

Science with NOAA:

Free Science Resources from the National Oceanic and Atmospheric Administration



Created by: NOAA Office of Education

Presented by: Stephen Zepecki

noaa.gov/education education@noaa.gov



[@NOAAeducation](https://twitter.com/NOAAeducation)



fb.com/NOAAEducationOutreach

Questions to Answer Today

- **What is NOAA?**
- **What are the NOAA education resource collections?**
- **What other ways can NOAA support elementary educators?**



What is NOAA?

National Oceanic & Atmospheric Administration

Vision

...understanding of the role of the oceans, coasts, and atmosphere in the global ecosystem to meet the needs of the economy and society.

NOAA takes the pulse of the planet

Mission

To understand and predict changes in Earth's environment and conserve and manage coastal and marine resources...

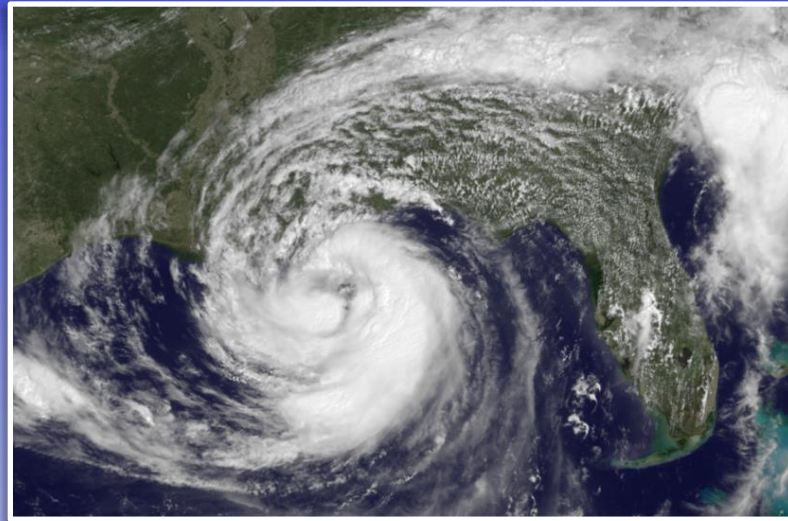
Science, Service, and Stewardship



NOAA is huge!



**National
Ocean Service**



Environmental Satellites



Fisheries



National Weather Service



Oceanic and Atmospheric Research



NOAA Education Website

NOAA National Oceanic and Atmospheric Administration
U.S. Department of Commerce

Search NOAA sites

OUR WORK

Education

Educators, students, and curious people everywhere
— come explore the ocean and atmosphere.

Courtesy of Juan Manuel Garcia Studio/Miami Museum of Science

Resource Collections Educator Opportunities Student Opportunities Grants & Networks

Background information • Links to interactive data visualizations
Lessons and activities • Real world data • Multimedia presentations
Teacher PD & workshops • Scholarships & fellowships • Grants

www.noaa.gov/education



Education Resource Collections

Resource collections

Resources to help integrate NOAA science into formal and informal education

Education resources are distributed across many websites and program offices at NOAA and partner websites. This portal is designed to help you access these resources from one location. Materials are organized by themes aligned with common teaching topics. [Learn more](#) about how we designed these collections.

Ocean & coasts

Physical and chemical processes of ocean and coastal areas.

- [Gulf oil spill](#)
- [Ocean acidification](#)
- [Ocean currents](#)
- [Ocean floor features](#)
- [Ocean pollution](#)
- [Tides](#)
- [Tsunamis](#)

Weather & atmosphere

Earth's climate system and concepts related to climate variability.

- [El Niño](#)
- [Hurricanes](#)
- [Space weather](#)
- [Tornadoes](#)
- [Weather observations](#)
- [Weather systems & patterns](#)

Climate

Earth's climate system and concepts related to climate variability.

- [Carbon cycle](#)
- [Changing seasons](#)
- [Climate change impacts](#)
- [Climate monitoring](#)

Marine life

Biology, habits, and threats to organisms that live in aquatic environments.

- [Aquatic food webs](#)
- [Coral ecosystems](#)
- [Life in an estuary](#)
- [Marine mammals](#)
- [Sea turtles](#)

Freshwater

Sources, processes, and threats to freshwater environments and drinking water.

- [Great Lakes Eco-Region](#)
- [Water cycle](#)
- [Watersheds, flooding & pollution](#)

Special topics

- [Science Olympiad: glaciers, glaciation, and long-term climate change \(2019\)](#)
- [Science Olympiad: meteorology \(2019\)](#)
- [Careers & technology](#)
- [Hands-on science activities](#)

[Other collections](#)

www.noaa.gov/education/education-resource-collections







Education Resource Collections

< WEATHER & ATMOSPHERE EDUCATION RESOURCES


Weather observations

Sun, rain, snow, wind... we can't escape the weather, but we can prepare for it if we know what is coming.

Education | water weather education weather conditions

SHARE |    

Observing the daily weather is part of a regular routine for many of us, helping us decide what to wear and which activities we will do each day. Similar observations of atmospheric conditions are also required by meteorologists to develop those weather forecasts with which we are all familiar.



Observation methods
Temperature, humidity, precipitation, air pressure, wind speed, and wind


LESSONS & ACTIVITIES
GPS-Based STEM Curriculum (MS, HS) >

LESSONS & ACTIVITIES

GPS-Based STEM Curriculum (MS, HS) >

Weather lesson plans (ES, MS, HS) >

Interactive weather activities (ES, MS) >

Wild Weather module (MS, HS) 

Identifying clouds on satellite images (MS, HS) >

[Show less](#) ^

MULTIMEDIA

Ask a Weatherman Video (MS, HS) >

That Weather Show >

Derecho Wind Storm video >

Weather forecast simulator >

[Show less](#) ^

REAL WORLD DATA

National Weather Service Homepage >

Snow report maps >

Weather satellite images >

Extreme weather and climate events >

Graphical weather forecasts >

REAL WORLD DATA

National Weather Service Homepage >

Snow report maps >

Weather satellite images >

Extreme weather and climate events >

Graphical weather forecasts >

Doppler radar >

[Show less](#) ^

BACKGROUND INFORMATION

Jetstream Online Weather School >

Owlie Skywarn booklets >

How to Make a Weather Satellite (ES, MS) >

The History of Weather Observations >

Types of fog >

[Show less](#) ^

CAREER PROFILES

STEM Stories: Pam Heinselmann video (MS, HS) >

Careers in the NWS >

MORE COLLECTIONS //

Hurricanes >

www.noaa.gov/resource-collections/weather-observations



Elementary Resource Collections

Marine life

Biology, habits, and threats to organisms that live in aquatic environments.

