Connecting people and resources to accelerate discovery by empowering the science gateway community

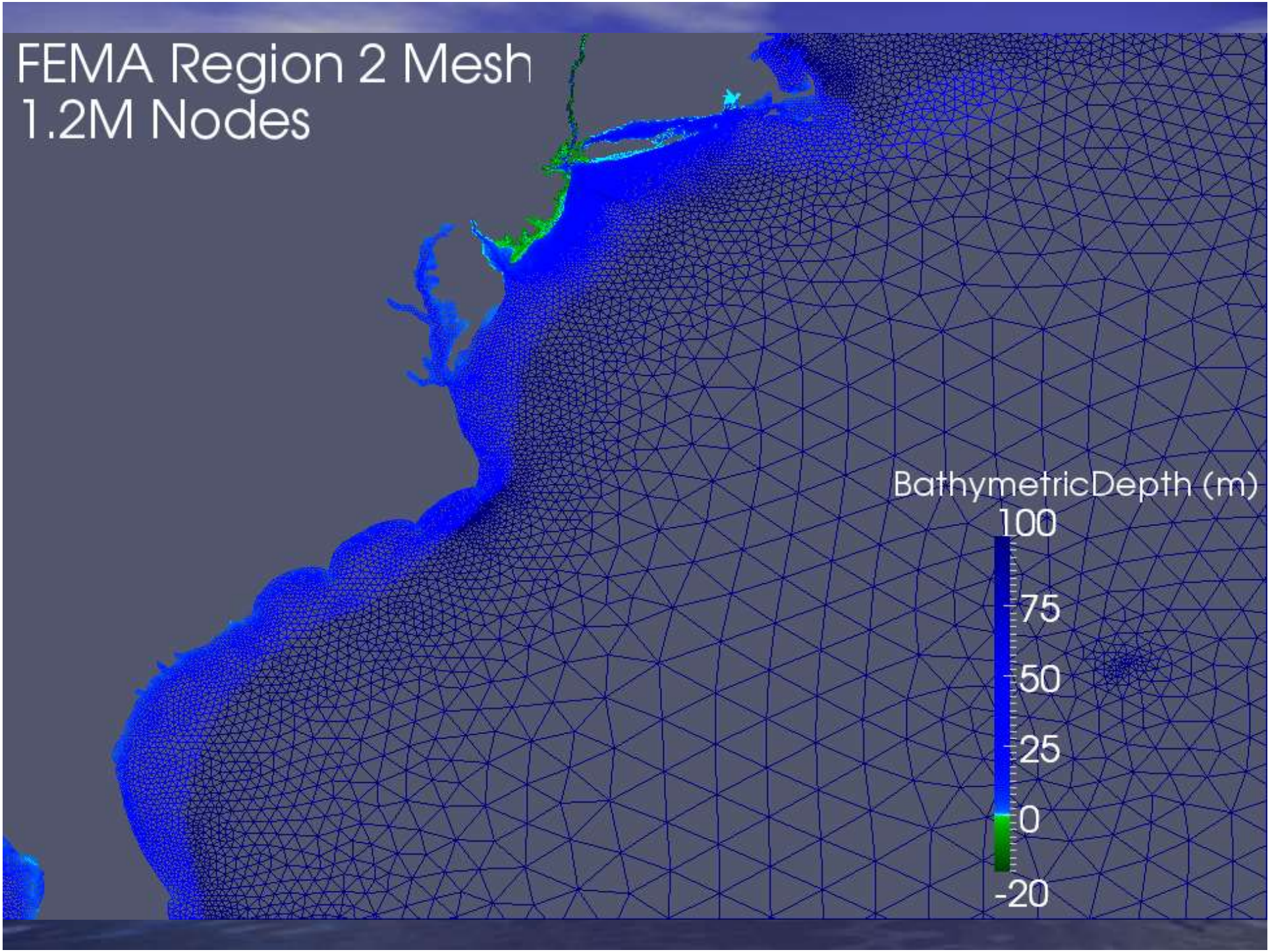
SGCI

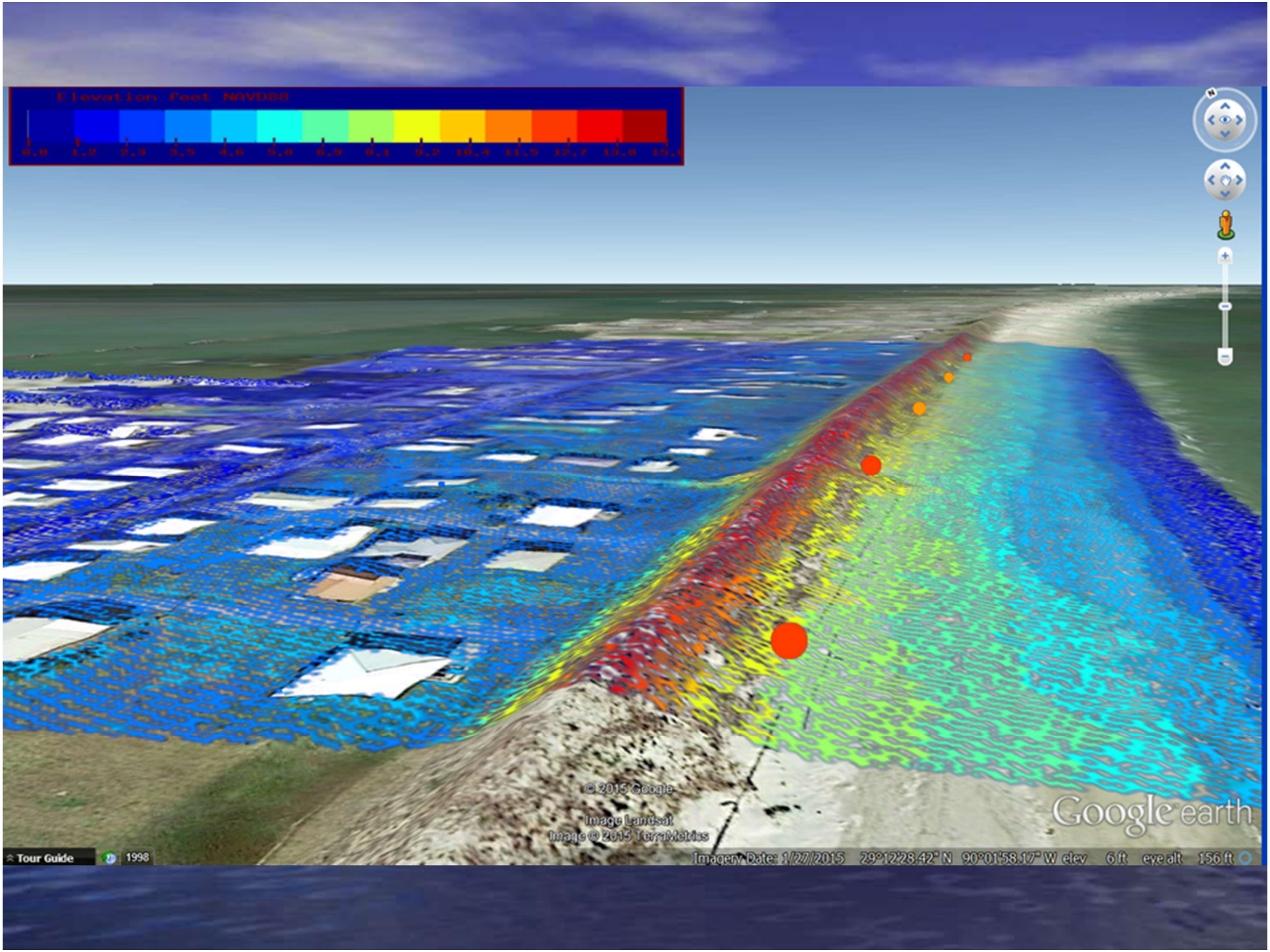
Coastal Emergency Risks Assessment

