

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**  
**INFORMATION EXCHANGE FOR MARINE EDUCATORS**

**NOVEMBER 2015**

This update is funded by the National Marine Sanctuary Foundation in partnership with NOAA's Ocean Exploration and Research Program, with additional support from the National Marine Protected Areas Center, to share information pertinent to the marine educator community. It is intended to encourage exchange of information and programs. We hope that it will also promote collaboration among the different educators addressing similar issues in their programs.

Please share this email with your colleagues and constituents. If you request materials or respond to a request for information, please mention that you learned about it from NOAA's Information Exchange.

The information included here has been compiled from many different sources, including EE-NEWS@NAAEE, EEinGEORGIA, the Scout Report, scuttlebutt, NSTA Express, and others. We have verified web addresses, but make no guarantee that they will remain active. The Department of Commerce/NOAA does not necessarily endorse or promote the views or facts presented on these sites.

To subscribe or unsubscribe to this list, send information to include in the newsletter, or discuss further enhancements, please contact the editor directly at [phyllis.dermer@noaa.gov](mailto: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/>.

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## **NOTABLE REFERENCES**

### **Incorporating the Social Sciences in Ocean Planning**

The October 2015 Marine Ecosystems and Management newsletter discusses incorporating social sciences into ocean planning. This edition offers expert discussion along with links to further information.

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

### **Making Marine Science Matter: Issues and Solutions from the 3rd IMCC**

Ocean and Coastal Management offers this special open access issue with articles from presentations at last year's 3rd International Marine Conservation Congress. Articles address combating fake science in the media, understanding audiences, citizen science, and more.

<http://www.sciencedirect.com/science/journal/09645691/115>

## ONLINE JOURNAL OF THE MONTH

### **InsideClimate News**

InsideClimate News is a non-profit, non-partisan news organization that covers clean energy, carbon energy, nuclear energy, and environmental science—plus the territory in between where law, policy, and public opinion are shaped. Their mission is to produce clear, objective stories that give the public and decision-makers the information they need to navigate climate and energy debates.

<http://insideclimatenews.org/>

## WEBSITES OF THE MONTH

### **Compound Interest**

Compound Interest is a site that aims to take a closer look at the chemical compounds we come across on a day-to-day basis. It provides graphics for educational purposes; many include links to references and further reading. Visitors can browse by category, search by keywords, and subscribe to the blog and receive notifications of new posts by email.

<http://www.compoundchem.com/infographics/>

### **Natural Sound Archive**

The Macaulay Library is the world's largest scientific archive of biodiversity audio and video recordings. Their mission is to collect and preserve recordings of each species' behavior and natural history, to facilitate the ability of others to collect and preserve such recordings, and to actively promote the use of these recordings for diverse purposes, including scientific research, education, conservation, and the arts.

<http://macaulaylibrary.org/>

## REQUESTS

### **Climate and Energy Survey**

The Climate Literacy and Energy Awareness Network (the CLEAN Network) provides avenues for climate and energy literacy efforts to share information, resources, and expertise through weekly teleconferences and an active listserv. Through this survey, they want to understand the needs of the broader climate and energy literacy stakeholder community.

<https://surveys.terc.edu/NoviSurvey/TakeSurveyPage.aspx?s=24f958eab9bf4833a3bc1982fcf94822&tsid=5fcd975d45b4405684f8f77fe8a39af5&c=en-US>

### **EE Capacity Survey**

This survey is in support of an EPA-funded project called Expanding Capacity in Environmental Education, led by Cornell University in collaboration with the North American Association for Environmental Education (NAAEE). The survey answers will help the researchers understand the breadth, scale, and scope of environmental education and related fields and professions in the U.S.

[https://newknowledge.az1.qualtrics.com/jfe/form/SV\\_cx89UVVsGeRsJCZ](https://newknowledge.az1.qualtrics.com/jfe/form/SV_cx89UVVsGeRsJCZ)

### **Seeking Ideas for Environmental Studies**

The Bureau of Ocean Energy Management is responsible for ensuring that the effects on the natural and human environment are taken into consideration during the leasing and development of oil, natural gas, renewable energy, and marine mineral resources on

the Outer Continental Shelf. The bureau invites input in identifying potential study ideas for consideration, especially those that include hypothesis testing and the opportunity to include a citizen-science component. The deadline for submission is November 20, 2015.