- [Aquatic food webs](#)
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- [Science Olympiad: meteorology \(2019\)](#)
- [Careers & technology](#)
- [Hands-on science activities](#)

Other collections

- [Elementary resources](#)
- [Data resources for educators](#)
- [New science standards](#)

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www.noaa.gov/education/education-resource-collections



Elementary Resource Collections

Elementary Resources

It's never too early to start teaching science! Get your kindergarten through fifth-grade students started using these NOAA resources. We gathered lessons, activities, and other materials specifically for elementary educators from across the agency and our partners.

We note the approximate grade level and call out when resources include a teacher's guide, use real-world data, and support science standards. This collection includes just a fraction of what NOAA has to offer; see "additional resource collections" within each subject for even more materials.

Showing 5 of 5 Education Resource Collections

[Elementary resources: Earth science >](#)



[Elementary resources: Life science >](#)



ADDITIONAL RESOURCES

[CLEAN Collection - Climate Literacy & Energy Awareness Network](#)

[How NOAA's education resources support new science standards >](#)

[Jetstream - An Online School for Weather >](#)

[Show more >](#)

[Elementary resources: NOAA careers >](#)



[Elementary resources: Physical science >](#)



[Elementary resources: Scientific process >](#)



www.noaa.gov/resource-collections/elementary-resources



Elementary Resource Collections

[Climate Change & Coral Activities](#)

4th - 12th grade

Students learn how climate change impacts the ocean through activities that help them understand ocean acidification, melting ice caps, and thermal expansion of water.

[Ducks in the Flow](#)

3rd - 5th grade • [Teacher guide](#) • [Links to standards](#)

Students use scientific inquiry and data gathering skills to learn about force, motion, and ocean currents using the true story of toys that fell off a ship during a storm and drifted to various places.

[Elementary GLOBE](#)

K - 4th grade • [Teacher guide](#)

Students learn about Earth systems through science-based fictional story books and accompanying lesson plans. The seven books in this series cover air quality, climate, clouds, Earth system, seasons, soil, and water.

[Exploring Changes in Ocean Chemistry](#)

4th - 5th grade • [Uses data](#) • [Links to standards](#)

Students test different water samples, analyze their results, and share their ideas about how to improve the experimental design.

[Help Nemo Find His Home!](#)

3rd - 8th grade • [Teacher guide](#) • [Links to standards](#)

Students learn about how ocean acidification affects the olfactory senses of clownfish.

[Hydrography, Mapping the Ocean Floor with a Sounding Box](#)

2nd - 4th grade • [Links to standards](#)

ADDITIONAL RESOURCE COLLECTIONS

[Data in the Classroom](#) >

[Discover Your Changing World with NOAA: An Activity Book](#) >

[Discover Your World With NOAA: An Activity Book](#) >

[Show more](#) v

VIDEOS, GAMES, & ONLINE ACTIVITIES

[Games - Planet Arcade](#) >

[OWLIE Young Meteorologist Game](#) >

[Sea Earth Atmosphere Games](#) >

[Show more](#) v

WORKSHEETS & COLORING PAGES

[Marine Debris Activity Books](#) >

[National Severe Storms Network Coloring Books & Activities](#) >

[OWLIE Skywarn Coloring Book](#) >

POSTERS & BROCHURES

[JetStream Downloadable Weather Materials](#) >

Resource Collection Highlights


www.oceanservice.noaa.gov/education/oysters-in-the-chesapeake-bay/elementary.html

www.marinedebris.noaa.gov/curricula/marine-debris-monitoring-toolkit-educators

www.globe.gov/web/elementary-globe



Resource Collection Highlights

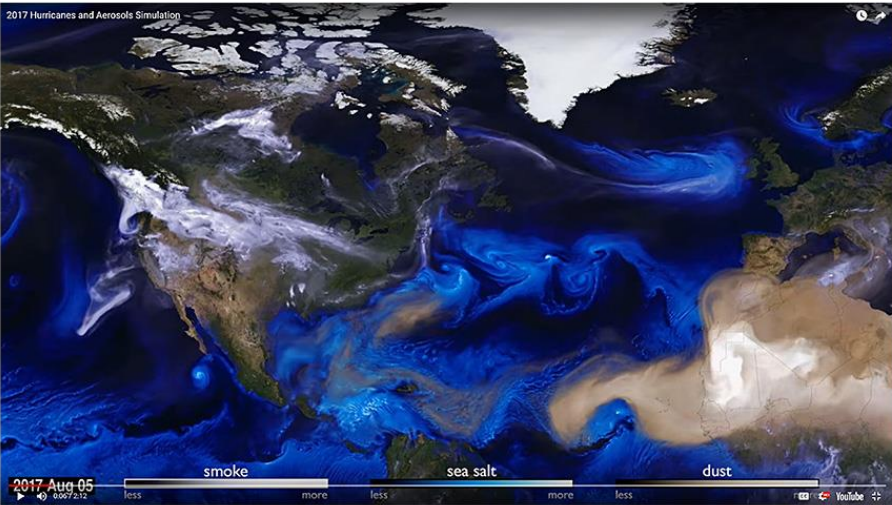


NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

JetStream Topics ▾ Topic Matrix Lesson Plan Overview NWS Info ▾

myForecast City, ST or zip code:

JetStream - An Online School for Weather



2017 Hurricanes and Aerosols Simulation

2017 Aug-05 49 00:07:32 less more less more less

smoke sea salt dust

To better understand dangerous storms, NASA compiled data from several satellites into a supercomputer simulation of this past year's hurricane season. Specifically, [the featured video](#) shows how smoke (white), sea salt (blue), and dust (brown) tracked from 2017 August through October across the northern half of Earth's Western Hemisphere.