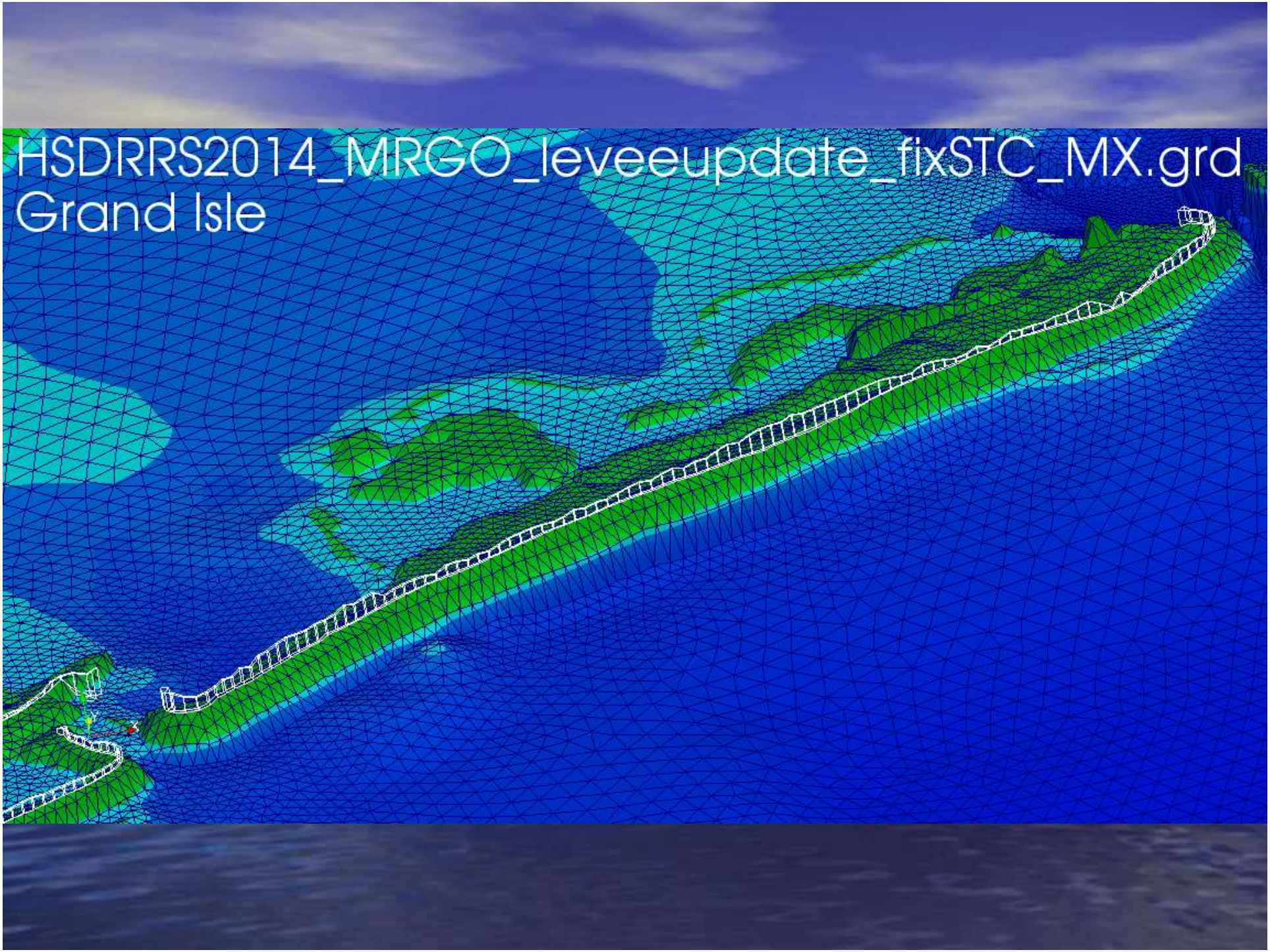
Science Gateways Bootcamp

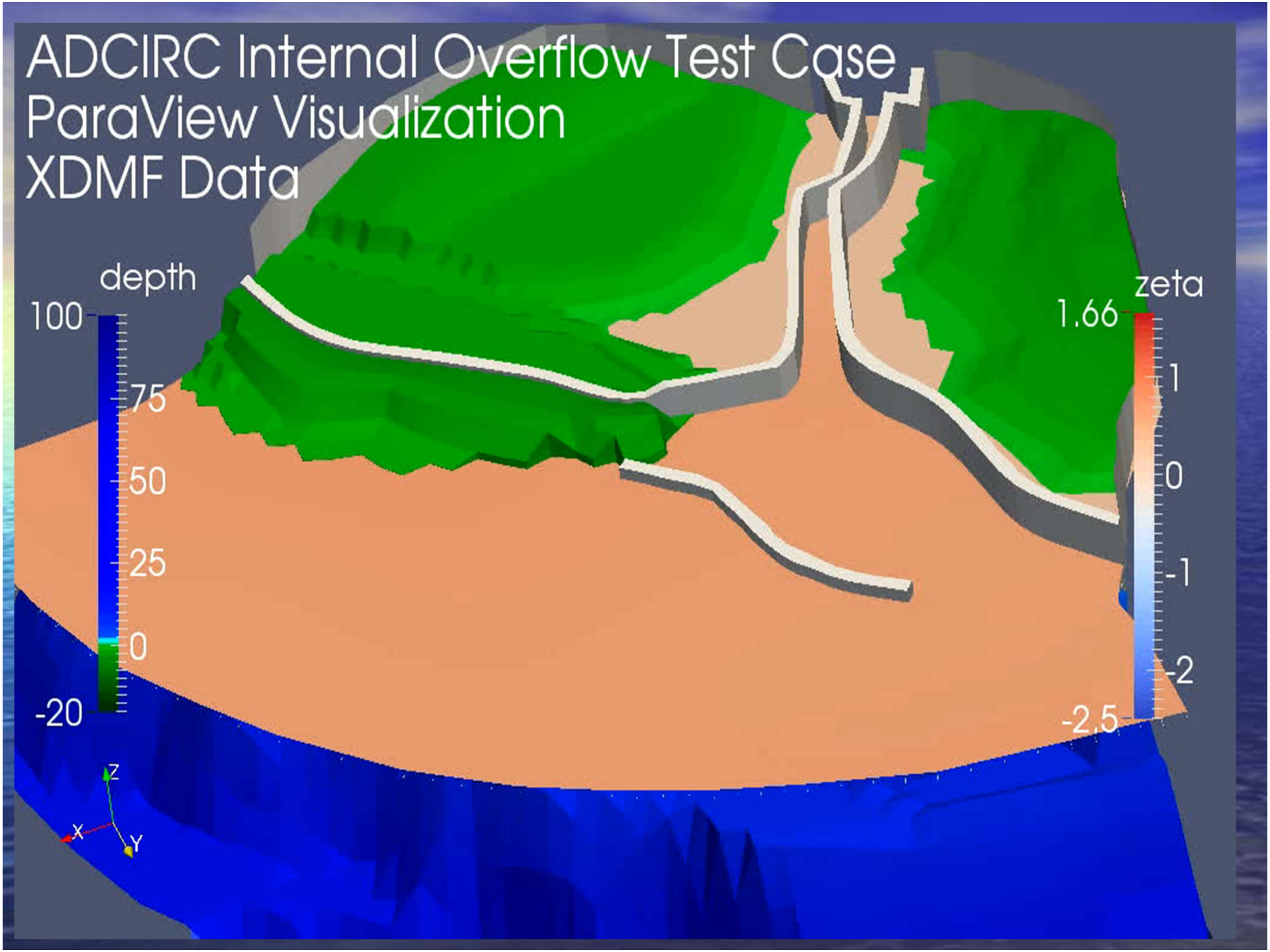
Jason Fleming and Carola Kaiser
Seahorse Coastal Consulting, LLC
Louisiana State University

