

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
INFORMATION EXCHANGE FOR MARINE EDUCATORS

NOVEMBER 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

Explaining Ocean Warming

IUCN has published Explaining Ocean Warming: Causes, scale, effects and consequences. The report, compiled by 80 scientists from 12 countries, highlights detectable scientific evidence of impacts on marine life, from microorganisms to mammals, which are likely to increase significantly even under a low emissions scenario. The website offers a link to the full report, along with an executive summary.

<https://www.iucn.org/news/explaining-ocean-warming-causes-scale-effects-and-consequences>

Fisheries of the United States

NOAA Fisheries offers the report, Fisheries of the United States, 2015, giving a profile of the nation's fishing and seafood by the numbers. The website also offers infographics derived from the report.

<http://www.st.nmfs.noaa.gov/commercial-fisheries/fus/fus15/materials>

MPA News

MPA News is the information service on planning and management of marine protected areas serving the global MPA community with news, views, analysis, and tips gathered from experts around the world. It is now integrated with Open Channels, with links to current and past editions, and much more. Check out the latest edition, hosting links to many newly published reports; Blue Solution: On Helping Fishermen Reduce Their Impact; and more.

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

MESSAGE FROM THE BRIDGE

Bridge eUpdate

This month, the Bridge looks at bycatch. The featured K-12 resource, NOAA's Bycatch Reduction Lesson Plan, provides a hands on activity to get students thinking about selective fishing gear. The highlighted Bridge DATA Exercise, Ghostbusting the Chesapeake, guides students through an analysis of data gathered during a five year program to remove derelict ghost pots from Virginia waters.

http://www.nmfs.noaa.gov/stories/2012/10/docs/bycatch_reduction_devices.pdf

http://www2.vims.edu/bridge/DATA.cfm?Bridge_Location=archive1010.html

REQUESTS

COSEE Priorities Survey

The Consortium for Ocean Science Exploration and Engagement Council will be conducting a planning meeting November 9-10, 2016 to address priorities for COSEEs over the next two years. They invite the community to provide input through this survey. The deadline for input is November 4, 2016.

https://www.surveymonkey.com/r/COSEE_Priorities

Seeking STEM Teaching Stories

Professors at the University of Texas at Arlington and partners seek participants in a study to gather the stories of K-8 teachers with respect to teaching STEM subjects. The goal of this study is to use results of the interviews to iterate and design a professional development MOOC (massive open online course).

Contact Patrice at pat68@cornell.edu

Serving Special Needs Audiences in Multi-day Programs

The Monterey Bay Aquarium Education staff seeks input regarding serving special needs students in youth programs. They would appreciate any information or wisdom about facilitated programs. They will share the results of this survey.

<https://www.surveymonkey.com/r/KBCRLZG>

GRANTS AND OPPORTUNITIES

Captain Planet Foundation Grants

The Captain Planet Foundation provides grants to school and community groups to support hands-on environmental projects for youth in grades K-12. The objective of the foundation is to encourage innovative programs that empower youth to work individually

and collectively to solve environmental problems in their neighborhoods and communities. The next deadline for application is January 31, 2017..

<http://captainplanetfoundation.org/apply-for-grants/>

Climate Adaptation Leadership Awards

These awards recognize the actions of individuals and organizations that are making a difference by increasing understanding of climate impacts, adapting to and reducing threats, increasing response capabilities, and providing other innovative approaches to reducing impacts and increasing resilience in a changing climate. The deadline for nomination is November 18, 2016.

<http://www.wildlifeadaptationstrategy.gov/award.php>

Climate Stewards Education Project Stewardship Community

The NOAA Climate Stewards Education Project provides formal and nonformal educators sustained professional development, collaborative online tools, and the support to build a climate-literate public engaged in climate stewardship. The deadline for application is November 20, 2016.

