NOAA's Implementation of AGOL: Meeting Our Mission

Randy Warren

July 22, 2015

Presentation Outline

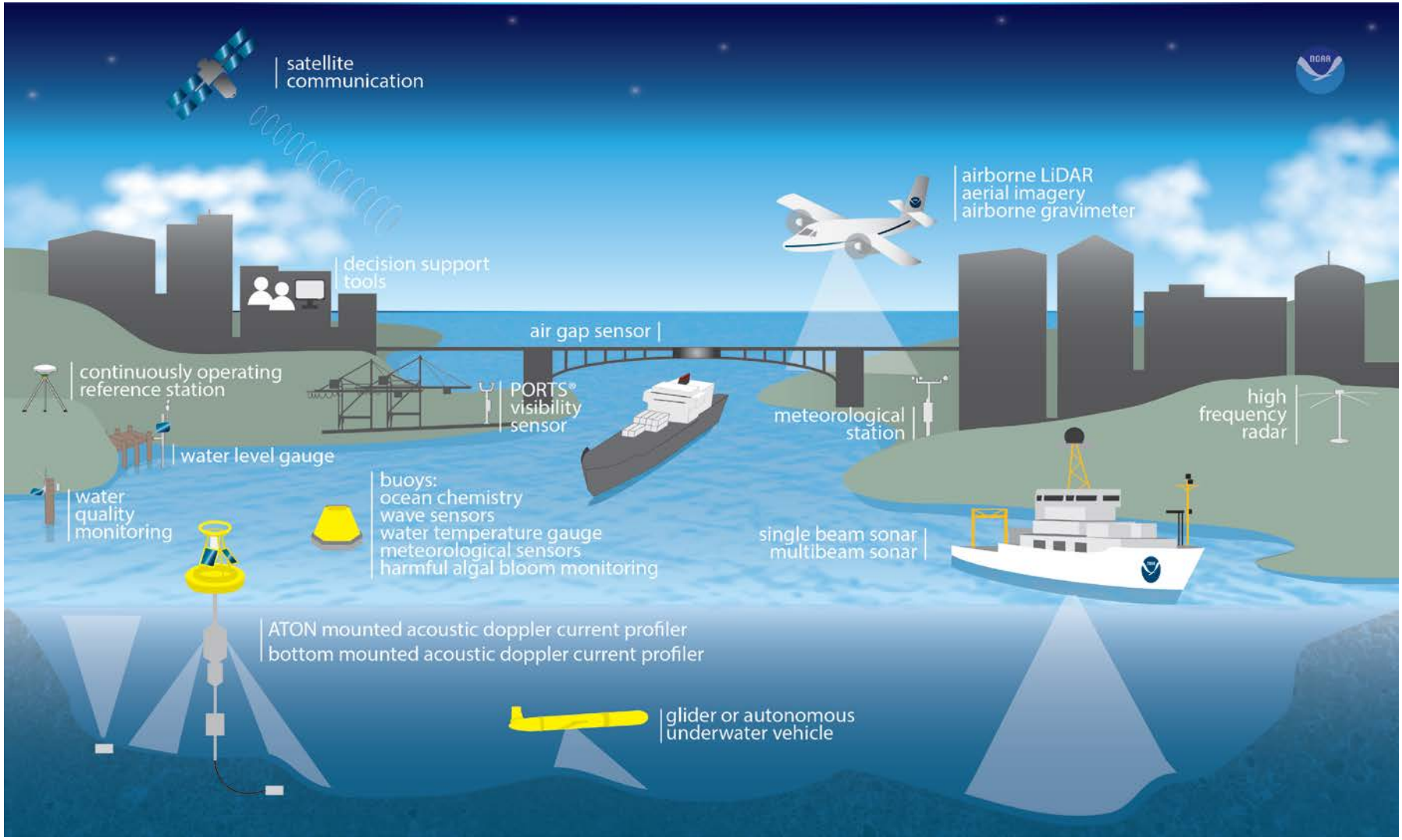
Introduction to NOAA's Mission

Use Cases for Meeting the Mission

Nuts and Bolts of NOAA's ArcGIS Online

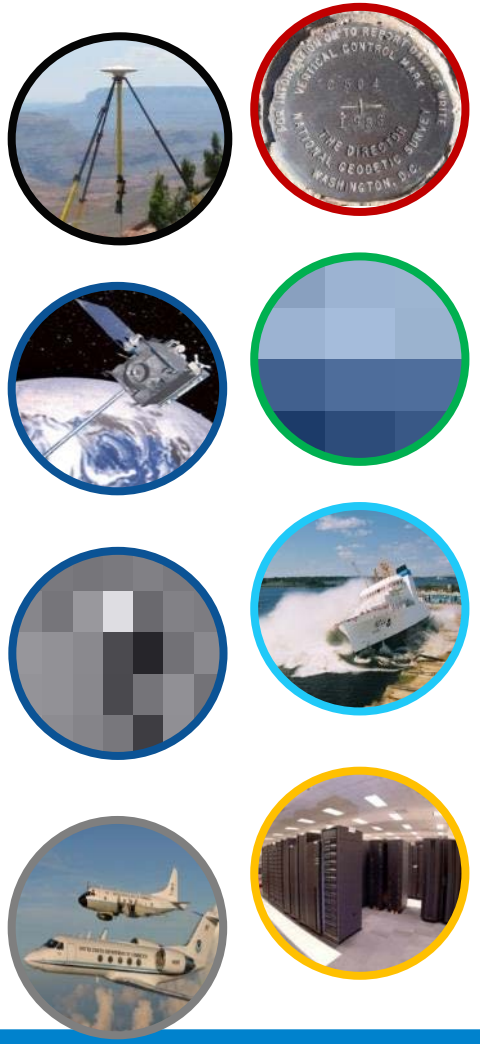
Looking Ahead

Environmental Intelligence



NOAA Core Geospatial Assets

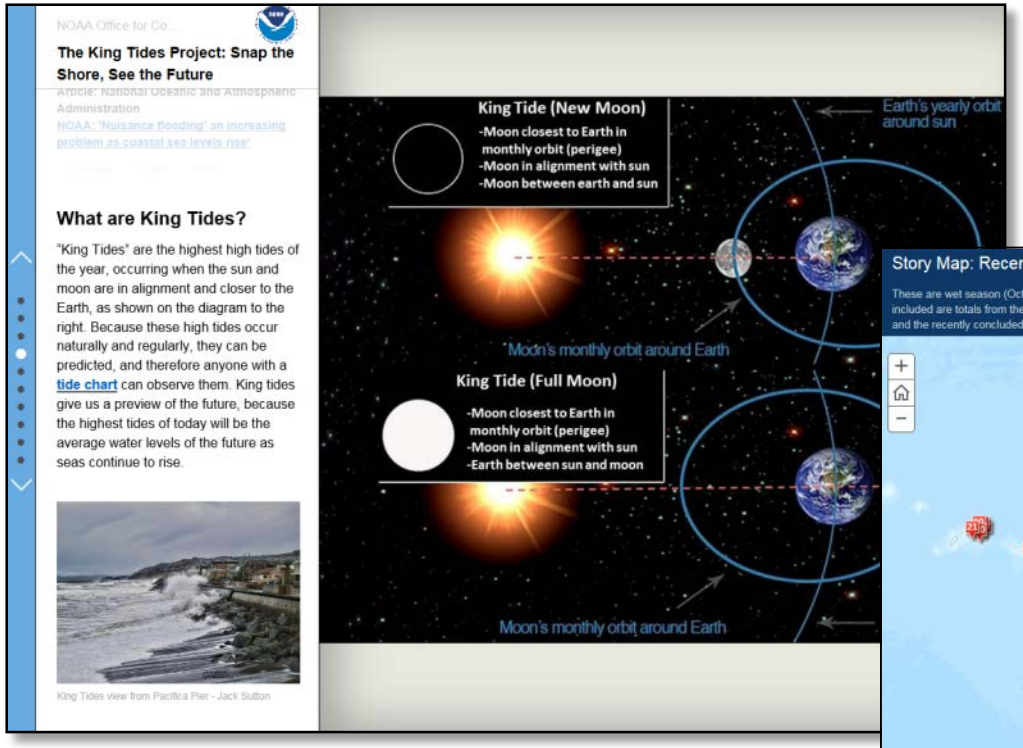
- National Spatial Reference System
  - Over 2300 Continuously Operating Reference Stations (CORS)
  - More than 1 million high-accuracy survey control marks
  - National shoreline to support charting and navigation
- Observing Systems [~100 observing systems]
  - 122 Doppler radars
  - 4 Polar and 4 Geostationary satellites
  - 8 Buoy Networks
  - 200 Permanent Tide Gages
- Ships and Aircraft
  - 18 ships and 12 aircraft engaged in research and survey operations
- High Performance Computing
  - 2 operational and 3 weather and climate research