Award Number
ACI-1547611


FEMA Region 2 Mesh
1.2M Nodes
BathymetricDepth (m)
100
75
50
25
0
-20


Elevation feet NAVD88
0.0 1.2 2.3 3.5 4.6 5.8 6.9 8.1 9.2 10.4 11.5 12.7 13.8 15.0
© 2015 Google
Image Landsat
Image © 2015 TerraMetrics
Google earth
Tour Guide
1998
Imagery Date: 1/27/2015 29°12'28.42" N 90°01'58.17" W elev 6 ft eye alt 156 ft

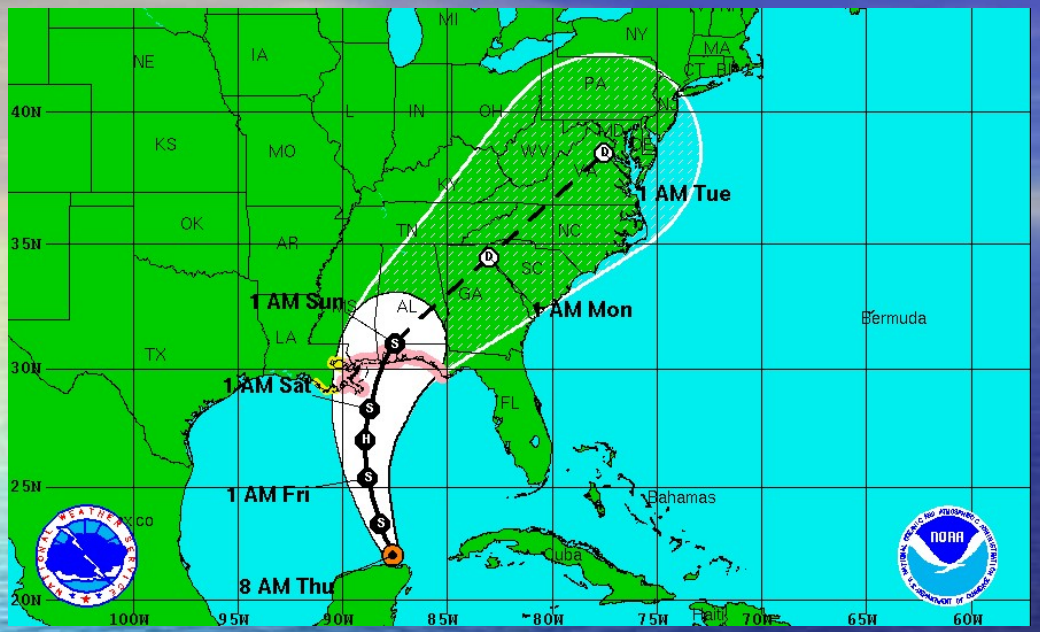

HSDRRS2014_MRGO_leveeupdate_fixSTC_MX.grd
Grand Isle

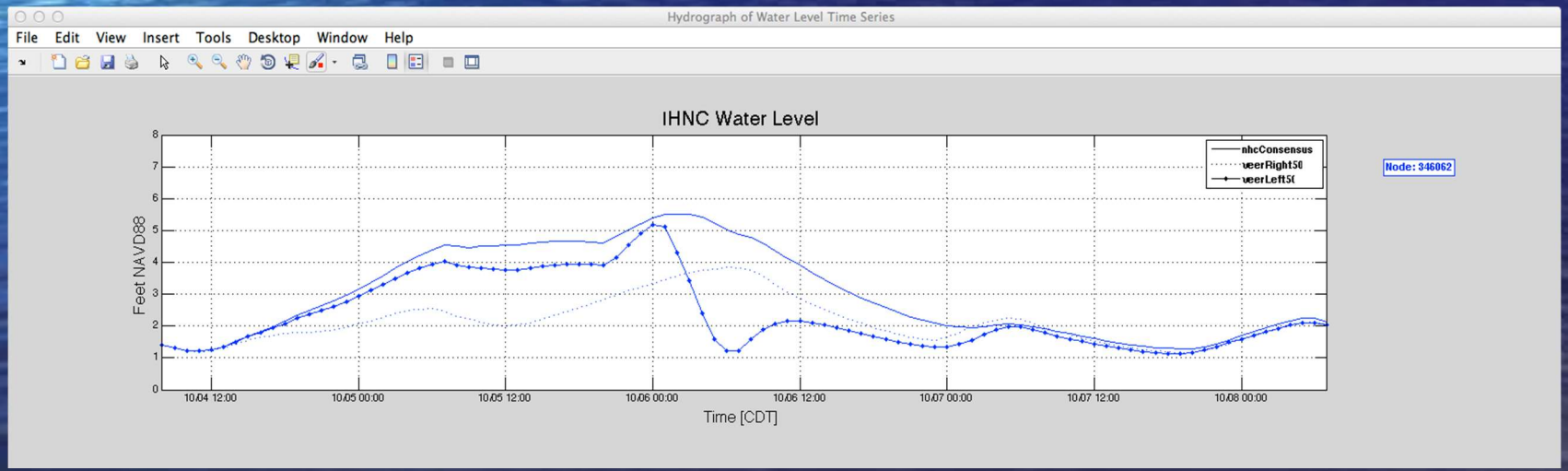

ADCIRC Internal Overflow Test Case
ParaView Visualization
XDMF Data
depth
100
75
50
25
0
-20
zeta
1.66
1
0
-1
-2
-2.5
Z
X
Y

