

## NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

### INFORMATION EXCHANGE FOR MARINE EDUCATORS

AUGUST 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.

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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 References**

#### **Climate Stabilization Targets**

This report on climate change, *Climate Stabilization Targets: Emissions, concentrations, and Impacts over Decades to Millenia*, was sponsored by the Energy Foundation and the U.S. Environmental Protection Agency. The report emphasizes the importance of 21st century choices regarding long-term climate stabilization. The report and summaries are downloadable from the website.

[http://www.nap.edu/catalog.php?record\\_id=12877#description](http://www.nap.edu/catalog.php?record_id=12877#description)

## **Oil Spills Bibliography**

In support of research on oil spills, response, and restoration, the NOAA Central Library published the Oil Spills Bibliography in pdf and docx format. Included are electronic resources, selected videos, select journal articles, and more.

[http://docs.lib.noaa.gov/noaa\\_documents/NESDIS/NODC/LISD/Central\\_Library/current\\_references/current\\_references\\_2010\\_2.pdf](http://docs.lib.noaa.gov/noaa_documents/NESDIS/NODC/LISD/Central_Library/current_references/current_references_2010_2.pdf)

[http://docs.lib.noaa.gov/noaa\\_documents/NESDIS/NODC/LISD/Central\\_Library/current\\_references/current\\_references\\_2010\\_2.docx](http://docs.lib.noaa.gov/noaa_documents/NESDIS/NODC/LISD/Central_Library/current_references/current_references_2010_2.docx)

## **OPPORTUNITY OF THE MONTH**

### **Month at the Museum**

The Museum of Science and Industry in Chicago is offering this unbelievable opportunity. The museum is conducting a nationwide search for a curious, adventurous, outgoing individual to live in the museum 24/7 for 30 days this fall as part of its Month at the Museum experiment. The winner will mingle with visitors, students, and teachers while having access to all the fun and education the museum offers daily. Sleep aboard the U-505 submarine. Visit the coal mine at night. Lead a class in eyeball dissection, or help blow things up in the chemistry show. The deadline for application is August 11, 2010.

<http://www.msichicago.org/matm>

## **WEBSITE OF THE MONTH**

### **Executive Order for the Stewardship of Our Oceans, Coasts, and Great Lakes**

President Barak Obama signed an Executive Order establishing the National Ocean Council. The Executive Order established for the first time a comprehensive, integrated national policy for the stewardship of the ocean, our coasts, and Great Lakes, which sets our nation on a path toward comprehensive planning for the preservation and sustainable uses of these bodies of water.

<http://www.whitehouse.gov/administration/eop/oceans>

## **GRANTS AND OPPORTUNITIES**

### **California B-WET Funding**

The NOAA Office of National Marine Sanctuaries' California Bay Watershed Education and Training (B-WET) Program has issued a request for proposals for projects that provide meaningful watershed educational experiences to students and teachers. The deadline for proposals is October 5, 2010.

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

### **Chesapeake B-WET Funding**

The Chesapeake B-WET grant program is a competitively based program that supports existing environmental education programs, fosters the growth of new programs, and encourages the development of partnerships among environmental education programs throughout the entire Chesapeake Bay watershed. Funded projects assist in meeting the Stewardship and Community Engagement goals of the Chesapeake 2000 Agreement. The deadline for application is October 15, 2010.

<http://www.grants.gov/search/search.do?mode=VIEW&oppld=48519>

### **CSCOR Funding**

The Center for Sponsored Coastal Ocean Research (CSCOR) announces the following funding opportunities:

- Coastal Ocean Program for the Harmful Algal Bloom Program; the deadline for submission of the required letter of intent is August 14, 2010
- Regional Ecosystem Prediction Program (2 opportunities); the deadline for submission is October 21, 2010

<http://www.cop.noaa.gov/news/fs/funding2011.aspx>

### **Environmental Literacy Grants for Formal K-12 Education Projects**

NOAA's Office of Education offers grants for Formal K-12 Education Projects that advance inquiry-based Earth System Science learning and stewardship directly tied to the school curriculum, with a particular interest in increasing climate literacy. Note that projects related to the Gulf of Mexico oil spill are encouraged. A successful project will catalyze change in K-12 education at the state, regional and national level through development of new programs and/or revision of existing programs to improve the environmental literacy of K-12 teachers and their students. The target audiences are K-12 students, pre- and in-service teachers, and providers of pre-service teacher education and in-service teacher professional development. There is a special interest in projects that address reaching groups traditionally underserved and/or underrepresented in Earth System science, including elementary students and teachers. The deadline for required pre-proposals is September 8, 2010.

