

New Jersey Shellfish Bed Closure and Sampling in Response to Superstorm Sandy

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Water Monitoring and Standards
Bureau of Marine Water Monitoring

NJWMC/BBP Meeting
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Storm Prep

- Statewide precautionary closure went into effect sunrise 10/28/2012.
- A 47 station sampling plan was set up to guide the reopening process.
- Developed Maps for the reporting of data on the Bureau website.

Storm Effects

- NJ took a direct hit from Sandy.
- Track of Sandy played a large role in contributing to the pollution event.
- Surge and rainfall were issues in some areas more than others.
- Surge damaged municipal storm water and waste water infrastructure.

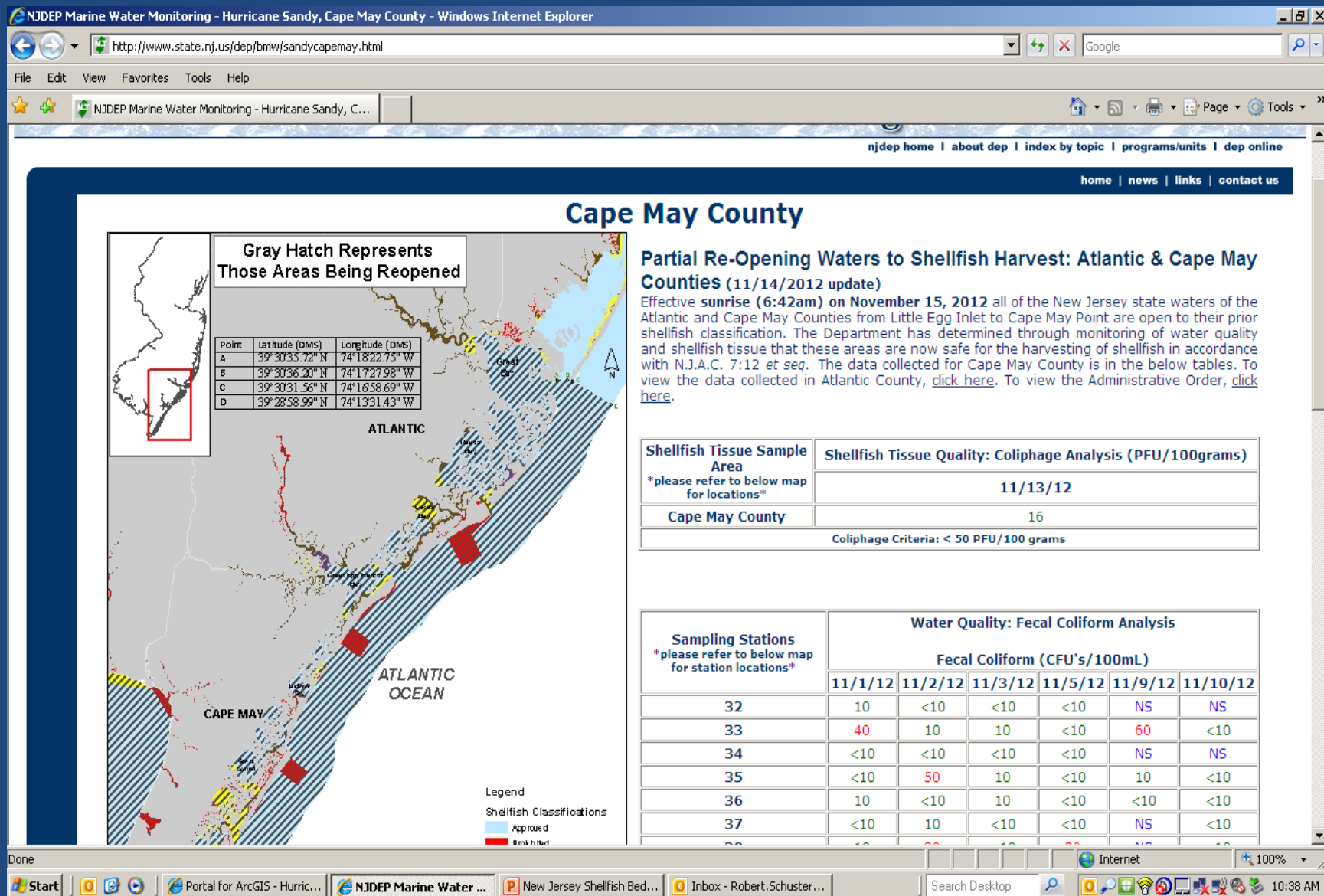
Sampling Design

- 47 stations were originally selected, stations were added to areas when needed, sampling water quality started on 11/1/2012.
- Due to infrastructure damage, coastal flooding and power outages, much of the contamination was from sewage bypasses and overflows.
- Tissue coliphage analysis (viral) was used for the reopening, criteria is <50 PFU/100g.
- Coliphage is an indicator of sewage, and is similar in morphology to Norwalk and Hepatitis.
- First used in New Jersey, to reopen shellfish waters, after a large sewage spill in Raritan Bay and Sandy Hook Bay in March 2003.
- Allows a faster reopening of shellfish waters, while still protecting public health.

