

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
INFORMATION EXCHANGE FOR MARINE EDUCATORS

AUGUST 2015

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://marineprotectedareas.noaa.gov/resources/education/>.

NOTABLE REFERENCES

Coalition Edition

The summer 2015 edition of Sanctuary Watch features the role of coalitions and partnerships, with case studies highlighting their importance in communication, empowerment, and more.

<http://sanctuaries.noaa.gov/news/sw/sanctuary-watch-summer-2015.pdf>

Managing Effectively the World's Most Iconic Marine Protected Areas

Managing effectively the world's most iconic Marine Protected Areas: A best practice guide is a new publication from the UNESCO World Heritage Marine Programme, encouraging MPA managers to take a proactive, future-oriented approach to managing their sites. The 122-page guide outlines how using area-based tools, such as marine

spatial planning, can help to plan for and achieve environmental, social, and economic objectives that lead to sustainable use and effective management over time.

<http://whc.unesco.org/en/news/1300>

Environmental Literacy in the United States

The National Environmental Education Foundation has published Environmental Literacy in the United States - An Agenda for Leadership in the 21st Century. The report offers examples of how people can understand their relationship to the environment; learn how to be environmentally responsible; and become inspired and motivated to act on this knowledge.

<http://neefusa.org/environmental-literacy.htm>

State of the Climate 2014

The American Meteorological Society has released the State of the Climate in 2014 report. The report provides a detailed update on global climate indicators, notable weather events, and other data collected by environmental monitoring stations and instruments located on land, water, ice, and in space. Read the highlights or download the full report.

<https://www.climate.gov/news-features/understanding-climate/2014-state-climate-highlights>

WEBSITES OF THE MONTH

Explorers Education Programme

The Marine Institute is responsible for marine research, technology development, and innovation in Ireland. Its website offers an Explorers Education Programme, with lesson plans, resources, and activities for primary school teachers to inspire their student's interest and knowledge in the ocean, marine environment, species, and seashores. The lesson plans and activities aim to integrate marine themes into strands taught in primary schools, including science, history, visual arts, and more. Be sure to check this out.

<http://www.marine.ie/Home/site-area/areas-activity/education-outreach/explorers-education-programme>

SEVENSEAS

SEVENSEAS is a free magazine designed to bridge the gap between marine conservation and tourism. The online magazine focuses on conservation issues, news, campaigns, international meetings and conferences, and more. Check this out.

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

BLOG OF THE MONTH

NSTA Blog

The NSTA blog currently consists of fourteen sub-blogs. Check out Science, Ms. Mentor, SciLinks, and much more. Each category opens a page for quick viewing, with active links to more detailed articles and resources.

<http://nstacommunities.org/blog/>

REQUESTS

Riptides Survey

Participants are needed to take a survey about riptides. The survey results will help development and/or enhancement of educational materials about beach safety.

https://tamu.qualtrics.com/SE/?SID=SV_e8NBaghB7R7VETr

Vote for Favorite Dive Destinations

SCUBA Diving Magazine seeks votes for their ongoing Top 100 Readers' Choice survey.

https://bonnier.co1.qualtrics.com/jfe/form/SV_0DmO45RtLY2IGOh?Source=SCCirc

GRANTS AND OPPORTUNITIES

50 States for Good Grant

Tom's of Maine's 50 States for Good supports the goodness behind grassroots community projects. One grant will be available for each state. The deadline for entry is August 26, 2015.

<http://www.tomsomaine.com/community#50-states-for-good>

AAAS Award for Public Engagement with Science

The AAAS Award for Public Engagement with Science recognizes scientists and engineers who make outstanding contributions to the popularization of science. The deadline for nomination is August 15, 2015.

http://www.aaas.org/page/aaas-award-public-engagement-science?utm_src=email

Gladding Memorial Award

The Gulf and Caribbean Fisheries Institute seeks nominations of outstanding fishers for the Gladding Memorial Award. This annual award is presented to select fishers who demonstrate significant commitment to the sustainable use and long-term conservation of marine resources in the Gulf and Caribbean region. The deadline for nomination is August 31, 2015.

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

Patagonia Environmental Grants

Patagonia offers grants to organizations that work on root causes of problems and approach issues with a commitment to long-term change, with a focus on organizations that build a strong base of citizen support. Applications are accepted year round at retail stores and twice yearly at the headquarters, with the next deadline for application of August 31, 2015.

<http://www.patagonia.com/us/patagonia.go?assetid=2942>

We Stand Strong Training Host Grants

Youth Service America and Save the Children will partner with training hosts to organize a one-day training for teams of youth leaders from specific regions to prepare them to organize local Prep Rally or Prep Project events in their communities for National Day of Service and Remembrance. See the website for details. Hurry – the deadline for application is August 7, 2015.

