

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
INFORMATION EXCHANGE FOR MARINE EDUCATORS

OCTOBER 2016

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

Blue Planning in Practice

The Blue Solutions Initiative provides a global platform to collate, share, and generate knowledge and capacity for sustainable management and equitable governance of our blue planet. They offer Blue Planning in Practice workshops; the associated handbook for participants is available online as a free download. Chapters include Identification of need and process design, Organisation of stakeholder participation, case studies, and more. Check out the resources with videos, publications, and more.

<https://bluesolutions.info/>

http://bluesolutions.info/images/Blue-Planning-in-Practice_Participant-Handbook_160830.pdf

Ocean Noise Strategy Roadmap

NOAA's Ocean Noise Strategy Roadmap is a guide for the agency's use in reviewing the status of the science on ocean noise. The agency is already taking on some of these recommendations, such as the recent launch of an underwater network of acoustic monitoring sensors. The roadmap suggests roles for continuing partnerships and starting new ones with other federal agencies, industries, academic researchers, environmental advocates, and others. It can be downloaded in full or in part.

<http://cetsound.noaa.gov/road-map>

WEBSITES OF THE MONTH

Virtual Natural History Museum

Google Arts & Culture and partners have created a virtual museum with collections from the Smithsonian's National Museum of Natural History, the Natural History Museum of London, and other institutions. Check out A Brief History of Discovery, view the online exhibits, take a virtual tour, and more.

<https://www.google.com/culturalinstitute/beta/u/0/project/natural-history>

Satellite Meteorology

This course content for grades 7-12 was developed at the Cooperative Institute for Meteorological Satellite Studies at the UW-Madison Space Science and Engineering Center with help from experts at the Advanced Satellite Products Branch. Meteorology can introduce middle and high school students to geoscience, applied mathematics, and more. The Learning Modules include an introduction, Wild Weather, Cloud Identification, and much more.

<http://cimss.ssec.wisc.edu/satmet/>

SIMULATORS OF THE MONTH

C-ROADS

Climate Interactive's climate change policy simulator, C-ROADS, is a free computer simulation program that helps people understand the long-term climate impacts of policy scenarios to reduce greenhouse gas emissions. It allows for the rapid summation of national greenhouse gas reduction pledges in order to show the long-term impact on climate. The website offers video tutorials, FAQs, and more. Be sure to check out the other simulations on the website.

<https://www.climateinteractive.org/tools/c-roads/>

En-ROADS

Climate Interactive's climate and energy policy and investment simulator, En-ROADS, is available in beta form. The model is calibrated to align with top energy models and the Intergovernmental Panel on Climate Change's latest assessment report. Become a policy analyst and explore different scenarios in energy efficiency, agriculture, economic growth, and more to find out how to lead the world to a clean energy future. It is available in English, Spanish, and Portuguese.

<https://www.climateinteractive.org/tools/en-roads/>

World Energy

Climate Interactive's climate and energy simulation exercise, World Energy, is a group role-playing simulation game where participants play business, civil society, and

government leaders trying to limit climate change to two degrees Celsius. In the exercise, participants negotiate and try out different measures like subsidies, carbon pricing, or energy efficiency to reduce greenhouse gas emissions. Proposals are then tested using the En-ROADS simulator, which provides participants feedback on their policy and investment proposals.

<https://www.climateinteractive.org/programs/world-energy/>

REQUESTS

Bird Cams Survey

The Cornell Lab of Ornithology is applying for grant funding that would enable cam watchers to join online activities with each other and with scientists to investigate questions sparked by the cams. Help them learn more about your interest in watching and learning from the cams.

https://www.surveymonkey.com/r/2016BirdCamsSurvey_eNews

How is EE Professional Development Helping You?

This survey is part of an EPA funded project called Expanding Capacity in Environmental Education (EECapacity) led by Cornell University in collaboration with the North American Association for Environmental Education. You are invited to participate in a survey about your experiences with professional development as part of your work in environmental education. Responses will help inform how EE professional development activities support the work of educators.

https://newknowledge.az1.qualtrics.com/jfe/form/SV_3QmkCn302ZAANff

Our Ocean Our Oxygen Video Survey

The Sea Change project, an initiative to promote ocean literacy in Europe and across the Atlantic, has recently published a video entitled “Our Ocean Our Oxygen” which aims to promote awareness on the importance of the ocean to our everyday lives. The project would value your opinion on the video. They are asking for volunteers to watch the video and complete the 5-minute survey by October 31, 2016. Be sure to check out the other short videos on the website while you’re there, Increasing Ocean Literacy and Human Health and the Ocean.