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

### **GBIF Young Researchers Award**

The Global Biodiversity Information Facility, an intergovernmental initiative established to enable free and open access to biodiversity information via the internet to underpin sustainable development, offers the 2010GBIF Young Researchers Award. The main objective of the award is to foster innovative research and discovery in biodiversity informatics by graduate students in masters and doctorate programs at universities in countries participating in the GBIF network. The deadline for application is September 15, 2010.

<http://www.gbif.org/communications/news-and-events/showsingle/article/call-for-proposals-for-the-first-gbif-young-researchers-award-2010/>

### **Georgia Pacific Foundation Grants**

The Georgia-Pacific Foundation supports a wide range of organizations that improve the quality of life in communities where Georgia-Pacific operates. The foundation has identified the following key investment areas: educational efforts; community enrichment; environmental programs; and entrepreneurship initiatives. The deadline for application is October 31, 2010. Check the website for eligibility.

<http://www.gp.com/gpfoundation/grantprocess.html>

### **Gulf of Mexico B-WET Program**

The National Marine Fisheries Service, Southeast Region, is seeking proposals under the Gulf of Mexico B-WET Program. The B-WET program is an environmental education program that promotes locally relevant, experiential learning in the K-12 environment. Funded projects provide meaningful watershed educational experiences for students, related professional development for teachers, and help to support regional

education and environmental priorities in the Gulf of Mexico. The deadline for application is October 14, 2010.

<http://www07.grants.gov/search/search.do?&mode=VIEW&oppld=55906>

### **Hawai'i B-WET Funding**

The B-WET Hawaii program is administered by the NOAA Pacific Services Center, and supports an environmental education programs that promote locally relevant experiential learning in the K-12 environment on priority topics, such as understanding climate change, earth sciences, and community resilience to hazards. Hurry - the deadline for submission of letters of intent is August 2, 2010.

[http://www.csc.noaa.gov/psc/b\\_wet/funding\\_opps.html](http://www.csc.noaa.gov/psc/b_wet/funding_opps.html)

### **ISRS Fellowships**

The International for Reef Studies (ISRS) will support up to two Graduate Fellowships for Coral Reef Ecosystem Research in 2010. The intent of the fellowship is to help PhD students develop skills and address problems related to relevant applications of coral reef ecosystem research and management. The deadline for application is August 27, 2010.

<http://www.coralreefs.org/graduate-fellowships.htm>

### **John Muir Conservation Award**

The John Muir Association is accepting applications for the John Muir Conservation Award in four categories: Conservationist of the Year, Environmental Education Conservation Award, Nonprofit or Public Agency Conservation Award, and the Business Conservation Award. The deadline for nominations is October 1, 2010.

<http://www.johnmuirassociation.org/php/conserv-award-submitnom.php>

### **Lowe's Toolbox for Education Grants**

The Lowe's Toolbox for Education offers grants to schools and parent/teacher groups across the United States. School projects should encourage parent involvement and build stronger community ties. The next deadline for application is October 15, 2010.

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

### **MyCampus Portal Grant Program**

CampusEAI Consortium offers the myCampus Portal Grants for K-12 schools to implement an intranet portal that integrates online learning, administrative computing, and student services systems. The deadline for application is September 3, 2010.

<http://www.campuseai.org/grant-program>

### **National Geographic Bee**

The National Geographic Bee is a national contest and educational outreach program of the National Geographic Society designed to encourage the teaching and study of geography. Students in grades 4-8 are eligible to participate. The deadline for early registration is October 15, 2010; see the website for complete details.

<http://www.nationalgeographic.com/geobee/>

### **New England B-Wet Funding**

NOAA B-WET is an environmental education program that promotes locally relevant, experiential learning in the K- 12 environment. This funding opportunity supports regional education and environmental priorities in New England. Priority areas are ecosystem conservation, coastal hazard response and resiliency, climate change

challenges, integrated water resources, and coastal and ocean uses. The deadline for application is October 8, 2010.

