

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
INFORMATION EXCHANGE FOR MARINE EDUCATORS

MAY 2014

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 Reference

Climate Change Report

The International Panel on Climate Change released Part 2 of their assessment report detailing the impact that climate change is having around the world and outlining steps that can be taken to minimize those impacts. The Fifth Assessment Report provides a clear and up to date view of the current state of scientific knowledge relevant to climate change. Downloadable materials include three reports (Climate Change 2014: Mitigation of Climate Change; Climate Change 2014: Impacts, Adaptation and Vulnerability; and Climate Change 2013: The Physical Science Basis), summaries for policymakers, and more.

<http://www.ipcc.ch/>

PROGRAM OF THE MONTH

Climate Change Course - Online

The University of California offers this free online course for the general public, examining the factors responsible for climate change, the biological and sociological consequences of such changes, and the possible engineering, economic, and legal solutions to avoid more extreme perturbations. The course includes weekly themes, daily mini-lectures, data visualizations, quizzes, exams, weekly assignments, a textbook, and readings.

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

WEBSITES OF THE MONTH

Climate & Atmosphere

The Bridge's Climate & Atmosphere pages link to a myriad of topical resources, including climate change, hazards, paleoclimatology, and much more. Be sure to check this out.

http://www2.vims.edu/bridge/search/bridge1output_menu.cfm?q=climate

Ocean Education

National Geographic's Ocean Education website offers mini-lesson plans, student activities, computer simulations, multimedia, and other resources for all grade levels. Diverse topics and ecosystems are explored, with a special high school unit on marine ecology, human impacts, and conservation. The Teacher Resources button links to additional resources.

http://education.nationalgeographic.com/education/program/oceans-education/?ar_a=1

OPPORTUNITY OF THE MONTH

Green Edventures

Green Edventures is inviting teachers, informal marine educators from nature centers and zoos and aquariums, college professors, and instructors from dive centers to visit and experience their flagship program in La Paz, Baja Sur, Mexico, July 10-13, 2014 for free. Contact Tara by May 15, 2014; open until spaces are filled.

Contact Tara at tara@greenedventures.com

REQUESTS

Seeking Committee Members

The Bureau of Ocean Energy Management's Environmental Studies Program develops, conducts, and oversees scientific research covering physical oceanography, atmospheric sciences, biology, protected species, social sciences and economics, submerged cultural resources, and environmental fates and effects. They seek qualified individuals to serve on the Outer Continental Shelf Scientific Committee for a three-year period.

<http://www.boem.gov/press04242014/>

Seeking Contributions

Wetland Science and Practice is a quarterly e-publication of the Society of Wetland Scientists. It publishes short articles (2-6 pages) on wetland science news, wetland

restoration/monitoring projects, and wetland education projects. The editor is interested in publishing articles on the activities of wetland educators and welcomes summaries of your projects.

Contact Ralph Tiner at rtiner@eco.umass.edu for information. Please put "WSP contribution" in the subject box of the email.

Zoo and Aquarium Survey

The goal of this study is to inventory the range of teacher professional development programs provided by zoos and aquariums, and better understand the potential to assist teachers in their science instruction. In part of the survey, participants are asked to share details about an exemplary teacher professional development program.

<https://www.surveymonkey.com/s/AZAPDStudy>

GRANTS AND OPPORTUNITIES

Afterschool Awards

The Afterschool Awards contest spotlights after-school achievements for elementary and middle school students. Categories include community service, science, and more. The deadline for application is June 23, 2014.

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

Arctic Observing and Research for Sustainability

The Belmont Forum has released a call for proposals on Arctic Observing and Research for Sustainability to encourage interdisciplinary and transdisciplinary science. The call seeks to bring together teams of natural scientists, social scientists, and stakeholders to develop projects that utilize existing Arctic observing systems, datasets, and models to evaluate key sustainability challenges and opportunities in the Arctic region. Three types of submissions are sought -- small collaboration grants, synthesis projects, and research proposals. The deadline for submission is July 31, 2014.

