

1. RAPID RESPONSE PLAN

1.4 Rapid Warning System Enhancements: develop a synthesis of current storm flood warning practices and forecast systems in coastal and upstate New York, including a demonstration product for an improved warning system for coastal or inland flooding --

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OBJECTIVES

- Met with NYC National Weather Service and NWS Eastern Region Headquarters in early Jan 2014 to discuss warning system and process (obtain reports from Irene and Sandy). Recommendation: Workshop at OEM office on Improving Communication for Warning Decision Support
- NYU-Cornell will catalog and assess other existing rapid warning systems (e.g., USGS Water Gauging System).
- Improvements to real-time atmospheric and storm surge predictions systems for the upcoming hurricane season.
- Improvements in visualization for atmospheric, hydrological, and storm surge predictions.
- Enhance Partnerships and Education Networks



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Advanced Circulation Model (ADCIRC) Upgrade/Testing

** => New things tested...

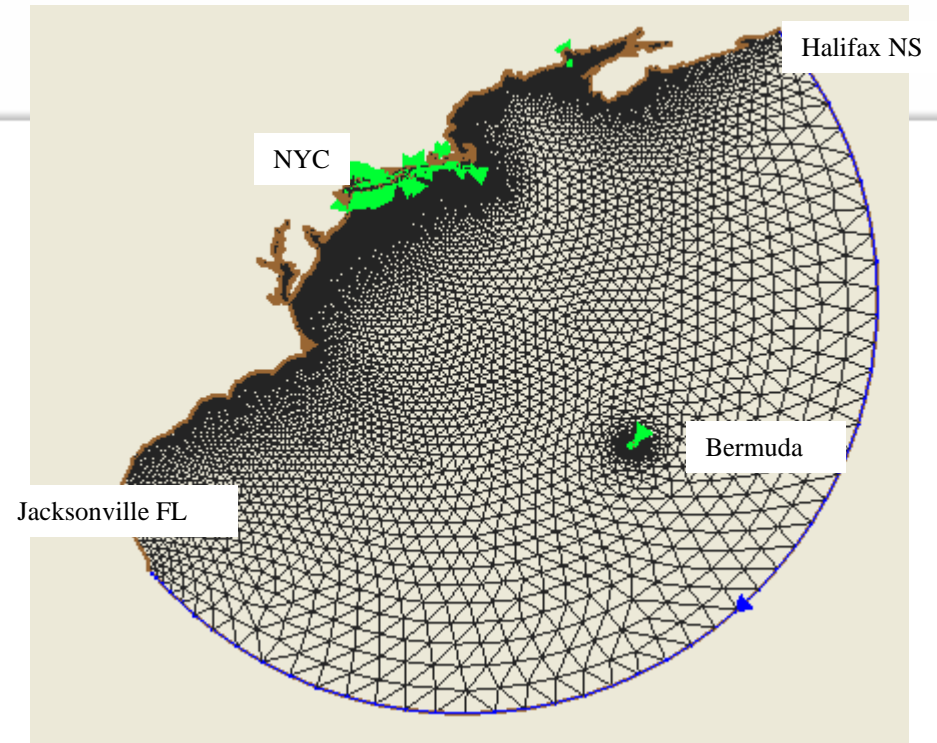
** Run 3D Mode (3 or 5-levels)

