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

To subscribe or unsubscribe to this list, send information to include in the newsletter, or discuss further enhancements, please contact the editor directly at phyllis.dermer@noaa.gov, or by phone at (865) 932-5074.

Collected archives and issues of the newsletter, past and present, are available at http://mpa.gov/resources/education/#exchange.

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Notable References

Ecosystem Services Provided by Waterbirds

This paper reviews the many ecosystem services provided by waterbirds. For those working on or teaching about waterbird and wetland conservation, it is technical in style but introduces a wide range of ideas for topics of discussion and offers pages of reference. If you don’t have access to Wiley Online Library or other publication databases, please contact me to request a copy. http://onlinelibrary.wiley.com/doi/10.1111/brv.12045/abstract

Contact Phyllis at phyllis.dermer@noaa.gov

Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings

As part of the Technical Preservation Series from the National Park Service, The Guidelines on Sustainability offers guidelines on how to make changes to improve energy efficiency while preserving the character of historic buildings.
Tribal Consultation Handbook
The U.S. Fish & Wildlife Service (FWS) has issued a new Tribal Consultation Handbook. Though the handbook has been developed for FWS staff to use in consultation with Tribes, it could be a useful tool for others. 

PROGRAMS OF THE MONTH
CreatureCast
CreatureCast is a collaborative blog produced by members of the Dunn Lab at Brown University, along with assorted friends. The project focuses on zoology in the broad sense, and serves as a forum to present original content both interesting and beautiful. Check out Six tips for achieving invisibility, How to hide, and many more. 
http://creaturecast.org/
http://science360.gov/series/creaturecast/046c0edd-2c5a-4e4d-9d0b-391630a35841

Plankton Chronicles
The Plankton Chronicles are sponsored by the Centre National de la Recherche Scientifique and partners. This series of videos and photos reveals the beauty and diversity of marine organisms that drift with the currents. The project uses state-of-the-art optics to reveal the beauty and diversity of planktonic organisms. The materials are available in English, French, and Spanish. 
http://www.planktonchronicles.org/en

WEBSITE OF THE MONTH
National Geographic Education: Collections
The National Geographic Education website has a number of collections dedicated to different areas within the natural sciences. Topics include ocean education, ecosystems, natural disasters, endangered species, and much more. Resources can be selected by grade, subject, type, and more. 
http://education.nationalgeographic.com/education/collections-topics/?ar_a=1

GRANTS AND OPPORTUNITIES
Adapting to a Changing Climate
Rare is offering the contest, Solution Search: Adapting to a Changing Climate, which seeks local solutions for how communities are adapting to their changing environments. The deadline for submission is July 19, 2013. 
http://www.solutionsearch.org/node/17

Audubon Photography Contest
The annual Audubon Magazine Photography Awards encourages participants to submit photographs that depict birdlife in any form. The deadline for entry is September 4, 2013. 
http://netapp.audubon.org/PhotoAwards/
California Ocean and Coastal Amateur Photography Contest
This contest highlights photographs that reflect the importance of our coast and ocean to Californians and the role that the California Coastal Commission, Natural Resources Agency, and the Ocean Protection Council have played in preserving coastal and marine resources. The deadline for submission is August 5, 2013.
http://mycoastalphoto.com/

CNN Heroes
Nominate a CNN Hero – an everyday person changing the world. Categories include Defending the Planet, Community Crusader, and more. The deadline for nomination is August 31, 2013.

Darwin Initiative Funding Round 20
The Darwin Initiative helps safeguard the world’s biodiversity by working with countries that are rich in biodiversity but poor in financial resources to meet their obligations under one or more of the three major biodiversity Conventions: the Convention on Biological Diversity; the Convention on International Trade in Endangered Species of Wild Fauna and Flora; and the Convention on the Conservation of Migratory Species of Wild Animals. The deadline for submission is July 17, 2013.