<http://www.boem.gov/note10262015/>

### **Seeking Comments - Guidelines for Community Engagement**

NAAEE and EECapacity are in the process of developing another document for the Guidelines for Excellence series and have released the First Draft Framework for the Guidelines for Community Engagement. This set of guidelines focuses on how environmental educators can work successfully in communities to protect the environment and promote community well-being and sustainability. The deadline for comment is November 16, 2015.

<http://www.naaee.net/programs/community-ee-guidelines-review>

## **GRANTS AND OPPORTUNITIES**

### **Beneath The Sea Marine Careers Scholarships**

Beneath The Sea offers various scholarships and grants, including Discovery, Sea of Tomorrow, and more. Check the individual offerings for their deadlines for application.

<http://www.beneaththesea.org/scholarships/44619>

### **Beneath the Waves 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, 2015.

<http://www.beneaththewavesfilmfest.org/youth-making-ripples/forms/>

### **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 December 16, 2015.

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

### **Connecting Math to Other Subjects Grants for High School Teachers**

This grant funds the creation of high school classroom materials or lessons connecting mathematics to other fields. See the website for eligibility and details. Hurry - the deadline for application is November 6, 2015.

<http://www.nctm.org/Grants-and-Awards/grants/Connecting-Mathematics-to-Other-Subject-Areas-Grants-%289-12%29/>

### **Conservation Photo Contest**

The National Association of Conservation Districts/Auxiliary Photo Contest is open to amateur photographers of all ages. Up to five photos can be submitted that depict

natural resource or conservation scenes. The deadline for submission is December 1, 2015.

<http://www.nacdnet.org/education/contests/photo>

### **Domestic Coral Reef Conservation Grants**

The NOAA Coral Reef Conservation Program announces the Domestic (U.S.) Coral Reef Conservation Grants competition for FY15. The awards are intended to support coral reef conservation projects in shallow water coral reef ecosystems, including reefs at mesophotic depths, in American Samoa, the Commonwealth of the Northern Mariana Islands, Florida, Guam, Hawaii, Puerto Rico, the U.S. Virgin Islands, and coral-dominated banks in U.S. portions of the Gulf of Mexico. The deadline for submission is January 6, 2016.

<http://www.grants.gov/web/grants/search-grants.html?keywords=NOAA-NOS-OCM-2016-2004574>

### **CRCP Coral Reef NGO Partnership**

The purpose of this funding is to invite NGOs with demonstrated expertise and experience in supporting coral reef management in the United States to submit proposals to establish partnerships with the NOAA Coral Reef Conservation Program (CRCP) to further the conservation of U.S. coral reefs. The deadline for application is January 21, 2016.

<http://www.grants.gov/web/grants/search-grants.html?keywords=NOAA-NOS-OCM-2016-2004583>

### **EcoLeader Ambassadors**

EcoLeaders is the National Wildlife Federation's national environmental leadership certification and career development program. They seek EcoLeader ambassadors to help recruit their peers and grow the community. The deadline for application is November 12, 2015.

[https://docs.google.com/a/noaa.gov/forms/d/1zPL\\_W\\_XwsEWXPxoXP0ozhr9IR0I9K1nKtQcjZ3uzAUw/viewform?edit\\_requested=true](https://docs.google.com/a/noaa.gov/forms/d/1zPL_W_XwsEWXPxoXP0ozhr9IR0I9K1nKtQcjZ3uzAUw/viewform?edit_requested=true)

### **Get Your Tech On Sweepstakes**

PBS Education's Get Your Tech On provides tools, support, and professional development to help teachers and students navigate the digital age of learning. The website hosts technology-themed resources, including webinars, how-to guides, professional development, and more. The sweepstakes ends December 11, 2015. Free registration is required.

<http://www.getyourtechon2015.com>

### **Film Festivals**

Student filmmakers interested in helping protect the ocean are invited to submit a film to the following festivals. The theme of the Gray's Reef Ocean Film Festival is Wonders of the Ocean. Selected films will be shown during the 13th Annual Gray's Reef Ocean Film Festival on January 30, 2016 in Savannah, Georgia. The deadline for submission is December 11, 2015. The San Francisco International Ocean Film Festival will be held March 10-13, 2016; the deadline for entry is November 30, 2015.