- 184,534 nodes
-> 20 m to 70 km

- Tide only BC's

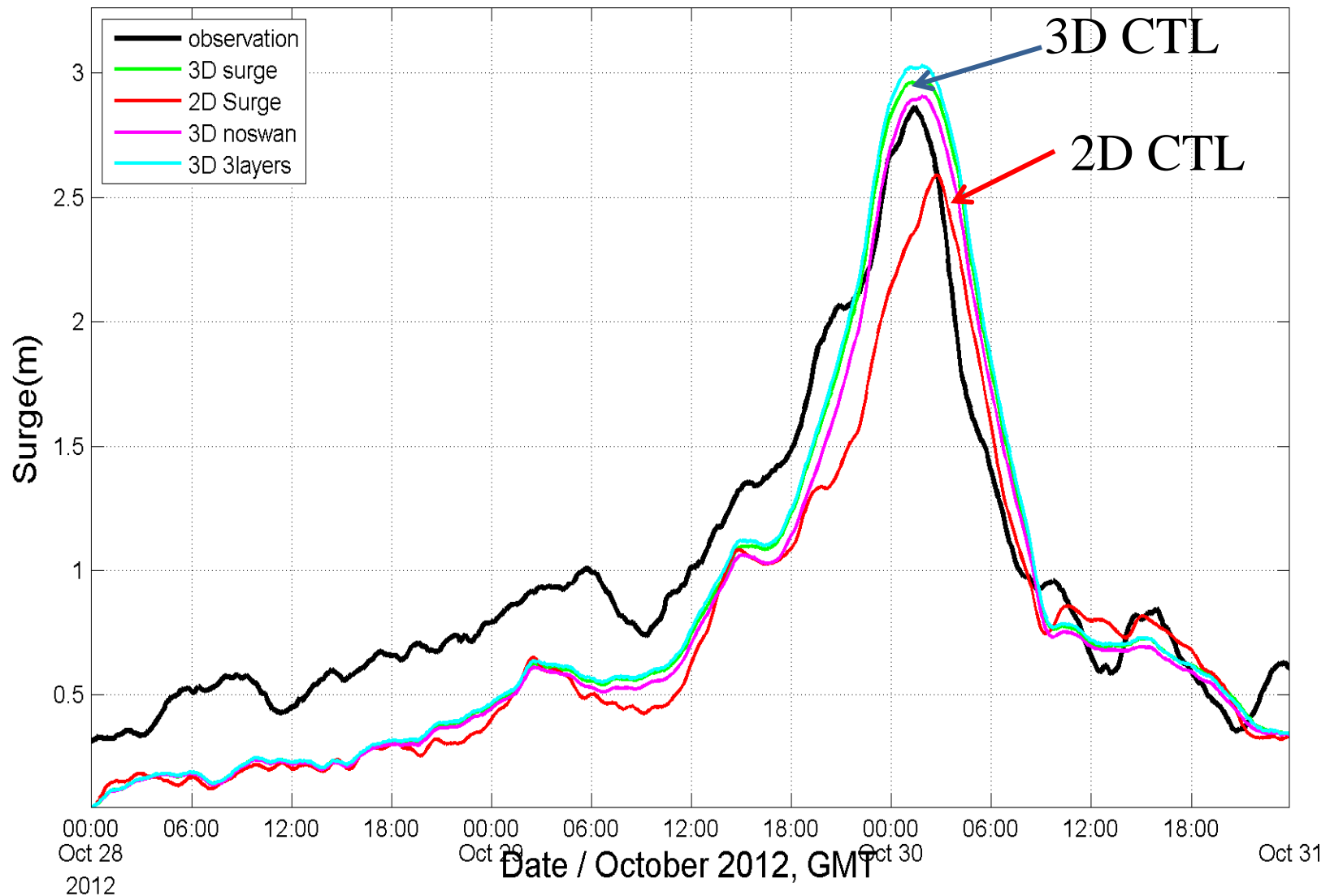
** Couple with

SWAN wave model