<http://www.seachangeproject.eu/seachange-media-2/promo-videos>

<http://www.surveymethods.com/EndUser.aspx?B296FAE2B0F8E7E6B6>

GRANTS AND OPPORTUNITIES

Ben & Jerry’s Foundation Grassroots Organizing for Social Change Program

The Ben & Jerry’s Foundation offers competitive grants to not-for-profit, grassroots community organizations working to bring about progressive social change by addressing the underlying conditions of societal and environmental problems. Hurry - the next deadline for pre-application is October 14, 2016.

<http://benandjerrysfoundation.org/the-grassroots-organizing-for-social-change-program/>

Cal Water H2O Challenge

Cal Water H2O Challenge is a project-based, environmentally-focused competition for grades 4-6. Designed in conjunction with NAAEE and partners, it is aligned with Common Core State Standards and complimentary to the Next Generation Science Standards (NGSS). The project explores water as a global and local resource, while

tackling a local water problem in an individual and community-based endeavor. The deadline for early registration (and a chance at a grant) is October 31, 2016.

<https://challenge.calwater.com/>

California B-WET Funding

The NOAA California 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 San Francisco Bay, Monterey Bay, and the Santa Barbara Channel. The deadline for application is November 18, 2016.

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

From the Bow Seat Ocean Awareness Student Contest

The goal of this contest is to challenge high school students to think critically about challenges facing the ocean. This year's contest theme is Ocean Pollution: Challenges & Solutions. The website offers links to scientific literature, pollution websites, resources on artists and writing, and much more. The deadline for entry is June 19, 2017.

<http://www.fromthebowseat.org/contest.php>

Gulf of Mexico Research Initiative Funding

The Gulf of Mexico Research Initiative (GoMRI) announces the last round of funding by the organization to support research directed at improving our understanding of the effects of oil on the environment and people of the Gulf of Mexico region. The deadline for Letters of Intent is November 14, 2016.

<http://gulfresearchinitiative.org/request-for-proposals/rfp-vi/>

Hawai'i B-WET Funding

The NOAA California 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 the State of Hawai'i. The deadline for application is November 4 2016.

<http://www.grants.gov/web/grants/search-grants.html?keywords=%20NOAA-NOS-OCM-2017-2004984>

Knauss Marine Policy Fellowship

The Knauss Marine Policy Fellowship provides experience to students who have an interest in ocean, coastal, and Great Lakes resources and in the national policy decisions affecting those resources. The program matches highly qualified graduate students with hosts in the legislative and executive branches of government located in the Washington, D.C. area, for a one year paid fellowship. The deadline for application is March 31, 2017. Contact your state Sea Grant program director.

<http://seagrant.noaa.gov/FundingFellowships/KnaussFellowship/ProspectiveFellows.asp>

X

<http://www.grants.gov/web/grants/view-opportunity.html?opId=287335>

Marine Debris Creative Advocacy Competition

This competition from Bow Seat challenges middle and high school students to implement real-world advocacy projects in their schools and communities, with the goals of educating the public about marine debris, inspiring people to change their behavior, and engaging them in activities that reduce or prevent marine debris. See the website for complete details. The deadline for submission is June 19, 2017.

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

Marine Debris Research Federal Funding

The NOAA Marine Debris Program offers Marine Debris Research Federal Funding to support research directly related to marine debris through field, laboratory, and modeling experiments. Proposals can address research that explores the ecological risk associated with marine debris, determines debris exposure levels, and examines the fate and transport of marine debris in nearshore, coastal environments. The deadline for proposal is December 19, 2016.

<http://www.grants.gov/web/grants/view-opportunity.html?oppld=289016>

Marisla Environmental Program

The Marisla Foundation offers Environmental Program Grants for activities which promote the conservation of biological diversity and advance sustainable ecosystem management. Primary emphasis is on marine resources conservation with a geographic focus on western North America, Chile, and the western Pacific. The next deadlines for application are October 15, 2016 and January 15, 2017.

