

HURRICANE SANDY

Rapid Maritime Response

presented to

American Association of Port
Authorities

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Navigation Manager, Southeast Region

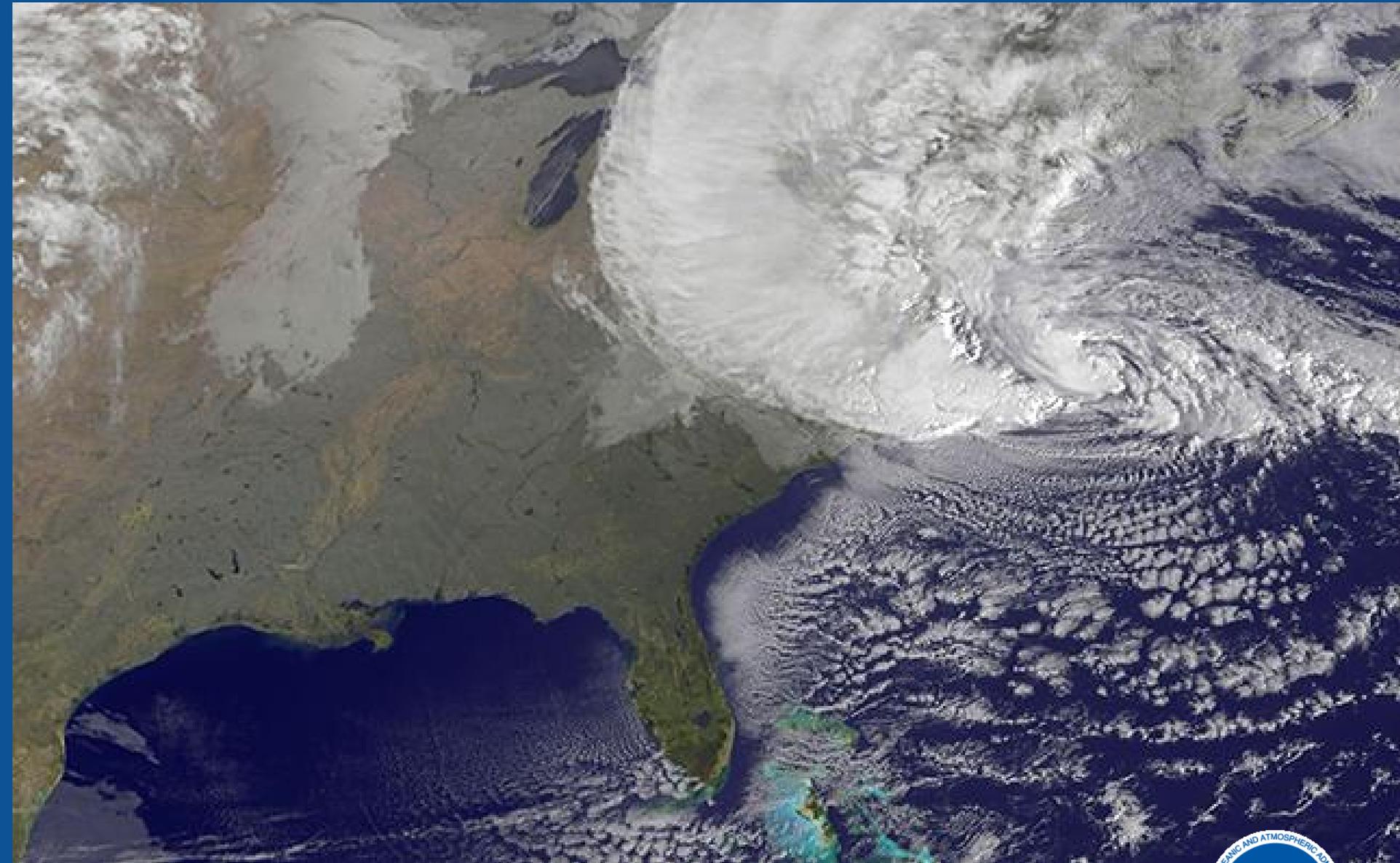
Office of Coast Survey



Marine Transportation System – Recovery Unit



Integrated effort involved USCG, NOAA, USACE, pilots, CBP, USACE, Port Authority, MARAD, NYSA, bulk oil facilities, terminal operators, towing Industry, DHS Infrastructure Protection, FEMA Region 2, Oil Spill ICC, and others.