<http://igfaqcr.org/cra-2014-arctic-observing-and-research-sustainability>

Conservation Service Corps Program

The Youth Development Program of the National Park Service is designed to provide employment, education, recreational, and public service opportunities to youth ages 15-25 years of age in NPS units and affiliated sites such as National Register of Historic Places, National Heritage Areas, National Wild and Scenic Rivers, National Historic Landmarks, National Trails and adjacent gateway communities. The deadline for application is May 30, 2014.

<http://www.grants.gov/web/grants/view-opportunity.html?oppld=253253>

EarthEcho Expedition Student Achievement Grants

Teachers are invited to apply for EarthEcho Expedition Student Achievement grants to support projects that mitigate the impacts of dead zones in local communities, as inspired by EarthEcho Expeditions: Into the Dead Zone. Educators must be registered with EarthEcho Expeditions to be eligible to apply. The deadline for application is June 1, 2014.

<http://earthecho.org/news/neafgrant-1406>

EPA Greater Research Opportunities Undergraduate Fellowships

This program offers undergraduate fellowships for bachelor level students in environmental fields of study. The agency plans to award approximately 34 fellowships. The deadline for application is May 27, 2014.

http://www.epa.gov/ncer/rfa/2014/2014_gro_undergrad.html

Esri Climate Resilience App Challenge

Esri, the folks who bring you ArcGIS and other mapping tools, offer the Esri Climate Resilience App Challenge 2014. Create an app using the Esri ArcGIS Platform that fits the theme of using technology to create map tools that help communities see, understand, and prepare for climate risks. The deadline for submission is June 2, 2014.

http://www.esri.com/software/landing_pages/climate-app

Kenton Miller Award

The Kenton R. Miller Award for Innovation in Protected Areas Management nominees are identified and proposed by individuals related to protected areas management, education, or science for innovation in any combination of the following categories: Communications; Planning and Management; Finance and Economics; Assessment, Monitoring, and Evaluation; Learning and Capacity Building; and, Governance. Hurry - the deadline for nomination is May 16, 2014.

http://www.iucn.org/about/work/programmes/gpap_home/gpap_people/gpap_awards2/gpap_milleraward/

MASNA Scholarships

The Marine Aquarium Societies of North America offers the MASNA Scholarship to one full-time undergraduate and one graduate student seeking degrees in the marine science field. The deadline for application is June 20, 2014.

<http://www.masna.org/AboutMASNA/MASNAScholarship.aspx>

Odebrecht Award for Sustainable Development

The Odebrecht Award for Sustainable Development gives students a chance to highlight their best ideas for sustainable development. Projects should explore innovative practices, methods, and ideas that can be implemented through a variety of real-world ventures. The deadline for submission is May 31, 2014.

<http://www.odebrechtaward.com/award.php>

Ramsar Wetland Conservation Awards

The Ramsar Wetland Conservation Award honors individuals, organizations, and governments around the world for actions that have significantly contributed to long-term conservation and sustainable use of wetlands. Categories are wetland wise use, wetland innovation, and young wetland champions. The deadline for nomination is July 15, 2014.

http://www.ramsar.org/cda/en/ramsar-activities-awards/main/ramsar/1-63-67_4000_0

Sol Hirsch Education Fund Grants

The National Weather Association awards grants to K-12 teachers to improve the study of meteorology. Selected teachers can use the funds to take accredited courses, attend workshops and conferences, or purchase materials for the classroom. The deadline for application is June 1, 2014.

<http://www.nwas.org/grants/solhirsch.php>

State Farm Student Achievement Award

The State Farm Companies Foundation, through Youth Service America, offers grants enhancing student achievement through service-learning in K-12 public schools. This grant engages participating teachers and students in a service and learning program that promotes academic achievement, workplace readiness, and stronger communities.

Note: the grant requires a 12-14 week Semester of Service™. A webinar will take place May 19, 2014. The deadline for application is June 6, 2014.

