

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
INFORMATION EXCHANGE FOR MARINE EDUCATORS

MAY 2017

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 eeNEWS@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/welcome.html#exchange>.

NOTABLE REFERENCES

Best Practice Protected Area Guidelines Series

The IUCN offers this guideline series of best practices for protected area management in several languages. Adapting to Climate Change has nine chapters built around an adaptive learning strategy. Case studies are provided to illustrate concepts, and there are series of best practices that can be applied to a range of situations. Other documents address Wilderness protected areas, Transboundary conservation, Staff training, and more.

<https://www.iucn.org/theme/protected-areas/publications/best-practice-guidelines>

Effects of the Deepwater Horizon Oil Spill on Protected Marine Species - Online

Volume 33 of the open access journal, *Endangered Species Research*, summarizes some of the long-term effects of the 2010 Deepwater Horizon oil spill on protected

marine mammals and sea turtles. The issue compiles 20 scientific studies by NOAA scientists and partners, covering more than 5 years of data collection, analysis, and interpretation.

<http://www.int-res.com/abstracts/esr/v33/>

New Technologies for Improving Ocean Management and Ecosystem Health

The April 2017 MEAM (Marine Ecosystems and Management) Newsletter discusses technologies that ocean technologists are using in their work, and think will be most influential in improving ocean management and ecosystem health.

<https://meam.openchannels.org/meam>

GRANTS OF THE MONTH

Instrumentl

Instrumentl is an automated grant assistant for nonprofits and researchers. Users can set up a project and it will search for active funding opportunities. It also offers a built-in project management tool that can be used to save favorite grants, receive deadline reminders, and more. It offers a short term free trial. Be sure to check out the medium feed for Instrumentl grants, currently highlighting water, wildlife research, environmental education grants and more.

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

<https://medium.com/@BeInstrumentl>

Water Grants

Check out these 16 water grants, highlighted from Instrumentl. Granting entities (and deadlines) include Park Foundation (June 7, 2017), Woodard & Curran (July 1, 2017), Coca-Cola (rolling), and more.

<https://medium.com/@BeInstrumentl/16-water-grants-you-should-be-applying-for-this-summer-55d73ab0c49b>

OPPORTUNITY OF THE MONTH

Skype a Scientist

Skype a Scientist matches scientists with classrooms of any grade from around the country to answer any questions students might have, through Skype or Google Hangout. Currently, there are over 130 scientists from over 60 Universities around the world ready to talk to classrooms. Sessions would be at least 30 minutes long but could also be tailored to your class length.

<https://squidscientistas.tumblr.com/post/156365179269/skype-a-scientist>

GRANTS AND OPPORTUNITIES

Alcoa Foundation Grants

Alcoa Foundation invests in education and the environment where Alcoa has a presence to further sustainability and to partner with communities in addressing local needs as they adapt to a changing world. Check the website for eligibility. Grants are awarded on a rolling basis.

<https://www.alcoa.com/foundation/en/partnerships-programs/grants.asp>

Best Buy Community Grants

The Best Buy Foundation helps provide teens with places and opportunities to develop technology skills that will inspire future education and career choices through Community Grants to local and regional nonprofits organizations. See the website for complete details, along with national grants criteria. The deadline for application is May 19, 2017.

<https://corporate.bestbuy.com/community-grants-page/>

Bogs Outdoor Education Grant

Bogs Footwear awards grants to projects that focus on connecting youth with outdoor education opportunities. The goal is to provide scholarships and grants to remove financial barriers, so all kids can grow and learn outdoors. The deadline for application is May 19, 2017. Free registration is required.

<http://outdoornation.org/>

Caribbean Sustainable Tourism Awards

These awards are aimed at identifying and showcasing sustainable tourism good practices in the Caribbean. The awards recognize individuals, groups, organizations or companies in any of the Caribbean Tourism Organization Member Countries which have developed responsible and unique tourism products or are engaged in implementing tourism-related initiatives which embrace sustainable tourism concepts and core values. The deadline for application is May 3, 2017.

<http://www.onecaribbean.org/caribbean-sustainable-tourism-awards/>

'Cause That's How I ROV

Tell your story using photos or video about how you are using student-built ROVs outside of underwater robotics competitions. The deadline for entry is May 15, 2017.