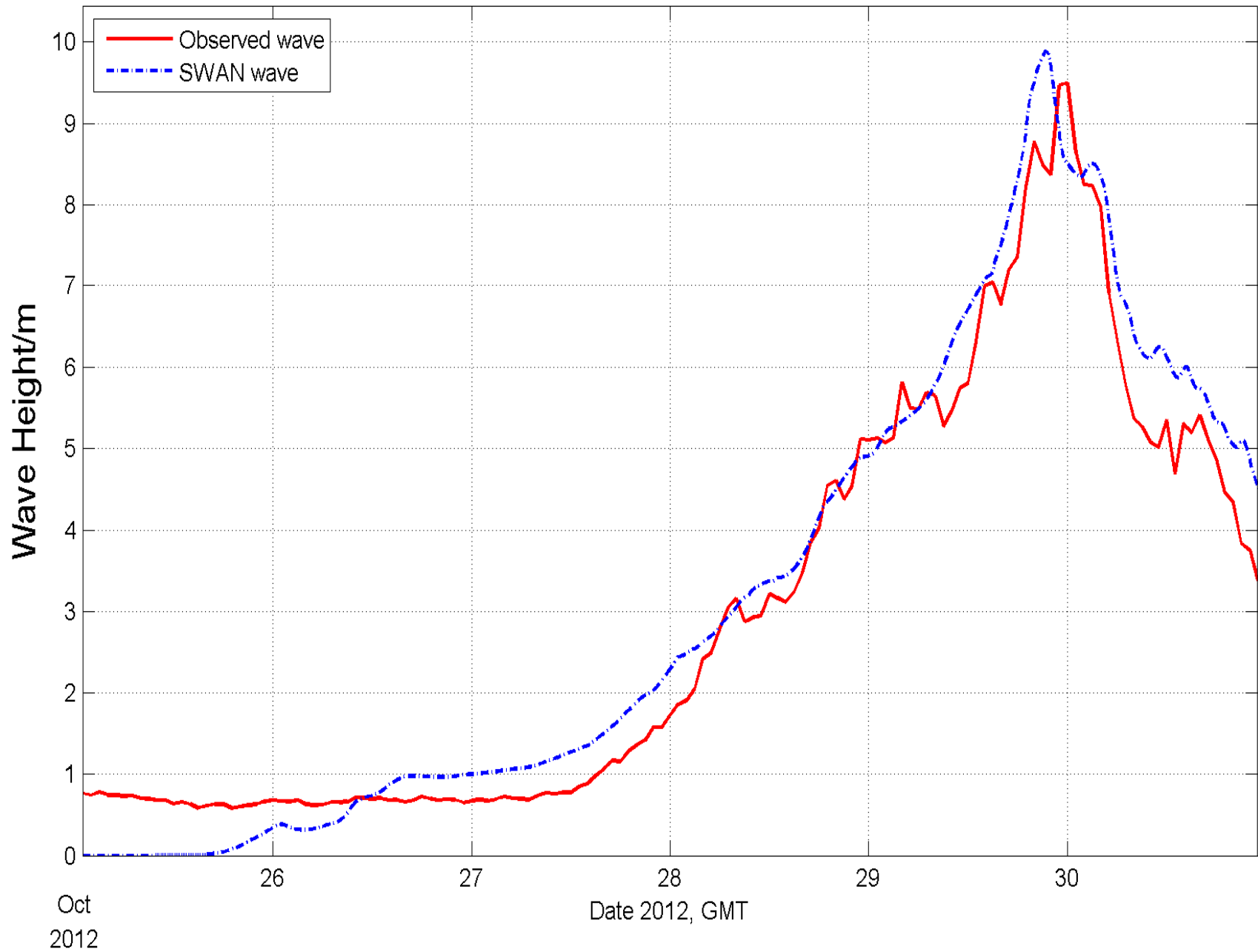


ADCIRC 2D vs 3D vs SWAN for Sandy

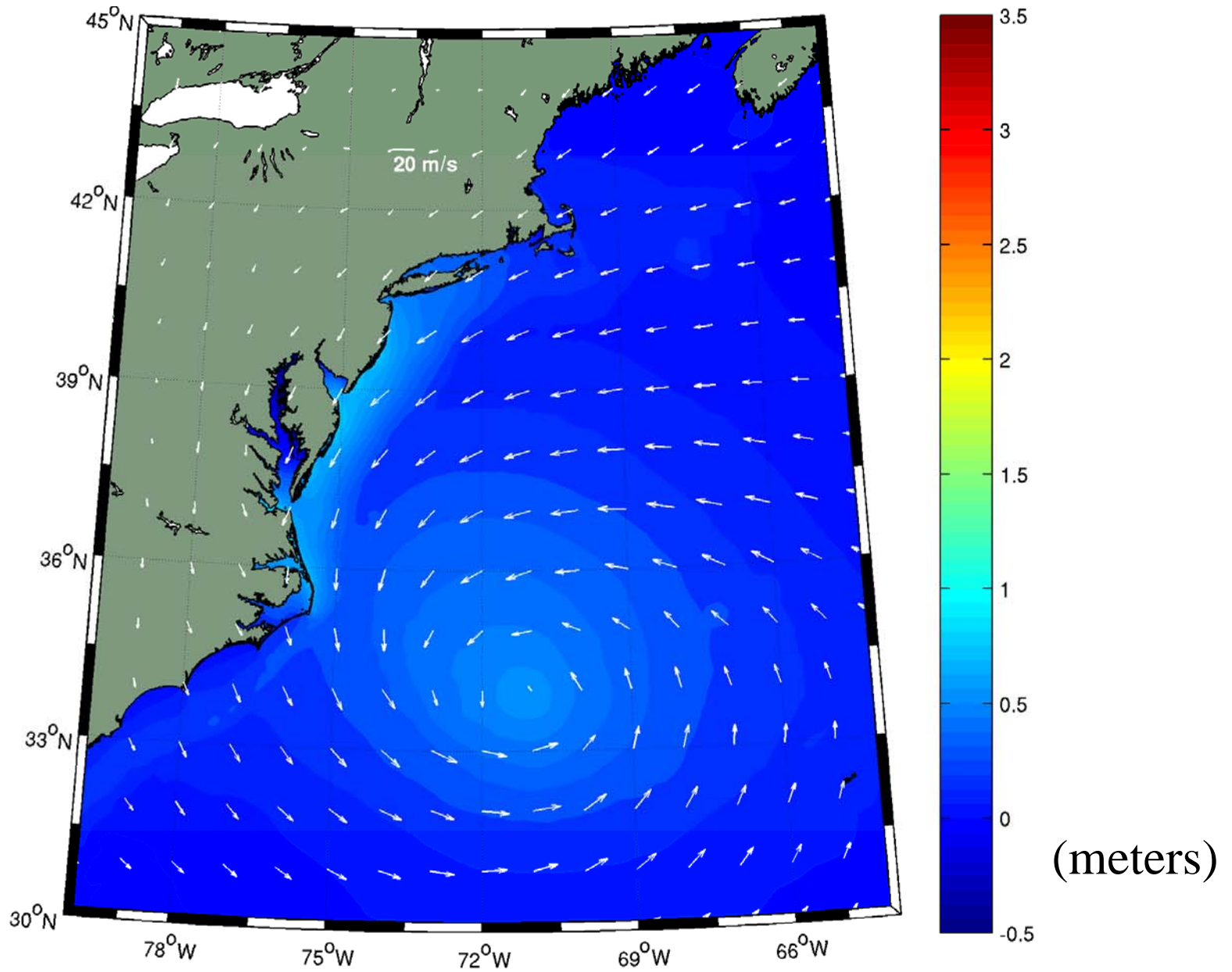
ADCIRC+SWAN 3D and 2D Battery Surge



Significant Wave Height at Buoy No 44025



REPLACE WITH A GOOGLE EARTH EXAMPLE??