<https://online.foundationsource.com/public/home/marisla>

National & International Trails Awards

The National & International Trails Awards recognize the contributions of volunteers, professionals, and others who are working for the betterment of trails. The deadline for nomination is December 1, 2016. Note that the American Trails International Trails Symposium will be held May 7-10, 2016 in Dayton, Ohio.

<http://americantrails.org/ee/index.php/symposium/2017-awards>

Nature Works Everywhere Grants

The Nature Conservancy is awarding grants to 55 schools to support projects that implement green infrastructure to address local environmental challenges. These include climate change, storm water collection, and more. Young people will work as social innovators to help their communities through project design and implementation. The deadline for application is October 31, 2016.

<https://www.natureworkseverywhere.org/grants/>

Project Polar Bear

Project Polar Bear challenges students to take action on climate change. Middle and high school groups compete for a grant by creating a plan for a project that will help reduce reliance on fossil fuels and engage their communities. Project categories include Community Engagement Through Art and Advocacy. The deadline for registration is November 25, 2016.

<http://www.polarbearsinternational.org/our-work/community-outreach/project-polar-bear>

Sea Turtle Conservation

The National Fish and Wildlife Foundation's Sea Turtles Program consists of a portfolio of 10-year business plans to guide conservation investments that will measurably

improve the current recovery trajectory of seven sea turtle populations. Key conservation strategies include reduce incidental capture, reduce exploitation of turtles and turtle eggs, and build strong regional networks; see the website for details. Hurry - the deadline for pre-proposals is October 13, 2016.

<http://www.nfwf.org/seaturtles/Pages/2017rfp.aspx>

Service Learning Awards

The National Youth Leadership Council and its partners present a number of awards honoring youth and adults for their commitment to education, service, community, and service-learning. The deadline for application is December 5, 2016.

<http://servicelearningconference.org/2017/awards>

Students for Zero Waste Week Art Contest

The Students for Zero Waste Week 2017 campaign is looking for new student artwork. Be sure to check out the Ocean Guardian Program, the Litterati app, and other links. The deadline for submission is November 18, 2016

http://sanctuaries.noaa.gov/education/ocean_guardian/zero-waste-week/

Teacher at Sea

NOAA's Teacher at Sea Program will be accepting applications from full-time teachers, starting November 1, 2016. The program provides participants a hands-on research experience at sea, giving them insight into oceanographic, hydrographic, and fisheries research by facilitating partnerships between educators and NOAA scientists. The deadline for application is November 30, 2016.

<http://teacheratsea.noaa.gov/#/home/>

Women Divers Hall of Fame Scholarships and Training Grants

The Women Divers Hall of Fame offers 33 different scholarships and training grants, including education, marine conservation, research, and much more. Check these out. The deadline for submission is November 18, 2016.

<http://www.wdhof.org/scholarships/scholarships.shtml>

FELLOWSHIPS, INTERNSHIPS, AND TEMPORARY OPPORTUNITIES

Coastal Science Assistantship Program - Louisiana

The Louisiana Coastal Protection and Restoration Authority supports the Coastal Science Assistantship Program, a program which provides assistantships for up to three years to support Master of Science students both enrolled full-time at Louisiana colleges/universities and involved in science or engineering research relevant to Louisiana coastal protection and restoration efforts. The deadline for application is November 15, 2016.

<http://www.laseagrant.org/research/student-research/csap/>

Coral Restoration and Conservation Internship

The Coral Restoration Foundation is accepting applications for the Coral Restoration and Conservation Internship program; internships run from late January to mid-May 2017 in Key Largo, Florida. A modest stipend is available. Hurry - the deadline for application is October 15, 2016.

<https://coralrestoration.org/internship/>

Northrop Grumman Foundation Teachers Academy

The Northrop Grumman Foundation Teachers Academy is designed for middle school teachers to enhance teacher confidence and classroom excellence in STEM. The academy will support 25 teachers located in school districts in select Northrop Grumman communities. See the website for complete details. The deadline for application is November 11, 2016.