These aerosols usefully trace sometimes invisible winds. In the midst of the many mesmerizing flows, hurricanes can be seen swirling across the Atlantic Ocean on the right. Some of these hurricanes lashed islands and coastal regions in North America before dissipating in the northern Atlantic. Studying this year's weather patterns may bolster more accurate storm forecasts as soon as next year.

Video Credit: M. R. Radcliff (USRA) et al., NASA's GSFC, SVS; Music: Elapsing Time by C. Telford & R. A. Navarro (ASCAP)

JetStream's Topics

- The Atmosphere
- The Ocean
- Global Weather
- Clouds
- The Upper Air
- Upper Air Charts
- Synoptic Meteorology
- Thunderstorms
- Lightning
- Derechos
- Tropical Weather
- Doppler Radar
- Remote Sensing
- Tsunamis
- The National Weather Service
- Appendix

About JetStream

The National Weather Service understands the critical value of fast, accurate weather information. We know that information is power - the power to save your life or the lives of your loved ones. Over the last ten years... [about JetStream](#)

Contact Us

Steven Cooper
Steven.Cooper@noaa.gov
Regional Director
NWS Southern Region
Headquarters
Fort Worth, Texas

www.weather.gov/jetstream/



Resource Collection Highlights

HOME OCEAN FACTS TOPICS EDUCATION NEWS PODCASTS VIDEO IMAGES ABOUT US

HOME » EDUCATION » DISCOVER YOUR CHANGING WORLD WITH NOAA: ACTIVITY BOOK

Activity Book: Discover Your Changing World With NOAA

Ten Activities to Introduce You to the **Essential Principles of Climate Science**

Discover Your Changing World with NOAA
An Activity Book

Are you ready to discover your changing world? This free activity book will introduce you to [The Essential Principles of Climate Science](#), help you learn about Earth's climate system, the factors that drive and change it, the impacts of those changes, and what you can do to explore, understand, and protect our Earth. Download the [full activity book](#) or individual activities below. Have Fun!

- Full Activity Book: [Discover Your Changing World with NOAA](#) (8.5 MB, pdf)
- Activity 1: [The Great Glowing Orb: Make a Solar Heat Engine](#) (611 KB, pdf)
- Activity 2: [The Climate Team: Make a Solar Cooker](#) (1.5 MB, pdf)
- Activity 3: [Climate Is Our Friend...Isn't It?: Make an Extinction Polyhedron](#) (621 KB, pdf)

[www.oceanservice.noaa.gov/
education/discoverclimate/](http://www.oceanservice.noaa.gov/education/discoverclimate/)

NOAA CELEBRATES
200 YEARS of SCIENCE, SERVICE, and STEWARDSHIP

Home Foundations Transformations Visions Top Tens Collections

[For Kids and Educators: Activity Book](#)

Discover Your World with NOAA: An Activity Book

For 200 years, NOAA has been focused on delivering "science, service, and stewardship." Making this happen leads the people of NOAA from the edge of space to the bottom of the ocean. To help you learn more about your world and how NOAA helps you explore, understand, and protect our Earth, we've put together this book with 43 different activities.

Download the full activity book or individual activities.

- Full Activity Book
- Explore the Earth
- Understand The Earth
- Protect The Earth

[Activity Book \(121MB, pdf\)](#)

[www.celebrating200years.noaa.gov/
edufun/book/welcome.html](http://www.celebrating200years.noaa.gov/edufun/book/welcome.html)



Resource Collection Highlights

The screenshot shows the NOAA Marine Debris Program website. The header includes the NOAA logo and the text 'Marine Debris Program OFFICE OF RESPONSE'. A navigation bar contains links for 'ABOUT US', 'DISCOVER THE ISSUE', 'CURRENT EFFORTS', 'IN YOUR REGION', 'RESOURCES', and 'MULT'. The main content area is titled 'Publications' and 'Activities and Curricula'. It features a sub-section for 'Activities' with three items: 'Understanding Marine Debris: Games and Activities for Kids of All Ages', 'Marine Debris Unscramble', and 'NOAA Coloring Book'. Each item includes a thumbnail image and a 'Download File' button with the file name and size.

www.marinedebris.noaa.gov/activities-and-curricula

The cover of the 'Chesapeake Bay Activity Book' is white with blue text. The title 'Chesapeake Bay Activity Book' is written in a large, bold, blue serif font. Below the title is a detailed blue line drawing of a crab, shown from a top-down perspective.

www.oceanservice.noaa.gov/education/games.html

The screenshot shows the NOAA Teacher at Sea website. The header includes the NOAA logo and the text 'NOAA TEACHER AT SEA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'. A navigation bar contains links for 'Home', 'FAQs', 'How to Apply', 'Contact Us', and 'Teacher at Sea By The Numbers'. The main content area is titled 'NOAA Teacher at Sea Resources'. It features a section for 'NOAA Teacher at Sea Books' with a list of books and their descriptions. A 'Sea Book 1' tab is selected, showing details for 'Teacher at Sea Book 1: Miss Cook's Voyage on the RONALD H. BROWN'. It includes a thumbnail image of the book cover and a 'Download File' button.

www.teacheratsea.noaa.gov/#/resources/



Data Resources for Educators

Marine life

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- [Aquatic food webs](#)
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www.noaa.gov/education/education-resource-collections



Data Resources for Educators

Data Resources for Educators

Did you know that NOAA collects terabytes of data every day from weather stations, radar, satellites, ships, buoys, and sensors? But this information isn't just collected for our scientists to use. Anyone can take on the role of scientist using our publically available data. But with dozens of websites and hundreds of variables to choose from, it can be tricky for educators to know how to get their students started with real Earth science data. This collection highlights ocean and atmosphere data sources that are easy to use and appropriate for classrooms and informal learning environments.

Within each topic area, the resources are separated into categories based on level of content:

- **Classroom ready** modules are designed with educators in mind. They use NOAA data in lesson plans and curricula for a straightforward experience. In addition to being on each topic page, all of the classroom ready resources are organized into one separate collection.
- **Data resources** are often geared for researchers and come in a variety of formats. They are not associated with lesson plans. However, the ones we highlight here are user-friendly and usually address a single subject.
- **Looking for more?** If you haven't found what you're looking for here, try exploring these major data repositories. These sites host vast troves of data from across many different subjects and disciplines.