[http://graysreef.noaa.gov/news/features/2016/film\\_festival\\_2016/student\\_film\\_forms.html](http://graysreef.noaa.gov/news/features/2016/film_festival_2016/student_film_forms.html)  
<http://oceanfilmfest.org/>

### **Gulf B-WET Funding**

NOAA's National Marine Fisheries Service Southeast Region is now seeking proposals under the Gulf of Mexico B-WET Program. Gulf B-WET 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 Gulf of Mexico. The deadline for application is December 11, 2015.

[http://sero.nmfs.noaa.gov/outreach\\_education/gulf\\_b\\_wet/index.html](http://sero.nmfs.noaa.gov/outreach_education/gulf_b_wet/index.html)

<http://www.grants.gov/web/grants/search-grants.html?keywords=NOAA-NMFS-SE-2016-2004691>

### **Habitat Connections Giveaway**

Birdsleuth is looking for 3-8th grade classroom teachers in the United States that can use the Habitat Connections lessons in their classroom. See the website for details. The deadline for application is November 13, 2015.

<http://www.birdsleuth.org/spring-giveaway/>

### **LEGO Challenges**

The FIRST® LEGO League TRASH TREK Challenge challenges kids, ages 9-16, to think like scientists and engineers. Teams of up to

ten <http://www.compoundchem.com/infographics/>

students will choose and solve a real-world trash problem and build, test, and program an autonomous robot to solve a series of sustainability-themed missions. Also, check out the Waste Wise Challenge for younger students, ages 6-9.

<http://www.firstlegoleague.org/challenge/2015trashtrek>

<http://www.juniorfirstlegoleague.org/2015-waste-wise-challenge>

### **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 11, 2015.

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

### **Marine Debris Art Contest**

NOAA's Marine Debris Division offers the Marine Debris Art Contest. The deadline for submission is November 30, 2015.

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

### **Museum Grants**

The Institute of Museum and Library Services is accepting applications for its museum grant programs, including Sparks! Ignition Grants for Museums, Museums for America, and more. Criteria for museums include aquariums and more – check the website for details. The deadline for application for some of these programs is December 1, 2015.

<http://www.ims.gov/applicants/project.aspx>

### **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. Early registration ends December 18, 2015.

<http://www.nationalgeographic.com/geobee/>

### **National Wetlands Awards**

The National Wetlands Awards recognize individuals who have demonstrated extraordinary effort, innovation, and excellence in the area of wetlands preservation. The education and outreach award is presented to a teacher, nonprofit staffer, state/local government employee, or reporter involved in hands-on wetland education. Be sure to check out the other categories. The deadline for nomination is November 20, 2015.

<http://www.elinwa.org/nominations>

### **Neotropical Migratory Bird Conservation Grant**

The U.S. Neotropical Migratory Bird Conservation Act established a competitive matching grants program to support public/private partnership projects that promote the conservation of neotropical migratory birds and their habitats in the United States, Canada, Latin America, or the Caribbean. Goals include perpetuating healthy populations of these birds, providing financial resources for bird conservation initiatives, and fostering international cooperation for such initiatives. Hurry - the deadline for application is November 5, 2015.

<http://www.fws.gov/birds/grants/neotropical-migratory-bird-conservation-act/how-to-apply.php>

### **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 Our Vanishing Rays. The deadline for entry is December 22, 2015.

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

### **P3 Design Competition for Sustainability**

The EPA seeks applications proposing to research, develop, and design solutions to real world challenges involving the overall sustainability of human society. P3: People, Prosperity and the Planet Student Design Competition for Sustainability highlights the use of scientific principles in creating innovative projects focused on sustainability. The deadline for application is December 8, 2015.

<http://www.epa.gov/P3/>

### **Peter Benchley Ocean Awards**

The Peter Benchley Ocean Awards acknowledge outstanding achievement across many sectors of society leading to the protection of our ocean, coasts, and the communities that depend on them. Award categories include science, policy, youth award, and more. The deadline for submission is November 20, 2015.

<http://peterbenchleyoceanawards.org/awards/nominations>

### **Real World Design Challenge**

The Real World Design Challenge is an annual competition that provides high school students the opportunity to work on real world engineering challenges in a team

environment. Students use professional engineering software to develop their solutions and generate presentations that convincingly demonstrate the value of their solutions. This year's challenge is to design an unmanned aerial vehicle and associated system to detect moisture levels around a food producing crop. The deadline for registration is November 20, 2015.

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

### **River of Words Art and Poetry Contest**

River of Words is an international environmental poetry and art project open to youth ages 5-19, designed to nurture respect and understanding of the natural world. The deadline for entries from the U.S. is December 1, 2015; for international entries, February 1, 2016.