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

Take A Second

Individual environmental actions only take a few seconds. Share how you are taking a few seconds to conserve water in a Vine or Instagram video. The deadline for submission is May 8, 2014. Additional contests will be held every few months.

<http://takeasec.org/officialrules.html>

True Hero Competition

True Hero grants cash awards to high school, college, and qualified non-profit community youth organizations that sponsor service trips and volunteer activities for students. This is a public voting competition. The deadline for posting is June 30, 2014.

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

Wild Gift Wilderness Experience

The Wild Gift is open to students and young professionals, ages 21-35. It provides an experience in deep wilderness and encourages a commitment to a self-designed leadership project that will advance wildlands stewardship and the development of sustainable human community and lifestyle. The most important requirement is a record of accomplishment that reflects leadership talent. The deadline for application is July 15, 2014.

<http://wildgift.org/apply>

Wildlife Habitat Council's Certification and Awards Program

Wildlife Habitat Council's Corporate Wildlife Habitat Certification/International Accreditation Program recognizes meaningful wildlife habitat management programs, including environmental education programs. Accreditation provides third-party credibility and an objective evaluation of projects. Accredited parties are eligible for a variety of awards, including Corporate Lands for Learning, Wings over Wetlands, and more. The deadline for certification and awards application submission is June 1, 2014.

<http://www.wildlifehc.org/certification/apply/>

Women of Worth Volunteerism Awards

Ten Women of Worth will each receive a donation from L'Oréal Paris for the nonprofit of their choice for volunteer efforts in her community. The deadline for nomination is June 25, 2014.

<http://www.lorealparisusa.com/en/women-of-worth.aspx#susan-garcia-trieschmann>

Young Birder of the Year Contest

The American Birding Association sponsors the Young Birder of the Year, an annual contest for youth ages 10-18. Submissions are due by October 15, 2014, but youth must register by June 15, 2013.

<http://www.aba.org/yby/>

CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT

Coastal Ecology Teacher Workshop - Georgia

Join educators at the Sapelo Island National Estuarine Research Reserve, June 25-27, 2014 on Sapelo Island, Georgia, for the Georgia Coastal Ecology Teacher Workshop.

The deadline for registration is May 15, 2014.

Contact Georgia Graves at georgiabeachwalk@bellsouth.net

Coastal Waters Institute - Texas

Join Artist Boat for a free, hands-on field and classroom-based professional development, July 14-17 or July 21-24, 2014. Participants will receive the Coastal Waters Institute Curriculum.

Contact lashley@artistboat.org

Educator Workshops - Georgia

The University of Georgia Marine Extension Service, Marine Education Center and Aquarium, offers a variety of professional development for marine educators. Upcoming workshops include the Georgia Shore Program, Georgia Coastal Ecosystems Long Term Ecological Research Program, and more. Check the website for details; funding may be available for Georgia educators.

http://marex.uga.edu/educator_workshops/

Engaging Military Communities - Online

This professional development course, May 12-June 8, 2014, is designed for environmental educators and community development professionals interested in working with members of the military community. Exposure to nature through outdoor recreation, gardening, tree planting, and similar activities has been especially valuable to returning soldiers and their families. The objective of this course is to increase participants' capacity to develop programs that increase environmental awareness and utilize the therapeutic value of nature in building resilient communities.

<https://sites.google.com/a/eelearn.net/eelearning-portal/courses/environmental-education-engaging-military-communities>

Long Island Sound Workshop - Connecticut

Connecticut Sea Grant and Long Island Sound Study will host a teacher training workshop, May 17, 2014 in Madison, Connecticut. Participants will learn how to incorporate Long Island Sound into their curriculum. For a nominal workshop fee, teachers will receive many materials, including a plankton tow net, an elevation meter, and more. Hurry – space in the course is limited.

Contact Ken Fusco at fuscokm@plainivleschools.org

NASA Educator Professional Development Webinars

NASA Educator Professional Development presents a series of free webinars open to all educators. Join NASA Education Specialists to learn about activities, lesson plans, educator guides, and resources to bring NASA into your classroom. Upcoming webinars include Seeing the World Without a Passport - Mission Geography, Art and the Cosmic Connection, and more.