<http://oceanservice.noaa.gov/education/climate-stewards/welcome.html>

Climate Studies Diversity Project for Minority Serving Institutions

The American Meteorological Society's Education Program invites faculty members at minority-serving institutions to apply for the AMS Climate Studies Diversity Project. Accepted applicants will have the opportunity to attend an expenses-paid workshop and study climate science and education from NASA, NOAA, and other scientists. After the workshops, participants will help increase climate literacy by teaching an AMS Climate Studies course at their home institution. The deadline for application is March 15, 2016.

<https://www.ametsoc.org/ams/index.cfm/education-careers/education-program/undergraduate-faculty/climate-studies/climate-studies-diversity-project/>

Collaboration Prize

The Collaboration Prize from the Lodestar Foundation is a national competition that recognizes nonprofit organizations that collaborate effectively to create greater impact. The deadline for application is November 16, 2016.

<http://www.thecollaborationprize.org/index.html>

Developing the Next Generation of Conservationists

Developing the Next Generation of Conservationists brings together public and private partners to support organizations that are developing innovative conservation job opportunities for youth on public lands which expose young people (particularly urban, tribal, and minority youth) to the natural world, along with career opportunities available in conservation. The deadline for application is November 17, 2017.

<http://www.nfwf.org/youth/Pages/home.aspx>

Honda Robotics Contest

Youth ages 13-18 can create a video, photo, or essay showing how robotics will impact society by the year 2066. The deadline for entry is January 3, 2017.

<http://csr.honda.com/asimo-contest/>

ISRS Awards

The International Society for Reef Studies awards acknowledge the scholarship and work of members.. The deadline for nomination is January 15, 2017.

<http://coralreefs.org/society-awards-and-grants/awards-fellowships/>

Laura Bush Foundation School Library Grants

The Laura Bush Foundation provides grants for school libraries to update, extend, and diversify their book and serials collections. Eligible schools have a student body where 85% or more of the students qualify for free or reduced lunches. The deadline for application is December 12, 2016.

<http://www.laurabushfoundation.com/how-to-apply/index.html>

Land Conservation Video Contest

Create a short video that shows how you connect with the land; the contest is open to ages 13 and older. The deadline for entry is November 11, 2016.

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

Lexus Eco Challenge

The Lexus Eco Challenge is designed to educate and empower middle and high school students to take action to improve the environment. Within the topic of Air & Climate, students identify an environmental issue that affects their local community and devise an action plan. Be sure to check out the lesson plans and judging criteria. The deadline for submission for Air & Climate is December 12, 2016.

<http://lexus.scholastic.com/>

Marine Debris Art Contest

NOAA's Marine Debris Division offers the Marine Debris Art Contest for K-8 students. The deadline for submission is November 30, 2016.

<http://marinedebris.noaa.gov/outreach/artcontest.html>

Max and Victoria Dreyfus Foundation

The Max and Victoria Dreyfus Foundation will consider 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 November 10, 2016.

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

Nancy Foster Scholarship Program

NOAA's Office of National Marine Sanctuaries hosts the Nancy Foster Scholarship Program, designed to support students interested in NOAA mission-related sciences of oceanography, marine biology, or maritime archaeology (including all science, engineering, and resource management of ocean and coastal areas), particularly by female and minority students. The deadline for application is December 9, 2016.

<http://fosterscholars.noaa.gov/howtoapply.html>

National Geographic Bee

The National Geographic Bee, a contest and educational outreach program of the National Geographic Society, is designed to encourage the teaching and study of geography in grades 4-8. The deadline for registration is January 23, 2017.

<http://nationalgeographic.org/bee>

National Leadership Grants for Museums

National Leadership Grants for Museums support projects that address current and future needs of the museum field and that have the potential to advance practice in the profession so that museums can improve services for the American public. The three categories are Learning Experiences, Community Anchors, and Collections Stewardship. Note that the grant definition of museum includes aquariums, nature centers, and much more. The deadline for application is December 1, 2016.