<http://www.stmarys-ca.edu/center-for-environmental-literacy/art-poetry-contest>

### **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, 2015.

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

### **Shell Science Teaching Award**

The Shell Science Teaching Award recognizes K–12 science teachers in the United States and Canada who have had a positive impact on their students, school, and community through exemplary classroom science teaching. One of many NSTA awards, the deadline for application is November 30, 2015. Be sure to check out the Shell Urban Science Educators Development Award and others.

<https://www.nsta.org/docs/awards/Shell.pdf>

<http://www.nsta.org/about/awards.aspx>

### **Teens for Wildfire Safe Communities Grants**

Youth ages 13-22 can complete a wildfire risk reduction project and earn funds towards a scholarship or charitable contribution from the National Fire Protection Association. The deadline for application is November 15, 2015.

<http://www.nfpa.org/safety-information/for-consumers/outdoors/wildland-fires/takeaction/wildfire-risk-reduction-community-service-projects/community-service-funding-awards>

### **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. Grants may be used to fund the production of print, radio, or television ads; pay for advertising space or airtime; or produce or distribute pamphlets, books, videos, or press packets. The deadline for application is December 15, 2015.

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

### **Think It Up**

In partnership with DonorsChoose.org, Think It Up invites public school students in grades 7-12 to develop student-powered, teacher-led, crowdfunded learning projects that address real-world problems and generate new ideas. Free registration is required.

<http://www.thinkitup.org/getstarted>



### **Wildfire Mitigation Awards**

The National Association of State Foresters and partners offer the annual Wildfire Mitigation Awards, honoring outstanding service that makes a significant impact on wildfire preparedness and mitigation. Awards will be given in categories that include Fire Adapted Communities leadership, wildfire mitigation innovation, and community wildfire preparedness pioneers. The deadline for nomination is November 6, 2015.

<http://stateforesters.org/mitigation>

### **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 efforts from chiropteran, avian, terrestrial, amphibious and marine wildlife. Quarterly deadlines for application are November 30, February 28, May 31, and August 31 of each year.

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

### **World of 7 Billion Video Contest**

The World of 7 Billion video contest challenges students to create a short (60 seconds or less) video illustrating the connection between a world population of seven billion and one of the global challenges of the contest. The deadline for submission is February 25, 2016.

<http://www.worldof7billion.org/student-video-contest/>

### **Young Professional Recruitment Fund**

The American Elasmobranch Society welcomes applications for the Young Professional Recruitment Fund, a diversity initiative. Awardees will be given one year of Society membership in addition to specialized professional development training, mentorship, and networking opportunities specific to their needs as international or historically underrepresented minority scientists and professionals. The deadline for application is November 16, 2015.

<http://elasmobranch.org/blog/applications-now-open-young-professional-recruitment-fund>

## **FELLOWSHIPS, INTERNSHIPS, AND TEMPORARY OPPORTUNITIES**

### **JASON Argonaut**

Apply to become a JASON 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 January 15, 2016.

<http://jason.org/argo2016>

### **Understanding Conservation Management Networks**

The ARC Centre of Excellence for Coral Reef Studies seeks two PhD students to contribute to a project on conservation management networks in and relating to marine and terrestrial protected areas. Scholarship funding will be for three years at James Cook University, Townsville, Australia. The deadline for application is November 30, 2015.

<http://www.coralcoe.org.au/about-us/phd-opportunities>



## **CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT**

### **Climate Change Impact Webinar--Hawaii and Pacific Islands**

The Department of Energy's Minorities in Energy Initiative is a platform to increase engagement of minority and tribal communities in the broader energy sector, with a focus on the three primary goal areas of STEM education and workforce development, energy economic development, and climate change. Register for a Regional Climate Change Impact Webinar; hurry -- Hawai'i and Pacific Islands will broadcast November 5, 2015.

<http://energy.gov/diversity/mie-webinar>

### **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 22, 2015.

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

### **GOES-R Education Proving Ground**

The GOES-R Education Proving Ground features the design and development of lesson plans and activities for middle and high school students by science teachers working with education and outreach specialists at the Cooperative Institute of Meteorological Satellite Studies and collaborators. The goal of the projects is to prepare the education community to be launch ready for new satellite imagery and improved products that will be available in the upcoming GOES-R era. Apply to join, check out the available lesson plans, and more.