FameLab: Exploring Earth and Beyond
FameLab: Exploring Earth and Beyond is a science communications competition allowing early career scientists from numerous disciplines the opportunity to show off their skills. Each contestant has three minutes to convey their research without the aid of slides and charts; hand-held props are acceptable. A panel of experts in both science and science communication will do the judging. See the website for complete details.
http://famelab-eeb.arc.nasa.gov/

GCFI Student Awards
The Gulf and Caribbean Fisheries Institute offers several student awards supporting attendance at the 66th GCFI conference November 4-8, 2013 in Corpus Christi, Texas. Two Outstanding Student Awards for Academic Achievement will be offered for the best presentations. Two GCFI Student Travel Awards will be offered. The Ron Schmied Scholarship is a GCFI initiative supported by the International Game Fish Association and private individuals, awarded to a qualified graduate student with an interest in social, economic, biological, ecological, or management perspectives on recreational fisheries. The deadline for application for the scholarship and travel awards is July 31, 2013.
http://www.gcfi.org/StudentAwards/StudentAwards.htm

Marisla Environmental Program
The Marisla Foundation offers Environmental Program grants for activities that promote the conservation of biological diversity and advance sustainable ecosystem management. Primary emphasis is on marine resources conservation with a geographic focus on western North America, Chile, and the western Pacific. The program also supports the search for solutions to health threats caused by toxic chemicals. The next deadlines for application are July 15, 2013 and October 15, 2013.
https://online.foundationsource.com/public/home/marisla
**Melinda Gray Ardia Environmental Foundation Grants**  
K-12 teachers are invited to apply for grants to develop or implement environmental curricula that integrate hands-on ecology exercises into the classroom. To facilitate learning and student empowerment, environmental curricula should be holistic and strive to synthesize multiple levels of learning (facts, concepts, and principles), often including experiential integrated learning and problem solving. The deadline for pre-proposals is September 13, 2013.  
http://www.mgaef.org/application.htm

**Nature Conservancy Photo Contest**  
The Nature Conservancy is accepting submissions for its annual digital photography highlighting the diversity of life on Earth, including portraits of wildlife in natural habitat, animal behavior, and the relationship between people and nature, plant life, weather, and seasons. They are especially interested in images that showcase the wide range of habitats across the planet. The deadline for submission is September 7, 2013.  
http://my.nature.org/photography/rules.html

**North American Wetlands Conservation Act Small Grants**  
The North American Wetlands Conservation Act provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects in the United States. These projects must involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats for the benefit of all wetlands-associated migratory birds. The deadline for application for U.S. Small Grants is October 31, 2013.  
http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm

**NSTA Awards**  
The National Science Teachers Association sponsors numerous awards for which environmental educators or their students may be eligible. Most applications are due November 30, 2013. Check out the new Robert E. Yager Foundation Excellence in Teaching Award.  
http://www.nsta.org/about/awards.aspx

**NSTA Conference Airline Ticket Contest**  
Apply to win one of thirty airline ticket on Southwest Airlines to one of NSTA’s fall 2013 conferences:  
- Portland, Oregon: October 24–26  
- Charlotte, North Carolina: November 7–9  
- Denver, Colorado: December 12–14  
To enter, write a 150-word essay on what science content, teaching strategy, technique, or topic you are most interested in learning about at the conference and why. Include your name, school, address, email, and phone number along with your essay. The deadline for entry is September 13, 2013. Email entry to swtravelsscholarship@nsta.org

**Ocean Flag Contest**  
The objective of the International Illustration Contest: Ocean Flag – Giving The Ocean A Face is to unite designers and kids, ages 6-12, to create a flag for the Ocean. The deadline for submission is September 29, 2013.  
http://www.oceanflag.org/#/contest/c1htu
Ornithological Research Small Grants Program
The Ornithological Council, a consortium of twelve scientific societies of ornithologists in the Western Hemisphere, has initiated a small grants program for projects that integrate ornithological research and conservation. Research projects that improve the likelihood of success of a specific conservation project in the region from Mexico in North America, through Central America and the Caribbean to South America are eligible to compete for funding. The deadline for application is July 31, 2013.