<http://www.nsta.org/northropgrumman/>

SeaWorld & Busch Gardens Youth Advisory Council

Applications are open for the SeaWorld & Busch Gardens Youth Advisory Council. The council unites young conservation leaders from across the country who provide input and ideas to SeaWorld Parks and Entertainment's staff and partners regarding conservation initiatives, education programs, and strategies for reaching and engaging other young people across the country, while leading initiatives to support SeaWorld's conservation priorities. Applications for the next round of Youth Advisory Council members are open to young people ages 14-19. The deadline for application is November 27, 2016.

<https://seaworldcares.com/2016/07/Get-to-know-the-SWBG-Youth-Advisory-Council>

CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT

Advanced Inquiry Program

This Project Dragonfly program from Miami University offers a master's degree that combines web-based graduate courses with face-to-face experiential and field study in various community learning institutions. See the website for participating institutions and complete details. The deadline for application is February 28, 2017.

http://aip.miamioh.edu/16-17_news

Connect Toolkit and Workshop – Illinois and Online

Connect tools are interactive resources and activities for educators, community groups, and conservation organizations to use to engage people of all ages and backgrounds in climate change education and action. While the tools focus on the Midwest, they are easily adapted to other regions. A panel discussion will be aired online from the Chicago Botanic Garden, October 25, 2016. Free registration is required.

http://www.chicagobotanic.org/education/teacher_programs/connecting_your_community_climate_change_workshop

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

Drawing Nature, Science and Culture: Natural History Illustration - Online

This free, online, six-week MOOC from the University of Newcastle, Australia starts October 26, 2016. Learn how to see and draw nature like an illustrator and build observational and visual interpretation skills in an interactive and enjoyable way.

<https://www.edx.org/course/drawing-nature-science-culture-natural-newcastlex-nhi101x>

ESRI User Conference

The call for papers for the ESRI User Conference (Environmental Systems Research Institute, the geographic information systems company), July 10-14, 2017 in San Diego, California, is now open. The deadline for submission is October 28, 2016.

<http://www.esri.com/events/user-conference/papers>

George Wright Society Conference

The 2017 George Wright Society Conference on Parks, Protected Areas, and Cultural Sites will take place April 2-7, 2017 in Norfolk, Virginia. The conference is a leading U.S. professional meeting of protected area managers. The conference theme is People, Place & Time – Advancing thought & practice in parks, protected areas & cultural sites.

<http://www.georgewright.org/gws2017>

Isn't that Spatial? - Online

NAAEE offers a free monthly webinar series on eePRO as part of NAAEE and Cornell University's EECapacity initiative. The webinars are on topics of interest to environmental education professionals in both formal and nonformal settings. The speaker for the webinar on December 6, 2016, Isn't that Spatial? Teaching about the Environment, Examining Field Data, and Telling Your Environmental Story with Web Mapping Technology, is the Education Industry Curriculum Development Manager Register for ESRI. Webinars are archived for those unable to attend the live session.

<https://naaee.org/eeopro/learning/monthly-webinar-series>

National Service-Learning Conference

The call for presentations for Dare to Dream, the 28th Annual National Service-Learning Conference, March 22-24, 2017 in Anaheim, California, is now open. Hurry - the deadline for submission is October 16, 2016.

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

NSTA Conferences on Science Education - Various

National Science Teachers Association conferences offer science content, teaching strategy, and more. Each year NSTA hosts a national conference on science education, a STEM Forum & Expo, and three area conferences; see the website for full details. The deadline for the STEM Forum & Expo is December 6, 2016, for the area conferences, January 17, 2016, and for the national conference April 17, 2017. The following upcoming conferences will take place:

- 6th Annual STEM Forum & Expo in Orlando, Florida, July 12-14, 2017
- Baltimore Maryland Area Conference, October 5-7, 2017
- Milwaukee Wisconsin Area Conference, November 9-11, 2017
- New Orleans Louisiana Area Conference, November 30-December 2, 2017
- Atlanta Georgia National Conference, March 15-18, 2018

<http://www.nsta.org/conferences/sessions.aspx>

NSTA Web Seminars - Online

NSTA offers free online seminars on the NGSS through YouTube. The latest are a series of twelve videos on disciplinary core ideas which have the power to focus K-12 science curriculum, instruction, and assessments.

https://www.youtube.com/playlist?list=PL2pHc_BEFW2JjWYua2_z3ccHEd6x5jIBK

Ocean Exploration Workshops – Various

NOAA's Ocean Exploration Program and partners offer Exploring the Deep Ocean with NOAA 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.