<http://www.ysa.org/standstrong>

Wildlife Acoustics Scientific Product Grant

Wildlife Acoustics supports efforts in conservation and environmental stewardship and offers a grant program to support bioacoustics research efforts from chiropteran, avian, terrestrial, amphibious, and marine wildlife. With quarterly awards, the next deadline for application is August 31, 2015.

<http://www.wildlifeacoustics.com/grant>

FELLOWSHIPS, INTERNSHIPS, AND TEMPORARY OPPORTUNITIES

Coral Reef Management Fellow - Puerto Rico

This two-year (2016-2018) position is in partnership with the Puerto Rico Department of Natural and Environmental Resources. The fellow will provide coral reef management support and the fellowship will provide the fellow with professional opportunities and training in coastal and coral reef resource management.

<https://www.nsujobs.com/applicants/jsp/shared/frameset/Frameset.jsp?time=1437589227970>

Expedition 363 Western Pacific Warm Pool

Opportunities exist for researchers (including graduate students) in all specialties to sail aboard the *JOIDES Resolution* September 30-November 30, 2015. Expedition 363 aims to understand the interaction between climate and the Western Pacific Warm Pool from the middle Miocene to Holocene. The deadline for application is August 15, 2015. Be sure to visit the *Joides Resolution* website to follow along during the research cruise. Teachers can sign up for live video broadcasts for their classes.

http://iodp.tamu.edu/scienceops/expeditions/pacific_warm_pool.html
<http://joidesresolution.org/>

CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT

Aldo Leopold Summer Conference - Wisconsin

The Aldo Leopold Foundation and the University of Wisconsin will host the Aldo Leopold Summer Conference: Building a Land Ethic, August 12-15, 2015 in Baraboo, Wisconsin.

<http://www.aldoleopold.org/Programs/conference.shtml>

Conservation in Action - Connecticut

Mystic Aquarium is launching a free public speaker series sponsored by Dominion. The three-part series will feature guest speakers who share their experiences with and contributions to the conservation of our ocean planet. The first of the series, Crittercam: A Tool in International Conservation, will take place August 19, 2015 in Mystic, Connecticut. Free registration is required.

<https://tickets.mysticaquarium.org/mainstore.asp?vid=3#cat1354>

NSTA Conference Calls for Proposals

The call for proposal for the 2016 area NSTA Conferences and 2017 National Conference on Science Education is open. The deadline for submission for the following conferences is January 15, 2016:

- Minneapolis, Minnesota: October 27–29, 2016
- Portland, Oregon: November 10–12, 2016
- Columbus, Ohio: December 1–3, 2016

- 5th Annual STEM Forum & Expo: Denver, Colorado: July 27–30, 2016
The deadline for submission for the 2017 National Conference, March 30–April 2, 2017 in Los Angeles, California is April 15, 2016
<http://www.nsta.org/conferences/sessions.aspx>

Ocean Exploration Workshops – Various

NOAA's Ocean Exploration Program and partners offer the Okeanos Explorer Education Materials Collection How or Why Do We Explore? Professional Development Workshops for Educators. Participants will receive classroom-ready lessons, certificates of participation, and other resources. Contact the noted educator or check out the website for registration and more information

- September 12, 2015 with the University of South Florida College of Marine Science in St. Pete Beach, Florida. Why Do We Explore? Professional Development Workshop for Educators. The deadline for registration is August 21, 2015. Contact Teresa Greely at greely@marine.usf.edu
- September 26, 2015 with the John G. Shedd Aquarium in Chicago, Illinois. How Do We Explore? Professional Development Workshop for Educators. The deadline for registration is September 4, 2015. Contact Jackie Formoso at jformoso@sheddaquarium.org
- October 3, 2015 with the Georgia Aquarium in Atlanta, Georgia. Why Do We Explore? Professional Development Workshop for Educators. The deadline for registration is September 18, 2015. Contact Kim Morris-Zarneke at kzarneke@georgiaaquarium.org
- October 3, 2015 with the Birch Aquarium at Scripps Institution of Oceanography in San Diego, California. Why Do We Explore? Professional Development Workshop for Educators. The deadline for registration is September 18, 2015. Contact Audrey Evans at eadrey@ucsd.edu

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

Ocean Science for Early Elementary Educator - Massachusetts

The New England Aquarium will host this educator workshop, August 3-6, 2015 in Boston, Massachusetts, for educators in grades K-2 (others are also welcome). Participants will explore essential scientific concepts such as water properties, ocean habitats, and animals, while making connections to literacy, math, and art.

http://www.neaq.org/education_and_activities/teacher_resources/professional_development/workshops/index.php

Ocean Sciences Meeting

The 2016 Ocean Sciences Meeting will be held February 21-26, 2016 in New Orleans, Louisiana, cosponsored by the Association for the Sciences of Limnology and Oceanography, The Oceanography Society, and the American Geophysical Union. Consider submitting to Session ID 9518, Teacher-Researcher Partnerships: working at the interface of science and education to enhance student learning. The deadline for abstract submission is September 23, 2015.