Russell Family Foundation Environmental Sustainability Program
The foundation focuses its grantmaking on Environmental Sustainability, Environmental Education, and Green Business focused on the Puget Sound. The deadline for submission of a letter of intent is July 15, 2013.
http://www.trff.org/home/

Sanctuary Classic
The 2013 Sanctuary Classic is a free fishing photograph contest that celebrates recreational fishing opportunities in America’s national marine sanctuaries and promotes conservation-focused fishing practices. One winner will be selected each week. The deadline for entry is September 2, 2013.
http://sanctuaryclassic.org/

Science Project Contest
This contest, open to student members of the Entomological Society of America, seeks to identify top science project ideas for elementary, middle, and high school teachers, students, and parents. Projects should relate to insects, spiders, or related arthropods. The deadline for submission is August 31, 2013.
http://www.entfdn.org/projectcontest.php

TV/EBiomovies
Television for the Environment, with UNEP, Biodiversity International, and partners, are calling on film-makers across the planet to submit their ideas for a new global competition of one-minute films on the environment aimed at the YouTube generation. Categories include Climate Change, Food Waste, and more – see the guidelines for complete details. The deadline for entry is August 30, 2013.
http://tve.org/biomovies

INTERNSHIPS AND TEMPORARY OPPORTUNITIES
Smith Conservation Research Fellowship Program
The Society for Conservation Biology hosts the David H. Smith Conservation Research Fellowship Program. These two year postdoctoral fellowships enable early-career scientists to improve and expand their research skills while directing their efforts towards problems of conservation concern for the United States. The deadline for application is September 20, 2013.
http://www.conbio.org/mini-sites/smith-fellows/apply/proposal-guidelines
Smithsonian Internship – Florida
The Smithsonian Marine Ecosystems Exhibit in Fort Pierce, Florida is seeking applicants for a part-time Animal Husbandry Internship, to run from September through December 2013. A stipend is available. The deadline for application is July 10, 2013. https://www.facebook.com/SmithsonianSMS

CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT

College of Exploration Courses - Online
The College of Exploration is launching a new set of online courses featuring expert faculty and professional development topics in education pedagogy, assessment, scientific discovery, and more. The first course, Teaching 21st Century Skills, runs July 10-August 4, 2013. Additional courses will include Oceans and Human Health, Searching for Shipwrecks, and Short Cycle Assessment in the Classroom. http://www.coexploration.org/online-campus/index.html

National Association for Interpretation National Workshop

Ocean Exploration Workshops – Various
NOAA’s Ocean Exploration Program and partners offer the Okeanos Explorer Education Materials Collection, How Do We Explore? Professional Development Workshop for Educators. Participants will receive curriculum with CD-ROM’s, certificates of participation, and more. Contact the noted educator or check out the website for registration and more information.

- August 13, 2013 with The Maritime Aquarium at Norwalk, Norwalk, Connecticut. The deadline for application is July 30, 2013, or call to see if space is still available. Contact Donna Vinci at dvinci@maritimeaquarium.org
- August 14, 2013 with the University of Rhode Island’s Inner Space Center in Narragansett, Rhode Island. The deadline for application is August 7, 2013, or call to see if space is still available. Contact Andrea Gingras at agingras@mail.uri.edu
- August 24, 2013 with Seattle Aquarium in Seattle, Washington; The deadline for application is August 2, 2013 Contact Dan Newburn at d.newburn@seattleaquarium.org

https://www-13e.bookeo.com/bookeo/b_innerspacecenter_start.html?crlsrc=1372351640898&src=02q&category=213M3U6LL13F5879088F
http://oceanexplorer.noaa.gov/edu/development/development.html