<https://www.marinetech.org/how-do-you-rov/>

Clif Bar Family Foundation's Small Grants

The Clif Bar Family Foundation Small Grants are awarded to projects that protect earth's beauty and bounty; increase opportunities for outdoor activity; and more. The next deadlines for applications are June 1 and October 1, 2017.

<http://clifbarfamilyfoundation.org/Grants-Programs>

Core Fulbright U.S. Scholar Program

The Core Fulbright U.S. Scholar Program offers teaching, research, or combined teaching/research awards in environmental studies and other disciplines. Opportunities are available for college and university faculty and administrators as well as for artists, journalists, scientists, lawyers, and others. The deadline for application is August 1, 2017.

<http://www.cies.org/program/core-fulbright-us-scholar-program>

Great Lakes B-WET Funding

The NOAA Bay Watershed Education and Training (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 watersheds of the Great Lakes. The deadline for application is June 2, 2017.

<http://www.noaa.gov/office-education/bwet/apply>

HBCU All-Star Students Program

The White House Initiative on Historically Black Colleges and Universities works to promote HBCU excellence, innovation, and sustainability. The initiative will recognize students for their dedication to academics, leadership, and civic engagement as 2017 HBCU All-Star Students.. The program will provide an opportunity to participate in regional and national events, along with, web chats with Initiative staff and other professionals from a wide range of disciplines that support a spirit of engagement and personal and professional development. The deadline for application is May 12, 2017. <https://sites.ed.gov/whhbcu/resources/hbcu-all-star-students/>

International Paper Foundation Grants

The International Paper Foundation offers grants to nonprofits in communities where it has operating facilities. Funding is available for disaster relief, children's education, and more. The deadline for application is August 1, 2017; see the website for eligibility and complete details.

<http://www.internationalpaper.com/company/regions/north-america/ip-foundation-usa/signature-causes>

Marine Debris Creative Advocacy Competition

As a reminder, this competition from Bow Seat challenges middle and high school students to implement real-world advocacy projects in their schools and communities. The deadline for submission is June 19, 2017.

<http://fromthebowseat.org/advocacy-competition.php>

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 16, 2017.

<http://masna.org/masna-programs/scholarship-program/>

Max and Victoria Dreyfus Foundation

The Max and Victoria Dreyfus Foundation considers requests to support museums, cultural and performing arts programs; schools, hospitals, educational and skills training programs, programs for youth, seniors, and the handicapped; environmental and wildlife protection activities; and other community-based organizations and their programs. The deadline for application is May 10, 2017.

<http://www.mvdreyfusfoundation.org/#!application-guidelines>

Mazda Foundation Grants

The Mazda Foundation awards grants to programs promoting education and literacy, environmental conservation, cross-cultural understanding, social welfare, and scientific research. The deadline for application is July 1, 2017

<http://www.mazdafoundation.org/grant-guidelines/>

NASA Research Announcement

NASA's Competitive Program for Science Museums, Planetariums and NASA Visitors solicits proposals for education or research engagement and/or exhibits through partnerships with K-12 schools, youth-serving organizations, and more. Projects should feature NASA-themed content in Earth science or other topics. The deadline for proposals is June 14, 2017.

<https://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={DEC7277A-A04F-F35D-94F0-D7EA8A1F4E04}&path=open>

Rivers, Trails and Conservation Assistance Program

The Rivers, Trails and Conservation Assistance (RTCA) program assists with community-led natural resource conservation and outdoor recreation initiatives. RTCA staff provide guidance to communities so they can conserve waterways, preserve open space, and develop trails and greenways. The deadline for application is June 30, 2017, but contact them as early as possible before the application deadline to discuss your proposed project and inform them of your intent to apply. See the website for complete details.

<http://www.nps.gov/orgs/rtca/apply.htm>

STEM Innovation Grant

From Colocation America, this grant aims to provide the educational background needed for youth wishing to enter the science, technology, engineering, and mathematics (STEM) workforce of the future. Programs must serve students in one of seven metropolitan areas; see the website for details. The deadline for application is May 26, 2017.

<https://www.colocationamerica.com/stem-grant>

Wildlife Acoustics Scientific Product Grant

Wildlife Acoustics' mission is to support efforts in conservation and environmental stewardship. The Wildlife Acoustics grant program supports bioacoustics research. The next deadline for application is May 15, 2017.