Sampling Design



Data Presentation



NJDEP Marine Water Monitoring - Windows Internet Explorer

http://www.state.nj.us/dep/bmw/

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What's NEW?

- [Partial Re-Opening of Waters to Shellfish Harvest: Northern Barnegat Bay](#)
- [Partial Re-Opening of Waters to Shellfish Harvest: Sandy Hook Bay](#)
- [Partial Re-Opening of Waters to Shellfish Harvest: Navesink River and Shrewsbury River](#)
- [Partial Re-Opening of Waters to Shellfish Harvest: Atlantic & Cape May Counties](#)
- [Partial Re-Opening of Waters to Shellfish Harvest: Prohibited waters of the Atlantic Ocean for the harvest](#)

Precautionary Closure of Shellfish Beds Statewide due to anticipated heavy rainfall from Hurricane Sandy, effective Monday 10/29/2012

11/11/2012 Update:	Partial Re-Opening of Waters to Shellfish Harvest: Delaware Bay, effective Monday 11/12/2012
11/14/2012 Update:	Partial Re-Opening of Waters to Shellfish Harvest: Atlantic & Cape May Counties, effective Thursday 11/15/2012
12/7/2012 Update:	Partial Re-Opening of Waters to Shellfish Harvest: Prohibited waters of the Atlantic Ocean for the harvest of surf clams under the Bait Program, effective immediately
12/14/12 Update:	Partial Re-Opening of Waters to Shellfish Harvest: Navesink River and Shrewsbury River, effective Saturday 12/8/2012
12/21/12 Update:	Partial Re-Opening of Waters to Shellfish Harvest: Sandy Hook Bay, effective Saturday 12/15/2012
12/21/12 Update:	Partial Re-Opening of Waters to Shellfish Harvest: Northern Barnegat Bay, effective Friday 12/21/2012

View BMWM's response efforts to Hurricane Sandy

The New Jersey Bureau of Marine Water Monitoring is involved in many aspects of the State's coastal water quality. It's roles include monitoring for compliance with the National Shellfish Sanitation Program, coordination of coastal bathing beach monitoring, removal of trash from coastal beaches, evaluation of the ecological health of the coastal waters, and monitoring to identify and track pollution sources impacting the State's coastal waters.

New Jersey has a very promising trend with regard to coastal water quality as reflected in the percent of its coastal waters from which shellfish can be harvested. With the most recent changes to the State's regulations on January 3, 2011 almost 90 percent of New Jersey's coastal waters are harvestable for shellfish.