Real-time WRF to 4-km grid spacing: http://dendrite.somas.stonybrook.edu/LI_WR



SBU WRF-ARW Forecasts

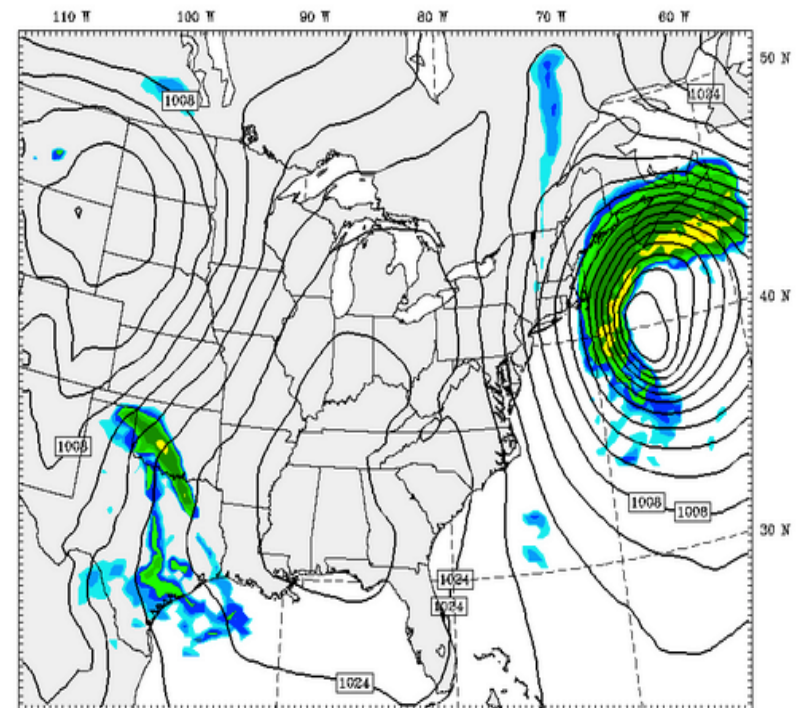
Available Model Runs

Currently the NAM-WRF does not include a 4-km domain

NAM-WRF	both	GFS-WRF
00 UTC Wed 26 Mar 2014	compare	00 UTC Wed 26 Mar 2014
12 UTC Tue 25 Mar 2014	compare	12 UTC Tue 25 Mar 2014
00 UTC Tue 25 Mar 2014	compare	00 UTC Tue 25 Mar 2014
12 UTC Mon 24 Mar 2014	compare	12 UTC Mon 24 Mar 2014
00 UTC Mon 24 Mar 2014	compare	00 UTC Mon 24 Mar 2014
12 UTC Sun 23 Mar 2014	compare	12 UTC Sun 23 Mar 2014
00 UTC Sun 23 Mar 2014	compare	00 UTC Sun 23 Mar 2014
12 UTC Sat 22 Mar 2014	compare	12 UTC Sat 22 Mar 2014
00 UTC Sat 22 Mar 2014	compare	00 UTC Sat 22 Mar 2014
12 UTC Fri 21 Mar 2014	compare	12 UTC Fri 21 Mar 2014
00 UTC Fri 21 Mar 2014	compare	00 UTC Fri 21 Mar 2014
12 UTC Thu 20 Mar 2014	compare	12 UTC Thu 20 Mar 2014
00 UTC Thu 20 Mar 2014	compare	00 UTC Thu 20 Mar 2014
12 UTC Wed 19 Mar 2014	compare	12 UTC Wed 19 Mar 2014

