### **Fire Management - Learning From the Experts**

Fire Management - Learning From the Experts captures the experience of seasoned employees who are acknowledged by their peers to have high expertise in planning and implementing fire programs. Topics include fire behavior prediction, high reliability organizing, stories, and more.

<http://www.wildfirelessons.net/Additional.aspx?Page=124>

### **Forest Encyclopedia Network**

Jointly developed by the USDA Forest Service Southern Research Station and Southern Regional Extension Forestry, this website has multiple online encyclopedias about the forests of the Southern United States, as well as one that covers the environmental threats facing all North American forests. The menu allows the visitor to view the site through a thematic lens, or through a global one.

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

### **Healthy Rivers: A Water Course**

Healthy Rivers: A Water Course was created by the Minnesota Department of Natural Resources. This free, interactive, online water course uses graphics, literary references, and testimonials from experts to help guide readers through the ecology of rivers, the threats facing them, and what can be done about the threats. Suitable for both students and educators, the course offers an overview of stream life and its importance.

<http://files.dnr.state.mn.us/assistance/backyard/healthyrivers/course/index.html>

### **Islands on the Edge**

The award-winning film, *Islands on the Edge - A Look at Climate Change in the Caribbean*, is now on YouTube in both standard and high definition. The film is split into two parts as it exceeds the maximum video length allowed on YouTube.

<http://www.youtube.com/watch?v=k2Z-t5U-NpA>  
<http://www.youtube.com/watch?v= XDpdMftd10&feature=related>

### **Managing Ecosystems, Managing Fisheries Webinar**

The webinar, *Managing Ecosystems, Managing Fisheries: How do EBM and EBFM Relate?* explores the relationship between ecosystem-based management and ecosystem-based fisheries management. A recording will be available.

[www.ebmtools.org/about\\_ebm/meam.html](http://www.ebmtools.org/about_ebm/meam.html)

### **Marine Debris Animation**

The National Marine Sanctuaries offers an online marine debris flash animation. At the end of the animation is a Response Blog, allowing the public to tell how they will make a difference.

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

### **Monitoring for Marine Invasive Species**

The Massachusetts Office of Coastal Zone Management offers the guide, *Monitoring for Marine Invasive Species: Guidance and Protocols for Volunteer Monitoring Groups*, online. It includes information on site selection, monitoring protocols, safety, and identification resources.

<http://www.mass.gov/czm/invasives/monitor/monitoringprotocol.htm>

### **Mystery Class – Exploring Sunlight and the Seasons**

Teachers and students in grades 4-12 classrooms are invited to participate this winter and spring in Journey North's Mystery Class project, February 2-May 15, 2009, in which students try to find ten secret classes hiding around the globe, using the changing sunlight at each site as the clue.

<http://www.learner.org/jnorth/tm/mclass/About.html>

### **NOAA Jeopardy**

NOAA Jeopardy has been expanded to include more categories, answers, and questions. Now the game has materials for Grades K-5, 6-8, 9-12, and Honors. Contact Susan Baker for the power point game, pre-loaded with general, Honors, or Marine Mammal categories. The game is easily modified by changing the text. Additional categories may be found on the website.

<http://coastalscience.noaa.gov/education/jeopardy/welcome.html>

Contact Susan Baker at [susan.baker@noaa.gov](mailto:susan.baker@noaa.gov)

### **Ocean Gazing Podcast**

COSEE Networked Ocean World offers the biweekly podcast *Ocean Gazing*, highlighting the science, researchers, and sounds of Ocean Observing Systems. Find out how to detect underwater earthquakes, take photos of some of the smallest ocean creatures, measure the ocean's temperature, and more.

<http://coseenow.net/category/ocean/>

### **Ocean Motion**

Ocean Motion is a NASA website aimed at students in grades 9-12. The website contains a review of the surface circulation of Earth's ocean and classroom investigations appropriate for various disciplines. The site features satellite and model data, quick evaluation quizzes, classroom investigations, and more.

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

### **Practical Uses of Math and Science**

NASA's Practical Uses of Math And Science (PUMAS) website is a collection of brief examples showing how math and science topics taught in K-12 classes can be used in interesting settings, including every day life. The examples are primarily written by scientists, engineers, and other content experts. A peer-review process stresses originality, accuracy, presentation clarity, and connection to national math and science curriculum guidelines.

<https://pumas.gsfc.nasa.gov/>

### **Project BudBurst 2009**

Project BudBurst will officially launch the 2009 national field campaign for students, families and other volunteers on March 2, 2009. The project is designed to engage the public in the collection of important climate change data based on the timing of leafing and flowering of trees and flowers. New website features include field guides to phenophases, updated plant species Identification Guides, real-time mapping with Google Maps, new classroom resources, photo sharing of plant observations, and more.