NJDEP Bureau of Marine Water Monitoring

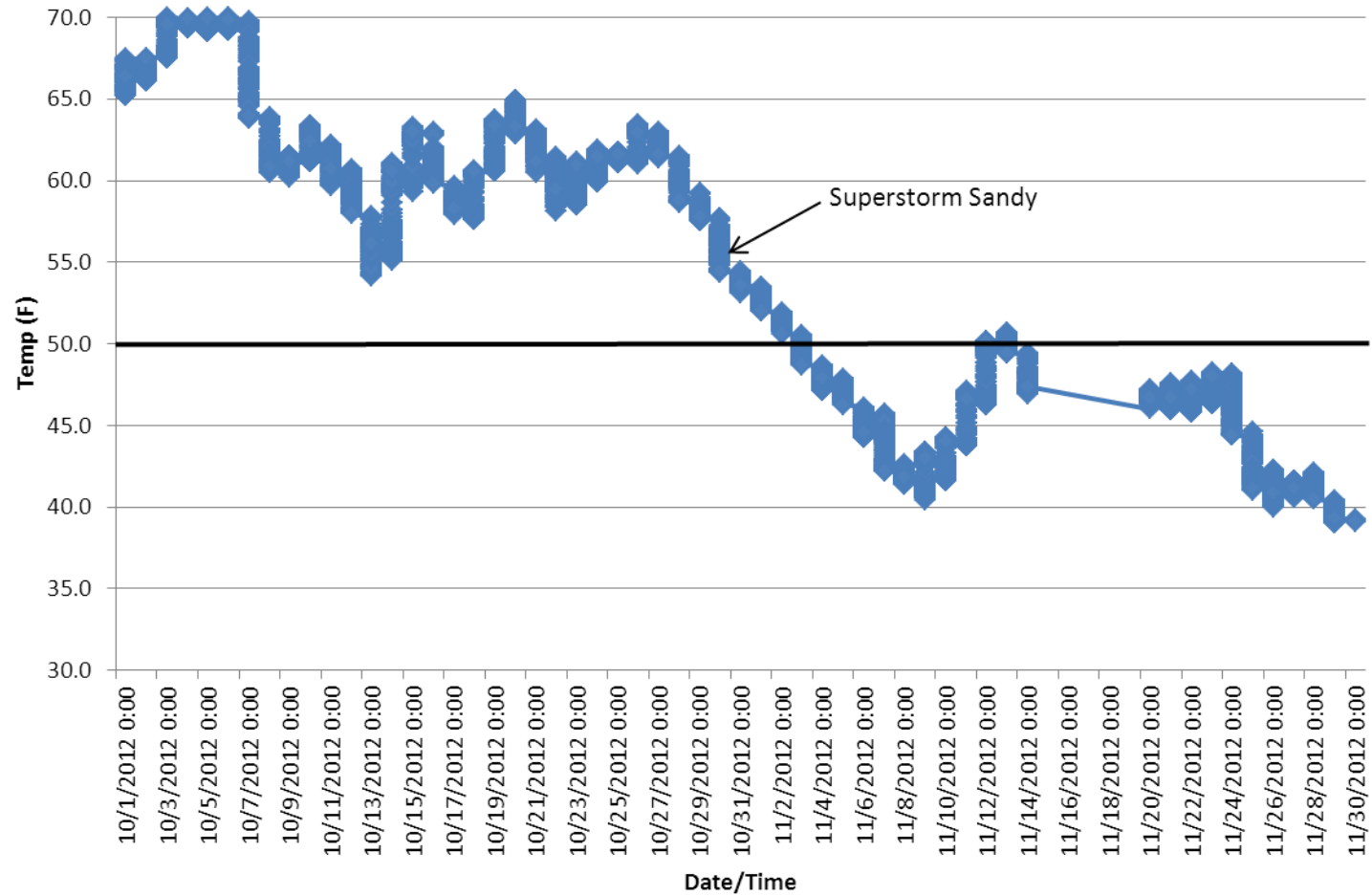
Internet 100%

Start Portal for ArcGIS - H... NJDEP Marine Wat... New Jersey Shellfish ... Inbox - Robert.Schu... FW: MARCO INFO: N... Search Desktop 10:55 AM

Openings

- Southern areas of the State were open within 2 weeks of the event.
- Northern areas, were opened after 6 weeks.
- Areas of Barnegat Bay Estuary are still closed (2/5/13) , due to shellfish tissue viral contamination.
- Contamination persist due to a large influx of viral contamination, followed by cooling water temperature (below 50 F), which reduced the shellfish metabolism and the ability purge pollutants.
- Split sampling was performed with FDA Dauphin Island Lab to verify counts.