<http://cimss.ssec.wisc.edu/education/goesr/>

### **National Service-Learning Conference**

The theme of the 27th Annual National Service-Learning Conference, March 30-April 2, 2016 in Minneapolis, Minnesota, is *Educate. Ignite. Transform.* Check out the scholarships and awards, call for showcases, and more.

<http://servicelearningconference.org/2016/index.php>

### **Ocean Parks and the 2016 National Park Service Centennial Webinar - Online**

Join the National Park Service for a webinar, November 12, 2015. The National Park Service is entrusted with managing 86 ocean and Great Lakes parks across 22 states and four territories, with over 11,000 miles of coast and 2.5 million acres of ocean and Great Lakes waters. The Park Service celebrates its 100th birthday in 2016. This webinar will provide a brief overview of the breadth and extent of coastal resources and issues in the National Park System and the NPS Centennial.

<https://attendee.gotowebinar.com/register/4432513267598871554>

### **Southeast Regional Sea Turtle Meeting**

The theme of the 3rd Southeast Regional Sea Turtle Meeting, February 9-12, 2016 in Mobile, Alabama, is *Embracing the theme of Changing Attitudes: Meeting the Challenges of Sea Turtle Conservation.* The program will feature a morning Education, Outreach and Social Media Workshop, a Special Session on the Deepwater Horizon Spill – Natural Resource Damage Assessment and Restoration of Sea Turtles, and more.

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

### **Sustainable Trails Conference**

The 2016 Sustainable Trails Conference will be held March 4-11, 2016 in beautiful Knoxville, Tennessee. Come visit! The conference will feature workshops, mini-workshops, and concurrent sessions. Submit your session or workshop proposal.

<http://www.trailbuilders.org/training/2016/3/7/sustainable-trails-conference-knoxville-tn>

## **EDUCATIONAL RESOURCES**

### **A People's Archive of Sinking and Melting**

A People's Archive of Sinking and Melting provides a perspective on the cultural, social, and personal impacts of rising sea levels. Visitors will find a collection of materials contributed by people living in places that may disappear because of the combined physical, political, and economic impacts of climate change.

<http://www.sinkingandmelting.org>

### **Adaptation Workbook for Natural Resources**

The Adaptation Workbook, created by the Northern Institute of Applied Climate Science, is a structured process to help users consider the potential effects of climate change on forest and related ecosystems, and design management, stewardship, and conservation actions to help prepare for changing conditions. While the workbook is designed for forest managers and natural resource professionals, others with clear management goals and knowledge about their local ecosystems can find it equally useful.

<http://toolkit.climate.gov/tool/adaptation-workbook-natural-resources>

### **Arctic Matters**

This booklet and interactive website from the National Research Council's Polar Research Board introduces the threats and opportunities of the Arctic's rapidly changing environment. Topics include sea and land ice melt; weather patterns; and information about fisheries, ecosystems, and tourism. The booklet can be downloaded for free or read online.

<http://nas-sites.org/arctic-interactive/>

<http://www.nap.edu/catalog/21717/arctic-matters-the-global-connection-to-changes-in-the-arctic>

### **Argo Buoy Project Data**

Ocean Classrooms harnesses the power of the Argo Buoy Project to provide a wealth of temperature, salinity, dissolved oxygen, and pH data. Students and teachers can investigate the ocean in real-time. The website offers a reference guide and lesson plan.

<http://oceanclassrooms.com/sciencenodes>

### **Chesapeake Exploration**

NOAA's Chesapeake Exploration brings the science of the Captain John Smith Chesapeake National Historic Trail to life through the use of data from the NOAA Chesapeake Bay Interpretive Buoy System and more. NOAA, in partnership with National Geographic, is developing this online curriculum to give teachers access to lessons designed around real-time data. The curriculum asks the students to think

through scientific principles related to geography, water quality, and weather phenomena using the current observation and geographic data. Free registration is required.

<http://cbexapp.noaa.gov/>

### **Children's Books on Deep Ocean Exploration**

The *JOIDES Resolution* website offers two free e-books, *Where Wild Microbes Grow: The Search for Life Under the Seafloor*, and *Uncovering Earth's Secrets: Science and Adventure on the JOIDES Resolution*. Available both on iBooks and as a PDF, they are written in rhyming verse and wonderfully illustrated. Node 3868 links to additional resources and activities.