[http://www.oesd.noaa.gov/BWET/BWET\\_funding.html#NewEngland](http://www.oesd.noaa.gov/BWET/BWET_funding.html#NewEngland)

### **Open Meadows Foundation**

Open Meadows Foundation is a grant-making organization for projects that are led by and benefit women and girls, particularly those from vulnerable communities. Small and start-up organizations are strongly encouraged to apply; proposals from organizations not previously funded have priority. The next deadline for proposals is August 14, 2010.

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

### **Pacific Northwest B-Wet Funding**

NOAA B-WET is an environmental education program that promotes locally relevant, experiential learning in the K- 12 environment. A funded project provides meaningful watershed educational experiences for students, related professional development for teachers, and helps to support regional education and environmental priorities in the Pacific Northwest. The deadline for application is October 8, 2010. Check the website for the full funding announcement as it is released.

[http://www.oesd.noaa.gov/BWET/BWET\\_funding.html](http://www.oesd.noaa.gov/BWET/BWET_funding.html)

### **SeaWorld & Busch Gardens Environmental Excellence Awards**

SeaWorld Parks & Entertainment recognize the outstanding efforts of K-12 students and teachers across the country who are working at the grassroots level to protect and preserve the environment. The deadline for application is December 1, 2010.

<http://www.swbg-animals.org/conservation-matters/eea/index.htm>

### **Smith Fellows**

The Society for Conservation Biology offers the two year post-doctoral David H. Smith Conservation Research Fellowship Program. These fellowships enable early-career scientists to improve and expand their research skills while directing their efforts towards problems of pressing conservation concern for the United States. The deadline for application is September 24, 2010.

<http://www.conbio.org/smithfellows/apply/>

### **Thank You Ocean Photography Contest**

The Thank You Ocean campaign offers the First Annual California Coast Photography Contest, meant to inspire ocean stewardship by featuring images of the iconic California coast and Pacific Ocean. The contest is open to all levels of photography enthusiasts and can feature scenic images of the California coast, underwater photos, or images of California wildlife. Hurry - the deadline for submission is August 6, 2010.

<http://www.thankyouocean.org/take-action/contests/>

### **Undergraduate Fellowships**

The Duke University Marine Laboratory offers two undergraduate fellowships for a full semester of study in Spring 2011. This is an all-expenses-paid semester for undergraduate students interested in pursuing a PhD in marine science. Factors considered in the evaluation process include whether an applicant identifies with a group that is racially/ethnically underrepresented in marine science and has demonstrated interest in marine science and its impact on society. The deadline for application is September 15, 2010.

<http://www.nicholas.duke.edu/marinelab/programs/undergraduate/fellowship>

### **Ways to Help**

WaysToHelp.org invites teens in the U.S. to apply for grants to fund their community service ideas across any one of 16 issue areas, including clean water, land preservation, global warming, and recycling. Grant requests are reviewed and responded to on a monthly basis.

<http://waystohelp.org/>

### **Wildlife Conservation Society Research Fellowship Program**

The Wildlife Conservation Society (WCS) Research Fellowship Program is a small grants program administered by the WCS Institute which helps build research capacity for the next generation of conservation practitioners worldwide. The program supports individual field research projects that have a clear application to conservation. The grants support work directly related to land/seascapes, species, and/or the global challenges of wildlife health, climate change, human livelihoods, and natural resource extraction. The deadline for application is January 5, 2011.

<http://programs.wcs.org/Default.aspx?alias=programs.wcs.org/grants>

## **INTERNSHIPS AND TEMPORARY OPPORTUNITIES**

### **DEVELOP Program Internships**

DEVELOP is a NASA Science Mission Directorate Applied Sciences training and development program. Students work on Earth science research projects, mentored by science advisors from NASA and partner agencies, and extend their research results to local communities. The projects demonstrate to community leaders how NASA science measurements and predictions can be utilized to address local policy issues. Students from high school through doctoral levels are chosen in a competitive application process. There are three terms each year; the deadline for application to the fall 2010 term, September 13-November 19, 2010 is August 9, 2010.

<http://develop.larc.nasa.gov/>

### **Ecology Project International**

Ecology Project International offers 9-12 day marine biology programs out of Costa Rica and Baja-Mexico. They partner with marine biologists conducting ongoing research on sea turtles, cetaceans, and echinoderms at field sites and engage students in the science and culture of the area.