NOAA's Goals

- Climate Adaptation and Mitigation
- Weather-Ready Nation
- Healthy Oceans
- Resilient Coastal Communities and Economies

Climate Adaptation & Mitigation

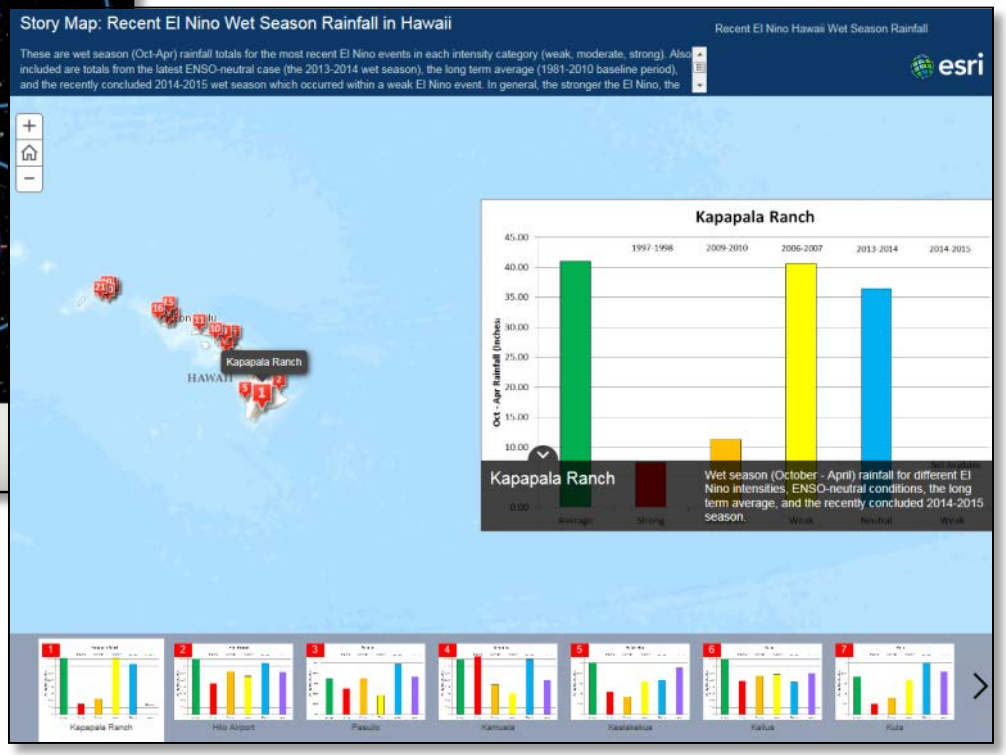


King Tides Story Map

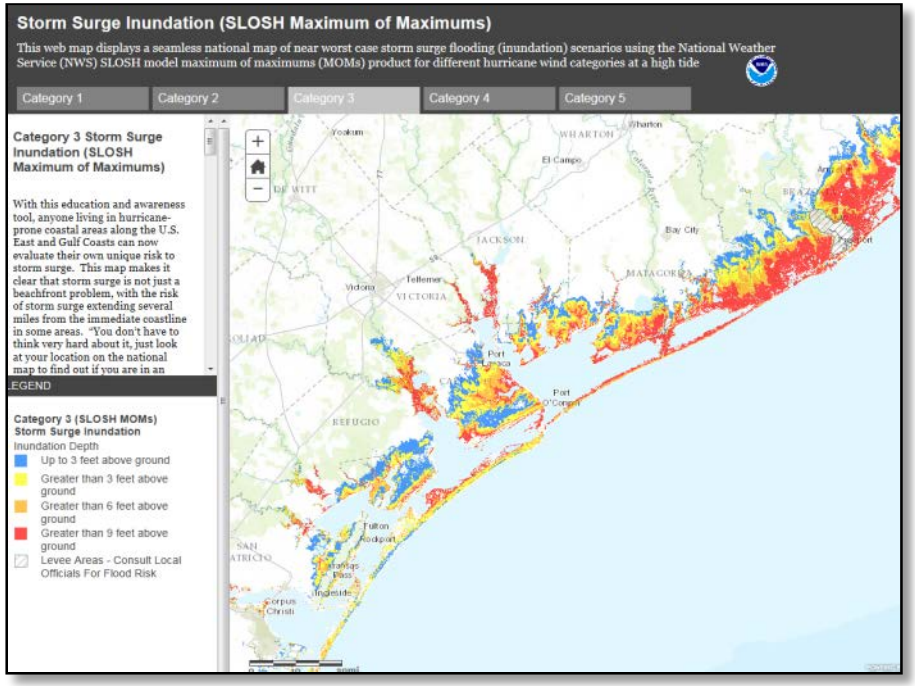
noaa.maps.arcgis.com

El Nino Rainfall in Hawaii

noaa.maps.arcgis.com



Weather-Ready Nation

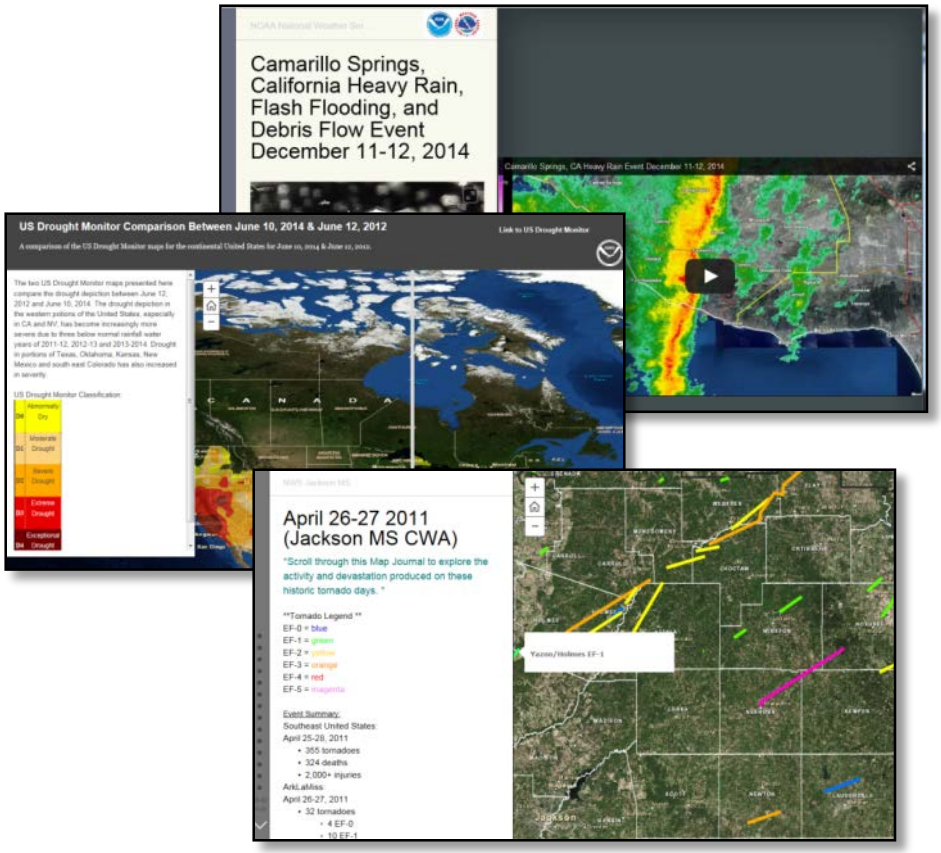


Storm Surge Inundation

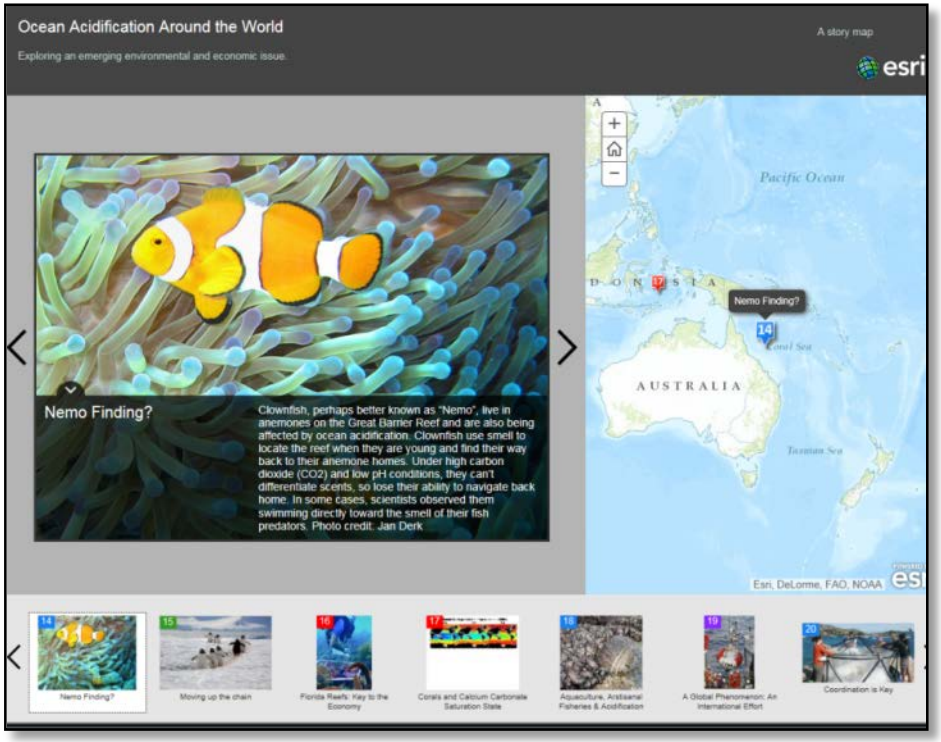
noaa.maps.arcgis.com

Extreme Weather Events

noaa.maps.arcgis.com



Healthy Oceans

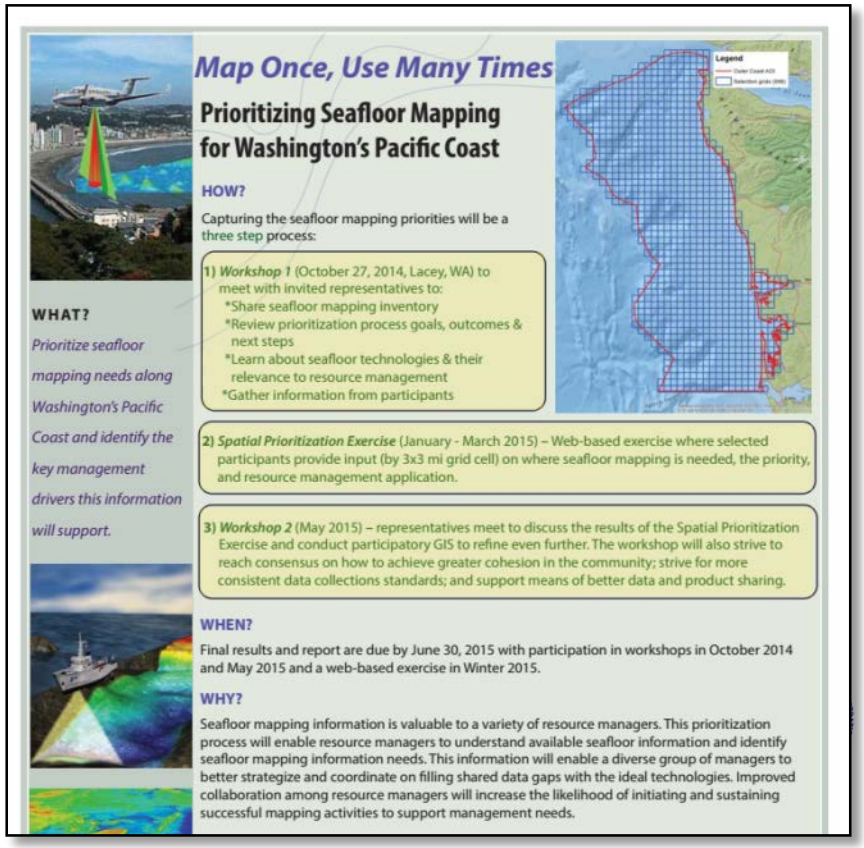


Ocean Acidification Around the World