<https://events-na11.adobeconnect.com/content/connect/c1/1088539485/en/events/catalog.html>

Ocean Exploration Workshops – Louisiana and Alabama

NOAA's Ocean Exploration Program and partners offer the Okeanos Explorer Education Materials Collection How Do We Explore? Professional Development Workshops 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. Note that these are rescheduled from the original dates.

- June 28, 2014 with the Audubon Aquarium of the Americas in New Orleans, Louisiana. The deadline for registration is June 6, 2014. Contact Tricia LeBlanc at tleblanc@AudubonInstitute.org
- August 2, 2014 with Dauphin Island Sea Lab on Dauphin Island, Alabama. The deadline for registration is July 12, 2014. Contact Sara Johnson at sejohnson@disl.org

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

Quantifying Debris Workshop - Louisiana

The Louisiana Environmental Education Commission offers the cross-curriculum Quantifying Debris workshop, June 25-27, 2014 in Cameron Parish, Louisiana, to teachers from EPA Region 6. Participants will discover the local flora and fauna with area biologists, conduct beach profiling, receive GPS training, and up to 16 professional development hours, and return home with lessons and activities for their classrooms. Scholarships and stipends may be available. Hurry – space is limited.

<http://www.wlf.louisiana.gov/newsletter-issue/special-enews-quantifying-debris-workshop-june-27-29>

Summer Institute for Climate Change Education – Minnesota

The scientists and educators teaching at the Will Steger Foundation's Summer Institute for Climate Change Education, August 4-6, 2014 in St. Paul, Minnesota, offer hands-on activities that will provide educators with climate change and energy concepts, skills to make learning experiential and to take students outside, and more. The nominal fee includes lodging, meals, and more.

<http://www.willstegerfoundation.org/summer-institute>

Teachers on the Estuary Workshop – Massachusetts

The Waquoit Bay National Estuarine Research Reserve will offer the free research and field-based teacher training program called Teachers on the Estuary (TOTE) for middle and high school science and math teachers, July 14-17, 2014 in Waquoit, Massachusetts, with a focus on planning and carrying out investigations. This program is designed to help teachers learn how to use real data and guide student investigations. Participants will investigate an on-line module on salt marsh values and climate change. There will be a follow-up session in November, 2014.

<http://www.waquoitbayreserve.org/education-training/education-programs/teacher-training/>

TOTE, WOW, and WET Workshop – Rhode Island

The Narragansett Bay National Estuarine Research Reserve will offer a combined Teachers on the Estuary, Wonders of Wetlands, and Project WET workshop, August 8-10, 2014 on Prudence Island, Rhode Island. Most expenses other than transportation are covered. Hurry – space is limited.

<http://www.nbnerr.org/tote.htm>

World Parks Congress

The IUCN World Parks Congress 2014, November 12-19, 2014 in Sydney, Australia, is a global forum on protected areas. Building on the theme "Parks, people, planet: inspiring solutions", it will present, discuss, and create original approaches for conservation and development, helping to address the gap in the conservation and sustainable development agenda. The deadline for early-bird registration is June 30, 2014.

<http://worldparkscongress.org/>

EDUCATIONAL RESOURCES

All About Bird Biology

The education program at the Cornell Lab of Ornithology offers this new website, All About Bird Biology. Developed as a companion site to the All About Birds species guide, the website takes visitors deeper into the lives of birds and highlights what they teach us about biology. The website features videos, articles, slides, and more. The new website starts with Feathers and developers have Bird Song and Fancy Males in the works.

<http://biology.allaboutbirds.org/>

Apps for Ocean Conservation and Management - on Video

The EBM Tools Network recently profiled a number of mobile apps that demonstrate how apps can facilitate ocean conservation and management. A number of these are demonstrated through short videos. Learn about a variety of ways stakeholders and citizen scientists can get involved with ocean conservation and management.