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

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

### **American Geophysical Union Fall Meeting**

The fall AGU meeting, December 13-17, 2010 in San Francisco, California provides an opportunity for researchers, teachers, students, and consultants to present and review the latest issues affecting all areas of Earth and space sciences. The deadline for abstract submission is September 2, 2010.

<http://www.agu.org/meetings/fm10/>

### **California and the World Ocean Conference**

The theme of the upcoming California and the World Ocean Conference, September 7-10, 2010 in San Francisco, California, is *Our Changing Ocean: a Vision for the 21st Century*.

<http://www.cce.csus.edu/conferences/cnra/cwo2010/index.htm>

### **Fish Culture Techniques – Florida**

Fish Culture Techniques will be held at Harbor Branch Oceanographic Institute, October 18-20, 2010 in Fort Pierce, Florida. This three-day beginner to intermediate workshop highlights techniques used in maturation, spawning, larvae culture, and production of fresh water and marine food fish. Students will interact with HBOI and USDA scientists at the Harbor Branch research facilities and learn techniques through laboratories and classroom presentations. Topics covered will include site selection, facility design, live feeds, and health management. The deadline for registration is October 4, 2010.

[http://www.fau.edu/hboi/Aquaculture/AQacted\\_WorkshopSchedule.php](http://www.fau.edu/hboi/Aquaculture/AQacted_WorkshopSchedule.php)

### **Fundamentals of Natural and Cultural Interpretation - Online**

The University of Wisconsin-Stevens Point and the Environmental Education and Training Partnership (EETAP) are offering a new fall course, Fundamentals of Natural and Cultural Interpretation, September 13-December 3, 2010. The deadline for registration is August 25, 2010.

Contact Jessica Tomaszewski at [jtomasze@uwsp.edu](mailto:jtomasze@uwsp.edu)

### **International Marine Conservation Congress**

The deadline for the call for proposals for the 2nd International Marine Conservation Congress, *Making Marine Science Matter*, May 14-18, 2011 in Victoria, British Columbia, Canada is August 31, 2010.

<http://www.conbio.org/IMCC2011/>

### **Learning Ocean Science through Ocean Exploration - Various**

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

- October 16, 2010 with Nauticus, The National Maritime Center in Virginia, an introductory workshop. The deadline for registration is October 1, 2010. Contact Jennifer Tabor at [jennifer.tabor@norfolk.gov](mailto:jennifer.tabor@norfolk.gov)
- October 23, 2010 with the South Carolina Aquarium, in Charleston, South Carolina, an introductory workshop. The deadline for registration is October 8, 2010. Contact Jaime Coomes at [jcoomes@scaquarium.org](mailto:jcoomes@scaquarium.org)
- October 23, 2010 with the National Aquarium in Baltimore, Maryland, a follow-up workshop. The deadline for registration is October 8, 2010. Contact Jennifer Aiken at [jaiken@aquaria.org](mailto:jaiken@aquaria.org)

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

### **Lessons from the Deep - Online**

NOAA's Office of Exploration and Research (OER), in partnership with the College of Exploration, will offer the free online workshop, *Lessons from the Deep: Exploring the Gulf of Mexico's Deep-Sea Ecosystems*, October 11-29, 2010. Between 2002 and 2009, OER sponsored 14 expeditions to study little-known deep-sea organisms and ecosystems in the Gulf of Mexico. Some of the sites studied are within a few miles of

the Deepwater Horizon well. Each of these expeditions was documented with an extensive website that included lesson plans for educators of grades 5-12. NOAA is developing an online professional development offering for educators of all levels that will focus on OER's Gulf of Mexico Deep-Sea expeditions. The course will be supported by keynote addresses from scientists and an Exploring the Gulf of Mexico's Deep-Sea Ecosystem Materials Collection. The collection includes a selection of lesson plans together with new lessons and additional background information about the Deepwater Horizon blowout event. The workshop will be free for all participants and will be available 24/7. Registration will be open at the end of August through the website. <http://www.coexploration.org/oe/>

### **Life on a Water Planet - Online**

Nova Southeastern University Oceanographic Center Distance Education offers *Life on a Water Planet*, an online interdisciplinary course exploring water issues from physical, social, cultural, economic, legal, and institutional perspectives. <http://www.nova.edu/ocean/waterplanet/index.html>