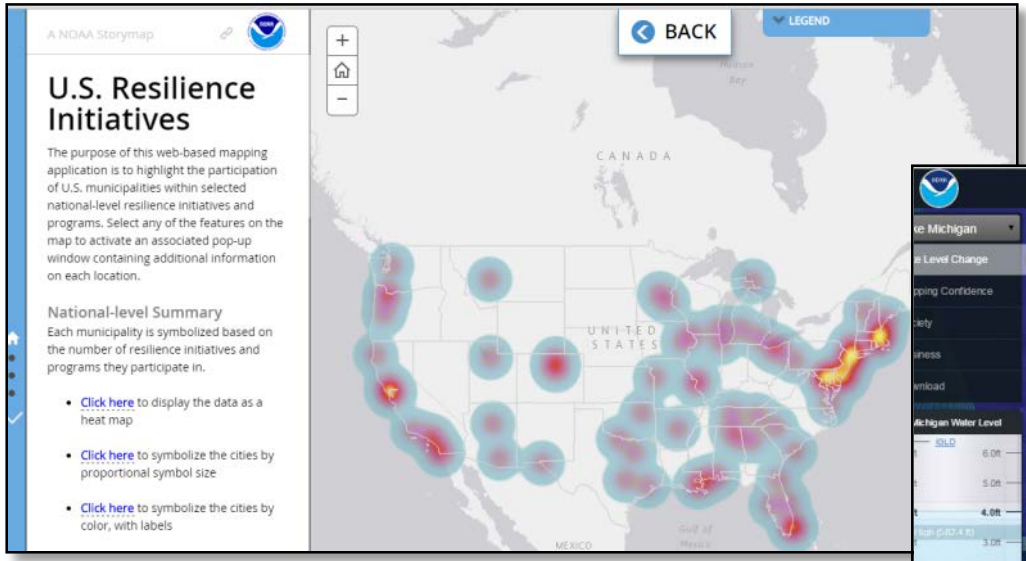
noaa.maps.arcgis.com

Seafloor Mapping Prioritization

noaa.maps.arcgis.com



Resilient Coastal Communities

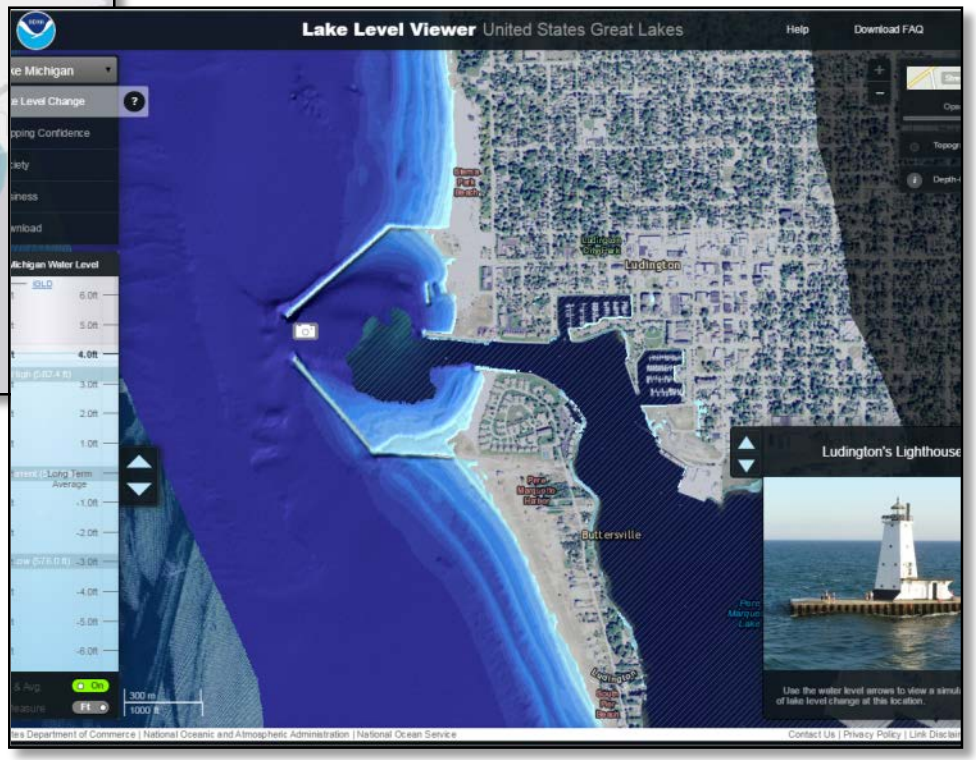


US Resilience Initiatives

noaa.maps.arcgis.com

Lake Level Viewer

Coast.noaa.gov/llv



NOAA GeoPlatform

Nuts and Bolts

- *First launched in 2011 using ArcGIS Portal > migrated to AGOL in 2013*
- *Currently 700 accounts (all custom roles)*
- *400 public records (~50 Story Maps)*

Looking Ahead

- *Continued development of Story Maps*
- *Security clearance for AGOL for increased capabilities*

http://noaa.maps.arcgis.com

NOAA GeoPlatform

Questions?