OMICS Professional Development – Connecticut
The University of Connecticut, Department of Marine Sciences has limited space available in the OMICS Professional Development Institute for high school science teachers, August 9-10, 2013 in Groton, Connecticut. The free workshop includes lodging, resources, and a stipend. https://www.facebook.com/scmea/posts/442385252468238
Polar Workshop – Build an ROV - California
Bring polar science and engineering to your classroom through hands-on building of remotely operated vehicles (ROVs). Teachers from the Monterey Bay and Santa Cruz areas can learn from local polar scientists and engineers and mentor-teachers to design and build their own ROV, July 30-August 1, 2013 in Monterey Bay, California. The workshop is free and offers opportunities for classroom mini-grants. Contact Arctic Research Consortium of the United States at info@polartrec.com

WCS Online Teacher Academy Discounts - Online
The Wildlife Conservation Society is offering deep discounts off three online courses: Habitat Ecology for Educators; Nature’s Thread: Weaving Environmental Education Into Your Curriculum; and Our Changing Planet: Climate Change and Wildlife Connections. While the courses started June 28 and run through August 18, 2013, teachers can sign up through July 5 and should be able to catch up to the first week’s work. HURRY – COURSES HAVE STARTED.
http://www.wcs.org/teachers/teacherpd/online-teacher-academy.aspx

EDUCATIONAL RESOURCES
10,000 Islands Dolphin Project
The project mission is to not only research the bottlenose dolphin population in Southwest Florida, but also educate students from any location in the world on the environment and its importance by using modern technology to bring nature into the classroom. The education program is composed of up to 20 lesson plans targeting third to seventh graders, all aligned to Common Core State Standards. Each lesson plan addresses an individual element, structured to be 45 minutes to 1 hour, including 15 minutes live from one of their survey vessels, Visit the website for more details.
http://www.dolphinprojecteducation.org/

Aquatic Food Webs
This NOAA Education Resources website offers an exploration of aquatic food webs. The website offers videos, lesson plans, and data sets. Check out the Real World Data investigations, Who’s Eating Whom, and more.
http://www.education.noaa.gov/Marine_Life/Aquatic_Food_Webs.html

Capitol Hill Ocean Week
If you weren’t able to attend Capitol Hill Ocean Week 2013, the OceansLIVE team from NOAA’s Office of National Marine Sanctuaries covered all three days of the symposium at the Newseum in Washington, D.C. Archived video includes coverage of all panel sessions, photos, and more.
http://nmsfocean.org/CHOW-2013/

Citizen Science – Precipitation Measurements
The Community Collaborative Rain, Hail and Snow Network is a non-profit, community-based network of volunteers measuring and mapping precipitation (rain, hail and snow). By using low-cost measurement tools, stressing training and education, and utilizing an interactive website, the aim is to provide high-quality data for natural resource, education, and research applications.
http://www.cocorahs.org/
DeepSea America
The Deepsea Challenger is James Cameron's single-pilot submersible that he took to the bottom of the Mariana Trench. Follow the archives through daily logs, photos, and more as the sub and expedition team traveled on a nation-wide educational tour to highlight the importance of ocean research and green STEAM (science, technology, engineering, arts, and mathematics) education from California to Massachusetts, where the sub has been donated to the Woods Hole Oceanographic Institution.

http://www.deepseaamerica.com/

Earth System Science
PBS’s Education Collections offer relevant online resources related to specific NOVA programs. NOVA’s Earth system science collection highlights important Earth processes through standards-based media resources. The website offers free access to the full program of Earth From Space, video clips, and other multimedia.


Econ 120: Two Minutes of Economic Sense
The NOAA Coastal Services Center’s Econ 120 animated video series explains economic principles in everyday terms and shows how these principles relate to the important decisions faced by those who manage the resources of the coasts and oceans. Topics include externalities, economic indicators, and more.

http://www.csc.noaa.gov/digitalcoast/socialcoast/econ120

Fishery Stock Assessments
NOAA Fisheries offers basic information about scientific fishery stock assessments with the series, The ABCs of Stock Assessment. The website also has Dive Deeper along with other stories and videos that bring understanding to the science of stock assessment.