<https://www.ims.gov/grants/available/national-leadership-grants-museums?GrantId=22>

National Recreation Trails Photo Contest

This annual contest, sponsored by American Trails, seeks to highlight the diversity of the National Recreation Trails and to make more Americans familiar with these resources. The deadline for entry is December 15, 2016.

<http://americantrails.org/nationalrecreationtrails/photocon.html>

Ocean Pals Poster Contest

Beneath the Sea's Ocean Pals Poster Contest for Children is an environmental education-through-art program encouraging young people to become aware of and share their concerns for the marine environment through poster art. This year's poster theme is Turtle Turmoil. The deadline for entry is December 22, 2015.

<http://www.beneaththesea.org/ocean-pals/44617>

Presidential Innovation Award for Environmental Educators

The Presidential Innovation Award for Environmental Educators Program recognizes outstanding K-12 teachers who employ innovative approaches to environmental education and use the environment as a context for learning for their students. Teachers from each EPA region will be selected to receive the award. The deadline for application is March 1, 2017

<https://www.epa.gov/education/presidential-innovation-award-environmental-educators>

SeaWorld & Busch Gardens Conservation Fund

The SeaWorld & Busch Gardens Conservation Fund supports projects in species research, habitat protection, animal rescue and rehabilitation, and conservation education. The deadline for application is November 30, 2016.

<http://swbg-conservationfund.org/en/grant-seekers/>

Solve for Tomorrow Contest

Teachers of grades 6-12 are eligible for the Samsung Solve for Tomorrow Contest, which focuses on how STEM can be applied to help improve local communities. The deadline for application is November 15, 2016.

<http://www.samsung.com/us/solvefortomorrow/home.html>

STEM Research Speaker and Poster Competitions

The STEM Research Speaker Competition recognizes outstanding scientific research by students in grades 11-12. Up to 24 students will be invited to compete in the Speaker Competition at the 2017 Florida Regional Junior Science, Engineering, and Humanities Symposium, January 29-31, 2017 in Gainesville, Florida. The deadline for application is November 10, 2016. Check out the Research Poster Competition, also, with a deadline for submission of December 2, 2016, for a chance to attend the symposium to be held April 26-29, 2017 in San Diego, California.

<https://www.cpet.ufl.edu/students/jsehs/symposium-activities/>

Temper of the Times Foundation Funds

The Temper of the Times Foundation provides grants to nonprofit organizations for wildland ecosystem advertising campaigns. Projects should lead to measurable outcomes for wildland ecosystem conservation and restoration in the United States. The deadline for application is December 15, 2015.

<http://www.temperfund.org/guidelines.html>

Wetland Foundation Travel Grants

The Wetland Foundation is soliciting applications for 2017 travel grants. The deadline for application is December 18, 2016.

http://thewetlandfoundation.org/The_Wetland_Foundation/Home.html

Youth Making Ripples Film Competition

The aim of the Beneath the Waves Youth Making Ripples film festival and competition for K-12 students is to engage students in marine science education, and to highlight the importance of scientific research related to ocean and coastal communities. Students should submit short films (< 5 minutes) on any marine science topic of their choice. The deadline for submission is December 5, 2016.

<http://beneaththewaves.org/youth-programs/submit-a-youth-film/>

FELLOWSHIPS, INTERNSHIPS, AND TEMPORARY OPPORTUNITIES

CIEE Internship

The Council of International Education and Exchange Tropical Marine Ecology and Conservation program is a study abroad program for undergraduate students, and hosts visiting scientists/groups; conducts research, and provides outreach to the local community. The internship runs January 7-May 27, 2017 and offers a stipend and other benefits. The deadline for application is November 20, 2016.

<http://cieebonaire.org/ciee/working-at-ciee/>

East Asia and Pacific Summer Institutes Fellowship Program

The National Science Foundation is accepting applications for its East Asia and Pacific Summer Institutes Fellowship Program. This program provides U.S. graduate students in science, engineering, and education with an opportunity to spend eight weeks conducting research at one of seven host locations in East Asia and the Pacific. Hurry - the deadline for application is November 10, 2016.