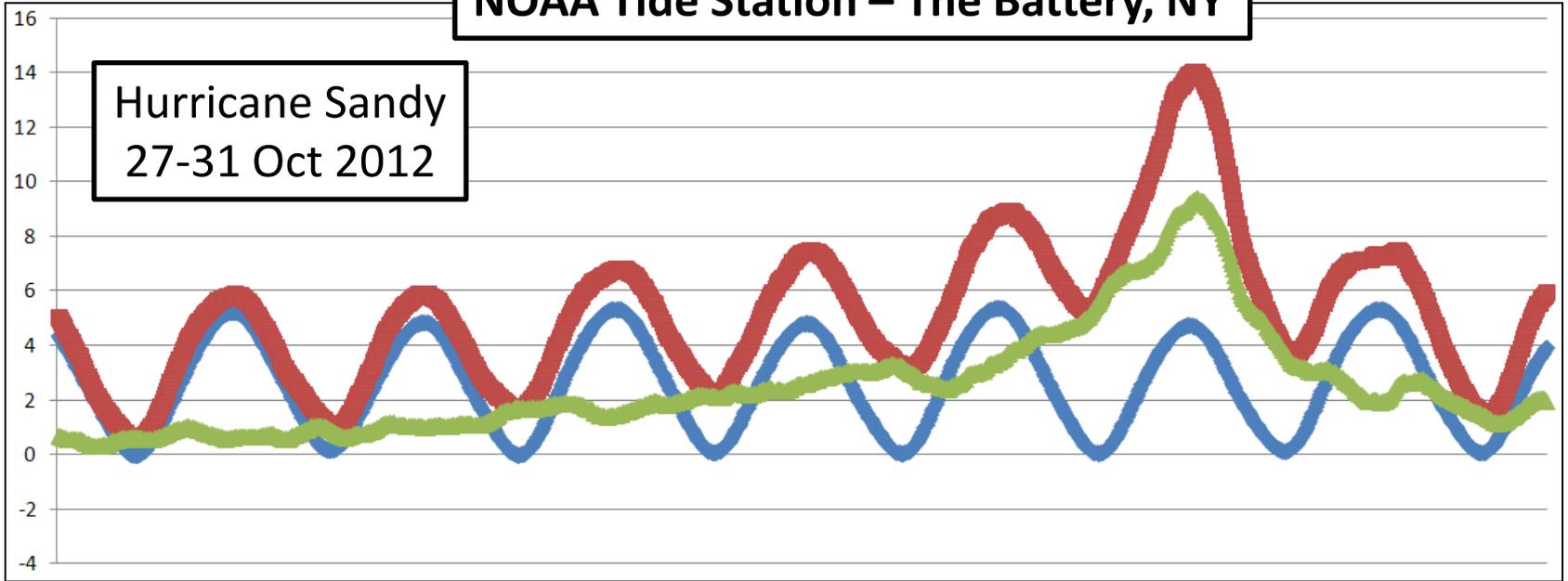


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NOAA Tide Station – The Battery, NY