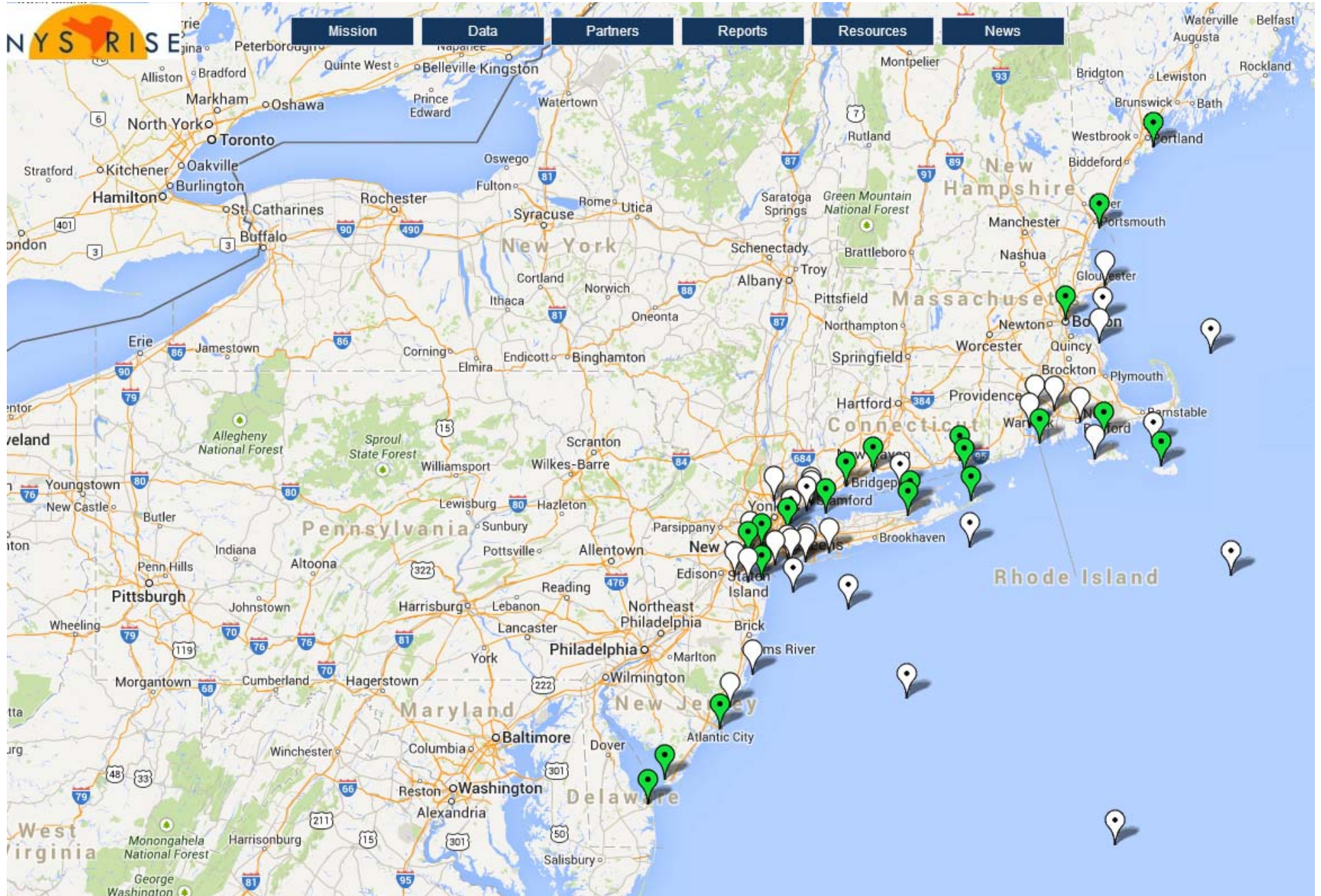
Latest GFS-WRF Simulated Reflectivity

Init: 12 UTC Tue 25 Mar 14 Fcst: 27 h
 Valid: 15 UTC Wed 26 Mar 14 (11 EDT Wed 26 Mar 14)
 Radar reflectivity (lambda = 10 cm) at k-index = 36
 Mean Sea Level Pressure (hPa)



The WRF-ARW (v3.5.1) is run twice daily, using the 00z and 12z NAM and GFS forecasts as initial and boundary conditions. The 36-km outer domain one-way nests down to 12- and 4-km inner domains. Model physics include Thompson microphysics, YSU boundary layer scheme, and the SAS cumulus parameterization.

Stony Brook Storm Surge Predictions in Google Earth (Mark Lang)



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1.4 Rapid Warning System Enhancements – Current activities

- A. Development of real-time disaster impacts visualization tool for use by Agriculture sector emergency managers (Ag Sentinel)
- B. Enhanced Cornell Cooperative Extension Disaster Education Network (county communication nodes for Federal, State and local alerts, as well as preparedness & resilience guidance tailored to event)
- C. An application in the new Google Earth Engine API that uses highly parallelized cloud computing to model socio-ecological flood vulnerability at high spatial and temporal resolution (upstate NY).
- D. Assessment of adaptability of the “Hudson Estuary Watershed Resiliency Project” to other upstate watersheds and recommendations document
- E. Summary of application of probabilistic climate metrics focused on how to streamline climate metrics models for use in augmenting current warning and forecast systems, especially in the realms of agriculture and forestry in upstate NY.



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AG SENTINEL RAPID VISUALIZATION TOOL



Cornell University
Cooperative Extension



Agriculture Emergency Situation Reporting

(This information is for situation awareness, reporting, and for immediate needs assistance during local and State disaster response. Farmers are encouraged to follow their normal process of reporting specific losses to their county Extension and USDA FSA offices.)

Name: _____ Contact Info: _____ Date: _____ Time: _____

Number of Farms Impacted in County:

Check box(es) to indicate impact. List the numbers impacted and indicate what, if any, assistance is needed. (e.g. mend/upright fences; farm/barn mud-out; dairy milking assistance; generator for milk processing; debris on roads/delivery issues; carcass disposal, etc.)