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5284

JASON Argonaut

Apply to become a JASON Student or Teacher Argonaut. The JASON Project seeks a diverse, creative, and adventurous group of students and teachers to venture into the field with JASON scientists. Experience with the JASON program is preferred. The deadline for application is January 15, 2017.

<http://www.jason.org/argonaut-program>

Teach Earth Educator Fellowships

During the Teach Earth fellowship through EarthWatch, teachers work side-by-side with scientists on field research expeditions around the world. The deadline for application is December 18, 2016.

<http://earthwatch.org/education/teacher-fellowships/teach-earth-united-states>

CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT

Fuller Science Symposium – Washington, D.C. and Online

The World Wildlife Fund's Fuller Science Symposium on climate resilience, November 15, 2016 in Washington, D.C., will feature speakers on climate resilience. Registration is free, and those who aren't able to attend in person can join by livestream. Talks will also be archived for viewing after the symposium.

<http://www.worldwildlife.org/pages/fuller-symposium-2016-2-degrees-later>

Junior Science, Engineering and Humanities Symposium - Florida

The Junior Science, Engineering and Humanities Symposium, January 29 – 31, 2017 in Gainesville, Florida, is for grades 9–12 students and teachers and parents. See the website for details.

<https://www.cpet.ufl.edu/students/jsehs/>

A Resilient Future: Science and Technology for Disaster Risk Reduction - Online

Discover how science and technology can help reduce disaster risk and increase resilience in this free seven-week MOOC, starting November 5, 2016. This course introduces participants to existing and emerging technologies suitable for disaster risk reduction while promoting the overall aim of sustainable development. The course focuses on three main natural hazards - floods, landslides and earthquakes.

<https://www.edx.org/course/resilient-future-science-technology-epflx-tech4drr>

Tips for Great Online Lessons

Learn to design effective online content for your students during this free webinar, November 15, 2016. Learn practical, easy-to-implement strategies that can transform a lesson into one that is eye-catching, engaging, and memorable.

<https://attendee.gotowebinar.com/register/6650168858860142851>

Using Giovanni for Geoscience Education - Online

The theme of this year's Giovanni workshop from NASA, November 15-17, 2016 is Using Giovanni for Geoscience Education. All of the presentations in the workshop will be given using the Adobe Connect environment. Free registration is recommended. All of the presentations will be archived.

http://disc.sci.gsfc.nasa.gov/giovanni/additional/third_leptoukh_online_giovanni_workshop

EDUCATIONAL RESOURCES

Climate Change Communication Toolkit

The National Park Service offers the Climate Change Communication Toolkit website. The toolkit provides support for climate change communicators with links to best practices, understanding your story and science, and more.

<https://www.nps.gov/subjects/climatechange/toolkit.htm>

Climate Science Academy

CIRES Education Outreach has launched its Climate Science Academy – an online, self-guided tutorial to help educate people about the climate system and climate change. The Climate Literacy Essential Principles provide the framework for the Climate Science Academy modules.

<http://cires.colorado.edu/outreach/projects/climate-science-academy>

Communications, Outreach and Visitor Services Videos

The videos from the U.S. Fish & Wildlife Service's Communications, Outreach and Visitor Services Training Workshop are available. Check these out.

<https://nctc.fws.gov/resources/knowledge-resources/video-gallery/communications.html>

Community Climate Change Education: A Mosaic of Approaches

This free e-book features twenty-six stories with information and resources on over a dozen approaches to community climate change education, from public art, marine science, youth programming, and more. It includes vignettes about the process of building successful community climate change projects and sustaining community educators and organizers for the long haul.

<https://naaee.org/eeopro/resources/community-climate-change-education>

Deep Ocean Exploration and Bioluminescence

Creep into the deep through this first series from Ocean Today Every Full Moon. The six videos discuss how much of the ocean is unexplored; how animals have evolved bioluminescent capabilities to breed, feed, and survive; and more..