- October 15, 2016 with Dauphin Island Sea Lab, on Dauphin Island, Alabama. Space is still available. Contact Sara Johnson at sejohnson@disl.org
- November 5, 2016 with the University of South Florida in St. Petersburg, Florida. The deadline for registration is October 14, 2016. Contact Angela Lodge at alodge@usf.edu
- November 5, 2016 with the North Carolina Aquarium at Fort Fisher, North Carolina. The deadline for registration is October 15, 2016. Contact Casey Radley at casey.radley@ncaquariums.com

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

Rivers to Reefs - Online

This webinar from the National Marine Sanctuaries Webinar Series took place October 11, 2016 and will be archived for future viewing. Using the Altamaha River watershed as an example, the webinar focused on human impacts on watersheds and how they influence ocean habitats. The webinar series provides educators with educational and scientific expertise, resources, and training to support ocean and climate literacy in the classroom.

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

Youth Ocean Conservation Summit

Registration is now open for the 2016 Youth Ocean Conservation Summit, December 10, 2016 in Sarasota, Florida. Participants will learn from other students leading ocean conservation programs in their communities, have the opportunity to develop plans for their own ocean conservation projects, and take part in workshops and trainings designed to give them the skills needed to ensure the success of these projects. Check out the pre-summit film festival and enter the film competition. The deadline for registration is November 18, 2016.

<http://youthoceanconservationsummit.weebly.com/2016-summit.html>

Zoo Math and Science - Minnesota

The Minnesota Zoo is hosting an education workshop for informal educators, April 24-26, 2017 in Apple Valley, Minnesota. Educators will receive training to implement the ZooMS (Zoo Math and Science) STEM program model in their institution. Be sure to check out the other resources on the website, including curriculum, teacher workshops, and much more.

<http://mnzoo.org/education/schools-teachers/stem-programs/>

Bridge eUpdate

Marine Debris

This month, the Bridge continues to focus on marine debris. The featured K-12 resource, National Geographic's Marine Debris educator page, provides a list of ideas to help get students thinking about the impact of plastics on our waterways. The highlighted Bridge DATA Exercise, Flotsam and Jetsam, guides students through an analysis of litter gathered during the 2016 International Coastal Cleanup.

<http://nationalgeographic.org/activity/marine-debris-a-legacy-of-litter>

http://www2.vims.edu/bridge/DATA.cfm?Bridge_Location=archive0201.html

EDUCATIONAL RESOURCES

Animals of the Northern Gulf of Mexico

The second episode, October 19, 2016, of Gulf Detectives from Alabama Public TV, Animals of the Northern Gulf of Mexico, is a virtual field trip. Scientists will teach concepts of animal habits and adaptations, food webs, ecosystems, biology, and environmental science. Free registration is required.

<http://www.aptv.org/IQLEARNING/ElectronicFieldTrips/fieldtrip.asp?tripID=22>

Before They Were Scientists

NOAA's Office of Ocean Exploration and Research offers a myriad of resources for education, including a wealth of career information. During the Exploring Carolina Canyons 2016 Expedition, they posted some background on various members of the science team and what inspired them toward careers in marine science.

<http://oceanexplorer.noaa.gov/explorations/16carolina/logs/logs.html>

Building STEM Teacher Leadership

This new website offers resources to support STEM teacher leaders. It provides an overview of topics in building STEM teacher leadership and is organized in a Frequently Asked Questions format, with options to access the information by topic or by role.

<http://stemteacherleadership.org/>

Built Environment

The Built Environment section of the Climate Resilience Toolkit is designed to help people address a wide range of risks facing cities and towns. The section provides peer-reviewed information, case studies, decision-support tools, and more.