Hurricane Sandy
27-31 Oct 2012

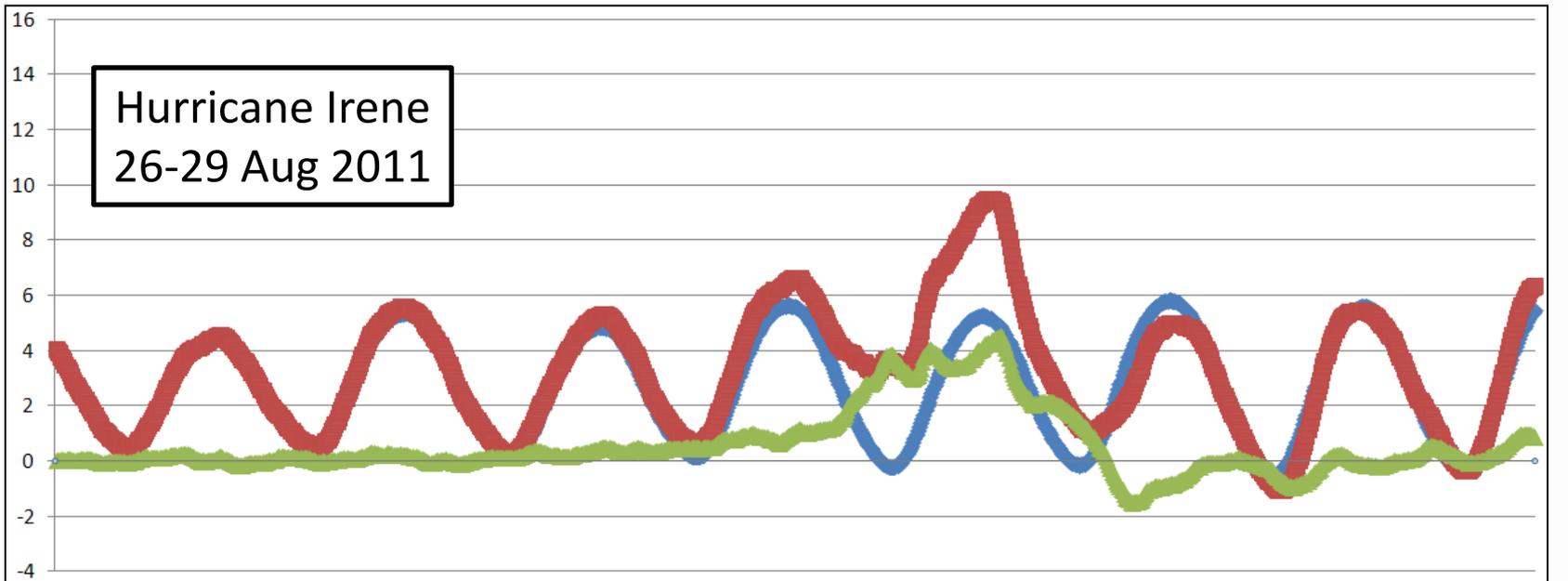


◆ Predicted

■ Observed Water Level

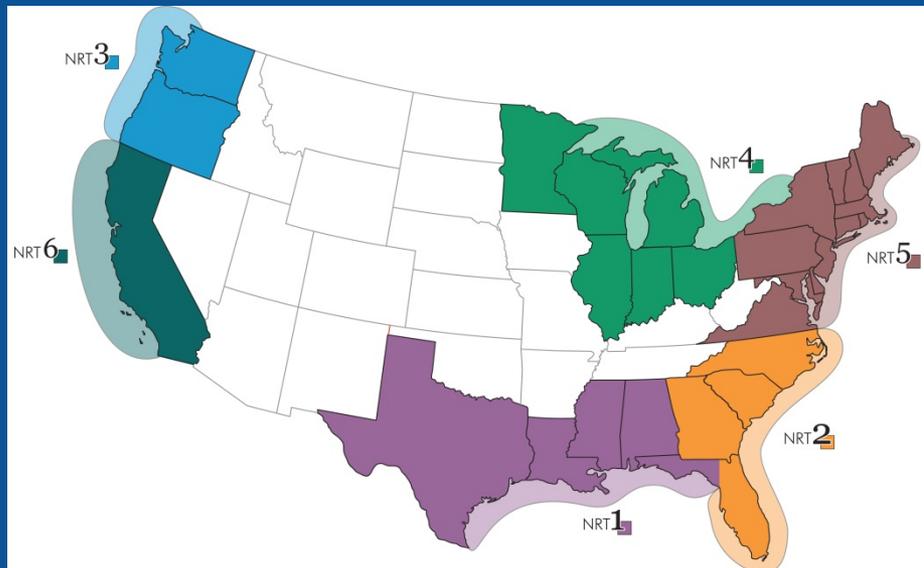
▲ Observed - Predicted

Hurricane Irene
26-29 Aug 2011



Coast Survey is set up for rapid maritime response

Navigation managers coordinate activities and assets with Coast Guard, port officials, and other agencies



Navigation response teams and NOAA survey ships, if available, conduct surveys

Two objectives for pre-storm preparation

1. Move navigation response people and assets into strategic position
2. Secure survey vessels; protect boats and people from harm during the storm



Available East Coast survey assets

NOAA Ship *Thomas Jefferson*



NOAA Ship *Ferdinand R. Hassler*



2 Navigation Response Teams



Research Vessel *Bay Hydro II*





Response Assets and Locations

NRT4
Galveston TX

MIST
DRC – Mobile AL

NRT1
Panama City FL

NRT2
Fernandina Beach FL
Mobilizing North along the I-95 Corridor
0600 EDT Tuesday - October 30th

Bay Hydro II
Norfolk VA

MIST and AUV
Silver Spring MD

Potomac
Annapolis MD

NRT5
Old Saybrooke, CT

Thomas Jefferson
New London, CT

*Created by Office of Coast Survey
October 29, 2012 – 1200 EDT*

Rapid Maritime Response



Response Assets and Locations



Created by Office of Coast Survey
30 October 2012 - 1200 EDT

Rapid Maritime Response

Navigation managers coordinated with:

- ✓ Coast Guard
- ✓ Army Corps of Engineers
- ✓ Pilots
- ✓ Port officials
- ✓ Terminal operators



Lt. Brent Pounds uses sunlight to explain survey plans to a terminal operator.

For days, the team in NY-NJ had no power, no phones, no hot water / hot food, little / no connectivity, and a major fuel crisis.

Port of New York - New Jersey

- *NOAA starts surveying Oct 31*
- *Port resumes modified ops within 5 days*

Cape May, New Jersey - Lewes, Delaware

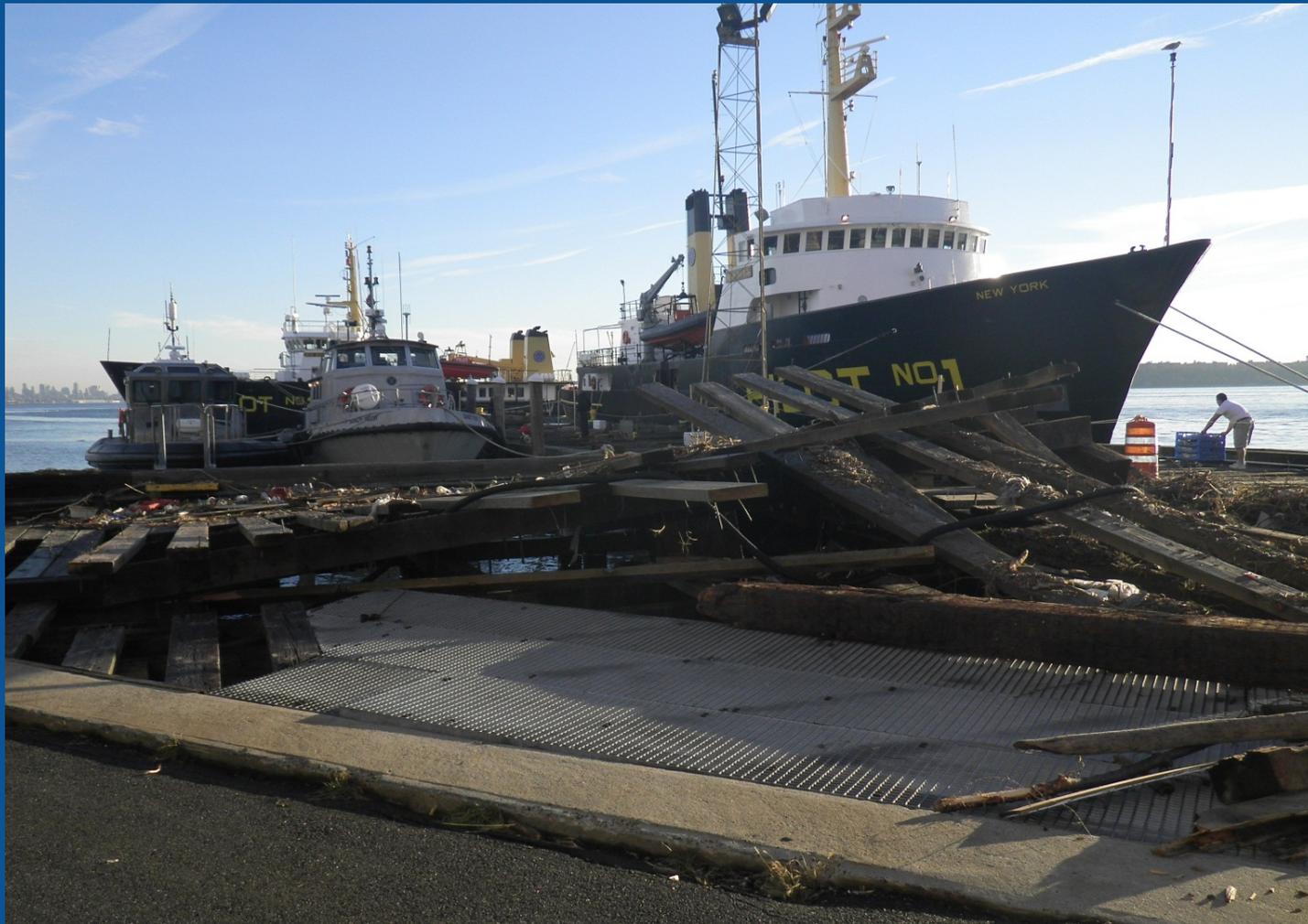
- *NOAA starts surveying Oct 31*
- *After comparison with earlier data, shoaling reported on Nov 4*