Randy Warren

randy.warren@noaa.gov

or

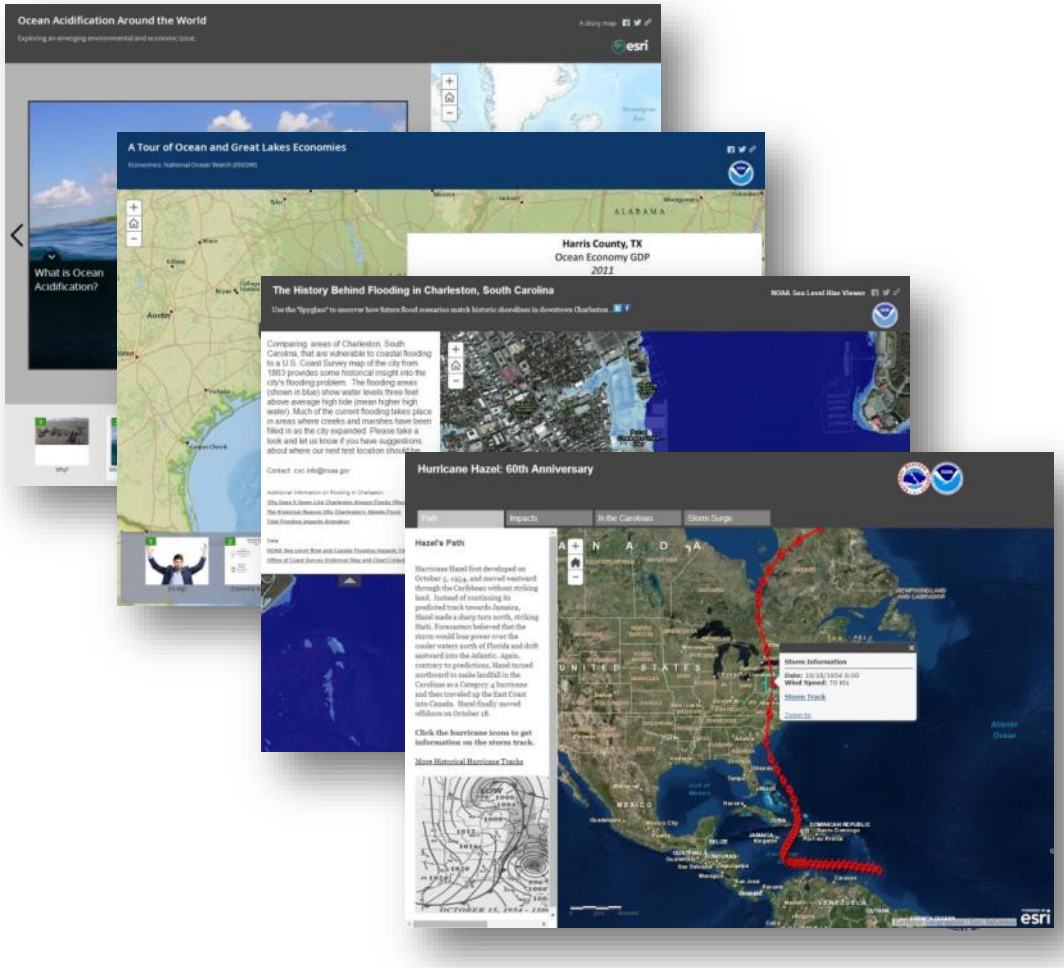
Booth F14

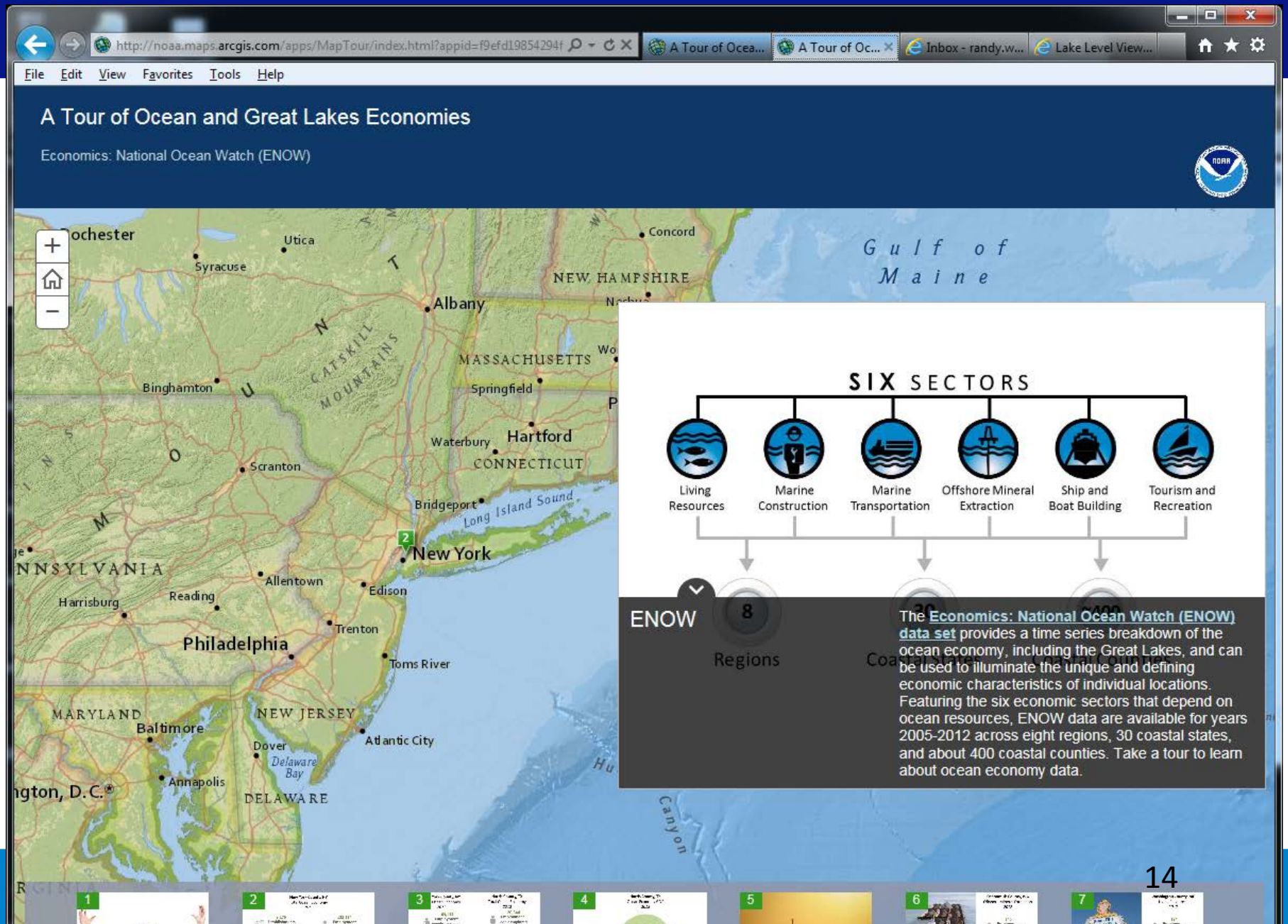
NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

NOAA GeoPlatform

Featured Story Maps

- *A Tour of Ocean and Great Lakes Economies*
- *The History Behind Flooding in Charleston, South Carolina*
- *Hurricane Hazel: 60th Anniversary*
- *Ocean Acidification Around the World*
- *More coming soon….*