Manahawkin Bay Continuous Temperature



Tissue Samples from Barnegat Bay



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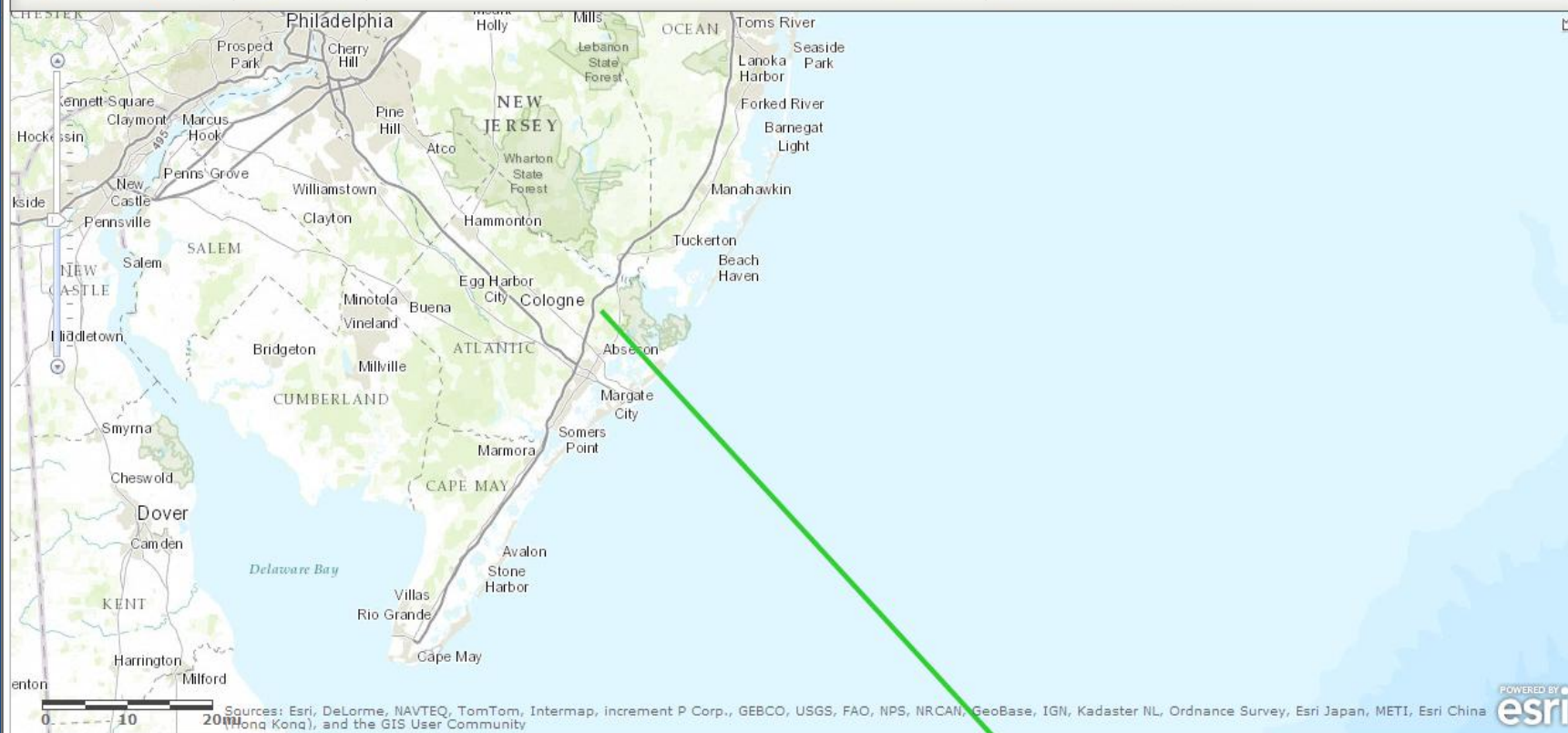


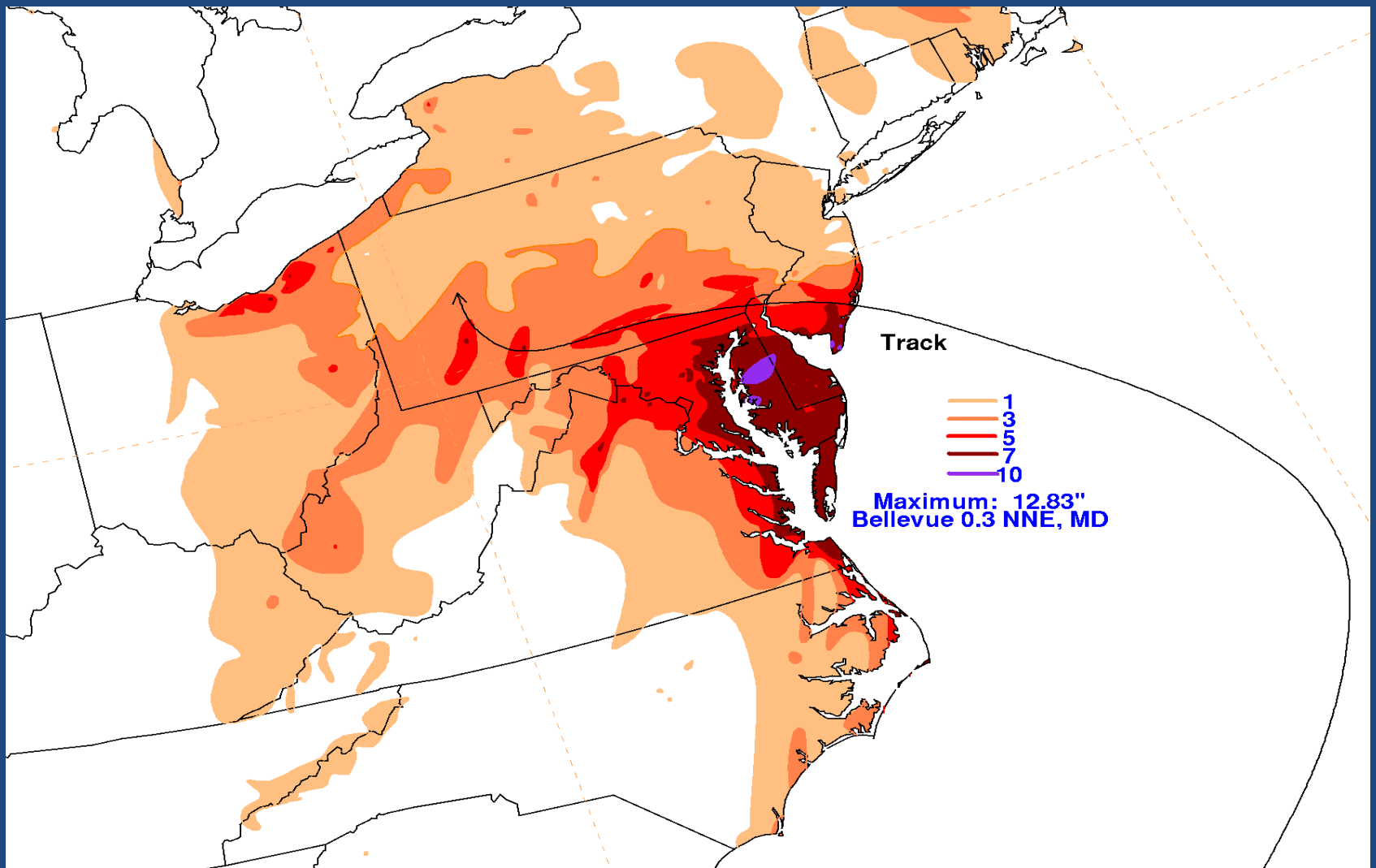
Hurricane Sandy Storm Tide mapper (Provisional Data)