Portable/Scalable

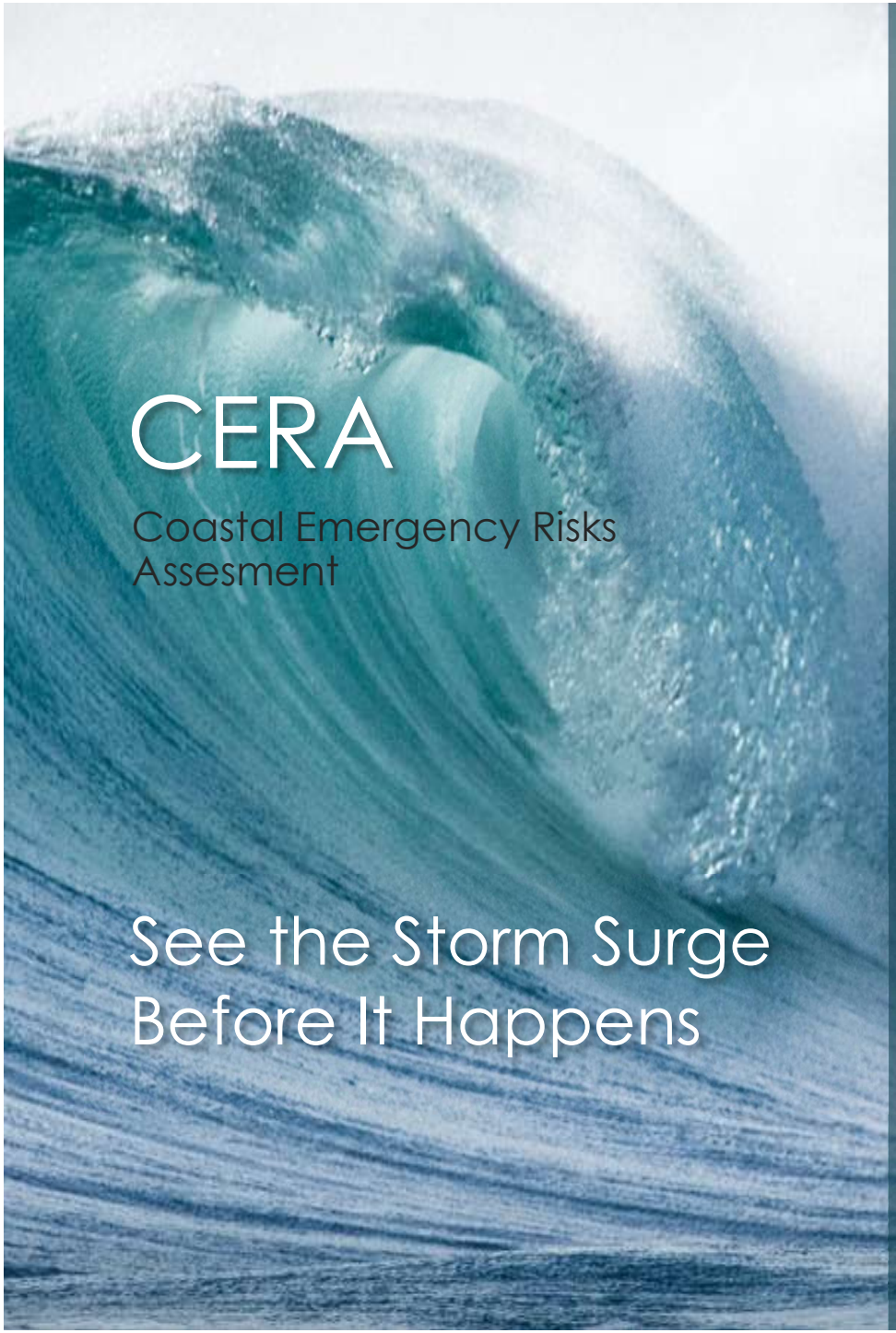
Original Motivation: Interim Gated Structures