<http://osm.agu.org/2016/>

Tangible Things

The free edX course from Harvard University, Tangible Things: Discovering History Through Artworks, Artifacts, Scientific Specimens, and the Stuff Around You, will help participants gain an understanding of history, museum studies, and curation by looking

at, organizing, and interpreting art, artifacts, scientific curiosities, and the stuff of everyday life. The five-week class starts August 5, 2015.
[https://www.edx.org/course/tangible-things-discovering-history-harvardx-usw30x-0?utm_source=Course+Announcements+Mailing+List&utm_medium=email&utm_content=title&utm_campaign=Student Newsletter July 28](https://www.edx.org/course/tangible-things-discovering-history-harvardx-usw30x-0?utm_source=Course+Announcements+Mailing+List&utm_medium=email&utm_content=title&utm_campaign=Student+Newsletter+July+28)

EDUCATIONAL RESOURCES

Beyond the Data

Climate.gov offers the blog, Beyond the Data: A blog by the nation's official climate record keepers. It will cover how climate records are collected and updated, how we know what we know about the climate, and how we can use climate information to make our communities more resilient.

<https://www.climate.gov/news-features/department/beyond-data>

Biocubes

Students examine one cubic foot of space and discover and report all the living things that are found within it. They can compare the animal, plant, and fungus community of their biocube with those of other biocubes from other places.

<http://qrius.si.edu/biocube>

Biodiversity Information Serving Our Nation (BISON)

Discover the locations where plant and animal species have been documented. Access this database to support scientific, educational, and policy-making activities regarding species occurrence and distribution. Users can query species by name, range, state, county, or data record provider. BISON displays search results in list or interactive map formats

<http://toolkit.climate.gov/tool/biodiversity-information-serving-our-nation-bison>

Bioluminescence and Vision on the Deep Seafloor 2015

NOAA's Office of Ocean Exploration and Research offers the Bioluminescence and Vision on the Deep Seafloor 2015 Expedition web page following the expedition of the R/V Pelican from July 14-27, 2015. The website includes mission logs, multimedia, an Ocean Explorer Expedition Education Module, and much more.

<http://oceanexplorer.noaa.gov/explorations/15biolum/welcome.html>

Chesapeake Bay Ecosystem Atlas

Chesapeake Environmental Communications and NOAA's National Center for Coastal Ocean Sciences offer the free Chesapeake Bay Ecosystem Atlas - An Interactive Guide to Chesapeake Bay iBook and its companion Teacher's Edition. The Atlas makes extensive use of animations, video, and interactive graphics. The Teacher's Edition includes suggested discussion questions, classroom activities, field trips for hands-on learning, and additional sources for more information by topic.

<https://itunes.apple.com/us/book/chesapeake-bay-ecosystem-atlas/id1020777102?mt=13>

<https://itunes.apple.com/us/book/chesapeake-bay-ecosystem-atlas/id1020793944?mt=13>

Climate Literacy

Climate Literacy: The Essential Principles of Climate Science presents information about Earth's climate, impacts of climate change, and approaches to adaptation or mitigation. Principles in the guide can serve as discussion starters or launching points for scientific inquiry. The guide aims to promote greater climate science literacy by providing this educational framework of principles and concepts. The guide can serve educators who teach climate science as a way to meet content standards in their science curricula.

<https://www.climate.gov/teaching/teaching-climate-literacy-and-energy-awareness>

Close Listening on NPR

For seven weeks beginning July 30, 2015, NPR's Morning Edition will be running a series of reports produced in collaboration with the Cornell Lab. Called "Close Listening: Decoding Nature Through Sound," the programs will introduce scientists who have pioneered ways to tune in to the natural chatter going on all around us.

<http://www.npr.org/programs/morning-edition/>

Coral Reef Restoration Project Videos

Follow along with this large scale coral reef restoration project. Additional underwater photos, videos, and other materials are uploaded often.

<https://www.youtube.com/user/NatureSeychelles>

Edmodo

Edmodo functions as a social network tool for the classroom, designed with learning in mind. The site allows teachers to post lesson plans, information, assignments, and other content.