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

Youth Making Ripples Film Festival and Competition

The Youth Making Ripples Contest is an ocean conservation-inspired film festival and competition which challenges K–12 students to produce short ocean documentaries (< 5 min.) about problems that face the ocean, and possible solutions to these issues. The website provides film maker resources, examples of previous winning films, and submission details. The deadline for submission is December 5th, 2017.

<http://youthmakingripples.org/submit-film/>

FELLOWSHIPS, INTERNSHIPS, AND TEMPORARY OPPORTUNITIES

EcoLeader Graduate Student Fellowship

The National Wildlife Federation is accepting applications for a graduate student fellowship opportunity for four months this summer. The paid fellow will develop career development resources on topics such as networking, mentoring, and more. Hurry - the deadline for application is May 7, 2017.

<http://www.nwf.org/Campus-Ecology/Get-Involved/Apply-for-a-Fellowship.aspx>

CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT

Capitol Hill Ocean Week – Washington, D.C.

Capitol Hill Ocean Week, hosted by the National Marine Sanctuary Foundation, June 13-15, 2017 in Washington, D.C., offers an opportunity to network with colleagues who share interests in marine policy, ocean science, and coastal issues.

<https://www.marinesanctuary.org/chow/>

Climate Change Education Partnership Alliance Webinars - Online

The Climate Change Education Partnership Alliance offers a series of four Effective Practices webinars in May and June, 2017 to compliment their newly released, downloadable guide (see below).

<http://ccepalliance.org/2017/03/2017-webinar-series/>

Coastal Ecology Teacher Workshop - Georgia

Join educators at the Sapelo Island National Estuarine Research Reserve, June 27-30, 2017 on Sapelo Island, Georgia, for the Georgia Coastal Ecology Teacher Workshop. The deadline for registration is May 15, 2017.

Contact Georgia Graves at georgiabeachwalk@bellsouth.net

Collaborative White Shark Science - Online

The first NMEA Student Webinar, Collaborative White Shark Science, will take place May 5, 2017. Hurry – free registration is required.

<http://www.marine-ed.org/blogpost/1067768/274122/Guest-blog-by-Sean-Russell-Join-OCEARCH-s-Chris-Fischer-for-an-NMEA-Student-Webinar>

Climate Change Academy - Maryland

The 2017 Climate Change Academy, a collaboration of NOAA and MADE CLEAR for educators from the mid-Atlantic, will be held August 8-10, 2017 in Towson, Maryland, and includes an online component prior to the on-site workshop.

<https://madeclear.org/k-12-education/>

Communication Skills for Bridging Divides

Develop practical communication skills to mend divides and build a more tolerant and inclusive world through this free, self-paced MOOC (massive open online course) mini-course from CatalystX. Participants will learn about the difference between dialogue, discussion, and debate; micro-affirmations; and how to be an ally.

<https://www.edx.org/course/communication-skills-bridging-divides-catalystx-ildiv1x-0>

Dynamic Ocean: Changes and Impacts - Online

This half-day virtual conference, May 13, 2017, will discuss the ocean, how we are changing it, and the impacts these changes are having on the world. Participants receive the Ocean's Effect on Weather and Climate SciPack with their paid registration, and registrants will receive access to the conference archives to watch later on-demand.

http://learningcenter.nsta.org/products/online_courses/VC_170513.aspx

Ecological Marine Units: A 3-D Mapping of the Ocean - Online

The EBM Tools Network and partners will host a webinar on Ecological Marine Units: A 3-D Mapping of the Ocean Based on NOAA's World Ocean Atlas (Tools Included), May

17, 2017. The webinar will report progress on the Ecological Marine Units project, which is developing a standardized global ecosystems classification and map for the oceans.
<https://attendee.gotowebinar.com/register/8386251543011526915>

Effective Practices Webinar Series - Online

The Climate Change Education Partnership will host this series of four webinars to compliment the newly released Climate Change Education: Effective Practices for Working with Educators, Scientists, Decision Makers, and the Public guide. The guide provides recommendations for effective education and communication practices when working with different types of audiences. Free registration is required.
<https://www.surveymonkey.com/r/CCEP2017WebinarSeries>

Engaging Alaska Youth in STEM and Community Resilience Workshop - Alaska

NOAA and partners offer this STEM workshop for formal and informal educators, July 20-22, 2017 in Fairbanks, Alaska. The minimal registration fee includes field trips, resources, and much more. Hurry - availability is on a first come first serve basis.
<http://alaskarefugefriends.org/engaging-alaska-youth-in-stem-and-community-resilience/>