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A Tour of Oc...
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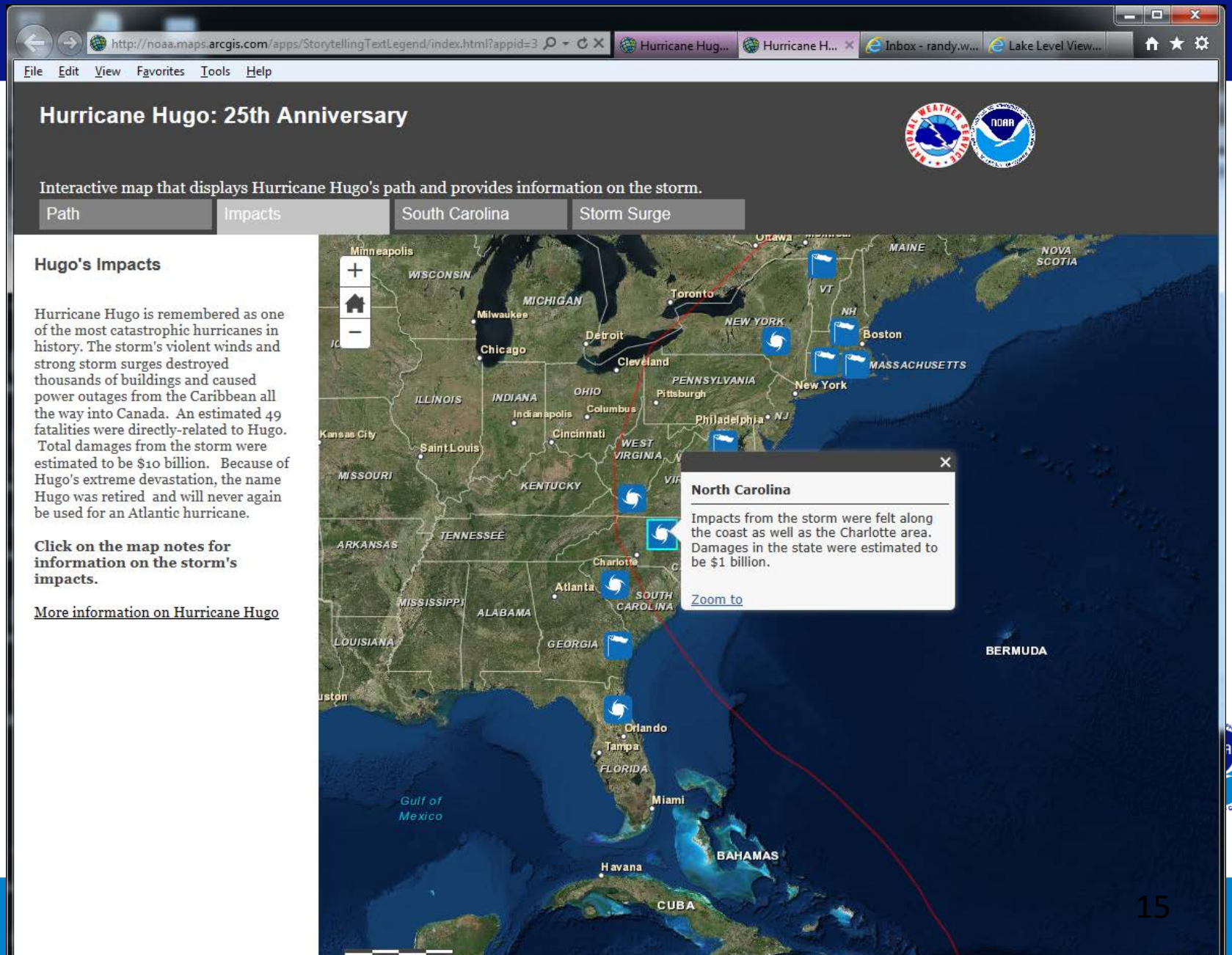
Lake Level View...
File Edit View Favorites Tools Help
A Tour of Ocean and Great Lakes Economies
Economics: National Ocean Watch (ENOW)
Gulf of Maine
Rochester
Utica
Syracuse
Albany
Concord
NEW HAMPSHIRE
MASSACHUSETTS
Springfield
Binghamton
Waterbury
Hartford
CONNECTICUT
Scranton
Bridgeport
Long Island Sound
New York
Allentown
Edison
Harrisburg
Reading
Trenton
Philadelphia
Toms River
MARYLAND
Baltimore
NEW JERSEY
Atlantic City
Dover
Delaware Bay
Annapolis
DELAWARE
SIX SECTORS
Living Resources
Marine Construction
Marine Transportation
Offshore Mineral Extraction
Ship and Boat Building
Tourism and Recreation
ENOW
8
Regions
The Economics: National Ocean Watch (ENOW) data set provides a time series breakdown of the ocean economy, including the Great Lakes, and can be used to illuminate the unique and defining economic characteristics of individual locations. Featuring the six economic sectors that depend on ocean resources, ENOW data are available for years 2005-2012 across eight regions, 30 coastal states, and about 400 coastal counties. Take a tour to learn about ocean economy data.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Hurricane Hug...
Hurricane H...
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Hurricane Hugo: 25th Anniversary
Interactive map that displays Hurricane Hugo's path and provides information on the storm.
Path
Impacts
South Carolina
Storm Surge
Hugo's Impacts
Hurricane Hugo is remembered as one of the most catastrophic hurricanes in history. The storm's violent winds and strong storm surges destroyed thousands of buildings and caused power outages from the Caribbean all the way into Canada. An estimated 49 fatalities were directly-related to Hugo. Total damages from the storm were estimated to be $10 billion. Because of Hugo's extreme devastation, the name Hugo was retired and will never again be used for an Atlantic hurricane.
Click on the map notes for information on the storm's impacts.
More information on Hurricane Hugo
North Carolina
Impacts from the storm were felt along the coast as well as the Charlotte area. Damages in the state were estimated to be $1 billion.
Zoom to
Minneapolis
WISCONSIN
MICHIGAN
Milwaukee
Chicago
Detroit
Toronto
Cleveland
NEW YORK
MAINE
NOVA SCOTIA
VT
NH
Boston
MASSACHUSETTS
New York
PENNSYLVANIA
Pittsburgh
Philadelphia
NJ
ILLINOIS
INDIANA
OHIO
Indianapolis
Columbus
Cincinnati
Kansas City
Saint Louis
WEST VIRGINIA
MISSOURI
KENTUCKY
TENNESSEE
ARKANSAS
Charlotte
Atlanta
SOUTH CAROLINA
MISSISSIPPI
ALABAMA
GEORGIA
LOUISIANA
BERMUDA
Orlando
Tampa
FLORIDA
Gulf of Mexico
Miami
BAHAMAS
Havana
CUBA

http://noaa.maps.arcgis.com/apps/MapSeries/?appid=c04dbcf9398d4933b9bfa

Story Map: Plan... | Story Map: ... | Inbox - randy.w... | Lake Level View...

File Edit View Favorites Tools Help

Story Map: NOAA In-House Planned Hydrographic Survey Projects - 2015

NOAA's Office of Coast Survey

Gulf of Maine | Rhode Island Sound | Approaches to Chesapeake Bay | Approaches to Charleston | Buzzards Bay | Approaches to Savannah

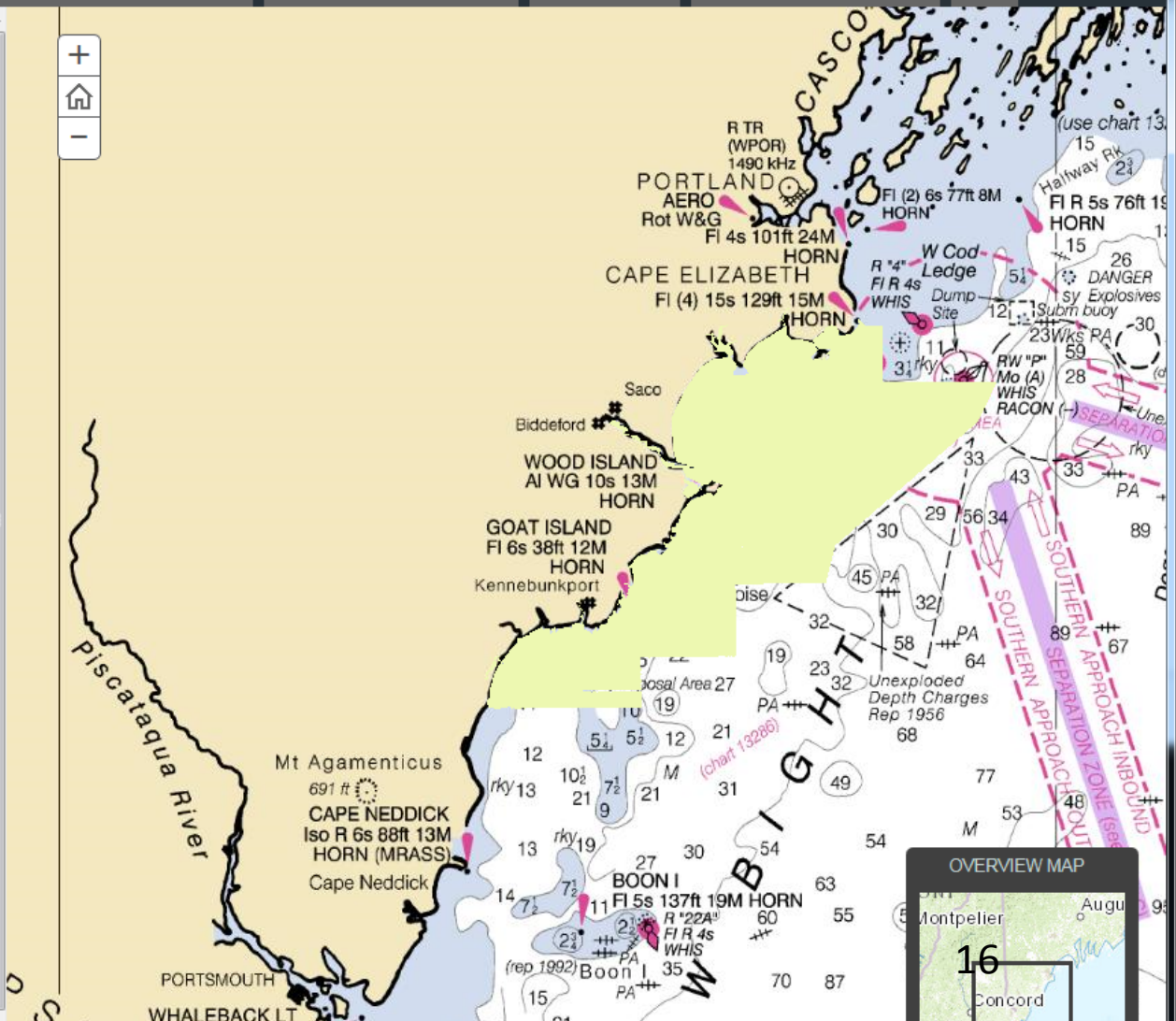
Gulf of Maine -- OPR-A321-FH-15
Planned project dates: 1/15/2015-3/30-2015
Planned days at sea: 35
Area: 143 square nautical miles

This project will provide contemporary surveys to update Coast Survey's nautical charting products. It will cover approximately 143 square nautical miles of navigationally significant area as identified in *2012 NOAA Hydrographic Survey Priorities*. In addition, the coast of Maine offers fertile grounds for the fishing industry, most notably the lobster industry. Areas that are heavily trafficked and fished along the Gulf of Maine show soundings that are decades old, and updated hydrographic surveys in this area would improve navigational safety for the lobstermen and others.