### **NEOSEC Ocean Literacy Summit – New Hampshire**

The New England Ocean Science Education Collaborative's (NEOSEC) 2010 Ocean Literacy Summit will be held on November 11-13, 2010 in Durham, New Hampshire. Check out the possible reimbursement for the cost of substitute teachers. <http://www.neosec.org/previous-summits/2010-summit>

### **Oceans 2010 MTS/IEEE Seattle**

The Oceans 2010 MTS/IEEE Seattle, September 20-23rd, 2010 in Seattle, Washington, jointly sponsored by the Marine Technology Society and the Oceanic Engineering Society of the Institute of Electrical and Electronic Engineers, is an international forum for scientists, engineers, and responsible ocean users to present the latest research results, ideas, developments, and applications in oceanic engineering and marine technology. <http://www.oceans10mtsieeeseattle.org/index.cfm>

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

Salish Sea Expeditions invites teachers to free teacher trainings geared for classroom educators, September 18, 2010 from Anacortes, Washington, and September 25, 2010 from Seattle, Washington. The workshops are aimed at helping students make valuable connections between the ecology of their local watershed and the Puget Sound. Contact Nikken Palesch at [nikken@salish.org](mailto:nikken@salish.org)

### **Seminars on Science - Online**

Registration is open for the fall sessions of Seminars on Science from the American Museum of Natural History. Courses are co-taught by an experienced classroom teacher and a research scientist. Upcoming courses include The Ocean System, Earth: Inside and Out, Water, and more. The deadline for registration for fall session 1, September 6-October 10, 2010 is August 27, 2010; for fall session 2, October 25-December 5, 2010, October 12, 2010. Register early for a discount. <http://www.amnh.org/learn/>

### **Schoolyard Habitat Webinars - Online**

Sign up to be advised of an upcoming free Schoolyard Habitat webinar and tips for educators from the National Wildlife Federation.



[http://online.nwf.org/site/Survey?ACTION\\_REQUIRED=URI\\_ACTION\\_USER\\_REQUESTS&SURVEY\\_ID=19021](http://online.nwf.org/site/Survey?ACTION_REQUIRED=URI_ACTION_USER_REQUESTS&SURVEY_ID=19021)

### **STEMester of Service Grants**

Youth Service America will implement the STEMester of Service program, a semester-long service-learning framework to engage educators and students in addressing critical environmental needs and connecting them to STEM (science, technology, engineering, and math) curricula, specifically science and technology. The grant is for middle schools with large populations of disadvantaged youth. Note that there are 7 new eligible states, and the deadline for application has been extended to August 20, 2010.

<http://www.ysa.org/grants/stem>

### **Tools That Work Webinars**

The COSEE Excellence in Networking Tools Sub-group recently held a webinar focusing on Tools for Online Presentations. The webinar explored the use of Elluminate, Moodle, Adobe Connect, and long-distance learning. The webinar was recorded and can be accessed from the Online Tools Guidebook. The next webinar will be on Social Media Tools.

<http://www.cosee.net/about/cnn/>

## **EDUCATIONAL RESOURCES**

### **100 Days — A Snapshot of NOAA's Response**

NOAA has been on the scene from day one of the Deepwater Horizon/BP Oil Spill, providing coordinated scientific, weather, and biological information and products. This website offers a brief snapshot of some of NOAA's efforts through science, damage assessment, food safety, wildlife and habitat protection, and more.

<http://www.noaa.gov/100days/100days.html>

### **3-D Geology of National Parks and Other Public Spaces**

For 3D enthusiasts, this index provides a listing by subject of three-dimensional images of national parks and other locations. Users can search for images by selecting from a list of subjects, including rock types, landform and landscape types, plants and animals, and more. Visitors will need 3D viewing glasses.

<http://3dparks.wr.usgs.gov/subject.htm>

### **Benthic Marine Algal Herbarium of L.I. Sound**

The University of Connecticut has photographed original herbarium sheets featuring over 300 preserved benthic marine macroalgal species in the Long Island Sound. Visitors can search by phylum, family, or name. The site offers a list of definitions, and more.

<http://www.algae.uconn.edu/>

### **The Best of CLEARING**

The Best of CLEARING (Volume VI) is a unique collection of EE stories, reviews, and perspectives from 20 past issues of CLEARING: the EE resource magazine of the Pacific Northwest. The CD includes field-tested teaching ideas and strategies, K-12 activities for all subject areas, and stories from innovative EE projects and programs. Be sure to check out the free online issues of Clearing. The website offers a portion of the content, and those that sign up for free membership will receive regular newsletters with

additional features like book reviews and resource blurbs. In addition, Clearing publishes one printed issue each year - a compilation of all the online articles plus book reviews, news, and other features. If you didn't see last year's annual issue, it can be seen in its entirety on the website.