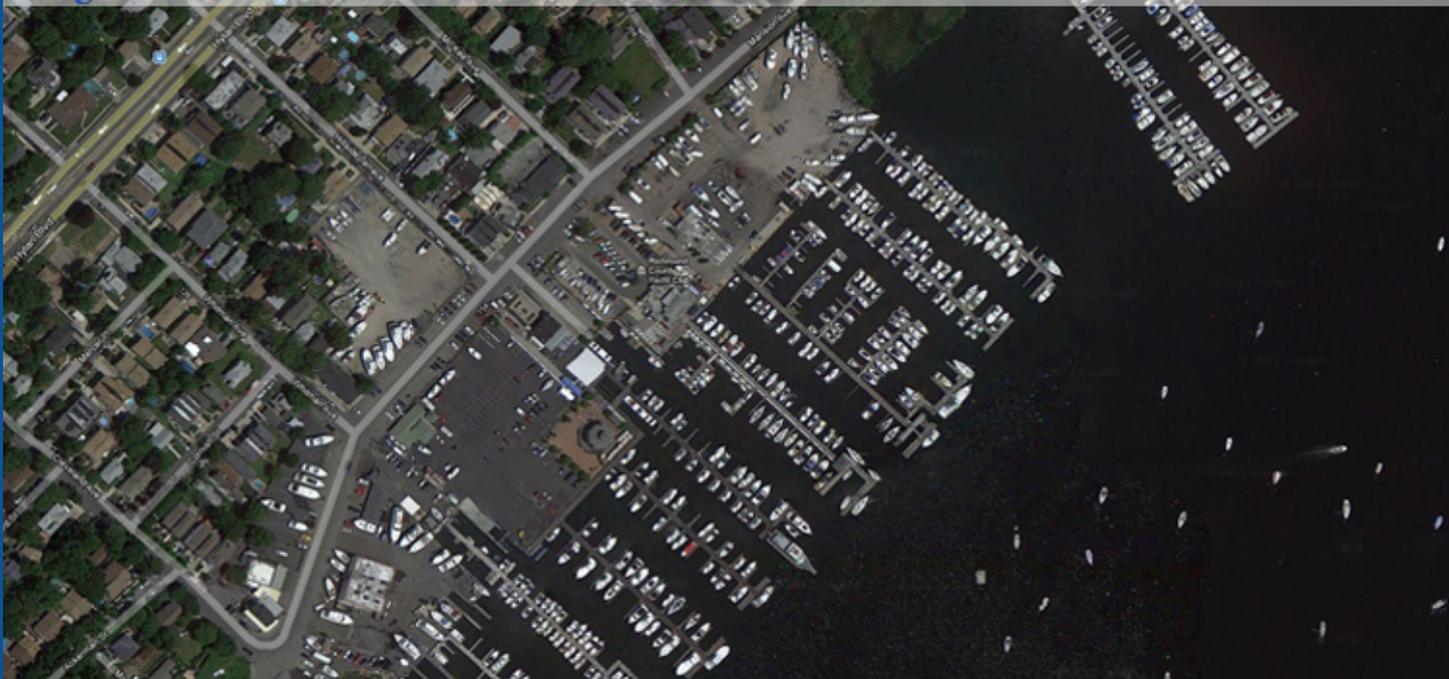
Hampton Roads - Norfolk, VA

- *NOAA starts surveying Oct 29*
- *Port resumes normal operations at 4 pm the next day (Oct 30)*