<http://openchannels.org/software-tools/apps-ocean-conservation-and-management-video>

Best Management Practices

This online book offers a guide for best practices for erosion control in the British Virgin Islands.

http://issuu.com/alookingglass/docs/best_erosion_practices-alookingglas

Beyond the Basics of Local Mitigation Planning

This website is designed to help guide visitors through the process of developing or updating a local hazard mitigation plan. Based on FEMA's *Local Mitigation Planning Handbook*, the website offers practical approaches and examples of how communities can engage in effective planning to reduce long-term risk from natural disasters.

<http://mitigationguide.org>

Bringing Wetlands to Market

This website offers a downloadable high school STEM curriculum related to the "Bringing Wetlands to Market" research project. The research studies, located in Falmouth and Mashpee on Cape Cod, Massachusetts, examine the relationship between salt marshes, climate change, nitrogen pollution, and the economic value of salt marshes as carbon sinks.

<http://wbnerwetlandscarbon.net/teachers/>

Changing Public Behavior - Online

Changing Public Behavior: People and the Environment is a self-study course designed for natural resource professionals, extension educators, and environmental educators

who work with communities. Through the seven units, participants build skills in identifying and analyzing behavior change opportunities and draft a plan for increasing people's involvement in an environmental situation.

<http://wateroutreach.uwex.edu/CPBhomepage.cfm>
<http://campus.extension.org/enrol/index.php?id=548>

Classroom Resources

The National Science Foundation's Classroom Resources offers a collection of lessons and web resources arranged by subject area for classroom teachers, students, and others. Most of these resources come from the National Science Digital Library. Topics include Arctic & Antarctic, Earth & Environment, and more.

<http://www.nsf.gov/news/classroom/index.jsp>

Climate Change Role Simulations

The Program on Negotiation at Harvard's Law School offers this Teaching Materials and Publications website with a variety of Climate Change role simulations. The role play introduces participants to the challenges associated with collective efforts to address the uncertain and dynamic risks associated with climate change. Simulations focus on flooding, development, wind farms, and more.

<http://www.pon.harvard.edu/shop/category/climate-change/>

Climate Commons

Climate Commons is an interactive map which combines NOAA data with climate impact reports. The map combines recent data on climate change indicators and emissions with geo-tagged stories on climate change.

<http://climatecommons.earthjournalism.net/map/>

Data Nuggets

Data Nuggets is a website designed to connect classrooms with scientific data. The website provides worksheets that bring real data into the classroom, guiding students through the scientific method while building their quantitative skills. Check out Do invasive species escape their enemies?, Coral bleaching and climate change, and more.

<http://datanuggets.org/>

Deep-Sea Coral Research

The Deep-Sea Coral Research & Technology Program Report to Congress 2014 features an overview of the program's continuing regional three-year field studies. Accompanying the details of the fieldwork are video and photos in all regions of the U.S.

<http://www.habitat.noaa.gov/protection/corals/deepseacorals.html>

Drought Risk Atlas

The National Drought Mitigation Center Drought Atlas project is intended to provide a wide range of decision makers with historical drought information and a web-based tool to visualize and assess their risk to drought. Check out the map viewer, and click to expand the drought monitor to view historical data.

<http://droughtatlas.unl.edu/>

Expedition 350: Izu Bonin Mariana Rear Arc Expedition

Join the *JOIDES Resolution* March 30-May 30 2014 for the Izu Bonin Mariana Rear Arc expedition. The education program will focus on this exploration, the nature and process of science, and careers. Video broadcasting is available April 4-May 28, 2014.

Requests for 30-45-minute Zoom interactions are handled on a first come, first served basis.

<http://joidesresolution.org/node/3393>

Exploration of the Gulf of Mexico 2014

NOAA's Office of Ocean Exploration and Research launched the NOAA Ship Okeanos Explorer: Exploration of the Gulf of Mexico 2014: Leg 3, April 10-May 1, 2014. Check out the archived information including mission overviews, an education module, and more.