Showing 5 of 5 Education Resource Collections

Classroom-ready data resources >

Explore NOAA data collected around the globe in formats designed just for educators. These resources take information from our atmosphere and ocean and package it in easily accessible, classroom-friendly lesson plans, activities, and curricula.



MAJOR DATA RESOURCES

[Climate.gov: Science & information for a climate-smart nation >](#)

[National Centers for Environmental Information \(NCEI\) >](#)

[Tides & Currents >](#)

Climate data resources >

Whether you're looking into the past or predicting the future, these resources let you work directly with the data that make up our climate record on land, in the atmosphere, and at sea.



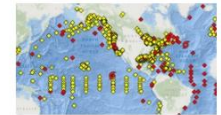
Historical data resources >

Long-term data and past events offer insights into how our planet works. Peer into observations from past decades, centuries, and beyond to see what has happened on Earth, how conditions have changed, and how they might change in the future.



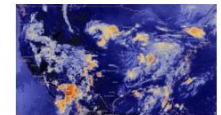
Ocean & freshwater data resources >

We live on a water planet. Follow marine animals as they navigate the ocean, get your local tide and current predictions, or see what sea level rise may have in store for coastal communities. You can also explore river observations and trends in snow and ice.



Weather & atmosphere data resources >

Go beyond your local weather forecast with these tools. Watch the Earth from a satellite's view in space, explore data collected by citizen scientists, and monitor hazards like hurricanes, wildfires, and droughts.



NOAA in your Backyard



NOAA has hundreds of facilities and professional communicators across the nation. Below are links to resources in various regions of the country that would be of interest to educators:

- [Alaska region](#)
- [Central region](#)
- [Great Lakes region](#)
- [Gulf of Mexico region](#)
- [Mid-Atlantic region](#)
- [New England region](#)
- [Northwest region](#)
- [Southeast region](#)
- [Southwest region](#)
- [Pacific Islands](#)
- [Caribbean](#)

Connect with NOAA field trips, professional development, and guest speakers in your area.



NOAA OFFICE OF EDUCATION
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NOAA in Your Backyard – The Mid-Atlantic Region

Educational Opportunities and Education/Outreach Specialists for DC, DE, MD, NJ, VA, and Eastern NY, and Eastern PA

NOAA in Your State – State by State Listings of NOAA Facilities and Programs

* A summary of NOAA facilities, staff, programs, or activities based in, or focused on, your state or territory.

- <http://www.legislative.noaa.gov/NIVS/>

National Weather Service – School Visits, Forecast Office Tours, Student and Educator Resources

* The National Weather Service provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas.

- **Philadelphia Weather Forecast Office (Mount Holly, NJ)** – <http://www.weather.gov/ph/outreach>
Contact: Joseph Miketta (Warning Coordination Meteorologist) - joseph.miketta@noaa.gov
- **New York Weather Forecast Office (Upton, NY)** – <http://www.weather.gov/okx/education>
Contact: Gary Conte (Warning Coordination Meteorologist) - gary.conte@noaa.gov
- **Central Pennsylvania Weather Forecast Office (State College, PA)** – <http://www.weather.gov/ctp/Outreach>
Contact: Peter Jung (Warning Coordination Meteorologist) - peter.jung@noaa.gov
- **Roanoke Weather Forecast Office (Blacksburg, VA)** – <http://www.weather.gov/rmk/OurOffice>
Contact: Phil Hysell (Warning Coordination Meteorologist) - phil.hysell@noaa.gov
- **Baltimore/Washington Weather Forecast Office (Sterling, VA)** – <http://www.weather.gov/wx/>
Contact: Christopher Strong (Warning Coordination Meteorologist) - christopher.strong@noaa.gov
- **Wakefield Weather Forecast Office (Wakefield, VA)** – <http://www.weather.gov/aka/>
Contact: Bill Sammler (Warning Coordination Meteorologist) - william.sammler@noaa.gov

National Estuarine Research Reserve System – Field Trips, Professional Development, Educator Resources

* The National Estuarine Research Reserves System protects more than 1.3 million coastal and estuarine acres in 28 reserves located in 22 states and Puerto Rico for purposes of long-term research, environmental monitoring, education and stewardship.

- **National Website** – <https://coast.noaa.gov/nerrs/>
- **Delaware Reserve (DE)** – <http://www.dnrec.delaware.gov/coastal/DNERR/Pages/DNERREducationTraining.aspx>
Contact: Maggie Pletta (Education Coordinator) - margaret.pletta@state.de.us
- **Chesapeake Bay Reserve (MD)** – <http://dnr.maryland.gov/waters/cbner/Pages/education.aspx>
Contact: Coreen Weillminster (Education Coordinator) - cweillminster@dnr.state.md.us
- **Jacques Cousteau Reserve (NJ)** – <http://jcnerr.org/education/>
Contact: Kaitlin Gannon (Education Coordinator) - gannon@marine.rutgers.edu
- **Hudson River Reserve (NY)** – <http://www.dec.ny.gov/lands/39663.html>
Contact: Chris Bowser (Education Coordinator) - chris.bowser@dec.ny.gov
- **Chesapeake Bay Reserve (VA)** – <http://www.vims.edu/cbner/education/index.php>
Contact: Sarah McGuire Nuss (Education Coordinator) - m McGuire@vims.edu

www.noaa.gov/education/noaa-in-your-backyard





We do a lot of tours out here and teachers are free to reach out if they want to bring their classroom out to our campus or have a scientist come talk to their class.