[http://www.windows.ucar.edu/citizen\\_science/budburst/](http://www.windows.ucar.edu/citizen_science/budburst/)

### **Satellite Observations in Science Education**

The Satellite Observations in Science Education website from the University of Wisconsin promotes the teaching and learning of the Earth system through quality educational resources that make use of satellite observations. The website includes learning activities, resources useful to building your own learning activities, satellite data, and more.

<http://www.ssec.wisc.edu/sose/>

### **Teaching Geologic Map Interpretation with Google Earth**

The Structural Geology Resources Collection at Carleton College presents an online tutorial, Teaching Geologic Map Interpretation with Google Earth. Resources in this collection include the non-traditional approach for using Google Earth to teach strike, dip, and geologic map interpretation, along with assignments and activities, a geologic map interpretation activity for structural geology using Google Earth, and more.

[http://serc.carleton.edu/NAGTWorkshops/structure/teaching\\_geo\\_map\\_interp.html](http://serc.carleton.edu/NAGTWorkshops/structure/teaching_geo_map_interp.html)

### **U.S. Global Change Research Information Office**

The US Global Change Research Information Office provides access to data and information on climate change research, adaptation/mitigation strategies and technologies, and global change-related educational resources on behalf of the various US Federal Agencies that are involved in the US Global Change Research Program. The website offers downloadable documents, *Ask Dr. Global Change* with links to useful information, and more. Check out the *Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources*, a report from the EPA which identifies strategies to protect the environment as these changes occur.

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

### **Volunteer Liability**

The National Sea Grant Law Center at the University of Mississippi offers a downloadable Volunteer Liability pamphlet. This publication reviews volunteer liability laws nationally and state by state, and can help those that are planning and organizing efforts involving volunteers. The document offers an overview of the federal and state

volunteer liability laws, as well as additional issues and doctrines that may apply to volunteer and volunteer organizers. The document addresses volunteer, organizational, and corporate liability separately.

<http://www.olemiss.edu/orgs/SGLC/National/Volunteer.pdf>

### **Weather Puzzle**

These weather picture "Slyder" puzzles on The Space Place website are fun to try. Users can pick easy, medium, or hard levels of difficulty to challenge logical- and spatial-reasoning muscles and to reveal dramatic ground-and space-based images of Earth and space weather phenomena.

<http://spaceplace.nasa.gov/en/kids/goes/slyder>

### **WET in the City**

WET in the City engages K-12 youth in hands-on activities that find creative ways to explore the science of water, its cultural context, and the complex issues surrounding its management and stewardship. The program is delivered at the local level, city by city, and targets urban educators with relevant, localized water education through a network of city partners. Sample activities can be downloaded from the website.

<http://www.wetcity.org/index.htm>

### **Wild Oceans**

The IMAX film, *Wild Oceans*, follows the struggle for sea life off the coast of South Africa. A downloadable teacher's guide is available.

[http://wildoceanfilm.com/admin/mod\\_documents/view\\_file.php?id=5](http://wildoceanfilm.com/admin/mod_documents/view_file.php?id=5)

### **Worldmapper**

Worldmapper is a collection of nearly 600 world maps, where territories are re-sized on each map according to the subject of interest. The maps presented on this website are equal area cartograms, otherwise known as density-equalizing maps. The cartogram re-sizes each territory according to the variable being mapped. Each map has associated technical notes about the data and its sources.

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

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

### **Florida Oceans Day**

The 11th annual Florida Oceans Day, March 25, 2009 in Tallahassee, Florida, will feature exhibits on ocean economics and climate change reports of the Florida Oceans and Coastal Council, along with a roundtable discussion of ocean management.

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

### **National Environmental Education Week**

National Environmental Education Week, April 12-18, 2009, promotes understanding and protection of the natural world by actively engaging K-12 students and educators of all subjects in an inspired week of environmental learning and service before Earth Day. This year's EE Week theme is *Be Water Wise!* Registered partners have access to a wide variety of free environmental education resources, including a school water auditing tool and water quality monitoring resources.

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

**Ocean Leadership Employment Opportunities**

The Consortium for Ocean Leadership is a nonprofit organization that represents public and private ocean research education institutions, aquaria, and industry with the mission to advance research, education, and sound ocean policy. The organization also manages ocean research and education programs in areas of scientific ocean drilling, ocean observing, ocean exploration, and ocean partnerships. As a service to the ocean community, job announcements are posted on the Ocean Leadership website.

<http://www.oceanleadership.org/about/employment>

**Special Days for EE: 2009 Planner**

EE in Georgia offers this 2009 planner, identifying special days set aside for Environmental Education.

<http://www.eeingorgia.org/net/content/go.aspx?s=16215.0.68.4863>