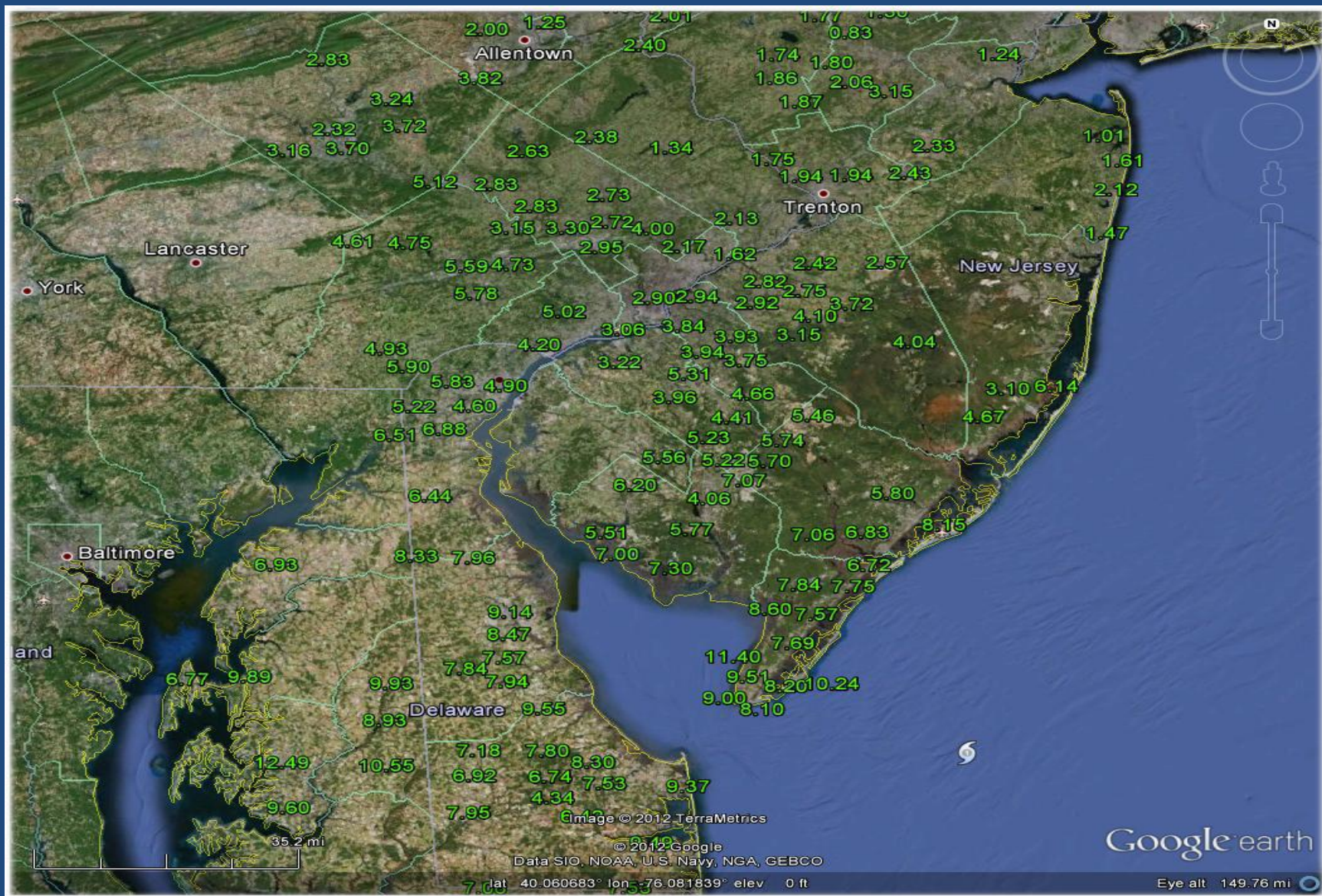
New Map My Content Help Sign In

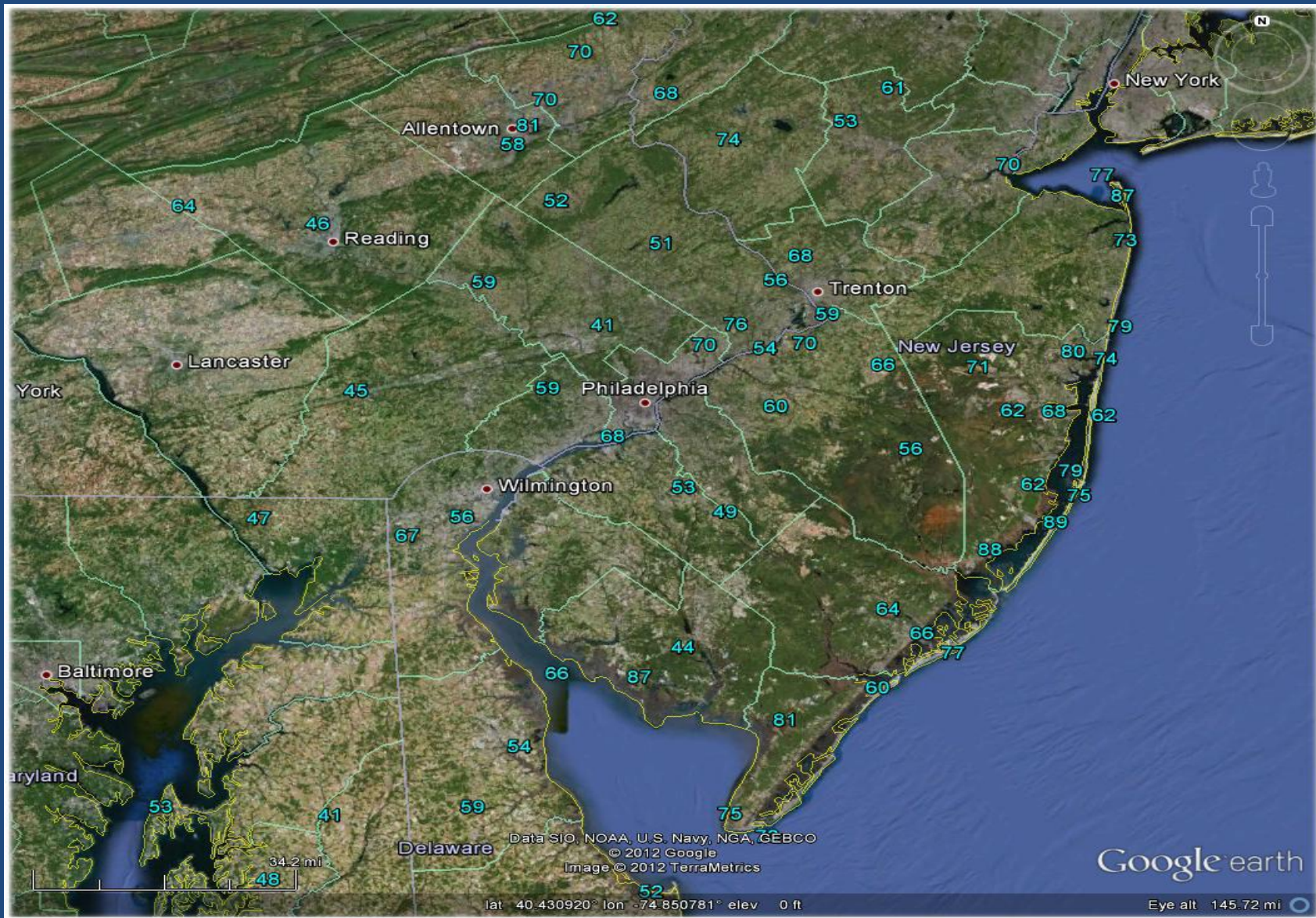
Details Add Basemap

Save Share Print Measure Bookmarks Find address or place

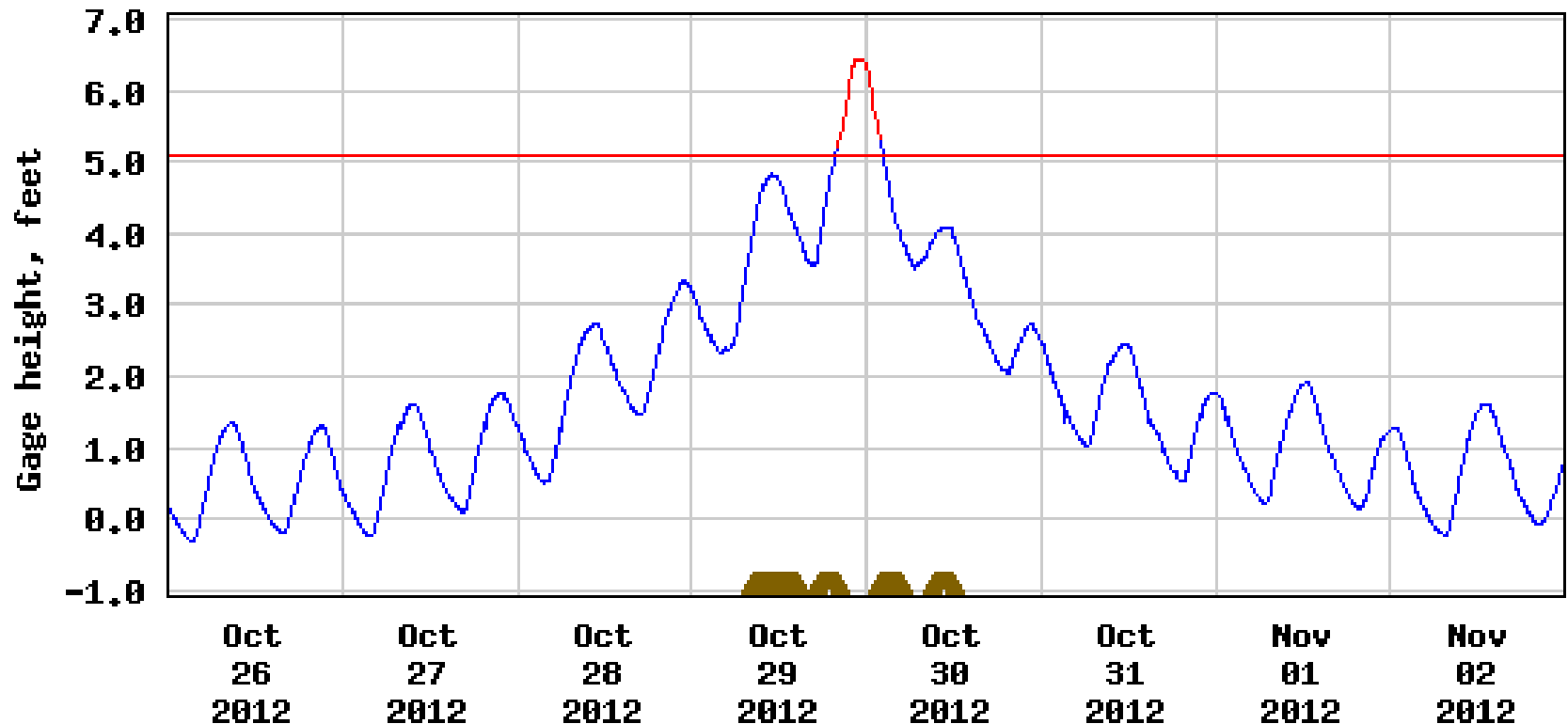








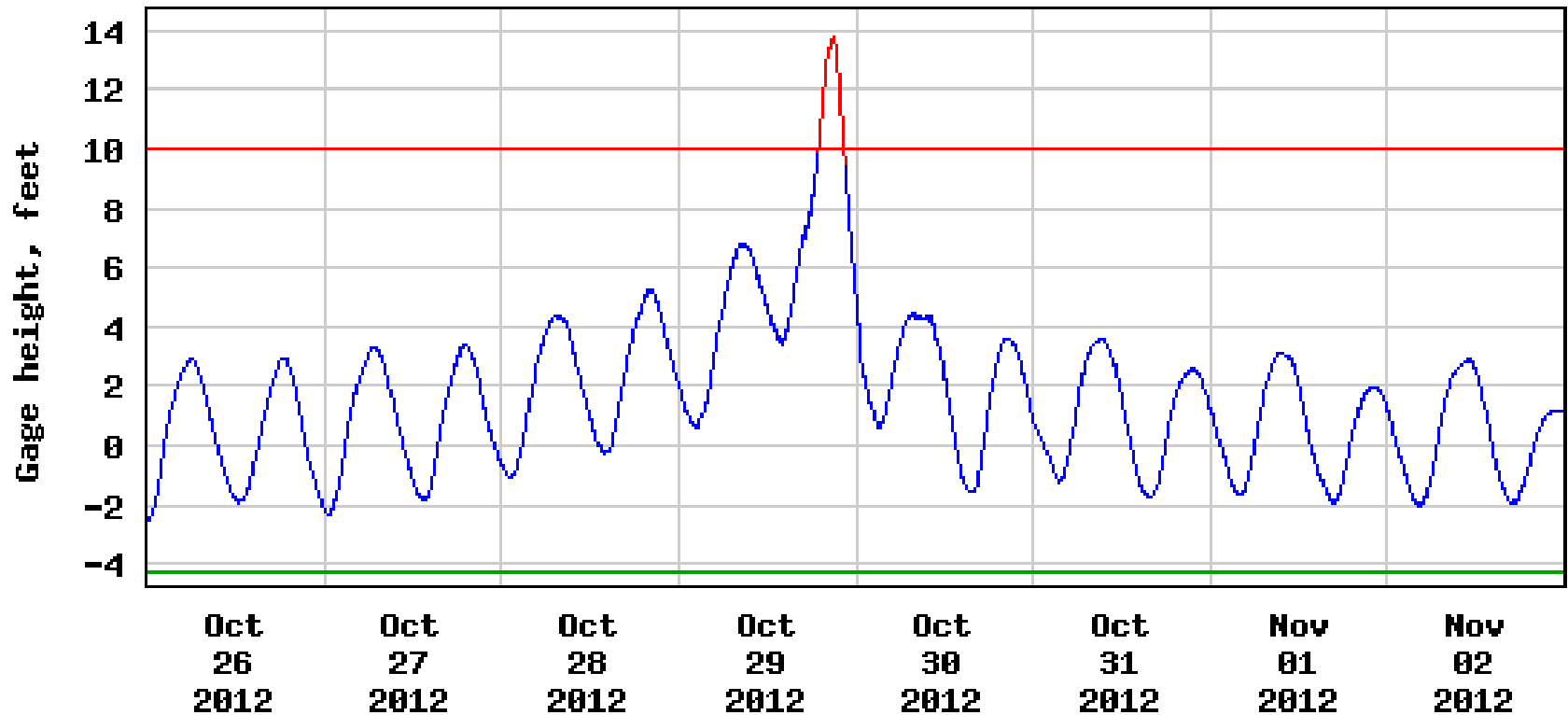
USGS 01409146 East Thorofare at Ship Bottom NJ



----- Provisional Data Subject to Revision -----

- Gage height
- Estimated gage height
- △ Value exceeds "high" threshold.
- Gage cannot accurately measure above this tide level

USGS 01407081 Raritan Bay at Keansburg NJ



---- Provisional Data Subject to Revision ----

- Gage height
- Estimated gage height
- Gage cannot accurately measure above this tide level
- Gage cannot accurately measure below this tide level

Sandy Storm Facts

- LOCATION.....WATER LEVEL.....TIDE LEVEL.....**SURGE**.....TIME
- *SANDY HOOK.....13.31* FT MLLW..4.67 FT MLLW....**8.64 FT**...736 PM
10/29
- ATLANTIC CITY.....8.90 FT MLLW...4.08 FT MLLW....**4.82 FT**...824 PM
10/29
- CAPE MAY.....8.91 FT MLLW...5.40 FT MLLW....**3.51 FT**...924 AM
10/29
- ATLANTIC CITY (NOS).....945.6 MB AT 7:18 PM.

Summary

- Area of the Barnegat Bay Estuary was close to the center of the storm and in the northeast quadrant (strongest part of the storm).
- Area from Little Egg Inlet north to Mantoloking was extremely hard hit, from surge, wind and rain.
- Multiple tide cycles of elevated tides.