HD Under H2O
HD under H2O offers high definition underwater video production and stock footage. They are producing short videos for PBS Digital Studios that are available for free online on YouTube. The series combines marine science with the challenges of underwater film making. A new video will be released every other Tuesday.

http://www.youtube.com/user/UnderH2Oshow?feature=watch

Hurricane and Severe Storm Sentinel Educational Video
NASA’s Hurricane and Severe Storm Sentinel mission uses NASA’s Global Hawk Unmanned Aerial Vehicles to study tropical storms and hurricanes. This video describes the mission; offers a glimpse inside the command centers of both the ground-based pilots and the scientists who analyze satellite images to assist in flight navigation; and more, including information about getting students involved with the program.

http://nasawavelength.org/resource/nw-000-000-003-539/

Invertebrates of Alaska Posters
The NOAA Fisheries Alaska Fisheries Science Center has a new set of posters featuring chitons, sea stars, and shrimp from Alaska. One set of posters can be ordered free for your school or classroom.

http://www.afsc.noaa.gov/education/oceanlife/invertebrates.htm
Living Data on Facebook
Living Data is a program for understanding climate change and reconnecting to the natural world. Scientists and artists share knowledge of the impacts of climate on people and the environment. Check out the Living Data Atrium, scanning electron microscope pictures, and more.
https://www.facebook.com/pages/Living-Data/390971427676138

Map of the Month
The Earth Institute State of the Planet blog produces a new map each month filled with interesting data and includes an in-depth article explaining what is being shown on the map.
http://blogs.ei.columbia.edu/tag/map-of-the-month/

MetLink: Weather and Climate Resources
The Royal Meteorological Society offers the MetLink website for educators seeking to teach their students about meteorology and climatology. The website offers Observations and Data, teacher resources, and more. The Resource of the Week brings together a range of resources that might include anything from a cloud identification key to a set of interactive graphics demonstrating the formation of thunderstorms. The Teachers area contains links to curricular materials, including guides for in-class demonstrations, quizzes, and fact sheets.
http://www.metlink.org/

Mission 31
Mission 31 will be an ocean exploration led by Fabien Cousteau this fall from the Aquarius Lab, to test new science and tech-based experiments with underwater motorcycles, autonomous robots, and Kirby Morgan tech diving helmets. Aquarius, owned by NOAA, is now managed by Florida International University; it will serve as Mission 31’s base camp for Cousteau’s team to explore climate, pollution, and more.
http://fabiencousteau.org/tag/aquarius/

NatureBridge
NatureBridge provides hands-on environmental field science education for children and teens through National Park-based overnight field science programs. Parks include Channel Islands, Olympic, and others. NatureBridge provide scholarships to more than 35% of their participating schools in order to reach more students from underserved communities. Sign up for email updates, download lesson plans, and more.
http://www.naturebridge.org/

Nautilus Exploration Program
Follow along as Educators at Sea, students, and researchers sail aboard E/V Nautilus and other research vessels during expeditions in the Gulf of Mexico, Caribbean Sea, and Mediterranean Sea. Watch live streaming events, check out the learning resources, play interactive games, and more.
http://www.nautiluslive.org/

New England Seamount Chain Expedition
NOAA's Office of Ocean Exploration and Research conducted the New England Seamount Chain Expedition, June 11 – 29, 2013. Visitors can explore the expedition on
the archived website through videos, lesson plans, and more. One lesson explored how to use live expedition feeds in the classroom.

http://oceanexplorer.noaa.gov/oceanoexplorations/ex1303/welcome.html

**NOAA NOS on Pinterest**

NOAA’s National Ocean Service (NOS) is now on Pinterest. New items are typically added weekly to keep you abreast of what’s new at NOS. Categories include Ocean Education, Life on a Coral Reef, National Marine Sanctuaries, and more.