Livestock: Number:

- Cattle: Dairy Beef _____ Loose; _____ Stranded; _____ Injured; _____ Dead
- Equine _____ Loose; _____ Stranded; _____ Injured; _____ Dead
- Swine _____ Loose; _____ Stranded; _____ Injured; _____ Dead
- Sheep _____ Loose; _____ Stranded; _____ Injured; _____ Dead
- Goats _____ Loose; _____ Stranded; _____ Injured; _____ Dead
- Ostrich/Emu _____ Loose; _____ Stranded; _____ Injured; _____ Dead
- Llama/Alpaca _____ Loose; _____ Stranded; _____ Injured; _____ Dead
- Poultry: Layers Broilers _____ Loose; _____ Stranded; _____ Injured; _____ Dead
- other: _____ _____ Loose; _____ Stranded; _____ Injured; _____ Dead

Other Livestock issue/need:

Location(s): _____

Fields:

- crops _____ Type of Impact/need: _____
- grazing lands _____ Type of Impact/need: _____
- nursery _____ Type of Impact/need: _____
- tree stock _____ Type of Impact/need: _____
- other: _____ Type of Impact/need: _____

Location(s): _____

Supplies/Facilities/Equipment:

- Stored Feed _____ Type of Impact/need: _____
- Water _____ Type of Impact/need: _____
- Farmhouse _____ Type of Impact/need: _____
- Other living quarters _____ Type of Impact/need: _____
- Barns _____ Type of Impact/need: _____
- Farm equipment _____ Type of Impact/need: _____
- Generator/Pumps _____ Type of Impact/need: _____
- Fences _____ Type of Impact/need: _____

Location(s): _____

Roads: On premises Leading to premises

Location/need: _____

Power: Outage on premise (pole/wires down) System/grid outage

Location/need: _____

FourthDisaster

Begin: 11/21/2013

End:

OPEN

County	Status	Point of Contact	Ag Assessment	Documents & Images
 Albany	Some Municipalities Declared		Heather Russell (11/21/2013 3:39 PM): test1	pdfdoc1.pdf pdfdoc4.pdf 
 Allegany	County Emergency	Heather Russell	Heather Russell (11/21/2013 3:39 PM): test2	
Ag Census Bronx	No Emergency		No existing entries.	
 Broome	County Emergency		Heather Russell (11/21/2013 3:39 PM): test3	
 Cattaraugus	No Emergency		No existing entries.	pdfdoc3.pdf
 Cayuga	No Emergency		No existing entries.	
 Chautauque	No Emergency		No existing entries.	



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ENHANCED CORNELL COOPERATIVE EXTENSION DISASTER EDUCATION NETWORK

- We are adapting our existing high capacity Cornell CCE NY EDEN communications systems to provide a centralized high-capacity ag sentinel system that organizes local information collection and pushes key information to response agencies during an emergency involving the natural resources, agricultural and food sector.
- This existing CCE system's capacity is well known for moving information of all kinds from state and federal governments, the national land grant university community, and the Cornell research and extension staff, to local communities and municipalities, and vice versa.
- Training and education activities for this retooling are currently under way.



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ASSESSMENT OF ADAPTABILITY OF THE “HUDSON ESTUARY WATERSHED RESILIENCY PROJECT”

A meeting was convened on Friday, March 7 at DEC Region 3 offices in New Paltz, among the following individuals -- Keith Tidball (NYS EDEN); Kathy Czajkowski (Mohawk River Basin Program); Bill Nechamen (by phone – NYSDEC, Bureau of Flood Protection and Dam Safety); Scott Cuppett, Emily Vail, and Beth Roessler (Water Resource Institute); Rosemarie Baglia (CCE Orange County); Elizabeth LoGiudice and Marilyn Wyman (CCE Columbia-Greene Counties); Sean Carroll, Neil Curri, Carolyn Klocker, Camille Marcotte, and Zywia Wojnar (CCE Dutchess County).

Information sharing and planning for a final product were the objectives of the meeting.



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