ASGS System Summary





Supply Creates Demand



CERA

Coastal Emergency Risks Assesment

See the Storm Surge Before It Happens

CERA - Interactive Real-Time Storm Surge and Wave Visualization Tool

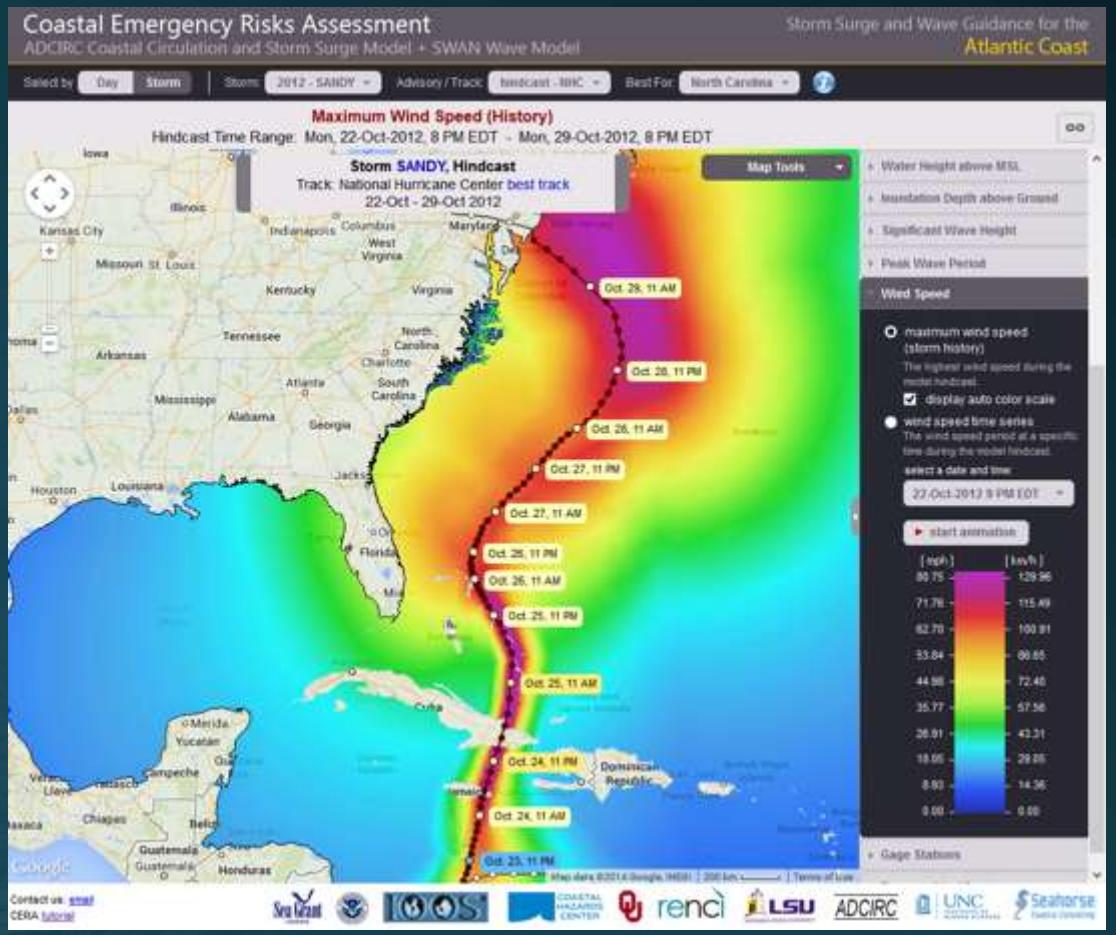
Sea Grant Louisiana

ADCIRC LSU Seahorse TEXAS UNC UNIVERSITY OF NOTRE DAME renci

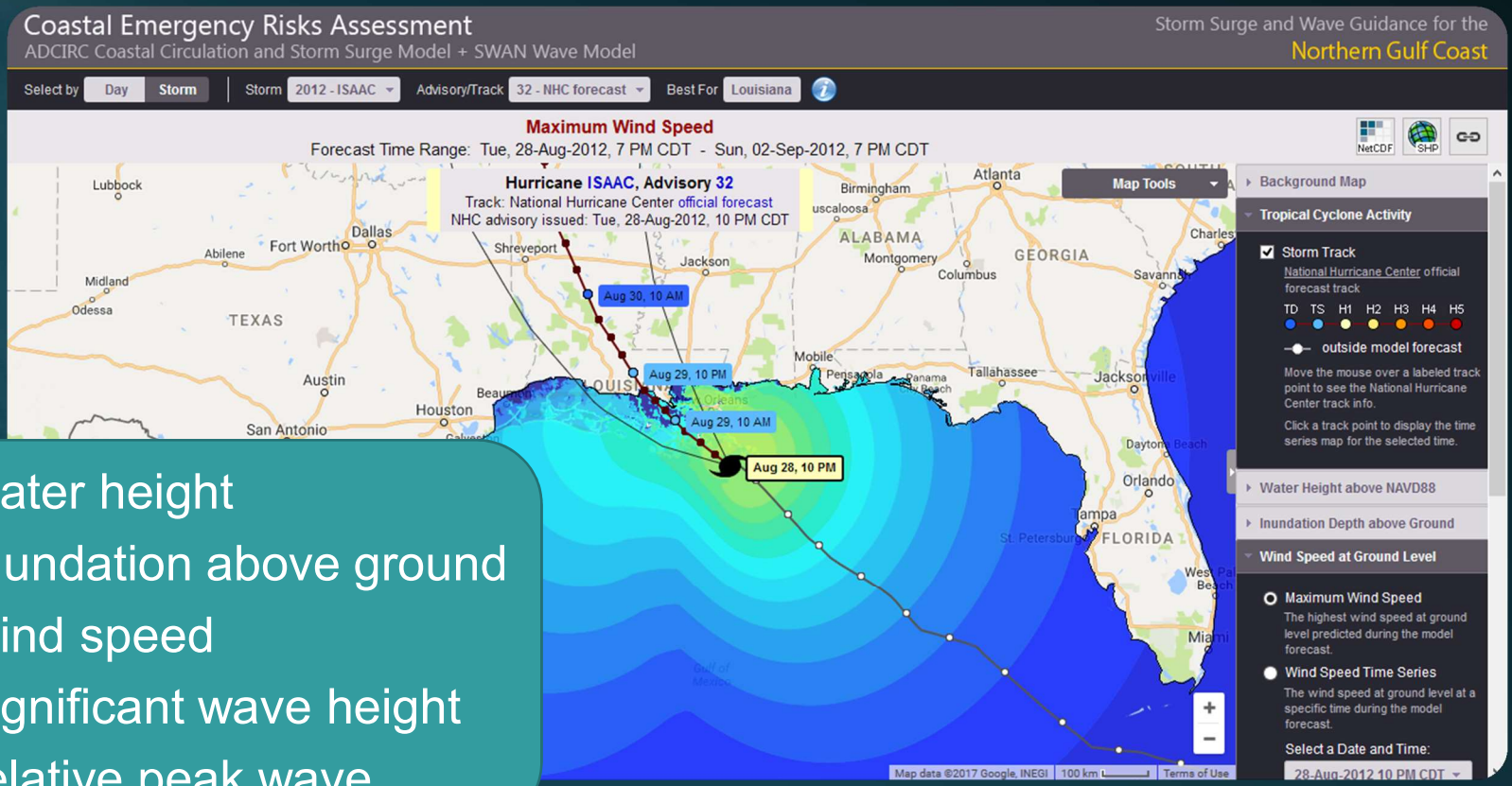
CERA Access

Contact: Carola Kaiser, ckaiser@cct.lsu.edu

CERA Home Page cera.coastalrisk.live



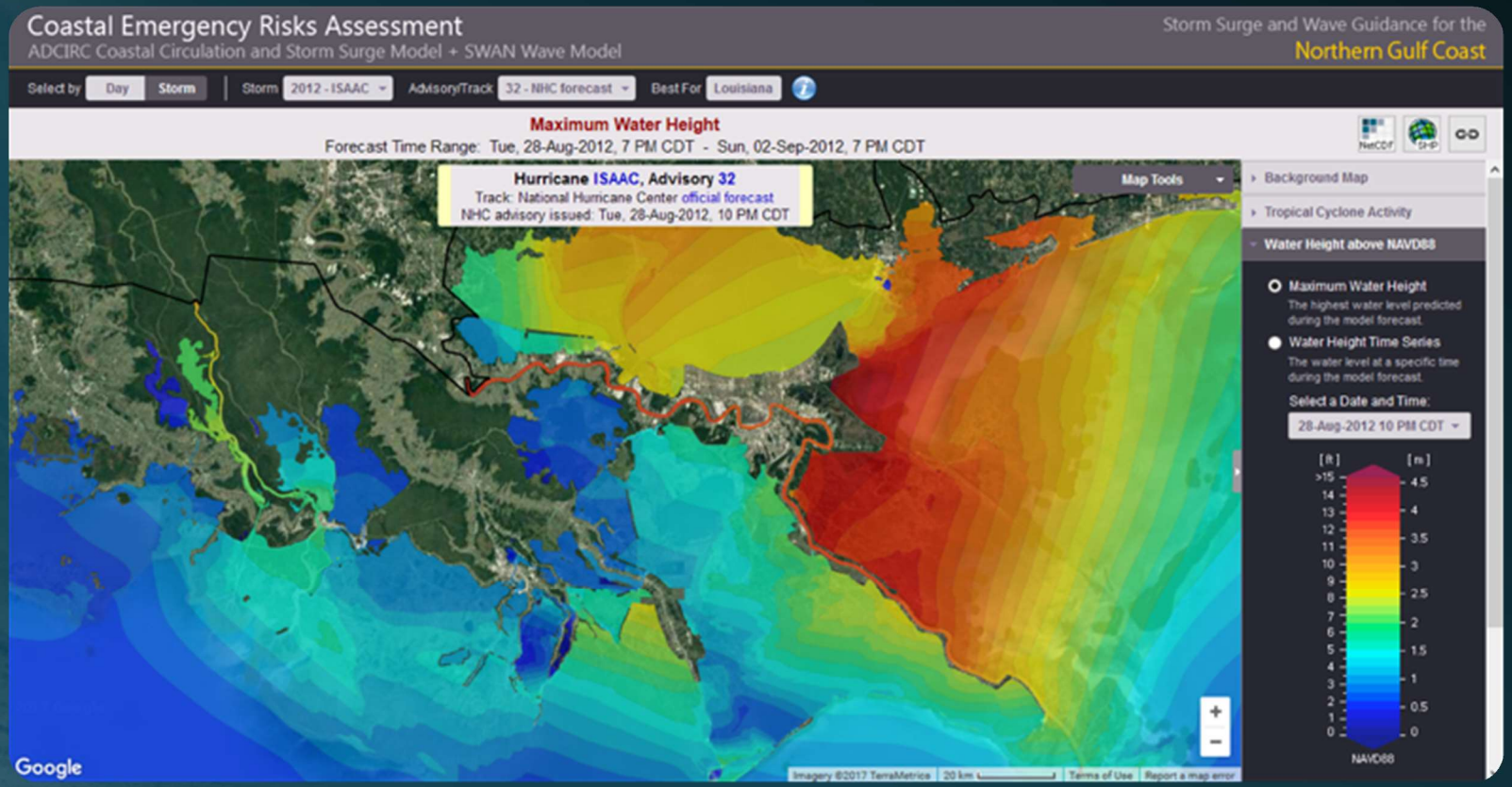
Select Model Layers



water height
inundation above ground
wind speed
significant wave height
relative peak wave