Port of New York and New Jersey took the brunt of the storm



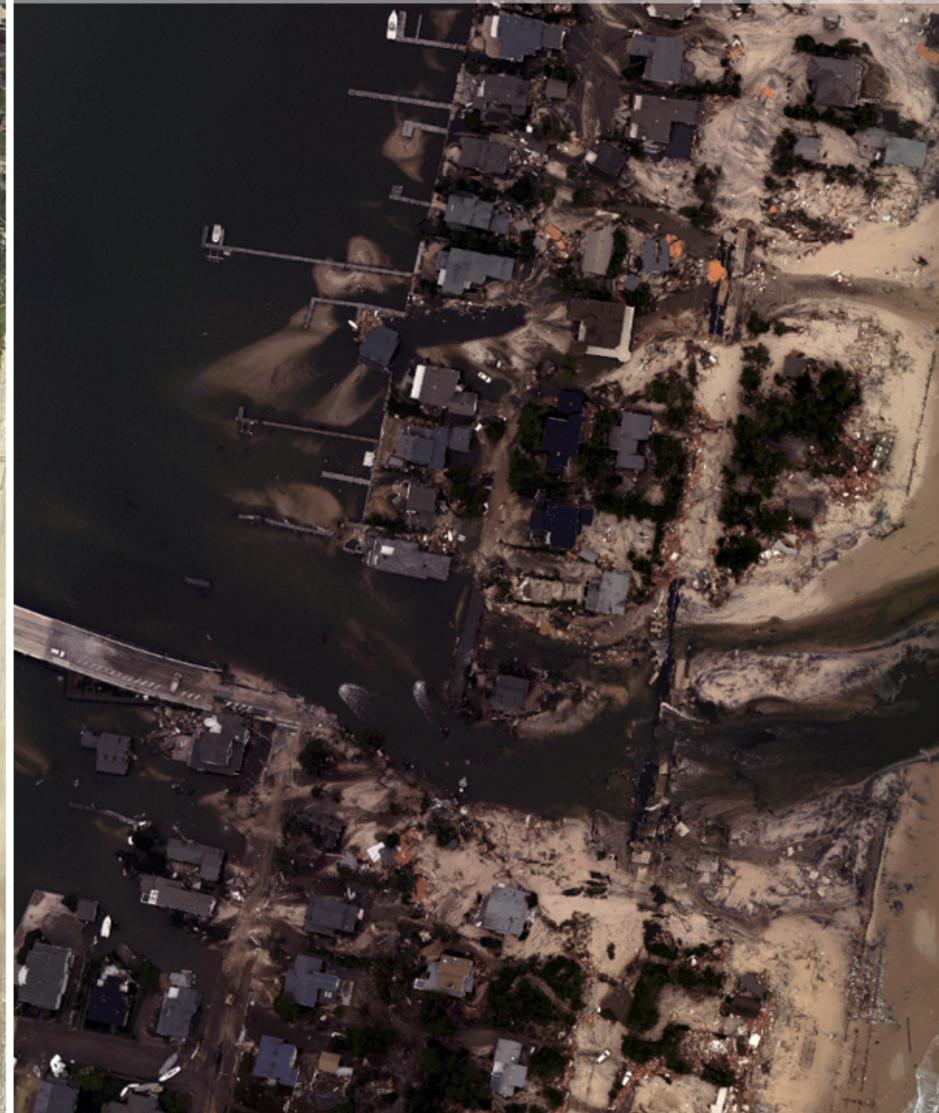
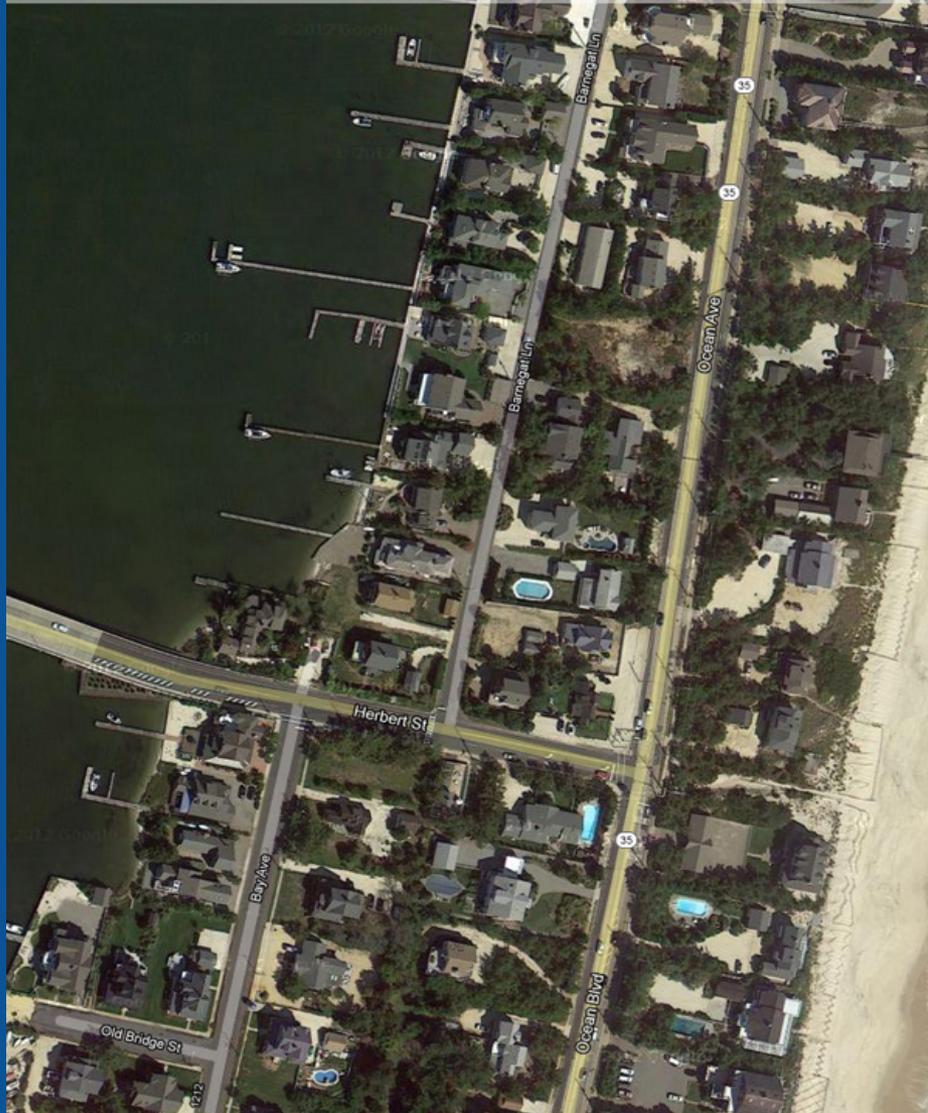