<http://www.clearingmagazine.org/online/best-of-clearing>

### **Bright Future Environmental Card Game**

This website from Applied Materials offers a free card game that educates about science issues. Players can learn how science can make the Earth a better place to live, while having fun. The website offers the downloadable cards, an activity guide, and more.

<http://brightfuture.appliedmaterials.com/game/>

### **Climate Adaptation Knowledge Exchange**

EcoAdapt and Island Press have launched CAKE - the Climate Adaptation Knowledge Exchange. CAKE is aimed at building a shared knowledge base for managing natural systems in the face of rapid climate change. The website offers a Virtual Library, Tools, Directory, and more. Be sure to check out the free CAKE and Ice Cream offer.

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

### **Climate Change Booklist**

Check out this booklist from the U.S. Fish and Wildlife Service's National Conservation Training Center Conservation Library, *Grades K-12: Books about Climate Change and Global Warming Selections*.

<http://library.fws.gov/booklists/booklistK-12climatechange.pdf>

### **Climate Change Resources for the Classroom**

The Teachers' Domain website offers climate change teaching resources for the classroom (5th grade and up) and includes public TV footage and student activities. Free registration is required.

<http://www.teachersdomain.org/special/climchg/>

### **Coastal Climate Adaptation Website**

NOAA's Coastal Climate Adaptation website makes it easy for coastal communities to find resources and engage in climate-related discussions. Visitors can find easy-to-understand climate change science information, examples of strategies, and plans and policies that communities can employ to address climate change impacts.

<http://collaborate.csc.noaa.gov/climateadaptation/default.aspx>

### **Coastcolour Project**

The European Space Agency has launched the Coastcolour project to fully exploit the potential of the MERIS instrument for remote sensing of the coastal zone. All data will be made online available from the website. Coastcolour is developing, demonstrating, validating, and comparing different algorithms over a global range of coastal water types, identifying best practices, and promoting discussion of the results in an open, public form.

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

### **EarthPulse**

National Geographic offers EarthPulse: A Visual Guide to Global Trends, exploring trends in the human condition, our relationship with nature, and the connected world

through imagery, maps, diagrams, and interactives that illuminate where we are today, how we got here, and how our actions may affect the future of life on Earth.

<http://www.nationalgeographic.com/earthpulse/>

### **Encyclopedia Arctica**

The Encyclopedia Arctica is the typecript of a proposed 20-volume reference work on the northern arctic and subarctic regions. The project was begun in 1947 under the sponsorship of the Office of Naval Research, Department of the Navy but support was withdrawn in 1951 after 3-4 million words had been written. Subjects covered include archaeology, anthropology, botany, engineering, geography, geology, history, law (including international relations); language, medicine, meteorology, oceanography, religion, zoology, biographies, and special topics. The glossary alone is 121 pages, with a 3-page introduction.

<http://www.dartmouth.edu/~library/digital/collections/ocn238796413/index.html>

### **Environmental Response Management Application**

NOAA offers this public website that delivers near-real-time information in map format about the response to the Deepwater Horizon BP oil spill. The online mapping tool is designed specifically for response activities where it is necessary to coordinate with various federal, state, and local agencies. ERMA is a web-based Geographic Information System (GIS) platform integrating the latest data on the oil spill's trajectory, fishery closed areas, wildlife, and place-based Gulf Coast resources into one customizable interactive map.

<http://gomex.erma.noaa.gov/>

### **Flying WILD Educator Resources on Gulf Oil Spill**

To help bird educators find useful information for their classrooms about the Gulf oil spill and birds, Flying WILD has compiled an educator resource page that includes links to key websites and databases, educator tools, articles, and how to help.

<http://www.flyingwild.org/resources/gulfoilspillresources.htm>

### **Free Worksheets for Teachers**

Teachnology offers printable K-12 teacher worksheets and other resources free to use and distribute for educational purposes. Science topics include oceans, environment, and more. Other resources include teacher templates, a worksheet maker, and more.