<http://joidesresolution.org/node/2998>

<http://joidesresolution.org/node/3868>

### **Climate Change**

National Geographic offers this special issue on climate change. The initial web page links to complete articles. The topics are: How do we know it's happening?; How do we fix it?; and How do we live with it?

<http://www.nationalgeographic.com/climate-change/special-issue>

### **Climate Adaptation Knowledge Exchange**

The Climate Adaptation Knowledge Exchange (CAKE) aims to build a shared knowledge base for managing natural and built systems in the face of rapid climate change and is intended to help build a community of practice. The website offers four interlinked components: case studies, a virtual library, a directory, and tools. It also houses Community Forums for the discussion of current issues in climate adaptation.

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

### **Coastal Forecasts**

The Office of Coast Survey, the National Weather Service, and partners offer an upgraded version of nowCOAST, a GIS-based web portal to near real-time information. It provides frequently updated ocean observations along with coastal and marine weather forecasts. The data layers include watches, warnings, and advisories for hazardous marine weather conditions. It also provides near real-time lightning strike density data for both land and overwater areas, and hydrologic conditions and predictions from ocean forecast models.

<https://nowcoast.noaa.gov/>

### **Conservation Connect**

Conservation Connect is a web-based video series that aims to connect middle school students with the outdoors and conservation careers. Produced by the U.S. Fish & Wildlife Service, each 5-7 minute episode can help students learn about wildlife, careers, and new technologies used to study and protect wildlife. Check out the winter/spring schedule, including Wildlife Law Enforcement, Manatees and Monarchs, and more.

<http://nctc.fws.gov/conservationconnect/>

### **Crash Course Kids**

Crash Course Kids is a YouTube video series designed to make science accessible and exciting for late elementary school students. Playlist categories include Earth Science, Life Science, and more. New videos are uploaded often.

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

### **First Snowfall Dates**

Check out this article on first snowfall dates, part of the blog Beyond the Data written by the nation's climate record keepers. And then, check out earlier blogs.

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

### **Flower Garden Banks Map Tool**

NOAA's National Marine Sanctuaries Program partnered with NOAA's National Coastal Data Development Center to create an on-line GIS-based mapping tool of the Flower Garden Banks National Marine Sanctuary. The layers selected can include information about bathymetry, oceanographic data, and more, including underwater photographs.

[http://flowergarden.noaa.gov/image\\_library/gismap.html](http://flowergarden.noaa.gov/image_library/gismap.html)

### **George Wright Society Conference Presentations**

PDFs of nearly 50 PowerPoint presentations made at the 2015 George Wright Society Conference on Parks, Protected Areas, and Cultural Sites are now available for download/viewing on this website. Please note that these are not annotated.

[http://www.georgewright.org/gws2015\\_powerpoints](http://www.georgewright.org/gws2015_powerpoints)

### **Global Invasive Species Database**

The Global Invasive Species Database is managed by the Invasive Species Specialist Group of the IUCN (International Union for Conservation of Nature). The database focuses on invasive alien species that threaten native biodiversity and natural ecosystems and covers all taxonomic groups from microorganisms to animals and plants in all ecosystems. Information may include ecology and distribution, management information, references, and more.

<http://www.issg.org/database/welcome/>

### **Global Weather Visualization**

This visualization of global weather conditions is forecast by supercomputers and updated every three hours. The current ocean surface estimates are updated every five days and ocean waves, every three hours.

<http://earth.nullschool.net/>

### **Great Lakes Now**

Detroit Public Television hosts Great Lakes Now, with environmental stories and specials. You can sign up to watch Live Stream or watch through Video on Demand. Topics include algae, invasive species, microbeads, and more.

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

### **International Rivers: The State of the World's Rivers**

The State of the World's Rivers is an interactive web database that illustrates data on ecological health in the world's 50 major river basins. Indicators of ecosystem health are grouped into three categories: river fragmentation, biodiversity, and water quality.

<http://www.internationalrivers.org/worldsrivers>

### **JSTOR Daily**

JSTOR has been an essential resource for students and scholars at colleges and university libraries, but the subscription price for this digital collection puts it out of reach for many individuals. JSTOR Daily brings some of the wealth of research and primary sources in the database to the general public at no charge. Through weekly feature

articles and daily blog posts, this online magazine mines the database for material that provides context and detail to current events and issues.

<http://daily.jstor.org/>

### **MAPP Webinars**

The Climate Program Office's Modeling, Analysis, Predictions, and Projections (MAPP) program organizes monthly webinars. Past topics have included drought, weather-climate linkages, arctic modeling, marine ecosystems, and tropical cyclones. All webinars are now available on YouTube. Sign up to receive notification of upcoming webinars and check out the archives.