<https://www.edmodo.com/>

e-Learning for Kids

This website offers more than 200 free, interactive digital science lessons addressing a range of topics and disciplines. The materials can be browsed by grade and searched by key word.

<http://www.e-learningforkids.org/science/>

Freebies for Science Teachers

NSTA offers Freebies for Science Teachers, with links to books, lessons, and more. Check out the Ocean Literacy Short Course, Free Technology for Teachers, and more.

<http://www.nsta.org/publications/freebies.aspx>

Gulf of Mexico Marine Ecosystem

This video from NOAA Fisheries describes some of the interactions between species, habitats, and stressors in the Gulf of Mexico ecosystem. The video describes the many tradeoffs that NOAA Fisheries must consider to promote an ecosystem-based approach to fisheries management in the Gulf of Mexico.

<http://www.st.nmfs.noaa.gov/ecosystems/ebfm/gulf-of-mexico-marine-ecosystem>

Harvesting the River

This cooperative project by the Illinois State Museum, the Meredosia River Museum, and the Havana Public Library District provides an interactive look into the cultural and economic lives of the people who lived in the central Illinois River region between 1875 and 1950. The website is divided into three sections - Harvesting, Transportation, and History. Visitors can explore how local residents harvested ice, fish, mussels, and

waterfowl from the river; while Transportation discusses different kinds of boats, roads, and railroads; and History includes first-hand accounts of life in the region.

<http://www.museum.state.il.us/RiverWeb/harvesting/index.html>

Hiking Trails in America

The American Hiking Society's report, *Hiking Trails in America: Pathways to Prosperity*, provides a summary of 50 years of trail legislation and development. It offers a look at the economic impact of trails on local communities, the outdoor industry, and more.

<http://atfiles.org/files/pdf/AHS-Hiking-Trails-in-America.pdf>

Hohonu Moana: Exploring the Deep Waters Off Hawai'i

From July 10–July 24, 2015, NOAA Ship *Okeanos Explorer* will conduct an exploratory mapping expedition focused on the Johnston Atoll region of the Pacific Remote Islands Marine National Monument.

<http://oceanexplorer.noaa.gov/okeanos/welcome.html>

Homeroom

Homeroom is the official blog of the U.S. Department of Education. The website addresses dozens of issues with multiple posts every week. Posts can be text-based, lean heavily on graphics, and/or include videos about programs, teachers, students, and communities.

<http://www.ed.gov/blog/>

How Stuff Works

HowStuffWorks offers easy-to-understand answers and explanations of how the world works. The website hosts Quizzes, Shows, Videos, and more. Categories include Environmental Science, Forces of Nature, Culture, and more. Oceanography (under Environmental Science/Earth Science) offers information about hydrology, desalination, rip currents, and more, while Forces of Nature explores Climate & Weather and Natural Disasters.

<http://science.howstuffworks.com/>

International Trails Symposium Presentations

The program at the 2015 International Trails Symposium featured concurrent sessions, core tracks, and more. The theme of the symposium was Solutions for Success. Many concurrent and core track presentations have been made available online in PowerPoint or PDF format.

<http://www.americantrails.org/ee/index.php/symposium/sessions>

JellyWatch

This website encourages citizen science and international collaboration, offering the ability to record sightings of jellyfish and other marine organisms. If you've been on the beach or in the ocean lately, contribute to a long-term dataset by reporting the animals seen and the conditions of the beach. Visitors can post critter sightings and can also use the Clean Seas option to indicate jelly-free times.

<http://jellywatch.org/>

Living Schoolyard Guide

The Living Schoolyard Month Activity Guide was developed by Green Schoolyards America in collaboration with organizations across California. The guide includes more

than forty hands-on activities for preK-12th grade students. Themes include: Art, Wildlife Habitat, Place-Based Understanding, and much more.

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

Microplastics

This website from the University of Florida / Florida Sea Grant offers a downloadable PowerPoint presentation addressing microplastics. Be sure to read through the notes section for each slide, which includes several links and citations.

<http://stjohns.ifas.ufl.edu/sea/microplastics.shtml>

NonProfitReady.org

NonProfitReady.org is an online portal that offers learning, webinars, and other resources to develop, train, and broaden the skills of the nonprofit professional. The website links to more than 200 free courses to support the most common jobs in the sector, including Fundraising, Leadership, Marketing and Communications, Volunteer Engagement, and more.

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

Railway Land Live

This project takes place on the Lewes Railway Land Nature Reserve, a former railway siding and adjacent railway land, a site of wet woodland, ponds, ditches, reedbed water meadow, and more. The website hosts pond surface and underwater webcams during certain times of the year; a video library archive hosts clips showing newt courtship, diving beetles, and more.