ESRI User Conference

The agenda for the ESRI User Conference, July 10-14, 2017 in San Diego, California, is available online.
<http://www.esri.com/events/user-conference/agenda>

Follow the Water - California

This free institute for middle school teachers, funded by the California Coastal Commission, will take place September 14-16, 2017 in the San Francisco Bay, California area. The activities will help teachers draw connections between inland waterways and ocean health in the context of climate change and ocean acidification. The deadline for registration is September 1, 2017.
http://i2sea.stanford.edu/docs/FollowtheWater_Flier.pdf

Guidelines for Excellence in Community Engagement - Online

The next installment of NAAEE's monthly webinar series, Bringing New Ideas and Innovation to the field of EE, May 9, 2017, will introduce the latest edition to the National Project for Excellence in EE, Guidelines for Excellence: Community Engagement. The guidelines are posted on NAAEE's website, and include useful resources.
<https://naaee.org/eepro/resources/community-engagement-guidelines>
<https://naaee.org/eepro/blog/introducing-naaees-guidelines-excellence>

He'eia National Estuarine Research Reserve Webinar

Learn about the He'eia National Estuarine Research Reserve, May 11, 2017. It is the 29th in the system and includes upland forests and grasslands, wetlands, reefs, and seagrass beds, as well as the largest sheltered body of water in the Hawaiian Island chain. The reserve also includes significant historic and cultural resources.
<https://attendee.gotowebinar.com/register/5350663766126568451>
<https://coast.noaa.gov/nerrs/reserves/hawaii.html>

International Marine Conservation Congress

The Society for Conservation Biology's Marine Section invites participants to attend the 5th International Marine Conservation Congress (IMCC5), June 24-29, 2018 in Kuching,

Sarawak, Malaysia. Sign up for announcements to be notified when the call for papers is out.

<http://conbio.org/mini-sites/imcc5/>

Introduction to Oceanography – New York

Stony Brook University's School of Marine and Atmospheric Sciences offers an intensive Introduction to Oceanography course for motivated high school students and current undergraduates, July 11-24, 2017 in Southampton, New York and off-shore. Scholarships for high school students from under-represented populations may be available.

http://www.somas.stonybrook.edu/education/undergrad_course_mar104/

Marine Aquarium Conference of North America

The 2017 Marine Aquarium Conference of North America will take place August 25-27, 2017 in New Orleans, Louisiana. The deadline for poster abstract submission is July 7, 2017.

<http://macnaconference.org/2017/>

Regional Climate Tutorial - Colorado

The National Center for Atmospheric Research (NCAR) and partners will host the Regional Climate Tutorial, July 10-12, 2017 in Boulder, Colorado. The workshop provides a broad overview of best practices for developing regional climate data and how it can be used for impact assessments.

<https://www.regonline.com/registration/Checkin.aspx?EventID=1958310>

Rise-up: Climate Change Education - Online

Learn how to work with primary and secondary-level students to help them explore climate change topics through the use of interactive and engaging activities from this seven-week MOOC from the Inter-American Development Bank. Though the course started April 27, 2017, it would be easy to catch up.

<https://www.edx.org/course/rise-climate-change-education-idbx-idb20-1x>

Rocket Scientists Write? - Online

Participants in this webinar, May 2, 2017 for pre-service, in-service, home school, and informal educators of grades K-8, will get an overview of language arts lessons and resources within NASA education materials. Discussion will include modification and customization of lessons.

<https://www.eiseverywhere.com/ehome/index.php?eventid=227785&>

Sea Turtle Exploration – North Carolina

The North Carolina Aquarium at Fort Fisher presents Sea Turtle Exploration: a curriculum to help educators engage students in the fundamentals of STEAM through sea turtles with ready-to-use, standards based lesson plans. Sign up for the workshop, May 6, 2017 at Fort Fisher, North Carolina, which will guide you through the new curriculum and website.

<https://reservations.ncaquariums.com/fortfisher/Info.aspx?EventID=20>

Seminars on Science - Online

Registration is open for Seminars on Science from the American Museum of Natural History. Courses are co-taught by an experienced classroom teacher and a research scientist. The deadline for registration for Summer Session 2, is June 26, 2017.