Staten Island, New York



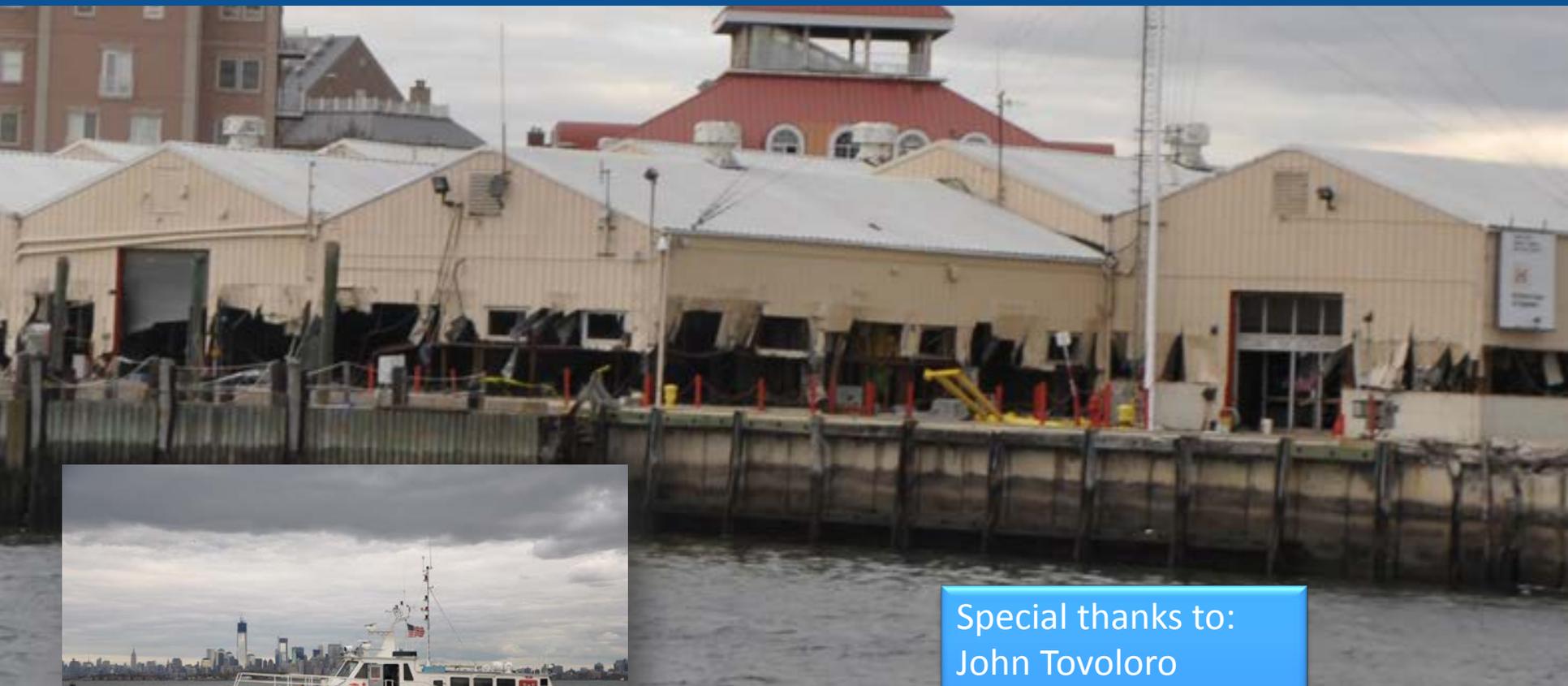
("After" image captured by NOAA's National Geodetic Survey)





Mantoloking, New Jersey ("After" image captured by NOAA's National Geodetic Survey)
http://ngs.woc.noaa.gov/eri_page/

U.S Army Corps of Engineers' offices



Special thanks to:
John Tovoloro
John Mraz
David Clarke
USACE survey crews

photos by Chris Gardner, New York District public affairs, Nov. 2, 2012

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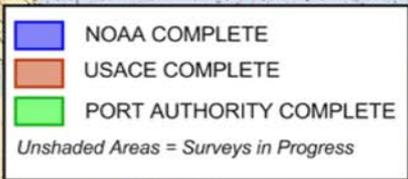