<https://toolkit.climate.gov/topics/built-environment>

Civil Conversation Challenge for Teenagers

The New York Times invites teenagers from around the world to practice skills of respectful, informed conversation across ideological and demographic divides, not only by posting their own thoughts on these issues, but also by reading the responses of others and replying to them. Issues included Climate Change and Energy, Immigration, and more. The Times offers a companion lesson plan: Talking Across Divides: 10 Ways to Encourage Civil Classroom Conversation On Difficult Issues with teaching activities for each of their commenting guidelines. The forums will be open for comment until November 7, 2016.

<http://www.nytimes.com/2016/10/03/learning/our-civil-conversation-challenge-for-teenagers.html>

CLEAN Videos on Climate Change, Extreme Weather, and Wildfire

The CLEAN network supports teaching and learning about climate and energy with more than 600 free peer-reviewed, scientifically accurate, and classroom-ready resources. Check out these two videos, and all the CLEAN resources

<https://naaee.org/eepro/resources/clean-videos-climate-change-extreme>
<http://cleanet.org/index.html>

Climate Change – How Do We Know?

NASA's Global Climate Change: Vitals Signs of the Planet offers evidence of climate change, including sea level rise, warming oceans, and more.

http://climate.nasa.gov/evidence/?s_email_id=20161012_ECO_ENG_GLOBE_ProjectPB|STedu

Coastal Flood Exposure Mapper

The Digital Coast's Coastal Flood Exposure Mapper is an online visualization tool which supports communities that are assessing their coastal hazard risks and vulnerabilities. The tool creates a collection of user-defined maps that show the people, places, and natural resources exposed to coastal flooding. Community members can see which areas are most likely to flood from sea level rise, storm surge, or shallow coastal flooding. The maps are overlaid with information about population density and the location of infrastructure, hospitals, and development. The tool is currently available for the East Coast and Gulf of Mexico.

<https://coast.noaa.gov/digitalcoast/tools/flood-exposure>

Coastal Storms

The Digital Coast from NOAA's Office for Coastal Management provides coastal data, along with tools, training, and information needed to make these data useful. The Coastal Storms website offers data, training, and tools, including coastal flood exposure mapper, best practices for risk communication, and more.

<https://coast.noaa.gov/digitalcoast/topics/coastal-storms.html>

Coral Publications

Coral Publications, founded by marine biologist Tim Wijgerde, assists companies and institutions with marine aquaculture, company promotion, and more. They produce videos of marine life and offer time lapse and other videos for watching on YouTube.

<https://www.youtube.com/channel/UCSnpNM2Rag6cmQDnmYGVMyg>

Earth Now

NASA's Earth Now is an application that visualizes recent global climate data from Earth Science satellites, including surface air temperature, carbon dioxide, carbon monoxide, ozone, and water vapor as well as gravity and sea level variations. The app is free and available for iPhone and Android users.

<https://play.google.com/store/apps/details?id=gov.nasa.jpl.earthnow.activity>

<https://itunes.apple.com/us/app/earth-now/id494633346?mt=8>

Eco-Schools Leadership Initiative

The Eco-Schools Leadership Initiative is a youth-driven program in which high school and college students use games and activities to teach elementary school students about an environmental topic. The program's mission is to create a network of young people who are passionate about environmental education. Check out the curriculum, and contact them if interested in starting a similar program.

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

European MSP Platform

The European MSP (marine spatial planning) Platform will share relevant knowledge and experiences to promote implementation efforts. The platform currently offers information on the status of processes in each coastal European Union Member State, EU-wide and national funding opportunities, and more.

<http://www.msp-platform.eu/>

Exploring Our Fluid Earth

Exploring Our Fluid Earth now has six content modules. They focus on aspects of physical, chemical, biological, and ecological aquatic science, and include Practices of Science and Standards Alignment. Browse the modules and join the free interactive community to comment on activities and more.

<https://manoa.hawaii.edu/exploringourfluidearth/>

Hurricanes

The National Ocean Service offers resources to understand, predict, and respond to the hurricanes and explore hurricane preparedness, response, and recovery. Check out the videos, explore historic hurricane tracks, and more.

<http://oceanservice.noaa.gov/hazards/hurricanes/>

JASON Live Events

JASON Learning connects youth with inspiring STEM role models through this live, interactive webcast series. On the day of the live event about 30 minutes prior to the start time, the event's landing page on the website is updated with instructions on how to access the live video feed along with a link/form to get to it. No advanced sign-up is required. Check out the speaker interviews prior to the webcast.