<http://www.amnh.org/learn-teach/seminars-on-science/sessions>

Statistical Thinking for Data Science and Analytics - Online

Learn how statistics plays a central role in the data science approach through this five week self-paced MOOC from Columbia University, starting May 15, 2017. Part of the Microsoft Professional Program Certificate in Data Science, the course will pave the statistical foundation for a further discussion on data science.

<https://www.edx.org/course/statistical-thinking-data-science-columbiacx-ds101x-1>

Summer Programs – Alabama

Dauphin Island Sea Lab Discovery Hall Programs promote conservation through education, research, and outreach. Through hands-on activities in marine habitats, people can see the impact of science on their daily lives. Many programs are available for both students and teachers. Teachers, check out Fins, Fishes, and Fisheries, Technology in Marine Science – ROVs, and more. Workshop registrations may be refunded upon completion.

<http://www.disl.org/dhp/summer/>

Using Earth Systems Science in your Schoolyard Habitat - Online

While the registration for this GLOBE Training for Eco-Schools, Session 2 is now closed, another will be held later this year. The free, online, self-paced course is for those who are looking to integrate citizen science and field-investigations into the Eco-Schools USA program by becoming a GLOBE trained teacher. The current session runs July 10-August 7, 2017, with another session October 9–September 4, 2017.

<http://www.nwf.org/Eco-Schools-USA/GLOBE/On-Line-Course-Information.aspx>

UPDATE FROM THE BRIDGE

A Stellar Animal: Steller Sea Lion Population Studies

Stellar sea lions, the largest of the eared seals, are facing serious population decreases.. Analyze their population trends using data from the National Marine Mammal Laboratory's Alaska Fisheries Science Center to identify factors that might be contributing to their decline.

http://www2.vims.edu/bridge/DATA.cfm?Bridge_Location=archive1201.html

EDUCATIONAL RESOURCES

Adaptation Clearinghouse

The Adaptation Clearinghouse is an online database and networking website for policymakers and others who are working to help communities adapt to climate change. Sectors include coasts, ecosystems, and more. Networks include Federal Adaptation Resources, Adaptation Equity Portal, and more.

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

Advancing Climate Change Environmental Education: Resources and Suggestions

This publication was created by environmental educators in EECapacity's 2013 Climate Change EE Project-based Online Learning Community Alliance. It includes a needs assessment, research-based approaches, academic standards for social studies, science, and common core, and more.

<http://www.eecapacity.net/climate-change-ee-project-based-online-learning-community-alliance.html>

Biodiversity Course - Online

California Academy of Sciences and Khan Academy partner to offer this video course on biodiversity. Topics include ecosystem services, introduced species, and much more.

https://www.youtube.com/playlist?list=PLS14biAqBAAtEEChVtzp9M9vwrXFF32_ob

Bird Photography Field Guide

Holbrook travel offers this guide to photographing birds in the field. Request a free copy.

<http://www.holbrookinsider.com/50tips>

CCEP Effective Practices Guide

The guide, Climate Change Education: Effective Practices for Working with Educators, Scientists, Decision Makers, and the Public, provides recommendations for effective education and communication practices when working with different types of audiences. Be sure to check out the free webinars in May and June, 2017.

<http://ccepalliance.org/2016/12/ccep-effective-practices-guide/>

Climate Teaching Modules

The University of Washington's Program on Climate Change offers a series of on-line climate teaching modules, with new ones added each year. Check out Presenting Science for Policy, Exploring Historical Temperature Records, and more.

<https://pcc.uw.edu/education/curriculum/climate-teaching-modules/>

Climate Smart Land Network

The Climate Smart Land Network provides forest landowners and managers with climate services designed to make climate change science accessible, understandable, and actionable. The website offers links to climate resources, a blog, and more.

<http://climatesmartnetwork.org/>

The Crowd & The Cloud

Citizen scientists are helping professional scientists to advance knowledge while speeding up new discoveries and innovations. The Crowd & The Cloud is a four-part public television series taking viewers on a tour of projects and people on the front lines of citizen science, showing how anyone, anywhere can participate. Episodes can be watched online.

<http://crowdandcloud.org/>

Dead Zone

This website from the Science Museum of Minnesota, is designed to teach elementary school students about the Gulf of Mexico dead zone. The interactive website features videos, animations, and activities. It is available in English and Spanish.

<https://www.smm.org/deadzone/top.html>

Delaware Sea Grant Virtual Tours

This website offers virtual field trips which can be viewed with a web browser or by using the RoundMe app.