<http://oceantoday.noaa.gov/every-full-moon/full-moon-exploration.html>

Don't Just Sit There - Do Something!

This YouTube playlist offers a series of short, humorous videos that discuss a piece of the climate change puzzle, incorporating science, news, humor, and easy actions for viewers to take.

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

<https://www.communitopia.org/resources.html>

Earth Optimism Series

The Earth Optimism Series is a 24-episode project from the World Ocean Observatory in partnership with the Smithsonian Institution's Ocean Portal, to address ocean solutions and innovative projects.

<http://worldoceanobservatory.org/radio-item/global-earth-optimism-summit>

EarthKAM

Registration is open for the fall 2016 mission for the Sally Ride EarthKAM @ Space Camp program taking place November 7-12, 2016. During the mission, students worldwide may submit requests to have a camera aboard the International Space Station capture an image of a specific location on Earth. Related resources, including images and activities, are available for use in the classroom.

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

El Nino and La Nina Explained

This short video from NOAA's Ocean Today briefly illustrates the phenomena of El Nino and La Nina, their relationships to tradewinds and surface water temperatures, and their

effects on precipitation in North America. Check out the related videos and click back to Ocean Today for a myriad of additional videos.

<http://oceanoday.noaa.gov/elninolanina/welcome.html>

Field Investigations Guide

Field Investigations: Using Outdoor Environments to Foster Student Learning of Scientific Practices, from the Association of Fish & Wildlife Agencies, is a framework of scientific practices that scientists use in the field. The guide was developed to help K-12 teachers introduce their students to the methodologies used for scientific field research and guide them through the process of conducting field investigations using these practices.

http://www.fishwildlife.org/files/ConEd-2015-Revision-Field_Investigations_.pdf

Follow the Drifters

Educational Passages uses miniature sailboats fitted with GPS as an educational tool for oceanography, earth science, geography, international relationships, and more. Check out the stories on the website, and the many resources on Student Drifters and the NERACOOS websites.

<http://educationalpassages.com/>

<http://www.neracoos.org/drifters>

<http://studentdrifters.org/>

Forty Years of Change: a Seabird Responds to a Melting Arctic - Online

George Divoky has studied seabirds in arctic Alaska since 1970 and has participated in studies and assessments related to oil and gas development and regional climate change. Since 1975, he has maintained a continuing study of Black Guillemots on Cooper Island, Alaska, in the western Beaufort Sea. The study is one of the longest longitudinal bird studies in the Arctic and its findings on the consequences of decadal-scale reductions in snow and sea ice provide examples of the biological consequences of climate change.

https://www.youtube.com/watch?v=nkjw36O_d9Y&feature=youtu.be

Giovanni

The Giovanni website from NASA's Goddard Earth Sciences Data and Information Services Center offers ways to visualize, analyze, and access Earth science remote sensing data without having to download the data. Portals include Oceans, Hydrology, and many more. Free registration is required. A workshop will take place November 15-17, 2016, covering how to use the website for geoscience education, and will be archived for future reference. In addition, the website hosts a user manual, access to newsletters, and more.

<http://disc.sci.gsfc.nasa.gov/>

Hands-on Ecosystem Services Games

The CAMPAM-L Listserv Archives from October 24, 2016 offers a compilation of activities and games about ecosystem services and ecosystem-based approaches to decision making. Check out these great links to simulations and more.

<http://listserv.gcfi.org/scripts/wa-GCFI.exe?A2=ind1610&L=CAMPAM-L&F=&S=&P=37143>

HathiTrust: Collections: Scripps Institution of Oceanography

This HathiTrust Digital Library provides access to the Scripps Institution of Oceanography's collection of digitized books. Free registration is required. Check out the other digital collections available from HathiTrust.