<http://www.teach-nology.com/worksheets/>

### **In Search of the Lost Whaling Fleets**

The National Marine Sanctuaries website offers these web pages detailing stories about whaling fleets lost among the icebergs and icepacks of Alaska's North Slope. Read about the ships, their stories, and more.

<http://sanctuaries.noaa.gov/whalingfleet/welcome.html>

### **International Continental Shelf Survey**

This joint U.S.-Canada research cruise will use two icebreakers to collect data to identify the edge of the continental shelf in the Arctic Ocean. As needed, the *Healy* will break ice for the *Louis S. St-Laurent* while it collects data to map the geology of the subseabed. Scientists aboard Healy will also measure seafloor bathymetry, collect high-resolution subseafloor data, make ice observations, collect water samples, and monitor marine mammals and ocean noise through high frequency audio recording. Join the PolarTREC teacher, Teacher at Sea, and others from August 2-September 6, 2010 as

they blog about their experiences. Check out the resources on the PolarTREC website to enhance your students' experience.

<http://www.polartrec.com/expeditions/international-continental-shelf-survey>

<http://teacheratsea.noaa.gov/index.html>

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

### **Introduction to the Dinoflagellata**

This website from the University of California Museum of Paleontology features an overview of the Dinoflagellata. The website offers introductory information, life history and ecology, systematics and morphology, and more.

<http://www.ucmp.berkeley.edu/protista/dinoflagellata.html>

### **IOOS Data Catalog**

The Integrated Ocean Observing System (IOOS) launched the first version of the IOOS Data Catalog to help people find ocean observations. The goal is to allow users to find the data they want, for the location and time period of interest. The catalog is a work in progress. IOOS will add more features and more observing assets as available.

<http://ioos.gov/catalog/>

### **JASON Online Games**

All of JASON's games are available online in the JASON Mission Center. Teachers can search for games and labs by state standards in the JASON Mission Center Web site, where you will also find worksheets and handouts. Games include Operation: Resilient Planet, Storm Tracker, and more. Free registration is required.

<http://www.jason.org/public/whatis/games.aspx>

### **Kings of Camouflage**

This documentary from NOVA explores the world of the cuttlefish and its behaviors. The website offers users the opportunity to view the complete film, along with a downloadable teacher's guide, transcript, links to related materials, and much more.

<http://video.pbs.org/video/1150618835/program/979359664>

### **Learn More About Climate**

*Learn More About Climate – Climate Change and Colorado's Future* is an initiative of The University of Colorado at Boulder's Office for University Outreach in the Division of Continuing Education and Professional Studies. The website offers interviews, problem-based lessons, and more.

<http://learnmoreaboutclimate.colorado.edu/>

### **Middle School Math & Science Portal**

The Middle School Portal 2: Math and Science Pathways project supports middle grades educators with high-quality, standards-based STEM resources and promotes collaboration and knowledge-sharing among its users. Resources include math and science resource guides, teacher and student opportunities, and much more.

<http://www.msteacher2.org/>

### **National Marine Sanctuary System Expeditions**

Check out the latest expeditions from across the National Marine Sanctuary System. New archives include:

- Live Webcasts from Shipwreck Montana
- Battle of the Atlantic Expedition

- Deep-Sea Coral Expedition
- Gray's Reef Expedition
- Papahānaumokuākea Marine National Monument Explorations 2010
- East Carolina University Nearshore Expedition
- Exploring Deep Sea Coral

<http://sanctuaries.noaa.gov/missions/welcome.html>

### **National Ocean Service Website**

NOAA's new NOS website offers interactive presentations of topics covered by the organization. Explore its role in marine navigation, learn more about the National Estuarine Research Reserve System, read about contaminants in the environment, and more.

<http://oceanservice.noaa.gov/topics/>

### **OceanLink**

OceanLink, from Bamfield Marine Sciences Center, offers information about the effects of climate change, marine biology education, and careers; answers to questions about the ocean and marine organisms; and more. Check out the archive for Ask a Scientist, the glossary, and more.

<http://oceanlink.info/index.html>

### **Oil Spill Resources**

NAAEE's EE-Link website has many resources on the oil spill listed: curriculum for K-12 classrooms, news, real-time map links, background, government agencies' response, and more; more are added frequently.