<https://roundme.com/spaces/search/DESeaGrant>

Drawdown Solutions

Drawdown maps, measures, models, and describes the 100 most substantive solutions to global warming. In the solutions list, each solution reduces greenhouse gases by avoiding emissions and/or by sequestering carbon dioxide already in the atmosphere. View the table, browse the solutions, and more.

<http://www.drawdown.org/solutions>

EarthViewer App Update

EarthViewer, a free app from HHMI BioInteractive for iOS 9 and 10 for iPad, includes features such as continental reconstructions, global temperature data, sea level data going back to the Ice Age and projected into the future, and more. Users can trace the relationships between atmospheric composition, temperature, day length, and solar luminosity, and their relationship to biodiversity and more.

<https://itunes.apple.com/us/app/earthviewer/id590208430>

Endangered Species Day

The 12th annual international Endangered Species Day is May 19, 2017. Check out the Endangered Species Day Toolkit for College Students, report your activities, and more.

<http://www.endangered.org/campaigns/endangered-species-day/>

Environmental Education in Song

Check out the following singers and bands for music to learn with:

- Banana Slug String Band: <http://www.bananaslugstringband.com/>
- Sisbro Studios: <https://www.sisbro.com/music/>
- Gary Bowman Songs: <http://www.garybowmansongs.com/>

In addition, look through the resources on the United Nation's Songs for Environmental Education website: <https://songsfree.wordpress.com/>

Federal Crowdsourcing and Citizen Science Catalog

This catalog helps to improve cross-agency collaboration, reveals opportunities for projects, and makes it easier for volunteers to find out about projects they can join. Users can search by project topic, sponsor agency, participant age, and intended outcomes.

<https://ccsinventory.wilsoncenter.org/>

Flower Gardens National Marine Sanctuary

The FGNMS website has a new look, and some pages are being redirected. Educational materials about coral, oil spills, and more are available, along with a media library. As the roll-out continues, the page layouts will adapt to different screen sizes, including mobile devices

<http://flowergarden.noaa.gov/education/welcome.html>

Fostering Outdoor Observation Skills

The activities in Fostering Outdoor Observation Skills are intended to be used with lessons that engage students in outdoor observation skills. The downloadable document was developed by the Pacific Education Institute.

<http://www.fishwildlife.org/files/ConEd-Fostering-Outdoor-Observation-Skills.pdf>

Geothermal Energy

The STEM Spark Energy Education newsletter offers information about education programs and technology innovation supported by the Department of Energy. The latest newsletter highlights geothermal energy.

<https://energy.gov/eere/education/stem-spark-news>

Global Schoolyard Bioblitz

Project Noah is once again teaming up with the National Environmental Education Foundation and National Geographic Education for the Global Schoolyard Bioblitz campaign. Teachers and students document the wildlife encountered in and around their school sites. The National Geographic website offers tools for any bioblitz, and students can upload their data to the Project Noah website. Be sure to check out the educator resources.

<http://www.projectnoah.org/missions/10164691>

<https://www.nationalgeographic.org/projects/bioblitz/education/>

GLOBE Clouds

Citizen scientists can download the free GLOBE Observer app to photograph clouds, record sky observations, and compare them with NASA satellite images to help scientists understand the sky from above and below.

<https://observer.globe.gov/>

Guide to the Salt Marshes and Tidal Creeks of the Southeastern U.S.

This online guide from the South Carolina Sea Grant Consortium and partners, provides an overview of salt marsh and tidal creek ecosystems in the southeastern U.S. It includes information on species identification/classification, ecosystem services and threats, cultural and historical highlights, and stewardship opportunities.

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

Jonathan Bird's Blue World

Jonathan Bird's Blue World is an educational underwater adventure co-produced by Jonathan Bird Productions and the Oceanic Research Group. Each episode segment (5-11 minutes) is hosted online as a self-contained webisode, and includes an accompanying study guide.. Topics include animals, marine research and researchers, underwater exploration and recent discoveries, and more. The website also hosts lesson plans, sea stories, a photo gallery, and more.

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

Live Exploration of Gray's Reef

Georgia Public Broadcasting will be live streaming from the University of Georgia's Marine Education Center and Aquarium, May 10, 2017. Students will experience a virtual tour of Gray's Reef National Marine Sanctuary and the aquarium in Savannah, Georgia. The exploration will be available on demand after May 10 with supplemental classroom resources for grades K-12.