Adi Hanein

*Research Coordinator, NOAA Pacific Marine Environmental Laboratory
Joint Institute for the Study of Atmosphere and Ocean (JISA0)*



Find Your Weather Forecast Office

NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER WEATHER SAFETY INFORMATION CENTER NEWS SEARCH ABOUT

Local forecast by "City, ST" or ZIP code
Enter location: Go
Location Help

Early Fall Storm to Bring Heavy Rains to the Appalachians
A developing low pressure system will move along the Appalachian Mountains tomorrow and Tuesday bringing heavy rain along with it. Rainfall totals of 2 to 3 inches are forecast which may lead to isolated flooding incidents. Additionally, this system could potentially bring severe weather to much of the East Coast on Tuesday.
[Read More...](#)

ACTIVE ALERTS FORECAST MAPS RADAR RIVERS, LAKES, RAINFALL AIR QUALITY SATELLITE PAST WEATHER

Created: 09/17/12 at 17:48 UTC

Customize Your Weather.gov
City, ST
Enter Your City, ST or ZIP Code
 Remember Me
[Get Weather](#)
Privacy Policy

Click on the map above for detailed alerts or

- Severe Thunderstorm Watch
- Special Marine Warning
- Flash Flood Watch
- Flood Warning
- Glacé Warning
- Flood Advisory
- Small Craft Advisory
- Coastal Flood Watch
- Ice Stagnation Advisory
- Flood Watch
- State Water
- Air Quality
- Coastal Watch
- River Current Statement
- Search Hazards Statement

NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUCATION NEWS SEARCH ABOUT

Your local forecast office is **Baltimore, MD/Washington, D.C.**

News Headlines
WINTER PAGE NOW ACTIVE FOR THE SEASON. Tracking any snow/ice threats through the next 7 days.

Current conditions at **Washington/Reagan National Airport, DC (KDCA)**
Lat: 38.85°N Lon: 77.03°W Elev: 13ft

64°F
18°C

A Few Clouds

Humidity 41%
Wind Speed W 9 mph
Barometer 30.12 in (1020.1 mb)
Dewpoint 40°F (4°C)
Visibility 10.00 mi
Last update: 30 Oct 3:52 pm EDT

Extended Forecast for **2 Miles SW Oxon Hill MD**

| Tonight | Wednesday | Wednesday Night | Thursday | Thursday Night | Friday | Friday Night | Saturday | Saturday Night |
|---------------|--------------|-----------------|--------------|----------------|--------------|--------------|--------------|----------------|
| Partly Cloudy | Mostly Sunny | Partly Cloudy | Partly Sunny | Shows Likely | Shows Likely | Shows Likely | Mostly Sunny | Mostly Clear |
| Low: 47°F | High: 68°F | Low: 57°F | High: 74°F | Low: 63°F | High: 69°F | Low: 49°F | High: 59°F | Low: 42°F |

Detailed Forecast

Tonight Partly cloudy, with a low around 47. Light and variable wind becoming south around 5 mph after midnight.

Wednesday Mostly sunny, with a high near 68. South wind 6 to 10 mph.

Wednesday Night Partly cloudy, with a low around 57. Southwest wind around 9 mph.

Thursday Partly sunny, with a high near 74. South wind 8 to 15 mph, with gusts as high as 24 mph.

Thursday Night Shows likely, mainly after 2am. Mostly cloudy, with a low around 63. South wind around 10 mph. Chance of precipitation is 60%.

Friday Shows likely. Cloudy, with a high near 69. Chance of precipitation is 70%.

Topographic Click Map For Forecast

www.weather.gov



Weather Forecast Office

- Storm preparedness
- Class visits
- Office tours
- Classroom resources
- Student internships



 **NATIONAL WEATHER SERVICE**
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER SAFETY INFORMATION

National Weather Service Local Office Contacts
Weather.gov > StormReady > National Weather Service Local Office Contacts

Click on a state to link to your Local NWS Office and a Contact Person, your Warning Coordination Meteorologist.
You can also find the name of your local office and additional contacts in PDF format.
Return to StormReady home or TsunamiReady home



www.weather.gov/stormready/contact



National Estuarine Research Reserve System (NERRS)



www.coast.noaa.gov/nerrs



Estuary Education

NOAA National Estuarine Research Reserve System
ESTUARY EDUCATION

CURRICULUM TEACHERS ON THE ESTUARY SCIENCE & DATA ESTUARY RESOURCES

ESTUARY EDUCATION

Where Rivers Meet the Sea

Estuary Education

Estuaries are invaluable resources for coastal dwellers, whether of fin, fur, or feather. For people, these ecosystems offer protection, recreation, and a wealth of learning opportunities. On this site, educators and estuary enthusiasts will find a variety of resources, including specially developed curricula, videos, teacher training workshops, real-time data, and opportunities to volunteer at a local reserve. This information will help educators share the wonders of estuaries with students and others.