http://pinterest.com/noaoocean/

**Northeast U.S. Canyons Expedition**

Follow along with the *Okeanos Explorer*, July 8–August 17, 2013, as it explores the diversity of benthic habitats and features, including deep-sea corals, gas seeps, and landslide features in and along the northeast deepwater canyons and seamounts off the U.S. East Coast. Using telepresence technology, scientists on board the ship will collaborate with scientists participating remotely from shore. Check out the lesson plans, mission logs, and more; the website will be built close to the expedition launch.

http://oceanexplorer.noaa.gov/oceanoexplorations/explorations/explorations.html

**Ocean Challenge Puzzle**

Try your hand at this online interactive quiz puzzle from NOAA. Answer questions to help uncover an ocean image and have fun while you learn a variety of ocean-related facts.

http://www8.nos.noaa.gov/oequizx/welcome.html

**OceanGLOBE and the COSEE-West Website**

OceanGLOBE guides, classroom exercises, and Powerpoint shows had been hosted on the UCLA Marine Science Center website, but is closing down. The materials can be accessed now on the COSEE West website. Other resources include a high school marine biology curriculum, materials given out at past COSEE-West educator workshops, and more.

http://www.usc.edu/org/cosee-west/curricula.html

**Research4Life**

Research4Life is a program which provides researchers in developing countries with free or low cost online access to peer-reviewed international scientific journals, books and databases from the world’s leading scientific, technical and medical publishers.

http://www.research4life.org/

**Sea Unseen**

NOAA’s Northwest Fisheries Science Center’s Sea Unseen - Scanning Electron Microscopy project offers links to images, videos, and educational resources.

http://www.nwfsc.noaa.gov/sem/index.cfm

**Spark 101**

Spark 101 features free interactive videos made by industry professionals on science, technology, engineering, and mathematics (STEM) topics. Teachers can use these brief videos to engage students in solving real-world problems. The content is directly connected to national curriculum from the College Board’s Advanced Placement, the National Academy Foundation, and Project Lead the Way. The videos have a three-segment format, with pauses for student dialogue.
http://www.spark101.org/

State of the Planet
The State of the Planet is a forum for discussion on varying viewpoints, hosted by the Earth Institute of Columbia University. Blog topics include Climate & Energy, Water, Eco Matters, Millennium Villages, and Education News. Categories include natural disasters, economics, earthquakes, and more.
http://blogs.ei.columbia.edu/

INITIATIVES, JOURNALS, and MORE

The Great Nature Project
National Geographic will launch The Great Nature Project, a week-long celebration of biodiversity. From September 21-29, 2013, participants take pictures of plants and animals in their neighborhood and upload them to a Great Nature Project website. Sign up for news and updates.
https://docs.google.com/a/ngs.org/spreadsheet/viewform?fromEmail=true&formkey=dDMZXBjVGR1SWlwYzdnNGp5WTFzdw6MQ

Green Fins
The Green Fins program encourages dive centers and snorkel operators in Indonesia, Malaysia, and elsewhere to work together to reduce their environmental impacts on coral reefs by adopting the Green Fins Code of Conduct. The code consists of 15 points which target environmental threats posed by the diving and snorkeling industry, both under the water and in shop. Members receive the training and the tools to promote environmental education and awareness.
http://www.greenfins.net/

National Science Foundation: Current
The National Science Foundation publishes the NSF Current newsletter in order to inform the public about its research and education efforts. The website hosts the downloadable current issue, along with archives of the issues dating back to 2005. The material covered here is as diverse as science. Articles contain links to additional resources including original research papers, visualizations, and data sets.

Ocean Desktop and Wallpaper Photos for PC and Mac
Check out NOAA's extensive collection of free desktop and wallpaper photos for PCs and Macs. Both widescreen and square monitor formats are available.
http://oceanservice.noaa.gov/wallpaper.html

Outdoor Nation
Outdoor Nation is dedicated to reconnecting youth with the outdoors. They host summits around the country, offer grants, lead outdoor outings, and more in an effort to mobilize a movement to get people back outside. Summits in Chicago, Illinois and Seattle, Washington will be held July 2013.
http://outdoornation.org/