NOAA Ship *Ferdinand R. Hassler*

For more information about Coast Survey activities, you can sign up for our newsletter or blog.

NOAA's Office of Coast Survey is responsible for planning hydrographic surveys. Planned hydrographic surveys are derived from NOAA's Hydrographic survey priorities, constituent requests submitted through navigational managers, and other factors. Note that these plans are



Peer Beneath the Waves

Bathymetry and nautical chart of Gloucester Harbor

Learn more about hydrography and charting.

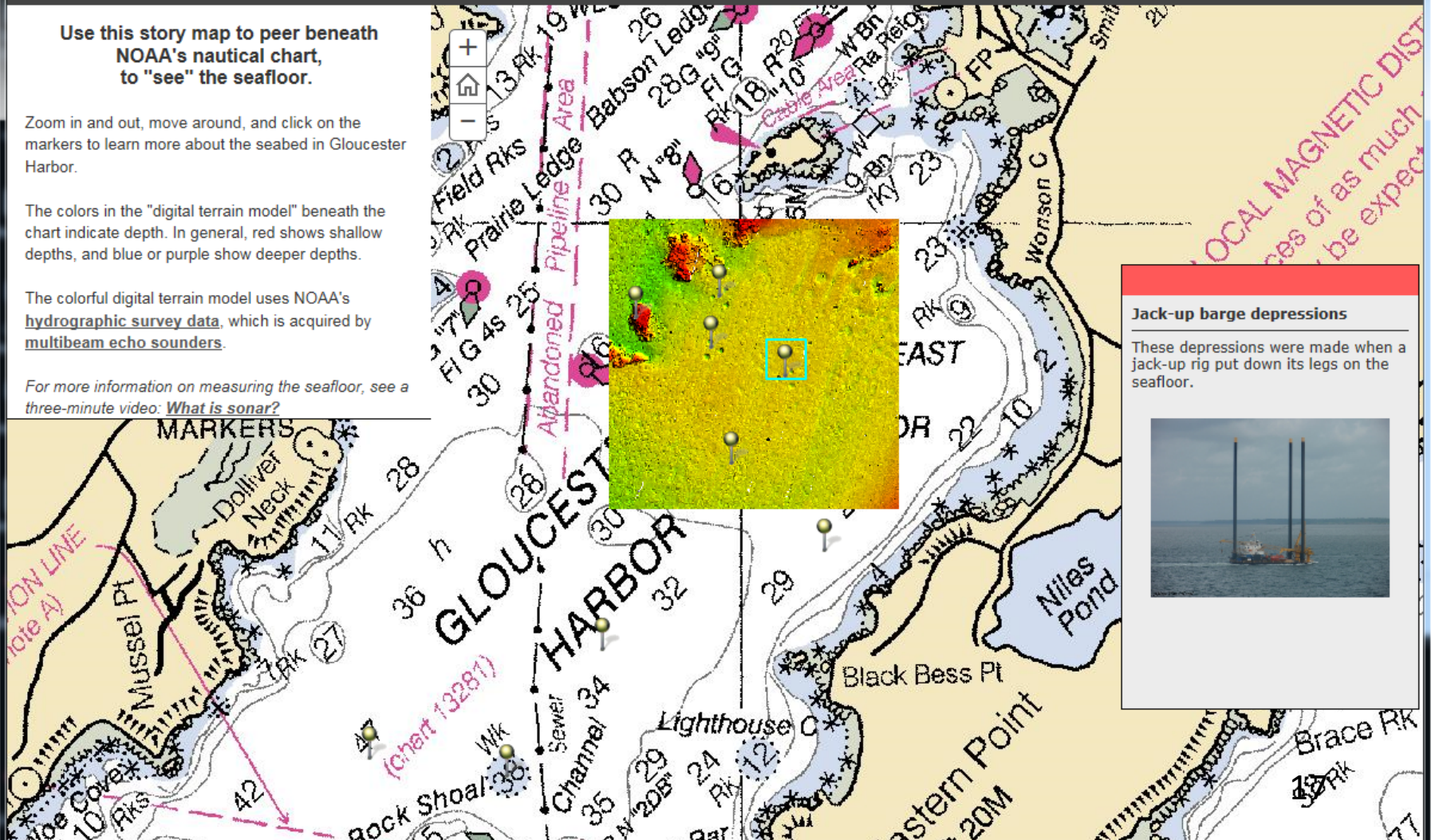
Use this story map to peer beneath NOAA's nautical chart, to "see" the seafloor.

Zoom in and out, move around, and click on the markers to learn more about the seabed in Gloucester Harbor.

The colors in the "digital terrain model" beneath the chart indicate depth. In general, red shows shallow depths, and blue or purple show deeper depths.

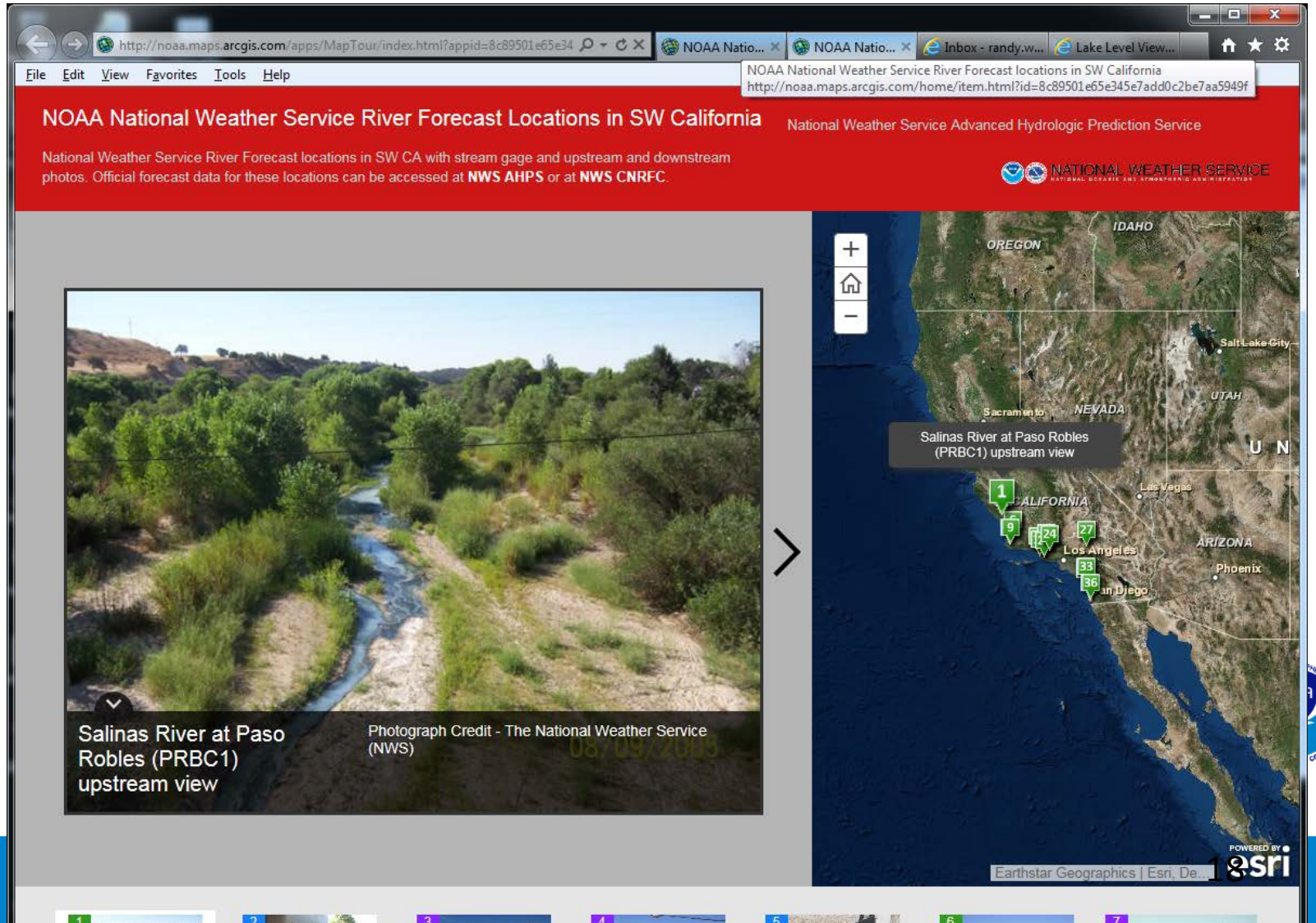
The colorful digital terrain model uses NOAA's **hydrographic survey data**, which is acquired by **multibeam echo sounders**.