<http://eelink.net/pages/Oil+Spill>

### **Operation: Tectonic Fury**

The JASON Project's new geology curriculum for middle school, Operation: Tectonic Fury, features scientists and takes your students from the top of Mount St. Helens to the depths of a West Virginia mine in search of answers to Earth's geologic mysteries. The free, online unit offers research articles, inquiry-based activities, videos, games, and other multimedia, and allows students to investigate and analyze Earth's past, present, and future to unlock its geologic mysteries.

<http://www.jason.org/public/Whats/CurrOTFIndex.aspx>

### **Quizlet**

Quizlet allows users to create flashcard sets with little fuss, and also share flashcards with friends via email, Facebook, or MySpace.

<http://quizlet.com/>

### **Restore the Gulf**

Created by the federal government, RestoretheGulf.gov provides the public with information on the response to the Deepwater BP oil spill, along with news updates and links to other governmental partners. The Assistance area contains information about claims and appeals, how to stay safe in and around the area, and also about how to volunteer with relief efforts. Other categories include news, response, and more.

<http://www.restorethegulf.gov>

### **Sea Level Rise Conference Online**

The International Conference on Sea Level Rise in the Gulf of Mexico took place March 1-3 in Corpus Christi, Texas. The oral presentations and recorded videos of sessions are available online for downloading.

<http://www.sealevelrise2010.org/video/>

<http://www.sealevelrise2010.org/oral%20Presentations.htm>

### **SeaWIFS Teacher Resources**

The SeaWIFS project uses space technology to study phytoplankton. The website offers the downloadable Living Ocean Teacher's Guide, a guide for grades 9-10 that discusses satellites, ocean color, phytoplankton, the carbon cycle, and greenhouse effect; a tutorial about ocean color using SeaWIFS images; and many other useful resources.

<http://oceancolor.gsfc.nasa.gov/SeaWIFS/TEACHERS/>

### **Shipwreck Montana "Live Dives"**

NOAA's Thunder Bay National Marine Sanctuary hosted live webcasts from the shipwreck *Montana* on July 14, 2010. Check out the archived "live dives", lesson plans, and more.

<http://thunderbay.noaa.gov/>

### **Studying Climate Change from Beneath the Ocean**

The *R/V Knorr* set sail from the Azores on June 10, 2010, with a crew of researcher scientists and three teachers from Massachusetts. The cruise will take them all the way across the North Atlantic back to the ship's homeport at Woods Hole Oceanographic Institution. Follow along with blogs and more.

<http://www.whoi.edu/page.do?pid=45257>

### **Tour de Turtles**

Tour de Turtles is an educational journey through the science, research, and geography of sea turtle migration using satellite telemetry. This event follows the migration of ten sea turtles from their nesting beaches to their foraging grounds. The Sea Turtle Conservancy launches the event August 1, 2010; check the website for events, educational resources, and much more.

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

### **Tracking El Nino**

This website from NOVA describes the anatomy of El Nino, links to a teacher's guide, and much more. Check out the site index for quick access to the materials.

<http://www.pbs.org/wgbh/nova/elnino/>

### **WaterLife: Sea Turtles and the Quest to Nest**

NOAA's National Ocean Service and Fisheries Service launched the second online educational game in the WaterLife series, *Sea Turtles and the Quest to Nest*. The web-based game encourages and explains loggerhead sea turtle conservation through a series of games and animations aimed at grade 4-7 students.

<http://games.noaa.gov/seaturtle/welcome.html>

### **Watershed Academy Webcast Seminars**

EPA's Watershed Academy sponsors free webcast seminars. Webcasts are typically conducted on a monthly basis. Archived versions available from the website include topics such as climate change, lakes, wetlands, outreach and education, and more.

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

### **Young Voices on Climate Change**

Young Voices on Climate Change is a film series featuring young people who are making a difference by shrinking the carbon footprint of their homes, schools, and communities. Check out the movies and follow the project on facebook.

<http://youngvoicesonclimatechange.com/>

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

### **Seagrass-Watch News**

The latest issue of Seagrass-Watch News, the official magazine of the global seagrass and assessment program, is now available online. In this issue are several articles on the economic valuation of seagrass ecosystems, and how they benefit human wellbeing.

<http://www.seagrasswatch.org/magazine.html>

### **Wordle**

Wordle visitors provide text, and the free online application will generate word clouds, giving greater prominence to words that appear more frequently. Users can tweak the clouds with different fonts, layouts, and color schemes. You can spend lots of playtime on this website.

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