<https://babel.hathitrust.org/cgi/mb?a=listis;c=622177961>

Just Jelly

In this lesson from the NOAA Ocean Explorer Hidden Ocean Expedition, students compare and contrast the feeding strategies of at least three different types of gelatinous zooplankton, explain why gelatinous zooplankton may function at several trophic levels within a marine food web, and make inferences about potential influences on the distribution of planktonic species in the water column.

<http://oceanexplorer.noaa.gov/explorations/16arctic/background/edu/edu.html>

Lionfish: Alien Invaders from the Indo-Pacific - Online

Lionfish have established themselves in the Western Atlantic. Join NOAA's National Marine Sanctuaries Webinar series, December 1, 2016, to learn about the impacts these predators are having on Atlantic, Caribbean, and Gulf of Mexico ecosystems, and what is being done to combat this invasion.

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

Listenwise

Teach your students to listen with Public Radio. Listenwise curates stories from public radio to keep teaching connected to the real world and build student listening skills at the same time. Check out the lesson plans, including lessons about beach erosion, fish sounds, and much more. Sign up for daily current events and access to some free resources. Listen to the Encyclopedia of Life Coral Reef podcasts and check out related lesson plans from Listenwise.

<https://listenwise.com/>

http://eol.org/info/podcasts_impacts#coral

Lynda.com

Lynda.com is a third-party web-based training site with self-paced classes on computer software, video production, graphics, social media, photography, public relations, project management, communications, leadership, and more. It offers a free, unlimited access ten-day trial.

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

Migratory Species in the Gulf of Mexico

The Nature Conservancy offers this report on migratory species in the Gulf of Mexico Large Marine Ecosystem. In addition to both the downloadable executive summary and full report, the website offers a slideshow of species.

<http://www.nature.org/ourinitiatives/regions/northamerica/areas/gulfofmexico/explore/migratory-species-report.xml>

Monthly E-news from NOAA OER

Each month, the NOAA Office of Ocean Exploration and Research distributes a newsletter for educators providing quick access to ocean exploration-focused, standards-based tips and tools to bring the excitement and science of ocean exploration into the classroom. Sign up to receive the newsletter, announcements for educator

professional development opportunities, and information on the latest ocean exploration expeditions, and read the archived newsletters at the following links.

http://oceanexplorer.noaa.gov/backmatter/email_update.html

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

Ocean Tipping Point?

This video from PBS highlights research conducted at Woods Hole on how heat absorbed by the ocean and changes of ocean chemistry from human activities could lead to a tipping point for marine life and ecosystems. Note that the video runs more than 13 minutes. Be sure to check out the other resources from the website.

<http://www.pbs.org/now/shows/527/oceans-climate-change.html>

Ocean Today Every Full Moon

NOAA's Ocean Today is a multimedia kiosk that features videos about all aspects of the ocean and was originally designed for the National Museum of Natural History's Sant Ocean Hall. Every month during the full moon they will release a new collection of videos showcasing discoveries, animals, and more. The videos are available on the website along with additional resources.

<http://oceantoday.noaa.gov/every-full-moon/>

Recreational Trails Program Annual Report

The 2016 Recreational Trails Program Annual Report is available for download and highlights program funding and administration, the RTP database, and examples of trail projects across the country. The website offers a quick review of the contents.

http://www.fhwa.dot.gov/environment/recreational_trails/overview/report/2016/

RiverXchange

RiverXchange is a free, multidisciplinary, standards-based learning experience for students in grades 4-6, focused on learning and sharing across borders about water resources issues. Each class will be partnered with one or more classes in a different state. Classes communicate at least twice each semester, by sharing projects on a private website and responding to what their partners have posted.

<https://riverxchange.com/>

Surging Seas Risk Finder

Climate Central released a new module within the Surging Seas Risk Finder, an interactive data toolkit for the coastal U.S. (to be expanded internationally in 2017). Enter a coastal zip code or city to view the risks.