CURRICULUM
FOR YOUR STUDENTS

TEACHERS ON THE ESTUARY
WORKSHOP CALENDAR

GRAPHING TOOL
GRAPH DATA FROM THE SYSTEM-WIDE MONITORING PROGRAM

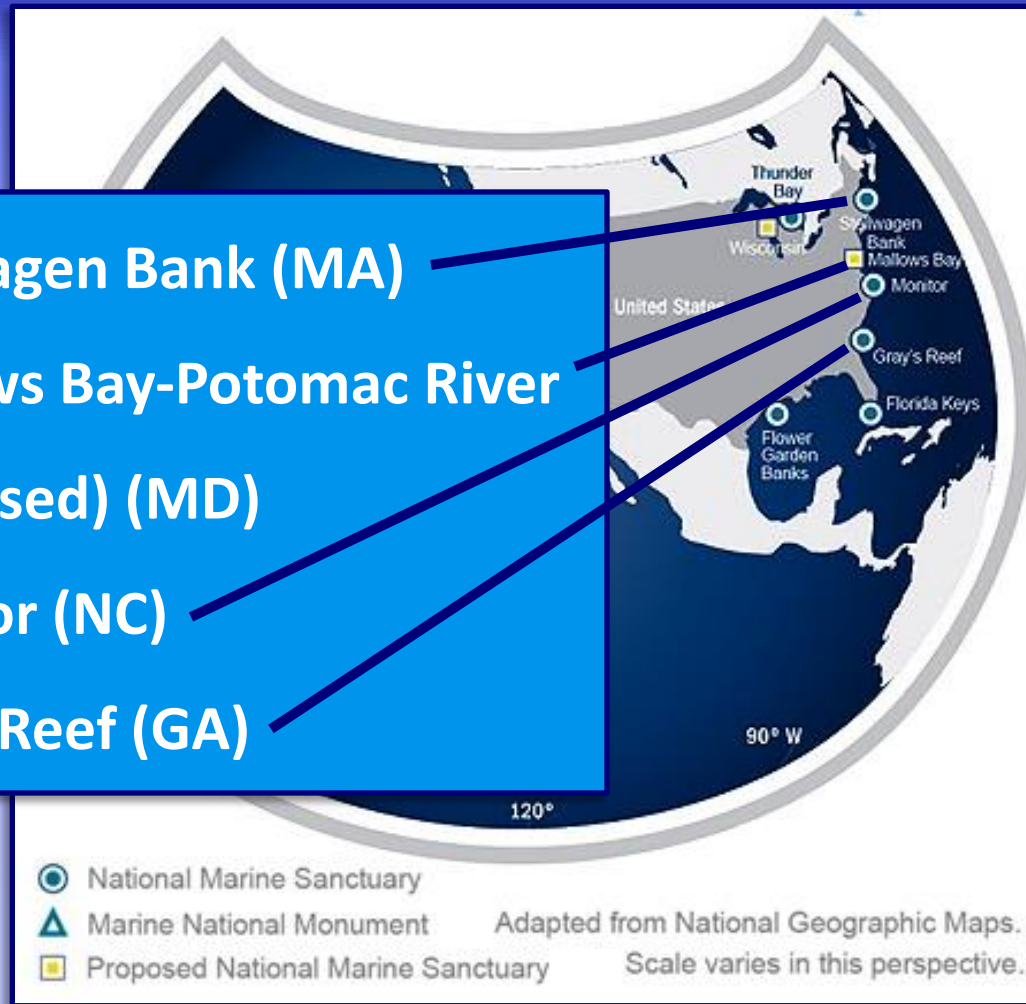
VIDEO GALLERY
EXPLORE

www.coast.noaa.gov/estuaries



National Marine Sanctuaries

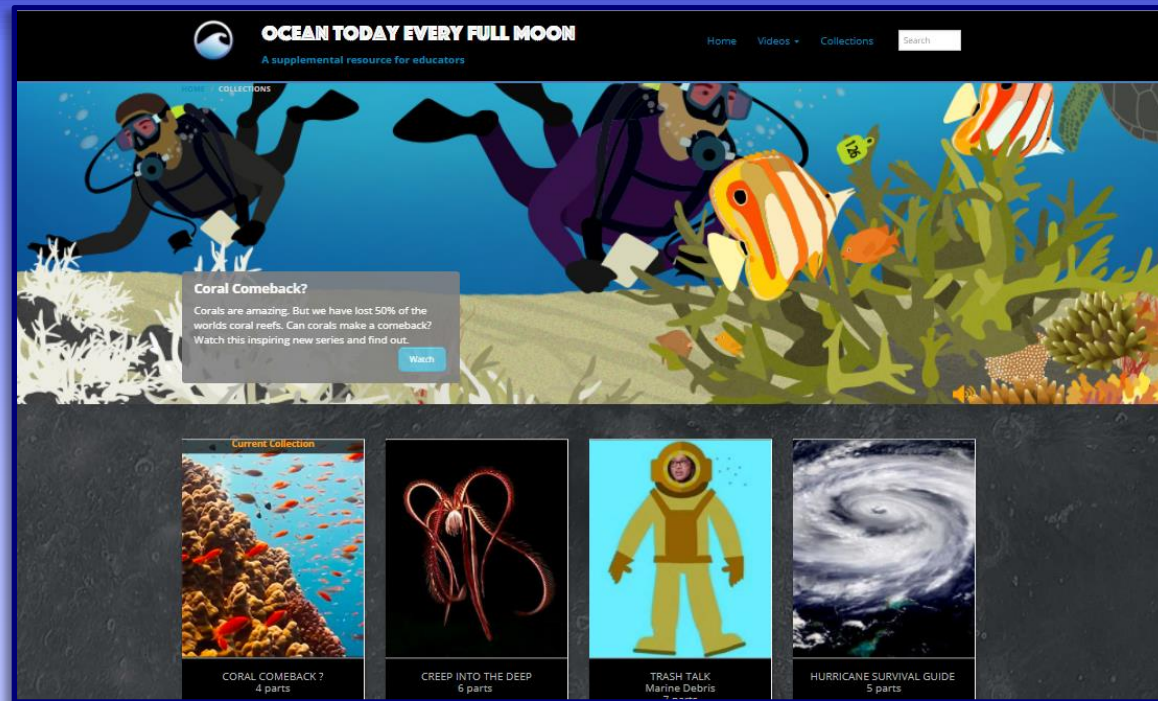
- Stellwagen Bank (MA)
- Mallows Bay-Potomac River (proposed) (MD)
- Monitor (NC)
- Gray's Reef (GA)



www.sanctuaries.noaa.gov/education



NOAA Ocean Today Every Full Moon




- Themed video collections produced for middle students
- Hundreds ocean-related videos for classroom use
- All free and downloadable

www.oceantoday.noaa.gov




National Data Buoy Center



National Oceanic and Atmospheric Administration's
National Data Buoy Center
Center of Excellence in Marine Technology


weather.gov



Home
About Us
Contact Us

Storm Special! View the latest observations near [Atlantic Tropical Storm Leslie](#), [Central Pacific Hurricane Walaka](#) and [East Pacific Hurricane Sergio](#).

The NDBC website is now available only via HTTPS. Please update your bookmarks and/or links to use <https://www.ndbc.noaa.gov/>.

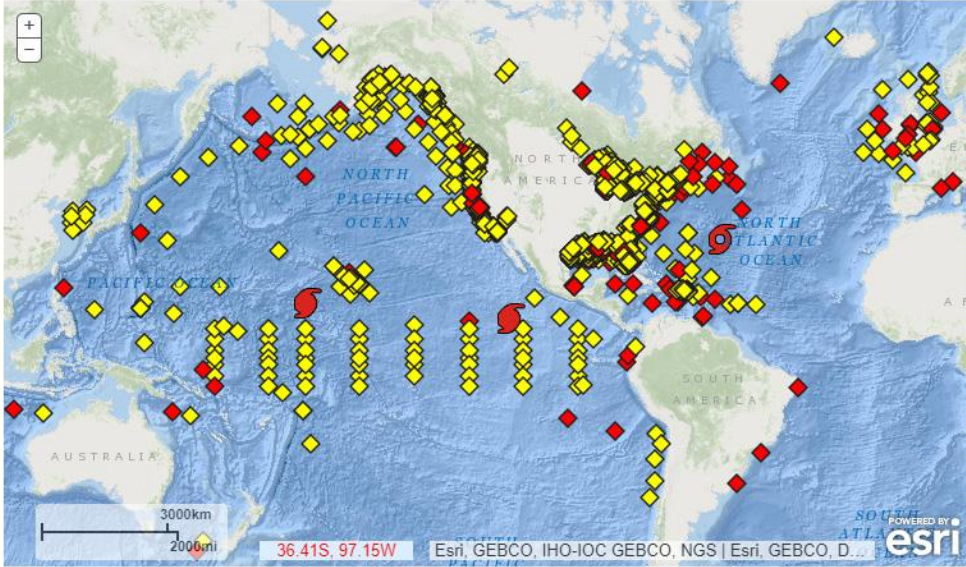
Recent Data
 Historical Data
 Show Labels
 Map Type: Oceans
[Bookmark This Link to Save Current Map View!](#) 