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

JOIDES Resolution Expeditions

Connect live to the *JOIDES Resolution* at sea. Live ship-to-shore event sign-ups are on a first-come, first-served basis. Sign up for live events with Expedition 363: Western Pacific Warm Pool, October 6-December 8, 2016 and Expedition 366: Marina Convergent Margin, December 8 2016 - February 7, 2017. Check out the expedition pages as the research continues.

<http://joidesresolution.org/node/1746>

<http://joidesresolution.org/node/2099>

Marine Biogeographic Assessment of the Main Hawaiian Islands

The Bureau of Ocean Energy Management and NOAA's National Centers for Coastal Ocean Science have released a report and data sets that highlight what is known about the marine environment of the main Hawaiian Islands. Topics include benthic habitats, an interactive map, and more.

<https://coastalscience.noaa.gov/projects/detail?key=163>

Meet a Scientist

The Coral Reef Ecology Curriculum from the Khaled bin Sultan Living Oceans Foundation is an educational resource for teachers and students interested in learning about coral reefs. Meet a Scientist offers profiles on a variety of different scientists. Be sure to check out the standards-aligned educational materials including interactive exercises, lesson plans, and more.

<https://www.livingoceansfoundation.org/education/portal/course/meet-a-scientist/>

NASA Education

The NASA education website has been updated. Check out the following resources.

Explore NASA Science: <https://science.nasa.gov/>

Education opportunities for educators:

<http://www.nasa.gov/audience/foreducators/current-ops-index.html>

Education opportunities for students:

<http://www.nasa.gov/audience/forstudents/current-opps-index.html>

Search Educational Resources: <http://www.nasa.gov/education/resources>

NASA Education on the web: <http://www.nasa.gov/audience/foreducators/index.html>

NASA JPL Teach

Explore this database of lesson plans for grades K-12 from NASA's Jet Propulsion Lab. Search by subject matter, grade level, key word and more. Browse activities, resources, and more. Check back often, as new lessons are added.

<http://www.jpl.nasa.gov/edu/teach/>

NASA and Weather

NASA's Stennis Space Center Office of Education offers a series of free STEM educator professional development workshops in Pearlington, Mississippi. Earth Right Now: NASA and Weather, November 6, 2016 will explore NASA's role in understanding and forecasting of weather, climate, seasons, and hurricanes. Participants will learn to use NASA data, STEM curriculum, and resources.

<https://www.eiseverywhere.com/ehome/index.php?eventid=201528&>

<http://education.ssc.nasa.gov/workshops.asp>

NSTA on YouTube

Check out the NSTA Playlists on YouTube. Series include NGSS in the Elementary Classroom, videos from The Science Teacher, and more.

<https://www.youtube.com/user/NatSciTeachAssoc/playlists>

Old Weather

Old Weather, a NOAA crowdsourcing project, enlists volunteers to help transcribe a collection of nineteenth and early twentieth century ship's logs that highlight weather, water, and ice conditions.

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

Open.NASA

NASA offers open.NASA, an open data portal to make its data sets, code repositories, and application program interfaces available to the general public. Visitors select the label they most identify with (Citizen Scientist, Govvie, and more) to see related articles and materials. Check out the Data Stories, which highlight how individuals and organizations around the world are making use of open data.

<https://open.nasa.gov>

Polar-ICE

Polar Interdisciplinary Coordinated Education is an NSF-funded project designed to connect scientists, educators, and students using data and research from the Arctic and Antarctic regions through data visualizations, workshops, webinars, and student research symposia. Check out the Art of Storytelling, Ask a Polar Scientist, and more. Follow the twitter and facebook pages for news and ways to get involved

<http://polar-ice.org/>

https://twitter.com/PolarICE_Ed

<https://www.facebook.com/polarICEeducation>

PREP

The Partnership for Resilience and Preparedness is a public-private collaboration to empower a data-driven approach to building climate resilience. The partnership aims to help planners, investors, and resource managers more easily incorporate climate risks into their decisions by enhancing access to relevant data and facilitating collective learning. Check out the website now, currently in beta form, and follow along as more products are added.