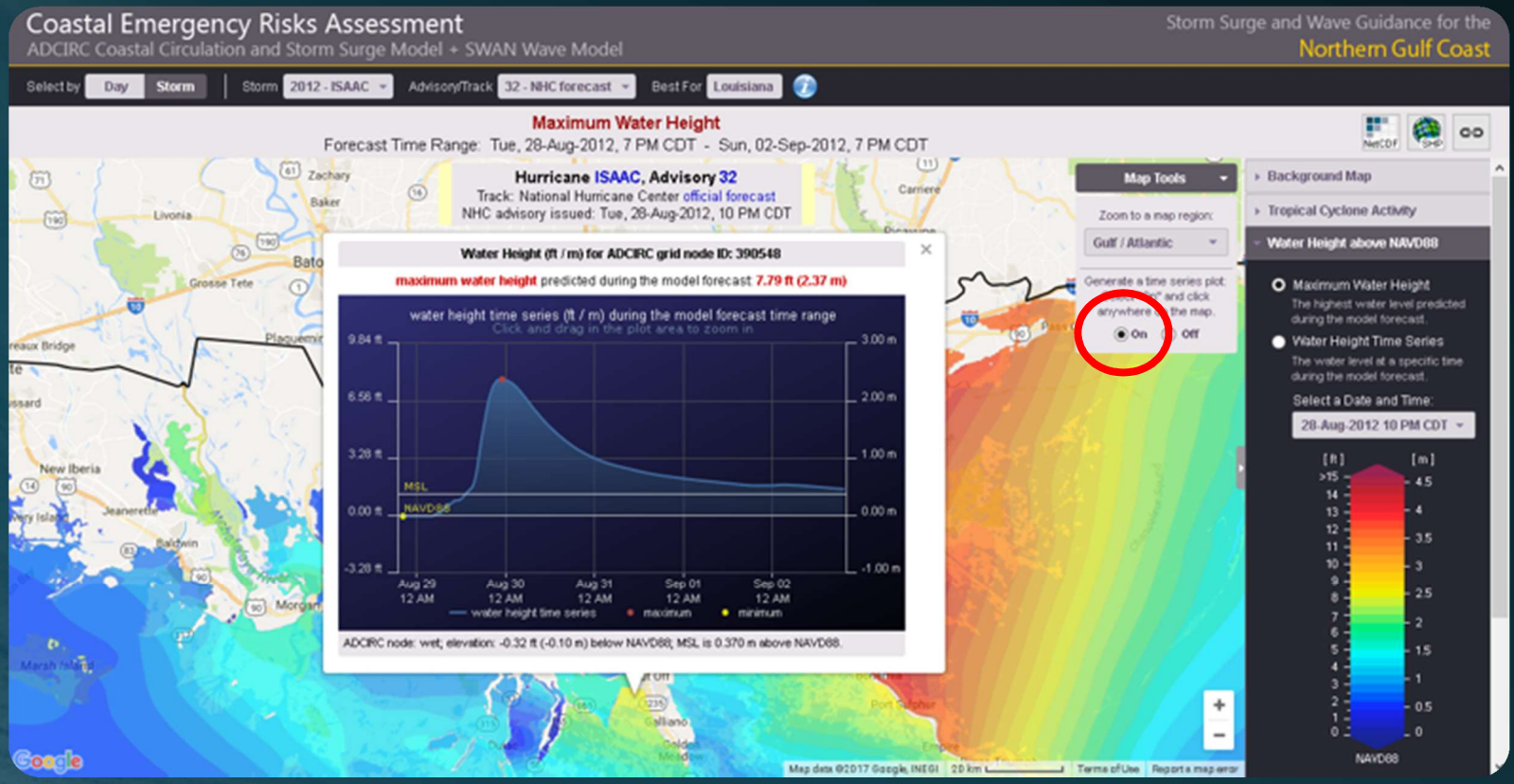
Carola Kaiser, CERA Web Mapping

Background Map, Zoom, Pan



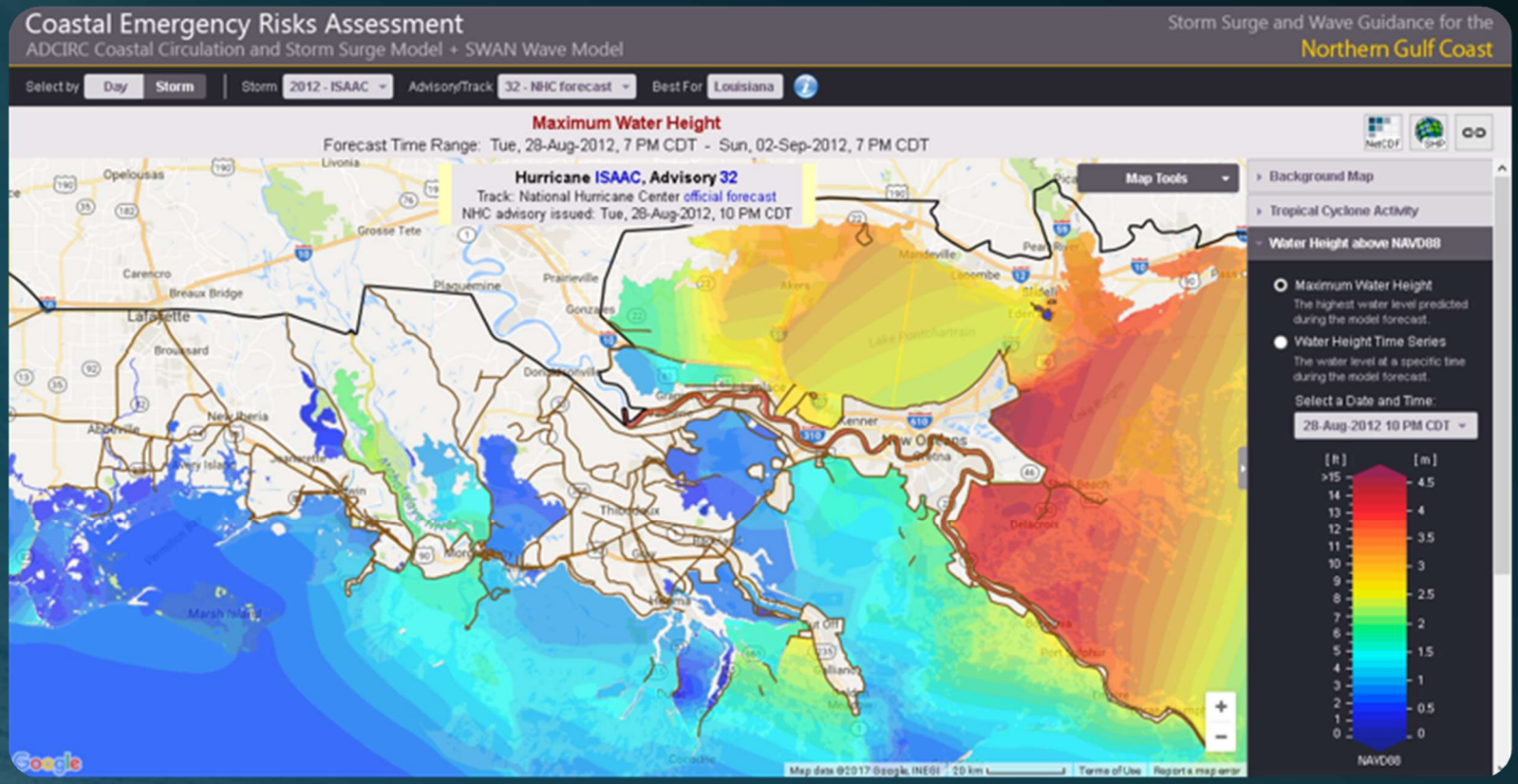
Carola Kaiser, CERA Web Mapping

Model Results at Each Point of Interest



Carola Kaiser, CERA Web Mapping

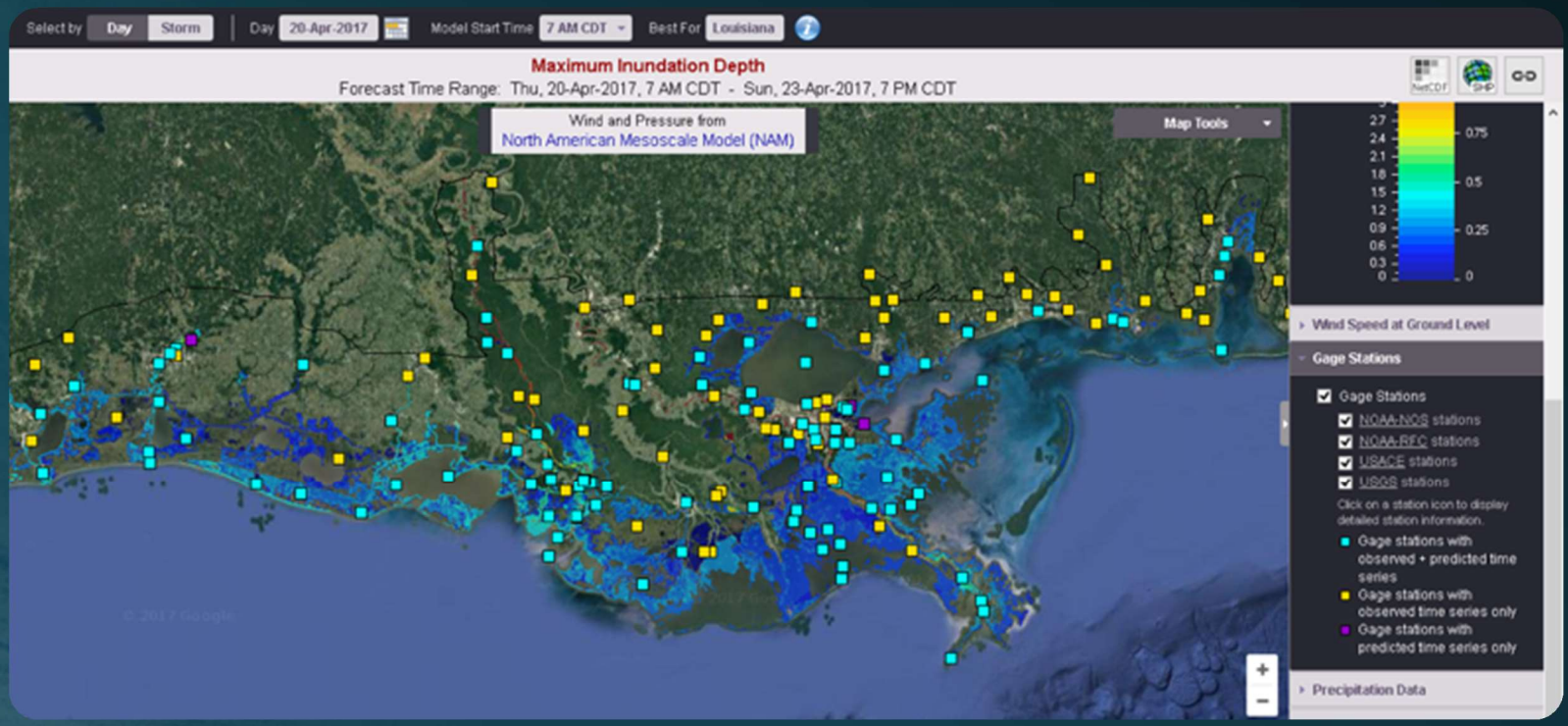
Overlay Map Layers



Carola Kaiser, CERA Web Mapping

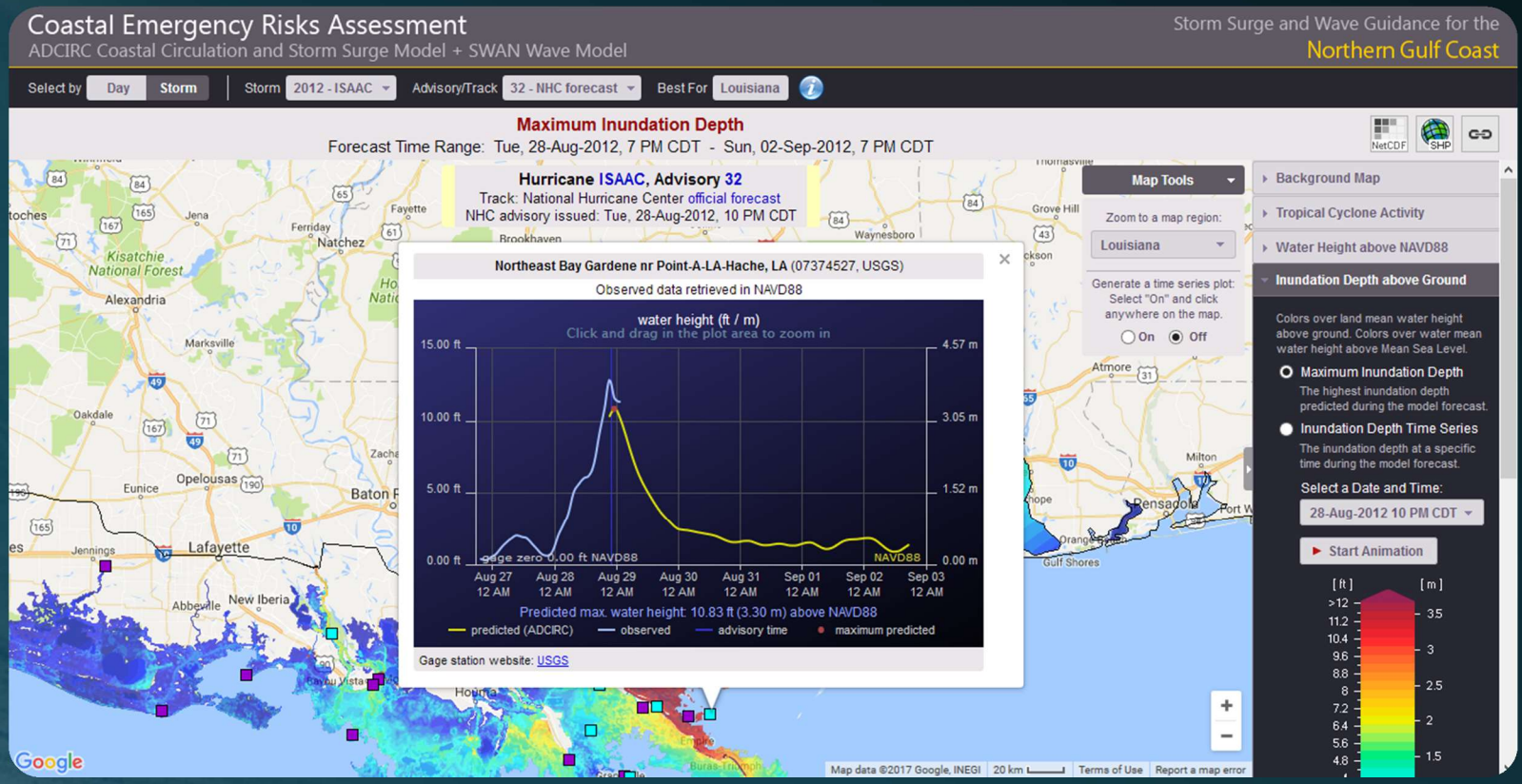
Water Level Stations

USGS, NOAA, River Forecast Centers, USACE



Carola Kaiser, CERA Web Mapping

Water Level Hydrographs



Carola Kaiser, CERA Web Mapping

CERA Users

- National Weather Service Offices LA, NC
- U.S Coast Guard, NC
- Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)
- Stephenson Disaster Management Institute, LSU
- River Forecast Centers, LA, TX, GA
- Department of Homeland Security
- Research community (UNC, MSU, USA, URI)
- Geological Survey
- National Hurricane Center
- NOAA's Storm Surge Roadmap, Maryland
- CPRA
- SE LA Flood Protection Authority

Connecting people and resources to accelerate discovery by empowering the science gateway community