<http://riskfinder.climatecentral.org/>

TEDEd: Lessons Worth Sharing

Create a lesson around any TED-Ed Original, TED Talk or YouTube video. Check out these online lessons and series, including Our Changing Climate, What Happens When Continents Collide, and much more.

<http://ed.ted.com/>

Tools of Engagement

This website from NAAEE offers a toolkit for engaging people in conservation. It provides ideas and resources about how to best engage people in your conservation work. The toolkit focuses on 20 core planning steps, planning tools, and more.

<https://naaee.org/our-work/programs/tools-engagement>

Trace Waterways Upstream and Downstream

This interactive map shows water flow in the U.S. Zoom in to see the detail of watersheds and trace your streams.

<https://txpub.usgs.gov/DSS/streamer/web/>

Underwater Acoustics

The Discovery of Sound in the Sea Project offers these short, instructional videos focused on four key acoustics topics: Science of Sound, Marine Mammal Hearing, Hearing in Marine Fishes, and Determining Mitigation and Monitoring through the Ecological Risk Assessment Process. Be sure to check out the other resources for decision makers, along with the great resources on the rest of the website.

<http://www.dosits.org/resources/decisionmakersresources/>

Using Storytelling to Advance Climate Change Education and Action

NAAEE's Climate Change Group members presented this symposium at the 2016 NAAEE Conference in Madison, Wisconsin. Each of the PowerPoint files offers links to the stories and the programs in which the stories were created/used.

<https://naaee.org/eepr/resources/using-storytelling-advance-climate>

YardMap

The Cornell Lab's YardMap citizen-science program has partnered with The Nature Conservancy to launch the Habitat Network. Participants create a habitat map and use the planning tool to set goals for their site. The citizen-science information from Habitat Network will provide data that the Conservancy and Lab can use to understand how much habitat exists in our cities and towns.

<http://content.yardmap.org/>

Youth Guide to the Global Goals

Youth Service America offers the Youth Guide to the Global Goals: Activate Youth to Achieve the Sustainable Development Goals. The guide offers a resource that can help youth to understand and work towards the Sustainable Development Goals, and conduct a 45-minute lesson to introduce the goals to their class, club, or group.

<https://ysa.csod.com/LMS/LoDetails/DetailsLo.aspx?loid=bfb71ca8-d0f6-4ae8-9f36-1019821673cb#t=1>

INITIATIVES, JOURNALS, and MORE

Clearing Magazine

CLEARING, the Pacific Northwest Journal of Community-based Environmental Literacy Education, is a print and online publication that provides information that can be used in classroom or outdoor settings. It includes activities and lesson plans, curriculum resources, and more. Sign up for the free mailing list to get the latest stories every month. Read online issues, follow along on their Facebook page, write an article for the publication, and more.

<http://clearingmagazine.org/>

Journal of Science Communication

JCOM, the Journal of Science Communication, is a quarterly, open-access journal dedicated to exploring science communication. Articles examine how scientists,

journalists, and others communicate scientific developments to the public, explore interdisciplinary work between scientists and others, and examine how the general public engages with science. Recent issues have explored the theme of trust in science communication and citizen science projects.

<http://jcom.sissa.it>

Marine News

The IUCN Global Marine and Polar Programme offers the 60-page online Marine News magazine Issue 13 with a myriad of articles about marine and polar activities from around the world. Included are highlights from a marine photo competition, articles about marine plastics, blue carbon, seamounts, deep sea mining, and much more.

https://www.iucn.org/sites/dev/files/marine_news13-web_2.pdf?dm_i=2GI3,XNFH,4XT0CS,2KYLF,1

Sea Grant is 50

NOAA's Sea Grant celebrates its 50th anniversary this year. By drawing on the experience of more than 3,000 scientists, engineers, public outreach experts, educators and students from more than 300 institutions, Sea Grant is able to make an impact at local and state levels, and serve as a powerful national force for change. Check out the website for highlights.

<http://seagrants.noaa.gov/50thAnniversary.aspx>