<http://oceanexplorer.noaa.gov/okeanos/explorations/ex1402/welcome.html>

Fire Adapted Communities Learning Network

The FAC Learning Network, managed by the Watershed Research and Training Center and The Nature Conservancy, encourages the development and sharing of best practices and innovations in order to accelerate the adoption of fire adapted community concepts nationwide. The network and website supports hub organizations and pilot communities that have committed to implementing, assessing, and sharing the work that they are doing to increase their communities' resilience to wildfire. Check out the resources pages.

<http://facnetwork.org/>

Georgia Videos

The new Georgia Department of Natural Resources Video Library is available online. Watch over 50 online videos on topics such as Wildlife/Nature, Conservation, State Parks/Historic Sites, and more. Check out Edge of Extinction, Sapelo: An Island in Time, and more.

http://gadnr.edvid.org/index.php?option=com_edv&task=top.display

Grand Challenges for Engineering

An international group of leading technological thinkers were asked to identify the Grand Challenges for Engineering in the 21st Century. The National Academy of Engineering Committee on Engineering's Grand Challenges has identified 14 areas, including develop carbon sequestration methods, provide access to clean water, and more. Check out the challenges, the Scholars Program, K-12 Partners Program, and more.

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

iNaturalist for Echinoderms

iNaturalist is a website that allows users to submit images of the species they encounter along with geographical location and any other information about the observation (time of the day, depth, etc.). The community can discuss and validate the identity of the species observed. The project aims at improving our knowledge of echinoderm species worldwide. While on the website, check out the other web pages, such as Insects of the San Francisco Bay Area, Flora de Mexico, and more.

<http://www.inaturalist.org/projects/echinoderms>

Marine Debris Webinars

In this two-part series, learn from scientists researching plastic pollution at the microscopic level and learn about how computer models can be used to predict where debris will go once it reaches the ocean. The second webinar will take place May 7, 2014. Webinars will be archived online for viewing after the presentation, and a link will be provided to the webinar archive to anyone registered.

<http://cosee.umaine.edu/programs/webinars/marinedebris/>

My Earth Changing Moment

Create and upload a short video, essay, art, etc. describing your "aha" Earth Changing Moment -- the moment when you realized the importance of the environment and your connection to it. Be sure to explore others' stories through the word cloud.

<http://myearthchangingmoments.org/>

National Climate Predictions & Projections Platform

The National Climate Predictions & Projections Platform works to advance the provision of regional and local information about the evolving climate and to accelerate its use in adaptation planning and decision making. Activities include climate data and indices; evaluation and translation of downscaled data; and building and supporting community. Check out Open Climate GIS and additional projects in the works.

<https://earthsystemcog.org/projects/ncpp/>

Natural Heroes Project Guide

Natural Heroes is a PBS broadcast series profiling an individual or group doing something positive for the environment. To help teachers and students take advantage of the content of these stories, this classroom guide offers six projects aligned to Common Core State Standards to accompany the films. Also included are interactive links to additional resources and short video clips from the film.

<http://naturalheroes.org/educational-resources/>

Navigation Education Materials

The Institute of Ocean Navigation offers lessons on nautical skills from dead reckoning and celestial navigation to the reading of charts and topo maps. Each lesson includes motivations for the students, background and assessment material for the teacher and mentor, activity descriptions and worksheets, and additional tips and resources. Lessons include Where is Here, GPS on the Move, and more.

<http://www.ion.org/outreach/lesson-plans.cfm>

Measuring Environmental Education Outcomes

In this downloadable e-book, 20 environmental educators across the U.S. look at environmental education outcomes and their measurement. Chapters address such questions as: What counts as outcomes of environmental education?, How can their measurement be part of environmental education curricula?, and more.

<http://www.naaee.net/publications/MEEO>

Nature Soundmap

The Nature Soundmap provides snippets of sounds and video from the natural world. Visitors will find an interactive map of the world complete with markers which include information about the animal or setting profiled, along with a link to more information. Improvements will be coming to the map, but in the mean time, follow along by subscribing to the newsletter.