Program Filter:

- NDBC Meteorological/Ocean
- International Partners
- IOOS Partners

Owner Filter:

- NDBC
- Alaska Ocean Observing System
- Amerada Hess




- Atlantic (Tropical)
- Atlantic (West)
- Australia
- Bay of Bengal
- Caribbean Sea
- Central America
- Chile
- Europe
- Gulf of Alaska
- Gulf of Mexico (West)
- Gulf of Mexico (East)/Florida
- Nova Scotia
- Pacific (North)
- Pacific (West)
- USA-Alaska
- USA-Hawaii
- USA-Great Lakes (East)
- USA-Lake Superior
- USA-Northeast
- USA-Northwest
- USA-Southeast
- USA-Southwest
- World

◆ Stations with recent data 1357 stations deployed [Disclaimer](#)

◆ Stations with historical data only 1003 hours reported in the past 6 hours

Data Access

- Mobile Access
- Classic Maps
- Recent DART@
- Obs Search
- Ship Obs Report
- BuoyCAMS
- TAO
- DODS
- OceanSITES
- HF Radar
- OSMC
- Dial-A-Buoy
- RSS Feeds 
- Web Widget
- Email Access
- Web Data Guide
- Maintenance Schedule
- Station Status Report

Program Info


- TAO
- DART@
- IOOS@

Publications

- NDBC PEA
- NDBC FONSI
- NDBC DQC Handbook

FAQ

- Visitor Information



www.ndbc.noaa.gov



Adopt A Drifter Program

HOME

TEACHERS ▾

STUDENTS ▾

TRACK A DRIFTER

GLOBAL DRIFTER MAP

OCEAN CURRENTS MAP

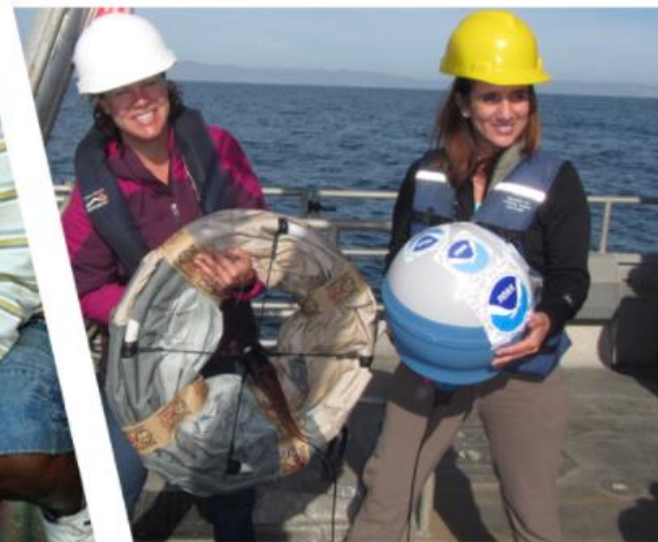
RESOURCES ▾

CONTACT US

FAQ



NOAA'S Adopt A Drifter Program



www.adp.noaa.gov



Citizen
Science!

CoCoRaHS

Community Collaborative Rain, Hail, and Snow Network

- A volunteer network of backyard weather observers who measure and map precipitation
- Providing the high quality data for natural resource, education and research applications
- In all 50 states, Puerto Rico, U.S. Virgin Islands, Canada, Bahamas
- All ages and backgrounds
- Use low-cost measurement tools
- Interactive web-site

CoCoRaHS COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK "Because every drop counts"

Welcome to CoCoRaHS! "Volunteers working together to measure precipitation across the nations."

Who uses CoCoRaHS Observations?

Reports received today 10/02/2018 as of 2:09 PM EDT

| Daily | Multi-day | SigWx | Hail | Condition | ET |
|-------|-----------|-------|------|-----------|-----|
| 9,520 | 163 | 4 | 0 | 15 | 100 |

Daily Precipitation (inches x.xx) USA 10/2/2018

Legend for Daily Precipitation (inches x.xx):

- 0.00
- Trace
- 0.00 - 0.10
- 0.20 - 0.30
- 0.30 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 3.00
- 3.00 - 4.00
- 4.00 - 5.00