<http://www.gpb.org/education/explore/grays-reef>

Monk Seal Webinar

Sign up for the next webinar from the National Marine Sanctuaries, Forty Years of Conserving Hawai'i's Native Seal, May 23, 2017. In honor of 2017 Year of the Monk Seal, join Dr. Charles Littnan on a four decade journey that tracks the history and challenges of monk seal conservation

<http://sanctuaries.noaa.gov/education/teachers/webinar-series.html>

Mountains in the Deep

Join NOAA Ship *Okeanos Explorer* for the Mountains in the Deep: Exploring the Central Pacific Basin Expedition, April 27-May 19, 2017. Scientists will investigate unknown and poorly known deepwater areas in the Kingman Reef and Palmyra Atoll, Jarvis Island units of the Pacific Remote Islands Marine National Monument, around the Cook Islands Marine Park, and the high seas.

<http://oceanexplorer.noaa.gov/okeanos/explorations/ex1705/welcome.html>

NASA Image and Video Library

NASA has launched a new online library to enable the public to search and download images, videos, and audio files. The website consolidates more than 140,000 images, videos and audio files from over 60 collections into one searchable location.

<https://images.nasa.gov/#/>

National Severe Storms Laboratory Learning Resources

Learn about thunderstorms, tornadoes, hail, lightning, floods, damaging winds and severe winter weather. Resources include Severe Weather 101, coloring books for young students, and additional links to weather education websites.

<http://www.nssl.noaa.gov/education/>

NYT Climate Issue

The New York Times posted this Climate Issue, Our Climate Future Is Actually Our Climate Present. The article discusses geoengineering, sea levels, and more.

<https://www.nytimes.com/2017/04/19/magazine/our-climate-future-is-actually-our-climate-present.html>

Ocean Exploration Lessons in Spanish

NOAA's Office of Ocean Exploration and Research now offers its NOAA Ship *Okeanos Explorer* Education Materials Collection lessons in Spanish.

<http://oceanexplorer.noaa.gov/okeanos/edu/collection/spanish.html>

On-Demand EEI Live! Webinars

The California Education and the Environment Initiative offers recordings of past EEI Live! webinars, sorted by audience.

<http://californiaeei.org/training/on-demand-webinars/>

Pushing the Boundaries: Technology-driven Exploration of Thunder Bay National Marine Sanctuary

Over the course of a four-part expedition throughout the spring and summer of 2017, Thunder Bay National Marine Sanctuary will host a multifaceted, ongoing research project to apply new tools toward searching for perhaps 100 undiscovered shipwrecks. Follow along with these expeditions through NOAA's Ocean Explorer website.

<http://oceanexplorer.noaa.gov/explorations/17thunderbay/welcome.html>

QuakeSmart Community Resilience Program

The QuakeSmart website helps communities reinforce their business plans against disaster. The site offers a toolkit, videos, and more.

<http://www.flash.org/quakeSMARTcommunity/index.html>

Redmap Citizen Science

Range Extension Database and Mapping project (Redmap) invites Australians to share sightings of marine species that are uncommon to their local seas. Over time, Redmap will use this citizen science data to map which Australian marine species may be extending their distribution range in response to changes in the marine environment, such as ocean warming. The data also highlights regions and species that may be experiencing more distribution changes, so that research can be focused into these areas. Check out the resources, sightings map, and much more.

<http://www.redmap.org.au/>

Science360 Video Library

Sponsored by the National Science Foundation, Science360 hosts science videos by scientists, colleges and universities, and more. Topics include Earth & Environment, K-12 & Education, People & Society, and more.

<https://science360.gov/files/>

Science Vs

Science Vs is a podcast dedicated to exploring a wide variety of scientific debates and disputes. Episodes, approximately 35-45 minutes in length, are dedicated to exploring a particular scientific debate in detail.

<https://gimletmedia.com/science-vs>

Sea Turtle Hospital Virtual Field Trip

Loggerhead Marinelife Center in Juno Beach, Florida, has received funding to support a discounted summer price for a virtual field trip to any camp program June - August in 2017. Virtual Field Trips allow youth to journey through the outdoor sea turtle hospital, interact with staff via Skype, and more.