<http://cpo.noaa.gov/ClimatePrograms/ModelingAnalysisPredictionsandProjections/WebinarSeries.aspx>

### **National Map Corps**

National Map Corps volunteers are editing structures in all 50 States, Puerto Rico, and the U.S. Virgin Islands. Structures include schools, hospitals, post offices, police stations and other important public buildings. Volunteers collect and/or improve structures data by adding new features, removing obsolete points, and correcting existing data using a web-based mapping tool. Both newly collected and modified point features become part of the USGS National Structures Database, The National Map, and U.S. Topo Maps.

<http://nationalmap.gov/TheNationalMapCorps/index.html>

### **Ocean Biodiversity and Biocoding**

Using this Q?rius website, students explore how scientists measure the biodiversity of coral reefs using nondestructive methods. Students are faced with the challenges of an ocean scientist to measure biodiversity in coral reefs beyond what can be seen with the naked eye. They model scientific processes used by scientists by exploring images, studying DNA barcodes, and more. Resources include printable lessons, webcasts, online activities, and more.

<http://qrius.si.edu/teaching-resources-ocean-biodiversity-and-biocoding>

### **Polar Educators International**

Polar Educators International is a network promoting polar education and research. They offer master classes for educators seeking professional development on the latest science discoveries and researchers interested in learning strategies for communicating scientific concepts to non-technical audiences. The classes are archived; free registration is required.

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

### **Project FeederWatch**

Count feeder birds for science during the 2015-2016 Project FeederWatch season, November 2015 through April 2016. The website offers quick snapshots for easy bird identification, educational materials, and more.

<http://feederwatch.org/>

### **Seagrass: Unsung Ecological Hero**

The Australian Broadcasting Corporation's The Science Show offers this article and link to an episode on seagrass. Be sure to check out the rest of the website; subjects include environment, science, and much more.

<http://www.abc.net.au/radionational/programs/scienceshow/seagrass-economic-powerhouse-unsung-hero/6884940>

### **Story of Climate Change**

The Earth Day Network's The Story of Climate Change is a free, interactive iTextbook for middle school students focusing on the causes and impacts of climate change, as well as potential solutions. It includes interactive resources, critical thinking activities, a downloadable Teacher's Guide, and more.

<http://www.earthday.org/story-climate-change>

### **Wildlife Conservation Society Webinars and Educational Resources**

The Wildlife Conservation Society webinars offer the opportunity to learn about global conservation efforts which affect wildlife health, climate, natural resources, and local livelihoods. The free webinars last approximately 90 minutes and are archived for viewing at any time. Free registration is required. Be sure to check out the education interactives and Wild Explorations in Science.

<http://www.wcs.org/educators/professional-development/webinars>

### **World's Largest Lesson**

The World's Largest Lesson aims to communicate the goals of Sustainable Development to children around the world. The content, in the form of a film, comics, and lesson plans, encourage children to take individual action to make positive change in their community. Goals include Climate Action, Life Below Water, and much more.

<https://www.tes.com/worldslargestlesson/>

### **XX Files**

The XX Files from AAAS takes viewers into the worlds of extraordinary women scientists. Videos include a week in the life of a scientific illustrator, catching gravitational waves, and more.

<http://specialprojects.sciencemag.org/xxfiles/?intcmp=NEWS-xx-files-PROMO>

## **INITIATIVES, JOURNALS, and MORE**

### **Innovation Collaborative**

The Innovation Collaborative serves is a national forum to foster creativity, innovation, and lifelong learning. It identifies and disseminates information about the ways that effective integration of the arts, sciences, humanities, engineering, happens in both school and out-of-school settings. It is launching an Effective Practice Research project to develop national models for teaching and learning at the intersections of STEM, the Arts, and Humanities. They seek teacher collaborators and example lessons that combine both science and art..

<http://www.innovationcollaborative.org/k-12-effective-practices.html>

### **Teacher / Scientist Partnerships on LinkedIn**

A new LinkedIn Group has formed promoting Teacher/Scientist Partnerships designed to build community and partnerships related to science education. It is designed to serve scientific content researchers, education researchers, and science education practitioners. Free membership is required to access group discussions.

<https://www.linkedin.com/topic/group/teacher-scientist-partnership?gid=8296900>