For more information on measuring the seafloor, see a three-minute video: ***What is sonar?***



Jack-up barge depressions

These depressions were made when a jack-up rig put down its legs on the seafloor.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Lake Level View...
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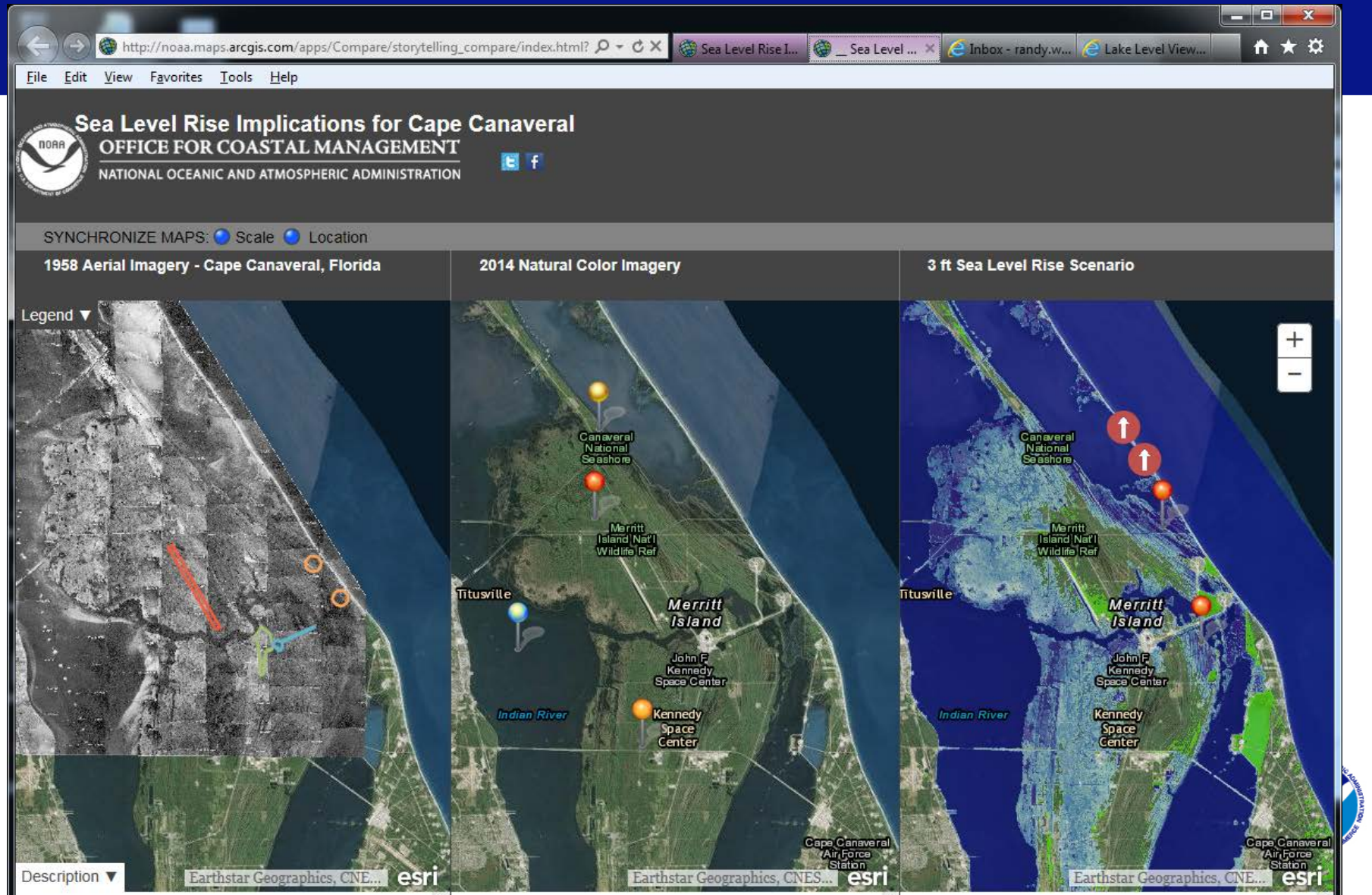
NOAA National Weather Service River Forecast locations in SW California
http://noaa.maps.arcgis.com/home/item.html?id=8c89501e65e345e7add0c2be7aa5949f
NOAA National Weather Service River Forecast Locations in SW California
National Weather Service Advanced Hydrologic Prediction Service
National Weather Service River Forecast locations in SW CA with stream gage and upstream and downstream photos. Official forecast data for these locations can be accessed at NWS AHPS or at NWS CNRFC.
NATIONAL WEATHER SERVICE
Salinas River at Paso Robles (PRBC1) upstream view
Photograph Credit - The National Weather Service (NWS)
08/09/2013
OREGON
IDAHO
Salt Lake City
UTAH
Sacramento
NEVADA
Salinas River at Paso Robles (PRBC1) upstream view
Las Vegas
ARIZONA
Los Angeles
Phoenix
San Diego
Earthstar Geographics | Esri, De...
POWERED BY esri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Sea Level Rise I...
Sea Level ...
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Sea Level Rise Implications for Cape Canaveral
OFFICE FOR COASTAL MANAGEMENT
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
SYNCHRONIZE MAPS: Scale Location
1958 Aerial Imagery - Cape Canaveral, Florida
2014 Natural Color Imagery
3 ft Sea Level Rise Scenario
Legend
Canaveral National Seashore
Merritt Island Nat'l Wildlife Ref
Titusville
Merritt Island
John F. Kennedy Space Center
Indian River
Kennedy Space Center
Cape Canaveral Air Force Station
Earthstar Geographics, CNE...
Earthstar Geographics, CNES...
esri
Description
The development of Brevard County, Florida, and more specifically Merritt Island, began after World War II when air-conditioning and the interstate highway system encouraged migration from northern states. In 1960 the
Not only is Kennedy Space Center a major Florida tourist destination and the launch site for NASA, the area is also environmentally significant, with only nine percent of the land developed. Canaveral National Seashore, Merritt Island
The effects of global climate change are imminent, and barrier islands are particularly vulnerable to sea level rise. The National Climate Assessment and other efforts have estimated that by the year 2100, sea level may rise

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Select Wildfire ... | Select Wildfi... | Inbox - randy.w... | Lake Level View...

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NOAA/National Weather Ser...

Select Wildfire History in the NOAA/National Weather Service Los Angeles/Oxnard Forecast Area

Presented here are maps and images of select wildfires that burned in a given year between 2003 and October 2014 in the NOAA/National Weather Service Los Angeles/Oxnard Forecast Area of San Luis Obispo, Santa Barbara, Ventura, and Los Angeles Counties in California.