Contact Kate Ufford at kufford@marinelife.org

<https://www.marinelifecenter.org/>

SNAPP

The Science for Nature and People Partnership (SNAPP) was launched as a partnership between The Nature Conservancy, the Wildlife Conservation Society, and the National Center for Ecological Analysis and Synthesis (NCEAS). Working groups tackle high-profile problems whose solutions could have maximum benefit for nature and people and where the sought-after solution has a clear pathway to implementation. Working groups fall under four thematic areas, including Water Security & Nature, Community Resilience & Climate Change, and more. Learn about projects, follow blogs, and more.

<http://snapppartnership.net/>

Social-Ecological Resilience and Changing Landscapes Webinars

The U.S. Forest Service's Rocky Mountain Research Station and partners hosted this webinar series exploring activities and tools that facilitate effective adaptation and build social-ecological resilience in the context of changing landscapes. All webinars are now archived on the website.

<https://www.fs.fed.us/rmrs/social-ecological-resilience-and-changing-landscapes-webinar-series>

State of World Plants

The Kew Royal Botanic Gardens' State of the World Plants is an interactive, multimedia report that offers a baseline assessment of current knowledge on the diversity of plants

on earth, the global threats these plants currently face, and the policies dealing with them. Topics include land cover change, climate change, invasive plants, and more. <https://stateoftheworldsplants.com>

Sunken Heritage of Midway Atoll

Join NOAA's Ocean Exploration as they explore maritime and aviation archaeology, May 2-16, 2017 through the Exploring the Sunken Heritage of Midway Atoll Expedition. Located within Papahānaumokuākea Marine National Monument and World Heritage Site, the sunken history left undiscovered at Midway represents the material remains of one of the most consequential events in the history of World War II. An Exploration for Educators webpage includes information about why they are exploring this region, standards-based lessons, and more.

<http://oceanexplorer.noaa.gov/explorations/17midway/welcome.html>

Systems Education Experiences

The Systems Education Experiences program provides an integrative approach to help participants internalize systems biology methods and thinking. Their mission is to cultivate cross-disciplinary skills for solving complex problems. Their free online resources include Ocean Acidification, Ecological Networks, and more. Check this out.

<https://see.systemsbiology.net/modules/>

Tag Weddell Seals by Satellite

This National Science Foundation-funded project uses citizen science to help researchers count Weddell Seals in Antarctica. The project is open through June 20, 2017.

http://www.tomnod.com/campaign/antarctica_pilot_2/map/10hcx16y1h

To What Degree? Climate Change Videos

This collection of video segments from NSF's science360 for Grades 6-12 features more than 50 leading climate researchers discussing climate change. Playlists include the carbon cycle, climate modeling, and more.

<https://science360.gov/series/degree/37c32dbf-21f1-4c3b-89ea-ac962cc6efb6>

USGS: Natural Hazards Programs

The USGS provides alerts and warnings of geologic hazards and supports the warning responsibilities of NOAA for geomagnetic storms, tsunamis, and volcanic ash. Programs include earthquakes, volcanoes, emergency management, and more. Check out the interactive earthquake map, science section with estuarine physical response to storms, and more.

<https://www.usgs.gov/science/mission-areas/natural-hazards>

Visionlearning

Visionlearning offers educational content in the STEM disciplines at the introductory undergraduate level. Topics include Earth Science, Biology, Math in Science, and more.

<http://www.visionlearning.com/en>

Washed Ashore Integrated Arts Marine Debris Curriculum

This free curriculum, produced by Washed Ashore and funded by the NOAA Marine Debris Program, uses a focus on the arts to teach students about marine debris, plastic use in our society, and how to prevent marine debris both individually and as a community.

<https://marinedebris.noaa.gov/curricula/washed-ashore-integrated-arts-marine-debris-curriculum>

INITIATIVES, JOURNALS, and MORE

Delaware Coast Day

The University of Delaware sponsors this annual Coast Day event, October 1, 2017. Attendees can interact with researchers, tour ships, try hands-on activities, and attend presentations on a range of topics.

<https://www.decoastday.udel.edu/>

Global Big Day

Global Big Day connects a network of people across the world working to understand and conserve birds. Join Big Day, May 13, 2017, and submit your birding data to Cornell Lab's eBird.

<http://ebird.org/content/ebird/globalbigday/>

Sustainable Disaster Response Council

The Sustainable Disaster Response Council is a membership organization which aims to assure that building after disaster is stronger, safer, and environmentally responsible. The group offers members access to education, certification, and advocacy programs.

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