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

Resource Guide on Resilience

This guide from the International Risk Governance Council collects resources on resilience in the context of risk management for scientists and practitioners. The contents look at integrating, developing, and measuring resilience for governments and decision makers with an emphasis on developing indicators and quantifying effectiveness. The site is a work in progress, so check back if interested.

<https://www.irgc.org/irgc-resource-guide-on-resilience/>

Secure Our Oceans

The Stimson Center offers the Secure Our Oceans website to help countries and organizations find the right technology to protect their marine protected areas. Navigate through the categories to find individual products and to learn about the advantages and challenges of different technology types. Secure Our Oceans is also creating Marine Enforcement Pods (Oceans Avengers), teams composed of conservation technologists, oceans scientists, illegal fishing experts, and others. They will produce technology feasibility studies and implementation plans that sustainably enforce marine protected areas.

<http://secureoceans.org/>

Severe Storms and Extreme Events - Data Table

The National Weather Service observers keep a comprehensive record describing 48 different types of severe events, from localized thunderstorms, tornadoes, and flash floods to regional events such as hurricanes, derechos, and winter storms.

The database currently contains data from January 1950 to June 2016, Search by location or narrative text, by event type, time period, and more.

<http://www.ncdc.noaa.gov/stormevents/>

Storybench

Storybench, a project from the Media Innovation Program at Northeastern University, is dedicated to sharing and developing the art and science of digital storytelling. The website offers mapping, GIF-making and other tutorials, a For Educators tab, and more.

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

Thousand Year Events

Climate.gov has a good explanation of how we can call something a thousand-year storm even if we don't have a thousand years of data. Check out this webpage using collected data and step-by-step statistical analysis.

<https://www.climate.gov/news-features/event-tracker/how-can-we-call-something-thousand-year-storm-if-we-don%E2%80%99t-have-thousand>

Tools for Crowdsourcing Data and Collaborative Mapping

EBM Tools Network members recently shared a variety of tools used to crowdsource data or do wiki-style mapping (collaborative mapping and editing by users).

<https://meam.openchannels.org/news/meam/ebm-toolbox-tools-crowdsourcing-data-and-collaborative-mapping>

Water Water Everywhere

The next NOAA Climate Stewards Webinar, November 7, 2016, will be Water Water Everywhere? Will There Be Enough to Drink? The webinar will address the forecasted impacts of climate change on global water resources, what we're expecting to occur in communities across the US, steps we can take and encourage others to take, to mitigate and/or adapt to these changes. Sign up to the NOAA Climate Stewards Education Project Listserve to insure you receive an invitation to this, and other upcoming events.

<https://list.woc.noaa.gov/cgi-bin/mailman/listinfo/noaacclimatestewards/>

INITIATIVES, JOURNALS, and MORE

Aquatic Conservation – Special MPA Issue

A special issue of Aquatic Conservation journal on marine protected area networks was published in September 2016. The issue, entitled Building Networks of MPAs: The Legacy from the 2014 Sydney World Parks Congress, includes 15 peer reviewed articles on a wide range of topics, including setting MPA targets, polar conservation, marine mammal protected areas, large scale MPAs, marine education, and more. All articles are available for free download.

<http://onlinelibrary.wiley.com/doi/10.1002/aqc.v26.S2/issuetoc>

Ensia

Published by the Institute on the Environment at the University of Minnesota, The journal Ensia (Environmental Solutions In Action) reports on a wide variety of environmental issues and debates. Visitors can search for content by category (e.g. Ecosystems, Culture, and more) or by Section (e.g. Articles, Videos, and more).

<http://ensia.com>

Storm Data

Storm Data is a monthly publication which contains a chronological listing, by state, of storms and unusual weather phenomena. Reports contain information on storm paths, deaths, injuries, and property damage. Some issues of include an "Outstanding storms of the month" section that highlights severe weather events with photographs, illustrations, and narratives. Storm Data began in 1959 and is published with a single issue each month, several months after the featured month to enable editors to include late reports and corrections. Note that it reports just a brief entry for each storm, but it can be an interesting tool to explore historical weather events and compare details of various storms.

<http://www.ncdc.noaa.gov/IPS/sd/sd.html>