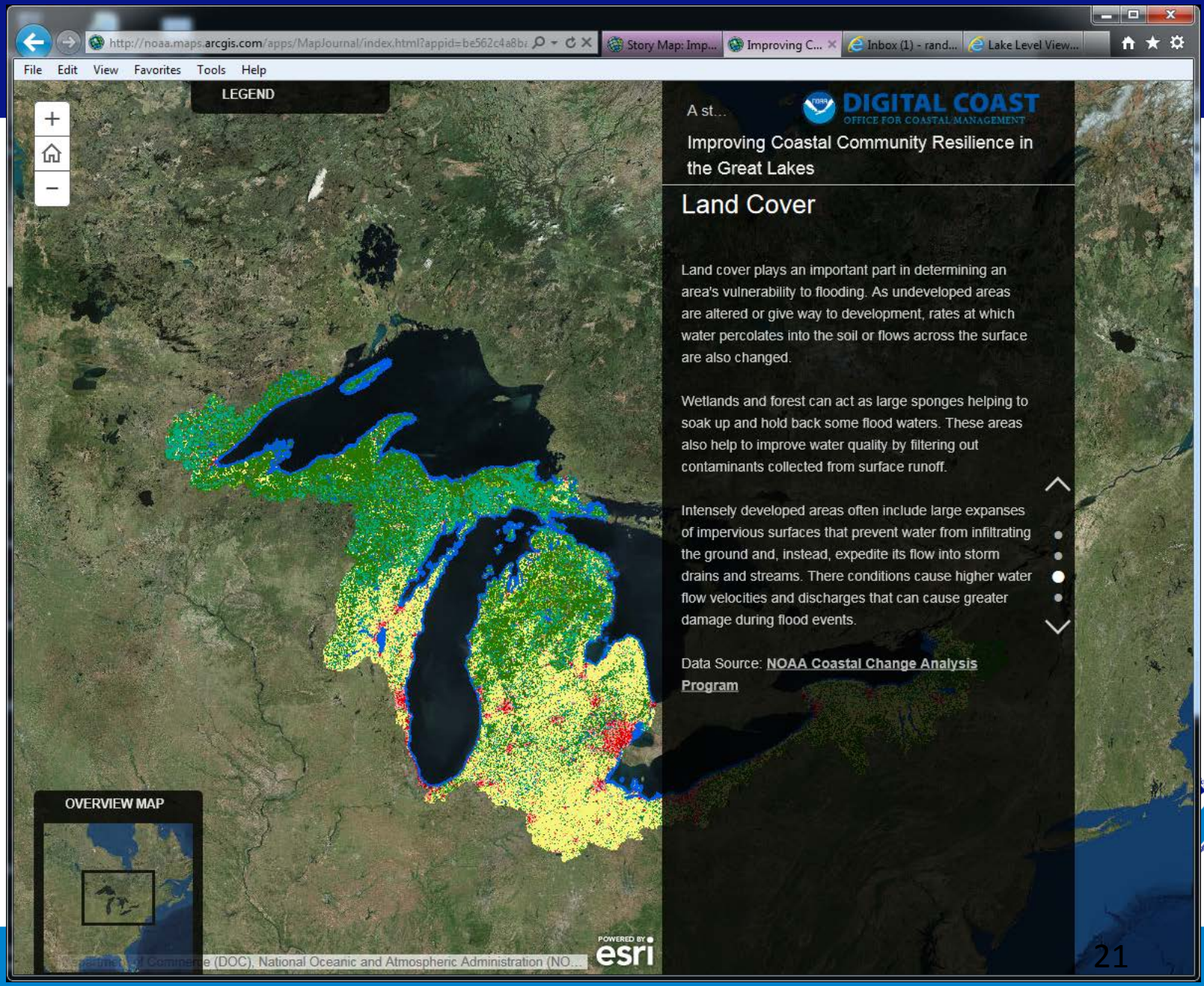
Fire statistics are courtesy of the Southern California Geographic Area Coordination Center (GACC).

NOTE: Scroll down to see a list of fires by year and an accompanying map of their location.

Photo Credit: Stephen Coleman

2014 Fire Perimeters (through October 2014)

Colby Fire - Los Angeles County
Start date: January 16, 2014
Contain Date: January 24, 2014
Acres: 1,952
Start location: 1 mile NE of Glendora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LEGEND
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DIGITAL COAST
OFFICE FOR COASTAL MANAGEMENT
Improving Coastal Community Resilience in the Great Lakes
Land Cover
Land cover plays an important part in determining an area's vulnerability to flooding. As undeveloped areas are altered or give way to development, rates at which water percolates into the soil or flows across the surface are also changed.
Wetlands and forest can act as large sponges helping to soak up and hold back some flood waters. These areas also help to improve water quality by filtering out contaminants collected from surface runoff.
Intensely developed areas often include large expanses of impervious surfaces that prevent water from infiltrating the ground and, instead, expedite its flow into storm drains and streams. There conditions cause higher water flow velocities and discharges that can cause greater damage during flood events.
Data Source: NOAA Coastal Change Analysis Program
OVERVIEW MAP
POWERED BY esri

http://noaa.maps.arcgis.com/apps/MapJournal/?appid=3b7307c3bb6a4dbd94c

Remembering ... | Rememberin... | Inbox (1) - rand... | Lake Level View...

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NOAA/NWS Baltimore/Washington

Remembering The Madison County, Virginia, Flash Flood of 27 June 1995

The Madison County, Virginia Flash Flood was an historic event. Record rainfall across the Central Virginia foothills of the Blue Ridge Mountains led to catastrophic flooding that caused millions of dollars of damage. Madison County received the worst of the flash flooding. The following is a recap of the historic flood. Scroll down for more information including the meteorology/hydrology of the event, response, impacts and rainfall reports.

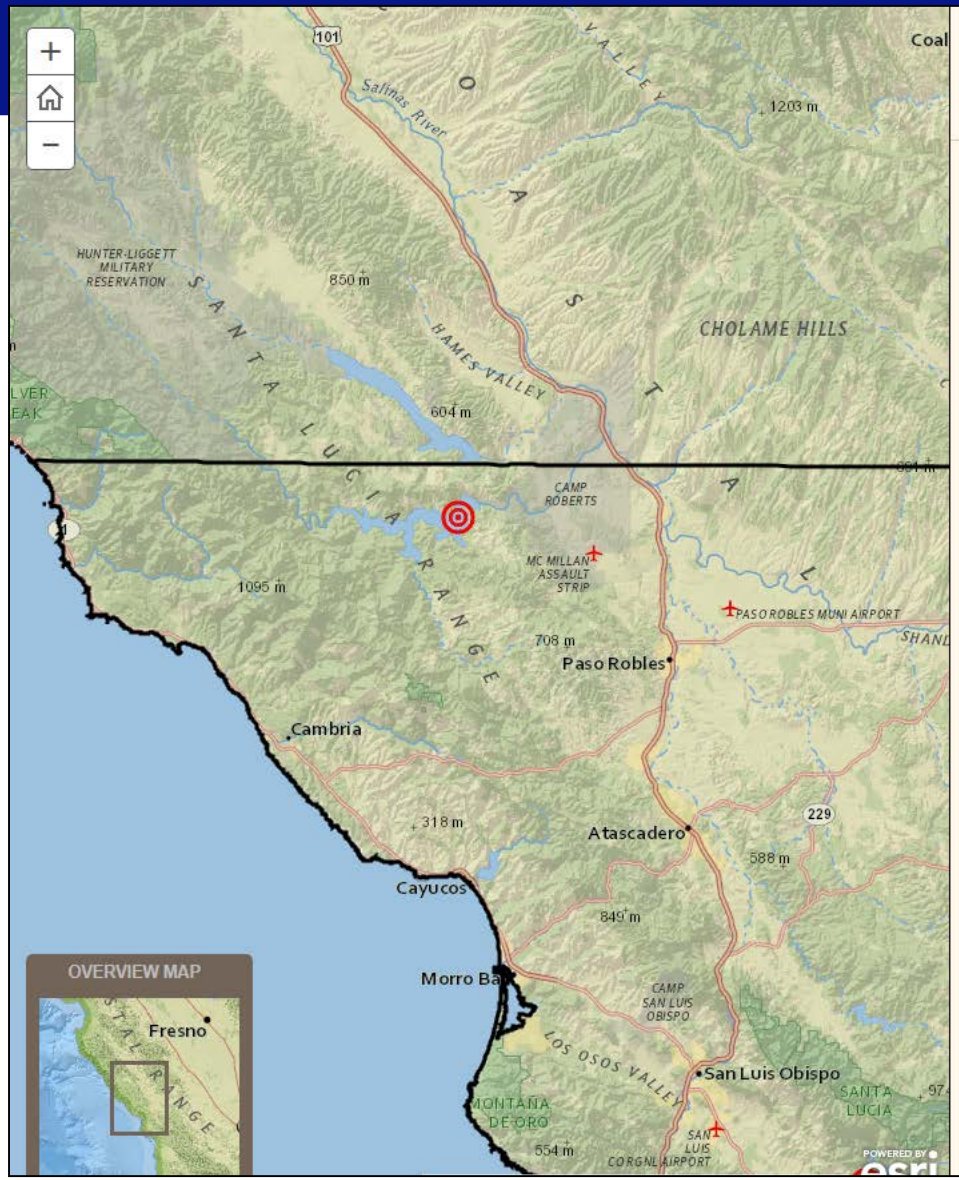
"I actually drove through the frontal zone that day...and I remember during the early morning... it was spitting rain here (Sterling, VA), with leaden gray skies with light easterlies...and as I drove through the front on I-95 just between Fredericksburg and Richmond VA, the skies south of the front turned into a tropical blue color with HUGE swelling cumulus. One could look west towards the Blue Ridge and see a heavy gray-black sky where the storms were." Steven Zubrick, Science Operations Officer, NWS Sterling

(Image: USGS)

The Precursor of Madison County, Virginia

Madison County is located in North-Central Virginia on the front range of the Appalachian Mountains. Its topography ranges from the Blue Ridge Mountains in the west to the foothills in the east. The highest elevation in Madison County is Hawksbill Mountain at 4050 feet which is located in Shenandoah National Park. Its dramatic drop off from the Blue Ridge to the foothills makes for a beautiful landscape. However, this landscape can

Figure 1. Flood effects in Shenandoah National Park in summer 1995.



NOAA/National Weather Ser...

2014 Drought - Images Of Select Southern California Reservoirs

Lake Nacimiento - San Luis Obispo County

Storage capacity as of September 2014 is 17.0%

Photo courtesy of www.lakenacimientolive.com

Lake Lopez - San Luis Obispo County

Storage capacity as of September 2014 is 45.4%