<http://www.railwaylandlive.org/live/>

Retraction Watch

Retraction Watch seeks to make public the "self-correcting" nature of science. The website brings to light retracted papers in a wide variety of fields, some due to fraud, others just due to mistakes in experiments or the publishing process. Visitors can browse by author, country, journal, subject, and type.

<http://retractionwatch.com>

Smithsonian Science How? Archives

Smithsonian Science How? delivers real-world science through free, interactive, live webcasts and supporting resources. The 25-minute programs feature the research and personalities of the Smithsonian's National Museum of Natural History, providing students with STEM role models, information about science careers and pathways, and connections to current research. All webcasts are archived for use at a convenient time. Resources include a teacher guide, assessment, and more. Check out the archives for Demystifying Microbes, Paleobotany, and much more.

<http://qrius.si.edu/webcast/science-how-video-archive>

STEM Index

The annual U.S. News & World Report/Raytheon index measures STEM activity in the United States in several areas, including employment, jobs, degrees granted, salaries, high school interest, and test assessments.

<http://www.usnews.com/news/stem-index/articles/2015/06/29/the-2015-us-news-raytheon-stem-index>

Structural Geology

The Science Education Resource Center (SERC) at Carleton College provides teaching activities, visualizations, and other resources for their faculty members to design an undergraduate structural geology course. The open website offers course and activity design ideas, pedagogical approaches, and much more. Check out the visualizations, including Orogeny, Uplift and Erosion, and more.

<http://serc.carleton.edu/NAGTWorkshops/structure/index.html>

USGS Multimedia Gallery

The United States Geological Survey provides numerous resources of interest, including the USGS Multimedia Gallery. The site is organized into Photography & Images; Videos & Animations; and Audio and Podcasts; each with hundreds of multimedia resources. The Public Lecture Series, a collection within Videos and Animations, features webinars on such topics as Climate Change Effects on Fisheries in the Great Lakes, and more.

<http://gallery.usgs.gov/>

Water Is Worth It

To mark the 40th anniversary of the federal Clean Water Act, the U.S. EPA has created the Water Is Worth It website that includes case studies, milestones, and resources for K-12 educators.

<http://water.epa.gov/action/cleanwater40/>

Waters Vast and Cold - Ocean Acidification Cruise

Researchers from NOAA's Pacific Marine Environmental Laboratory and the University of Alaska Fairbanks have set sail on the NOAA ship *Ronald H. Brown* to survey ocean chemistry and its connections to the base of the food web in the Gulf of Alaska. This will be the first broad scale, comprehensive survey in this area. Read about the mission and follow along through the cruise blog.

<http://oceanacidification.noaa.gov/WhatsNew/OANews/WatersVastCold.aspx>

<http://rb1504goacruise.blogspot.com/>

World Database on Protected Areas User Manual

The first World Database on Protected Areas (WDPA) User Manual is available online. The manual can be used as a reference to understand what the database includes, what are its data and quality standards, how it is compiled, and more. The manual has four sections and six appendices; Section 1 offers a quick introduction to the WDPA.

<http://www.unep->

[wcmc.org/system/dataset_file_fields/files/000/000/308/original/WDPA_Manual_1-0.pdf?1432223858](http://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/308/original/WDPA_Manual_1-0.pdf?1432223858)

INITIATIVES, JOURNALS, and MORE

EPIC805

EPIC805 (Environment in the Public Interest Crowdsourcing, area code 805) is a public trust resource watch network seeking to locate, document, and inform appropriate agencies to resolve observed environmental problems in Morro Bay, California. The project trains university students and community volunteers to patrol the bay via dockwalking or kayak, and to use smartphones to visually record pollution violations.

The program provides an alternative to formal enforcement, fines, penalties, legal costs,

and possible criminal prosecution. It is a win-win situation for the violator, government, and environment. See the website for details.

<http://www.case-1.org/news/19-crowdsourcing-san-luis-obispo-s-mpas>

Every Kid in a Park Initiative Webinars

The "Every Kid in a Park" initiative will offer 4th grade students and their families free admission to federal lands and waters for a year. A webinar will be held three times during the month of August; register for an upcoming webinar for complete details. The Every Kid in a Park pass will be available for the 2015-2016 school year.

http://www.ysa.org/every_kid_in_a_park_initiative_webinars

World Trails Magazine

The World Trails Network has begun publishing an online magazine. The digital magazine will feature trails in many nations, as well as provide information about trail development resources, a forum for exchange about trail matters, and more.

<http://worldtrailsnetwork.org/network-news/>