AMBASSADOR™ WEATHER-READY NATION

NOAA PARTNER OF THE FEDERAL GOVERNMENT

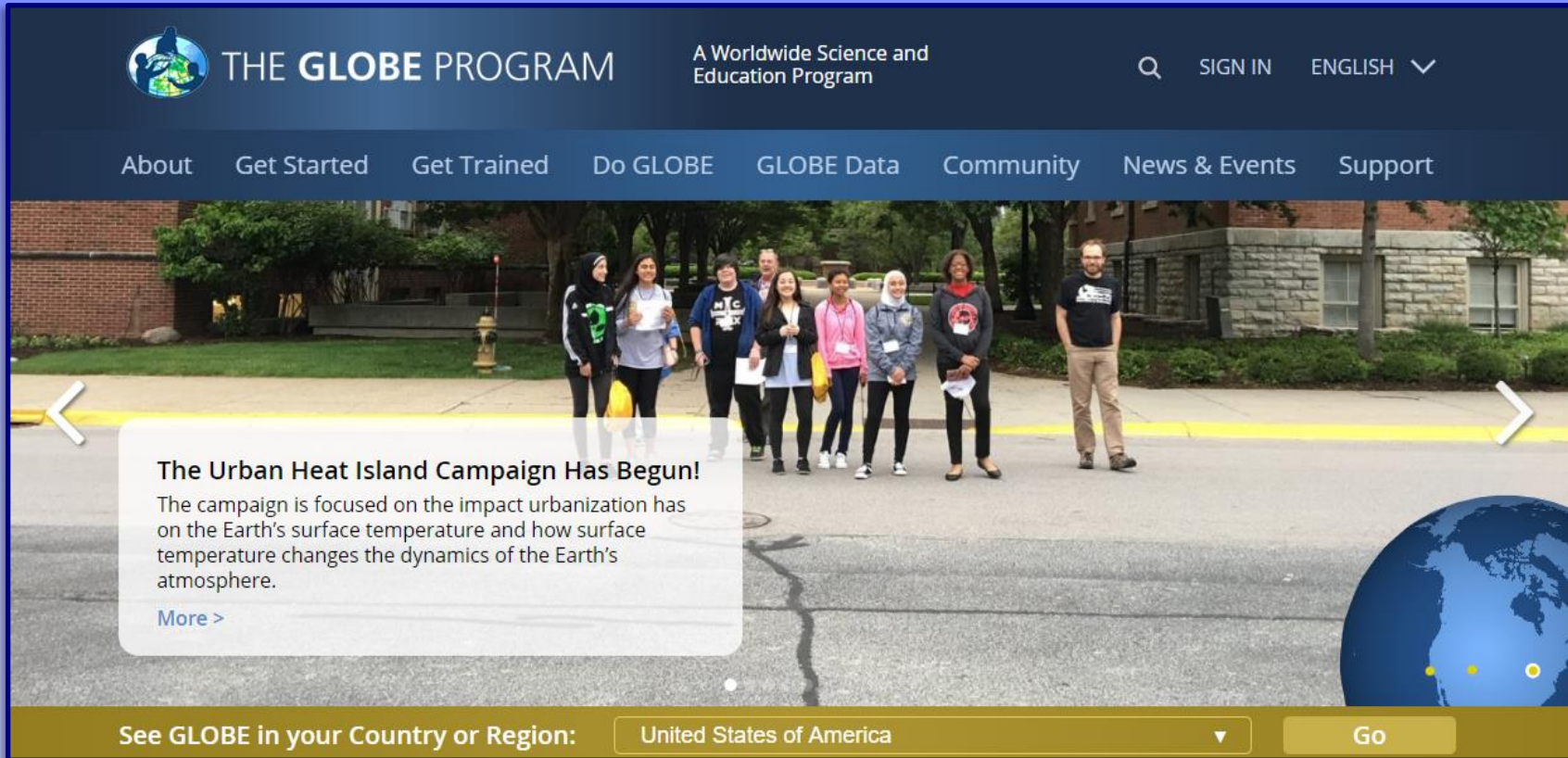
NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

www.cocorahs.org



Citizen
Science!

The GLOBE Program



The screenshot shows the homepage of the The GLOBE Program website. At the top left is the GLOBE logo, a globe with a person's silhouette. To its right is the text "THE GLOBE PROGRAM" and "A Worldwide Science and Education Program". On the top right, there are search, "SIGN IN", and "ENGLISH" dropdown menus. Below this is a navigation bar with links: "About", "Get Started", "Get Trained", "Do GLOBE", "GLOBE Data", "Community", "News & Events", and "Support". The main content area features a large photograph of a diverse group of people standing on a paved area. A white text box on the left of the photo contains the headline "The Urban Heat Island Campaign Has Begun!" and a sub-headline: "The campaign is focused on the impact urbanization has on the Earth's surface temperature and how surface temperature changes the dynamics of the Earth's atmosphere." Below the sub-headline is a "More >" link. At the bottom of the main area, there is a yellow bar with the text "See GLOBE in your Country or Region:" followed by a dropdown menu showing "United States of America" and a "Go" button. A partial globe graphic is visible in the bottom right corner of the main area.

THE GLOBE PROGRAM
A Worldwide Science and Education Program

Search SIGN IN ENGLISH

About Get Started Get Trained Do GLOBE GLOBE Data Community News & Events Support

The Urban Heat Island Campaign Has Begun!
The campaign is focused on the impact urbanization has on the Earth's surface temperature and how surface temperature changes the dynamics of the Earth's atmosphere.
[More >](#)

See GLOBE in your Country or Region: United States of America Go

www.globe.gov





Any Questions?

noaa.gov/education

education@noaa.gov



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<https://www.facebook.com/NOAAEducationOutreach>
- Education Resource Collections www.noaa.gov/education/education-resource-collections
- Elementary Resource Collections www.noaa.gov/resource-collections/elementary-resources
 - Oysters www.oceanservice.noaa.gov/education/oysters-in-the-chesapeake-bay/elementary.html
 - Marine Debris www.marinedebris.noaa.gov/curricula/marine-debris-monitoring-toolkit-educators
 - GLOBE www.globe.gov/web/elementary-globe
 - JetStream www.weather.gov/jetstream
 - DYWWN www.oceanservice.noaa.gov/education/discoverclimate/
 - DYCW www.celebrating200years.noaa.gov/edufun/book/welcome.html
 - Marine Debris Activities www.marinedebris.noaa.gov/activities-and-curricula
 - Regional Activity Books www.oceanservice.noaa.gov/education/games.html
 - Teacher at Sea Books www.teacheratsea.noaa.gov/#/resources/
- Data Resources for Educators www.noaa.gov/resource-collections/data-resources-for-educators
- NOAA in your Backyard – find us in your region www.noaa.gov/education/noaa-in-your-backyard
- National Weather Service – find your local weather www.weather.gov
- National Weather Service Local Office www.weather.gov/stormready/contact
- National Estuarine Research Reserve System (NERRS) www.coast.noaa.gov/nerrs
- NERRS Estuary Education www.coast.noaa.gov/estuaries
- Ocean Today Every Full Moon video catalog www.oceantoday.noaa.gov
- National Data Buoy Center www.ndbc.noaa.gov & NOAA Adopt a Drifter program www.adp.noaa.gov
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- The GLOBE Program – A Worldwide Science and Education Program www.globe.gov