<http://www.naturesoundmap.com/blog/>

NGSS Hub

The NGSS@NSTA Hub now offers a dynamic version of the Next Generation Science Standards. Standards can be accessed via a simple matrix, then displayed in a clear and easily understood format. Accompanying each standard are student performance

expectations and the corresponding science and engineering practices, disciplinary core ideas, and crosscutting concepts. The hub also provides key connections to the Common Core State Standards in literacy and mathematics. Curated online resources that support the standard will soon be added.

<http://ngss.nsta.org/>

Ocean Acidification

The California Coastal Commission hosts this overview of ocean acidification, along with links to additional resources.

<http://www.coastal.ca.gov/publiced/oa.html>

Oyster Gardening

The Southern Regional Aquaculture Center posts this fact sheet on Non-Commercial Oyster Culture, highlighting oyster gardening and some engaging ways of using oysters with students. It reviews regulatory issues, site evaluation, educational resources, and much more.

<https://srac.tamu.edu/index.cfm/getFactSheet/whichfactsheet/236/>

Principles for Effective Stakeholder Engagement in Marine Planning – Online

It is essential that marine planning processes are designed to engage stakeholders in a manner that meets the needs of planners, process participants, and the stakeholders themselves. This free virtual training, May 15, 2014, will present and explore principles and best practices for stakeholder engagement in marine planning. The current training is full; sign up to be on a wait-list for future trainings, or check out the archived recording when posted.

<http://openchannels.org/node/6338>

Science360 App

The National Science Foundation's free Science360 for iPad provides easy access to science and engineering images and video from around the globe, and a news feed featuring breaking news from NSF-funded institutions.

<https://itunes.apple.com/app/science360-for-ipad/id439928181?mt=8>

Space Weather

The Space Weather Prediction Center is part of the National Weather Service and is one of nine National Centers for Environmental Prediction. The center provides real-time monitoring and forecasting of solar and geophysical events which impact satellites, power grids, communications, navigation, and many other technological systems. It also explores and evaluates new models and products and transitions them into operations. Check out the Education and Outreach Resources for links to overviews, videos, and more.

<http://www.swpc.noaa.gov/>

Starfish Species

The Mother Nature Network hosts this webpage with pictures of 19 starfish, along with brief descriptions of each species.

<http://www.mnn.com/earth-matters/animals/stories/19-bizarre-and-beautiful-starfish-species>

VirtualJobShaddow

VirtualJobShadow is an online career planning and career exploration resource that provides tools and resources for charting your career path. Check out the Esri- and NOAA-supported Climate Scientist profile. Additional demo profiles include Sustainability Architect, Mechanical Engineer, and Operating Room Nurse.

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

Whaleopedia

Whaleopedia is a guide to all species of whales, dolphins, and porpoises, with videos, audio recordings, natural history information, and more.

<http://whaleopedia.org/animalfund/>

World Ocean Curriculum Catalogue

This resource page from the World Ocean Observatory Classroom offers a good list of links to educator resources, educational content, lesson plans, and activities.

<http://www.worldoceanobservatory.org/content/ocean-curriculum-catalogue>

INITIATIVES, JOURNALS, and MORE

Reef Encounter

The International Society for Reef Studies is making an electronic version of the society's news journal *Reef Encounter* available for free to non-members. A pdf file of the latest edition can be downloaded from the society's membership server.

<http://www.coralreefs.org/reef-encounter.htm>

<http://www.sgmeet.com/isrs/membership/files/REEF-ENCOUNTER-29-1-Feb2014.pdf>

World Environment Day

World Environment Day, June 5, is meant to stimulate worldwide awareness about environmental issues and their impact on humans. Learn more about this year's theme, *Raise your voice, not the sea level*. Check out the Challenge, learn about Small Island Developing States, and more.

<http://www.unep.org/wed/>

World Oceans Day

Celebrate World Oceans Day, June 8, 2014, with these resources for kids and teachers. Register your event, or find one close to home.

<http://worldoceansday.org/>