Response Surveys Port of New York/New Jersey

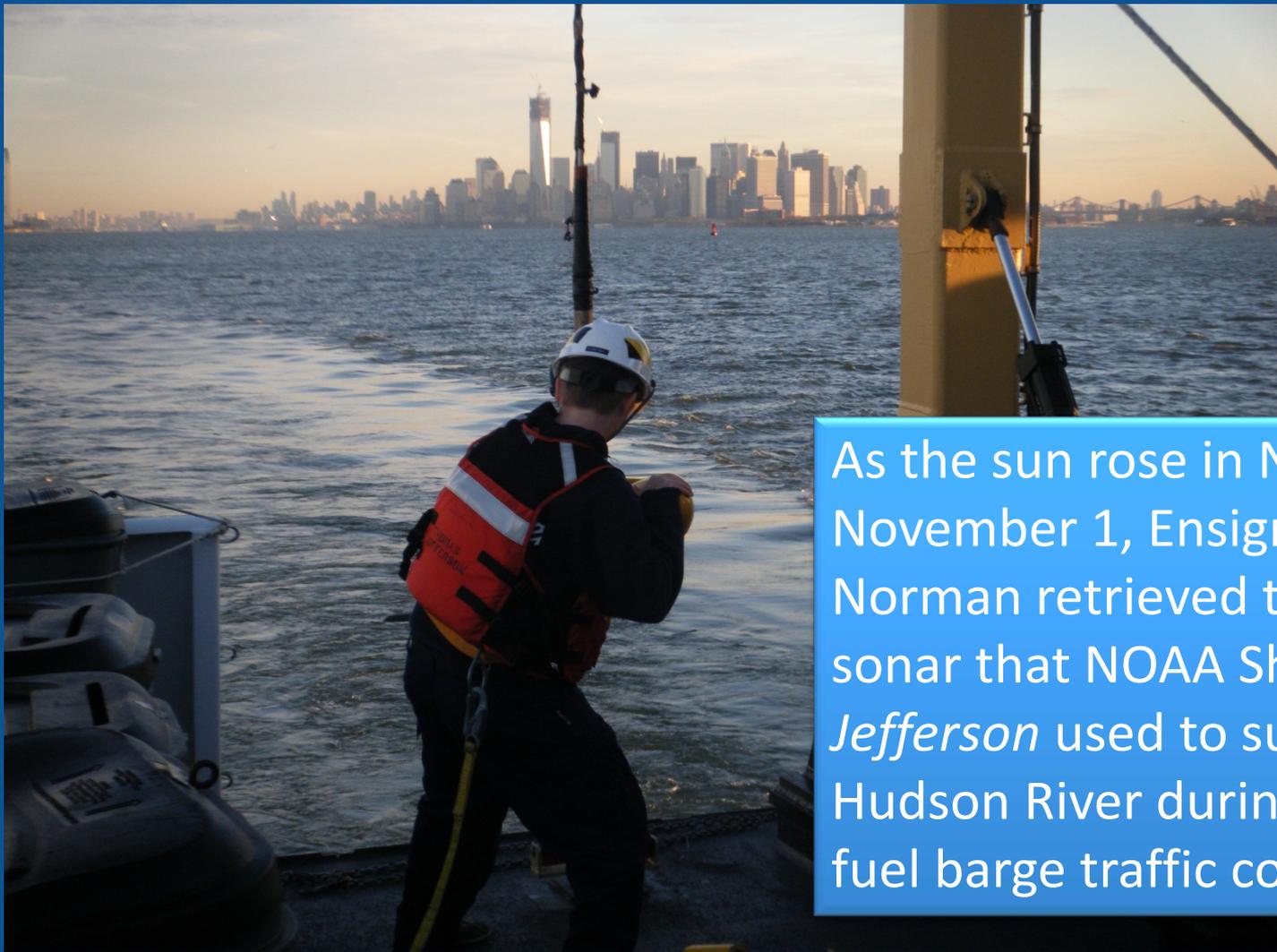
NOAA's completed survey areas represent over 80% of total survey requests for the Port of New York/New Jersey

NOAA surveyed 20 square nautical miles in 5 days, ensuring that all shipping channels in the Port of New York & New Jersey were clear of hazards.



Navigation Response Team 5 makes its way through the Sandy rubble at Carteret, New Jersey, public boat ramp

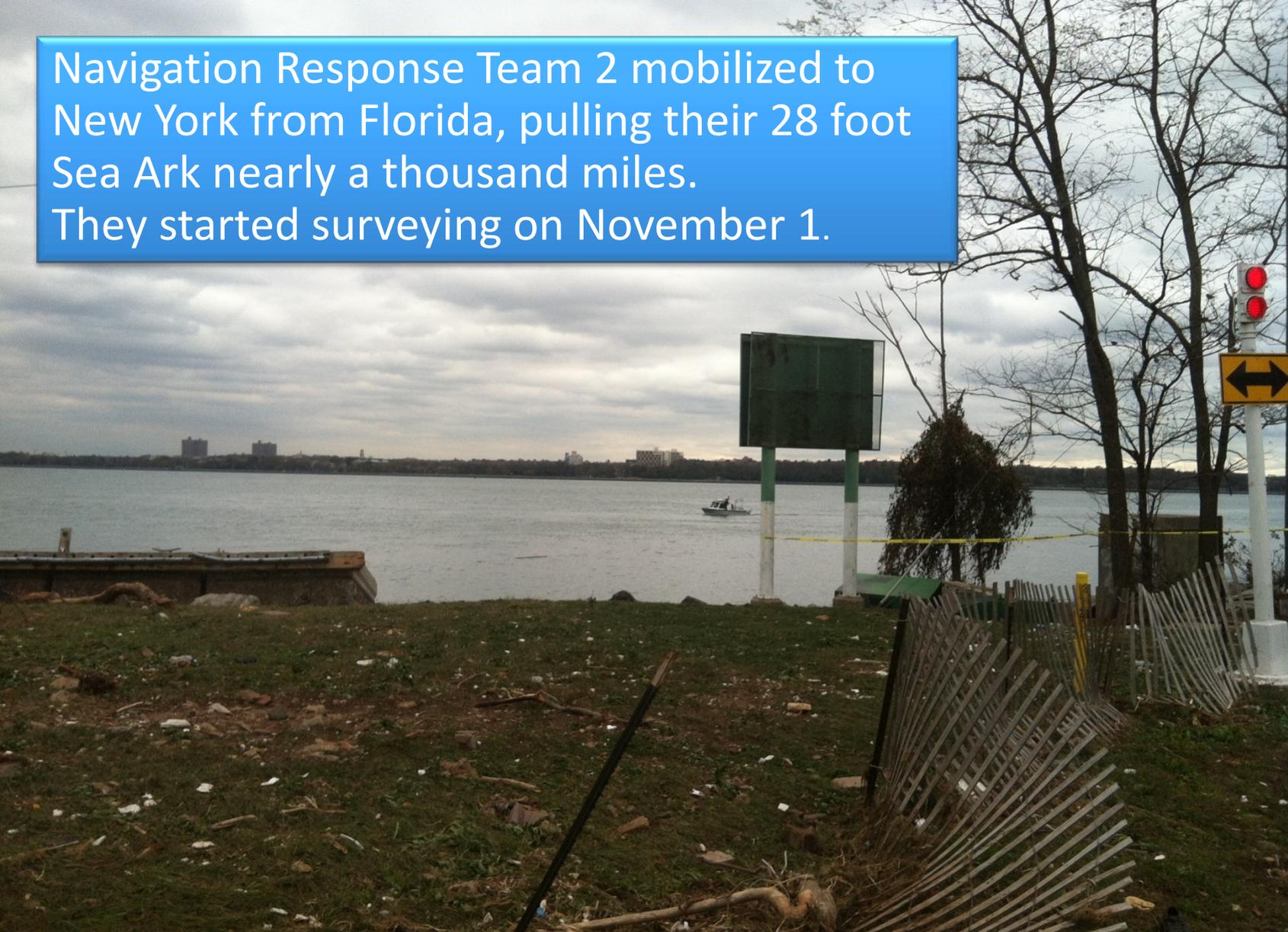




As the sun rose in New York on November 1, Ensign Lindsey Norman retrieved the side scan sonar that NOAA Ship *Thomas Jefferson* used to survey the Hudson River during the night, so fuel barge traffic could resume.

The New York / New Jersey port area is the country's largest for petro-chemical transportation, with the second largest oil refinery.

Navigation Response Team 2 mobilized to New York from Florida, pulling their 28 foot Sea Ark nearly a thousand miles. They started surveying on November 1.

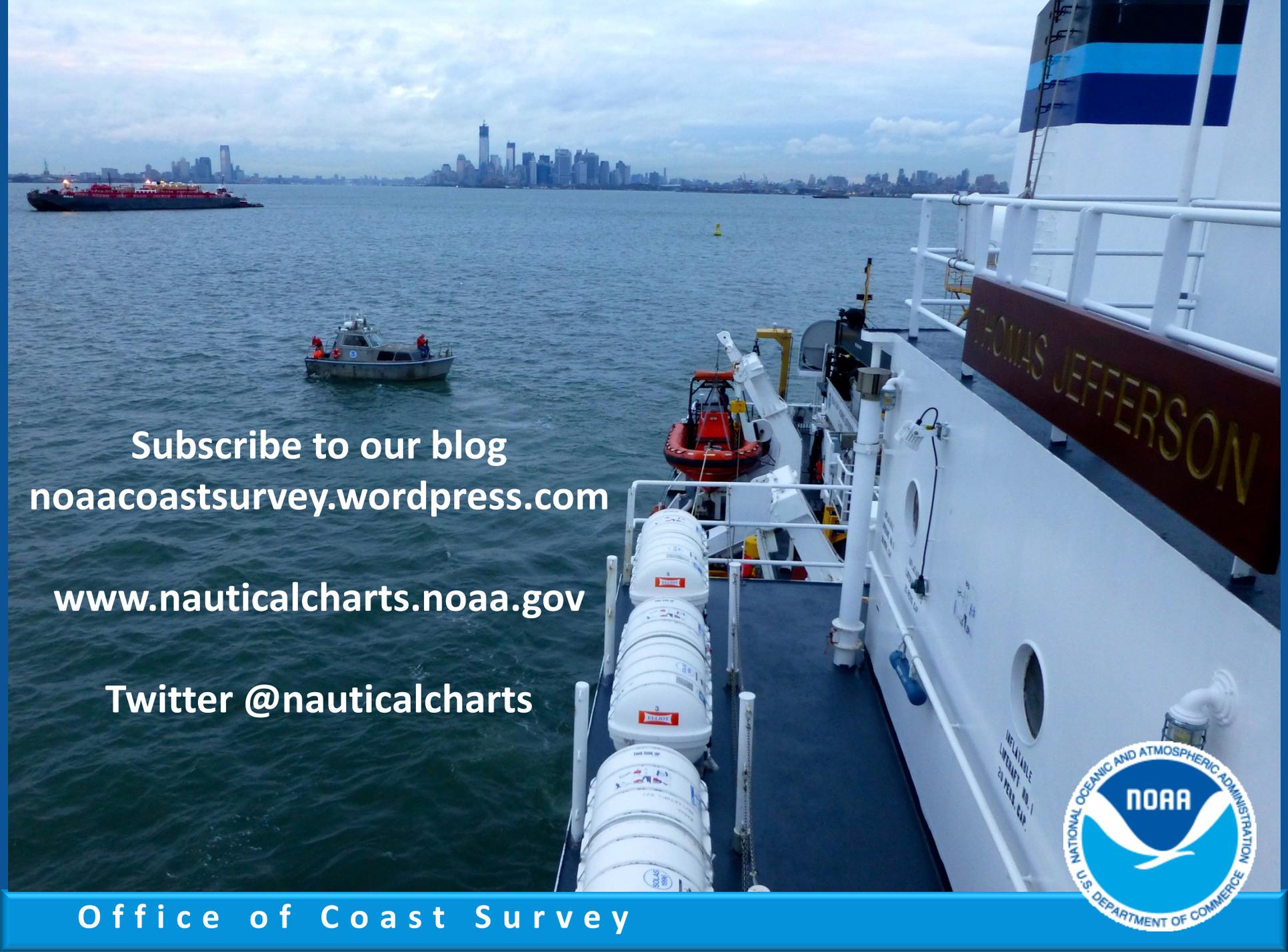


NRT 5 sees shipping resume in the Port of NY/NJ.



Surveys in NY/NJ were essential for the nation's economy

- Over \$200 billion of trade moved through the port in 2011
- It is country's third largest port, by value of cargo (fourth largest, by volume)
- The flow of trade starts from America's heartland, with exports like automobiles and meat, in addition to many other commodities



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