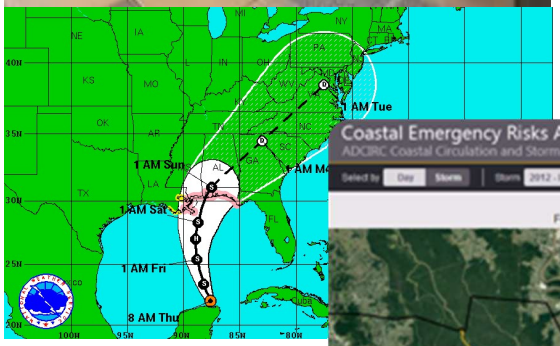
Science Gateways Bootcamp

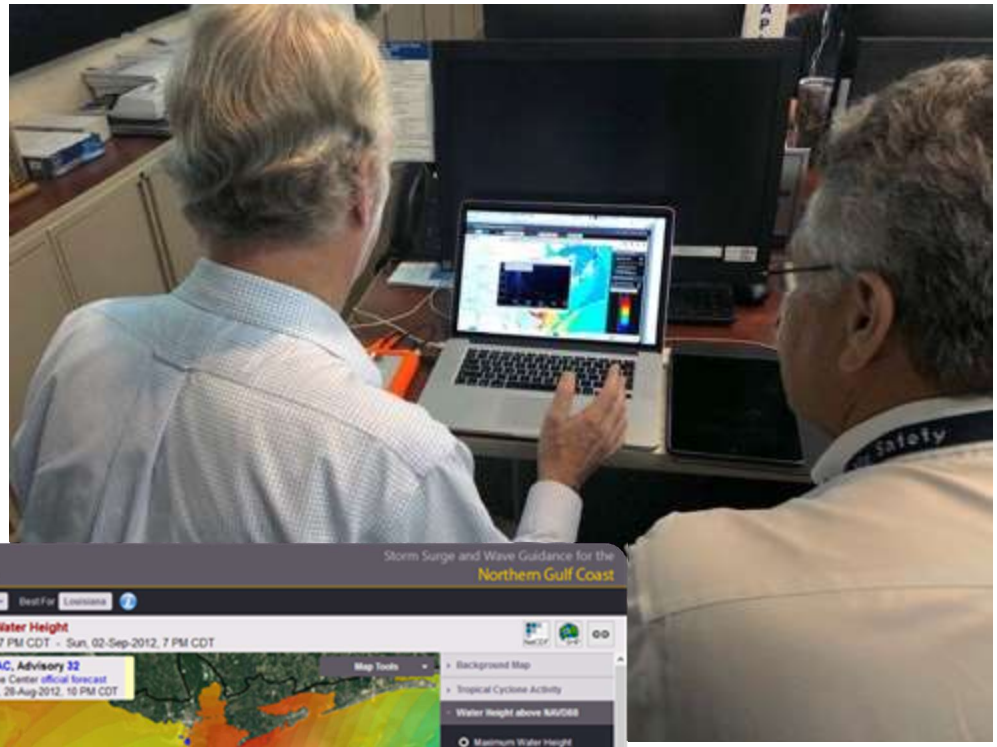
October 2017

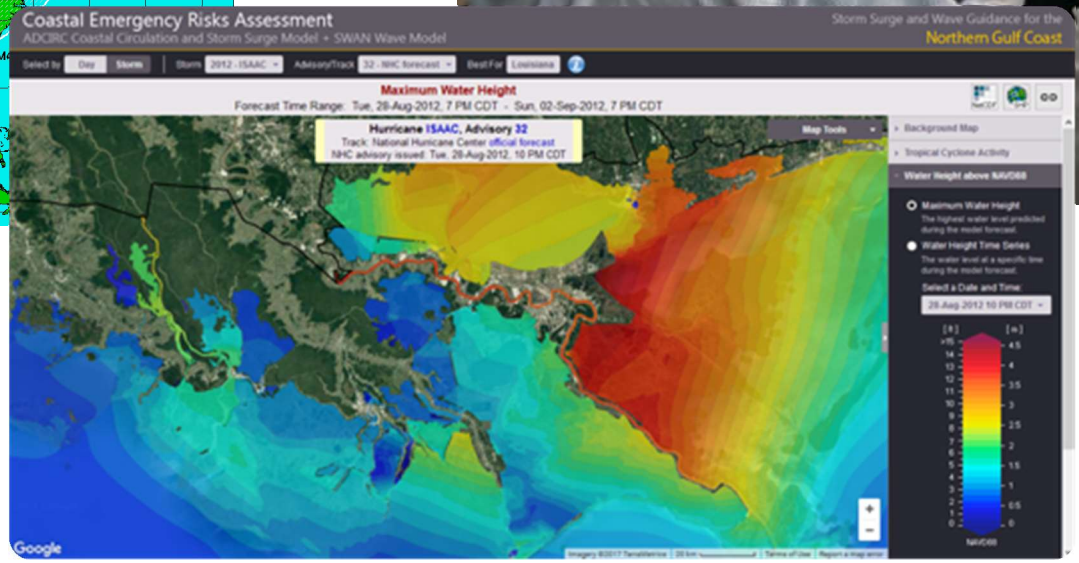
Jason Fleming and Carola Kaiser
Seahorse Coastal Consulting, LLC
Louisiana State University

Award Number
ACI-1547611

Napkin Drawing







http://www.keygroup.ch.cam.ac.uk/wp-content/uploads/2015/06/mk1.jpg

Value Proposition

Coastal Emergency Risks Assessment

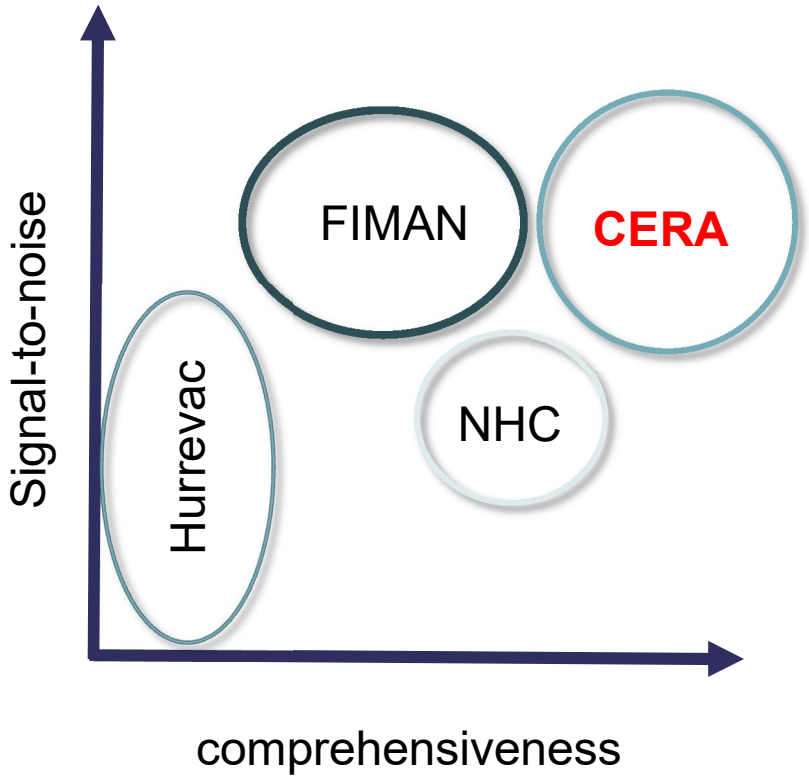
WILL HELP Emergency Managers

make time critical operational decisions

BY providing storm impact predictions on an intuitive-to-use web interface.

Current Market Landscape

- Emergency information incomplete or buried in noise
- Quick access to actionable information
- Official information sources lacking critical impacts
- Comprehensive yet tightly focused



Target Audience

- State Emergency Decision Makers
- What do you know about your target segments?
  - State Directors of Operations make purchasing decisions
  - Buy into technologies that produce better outcomes in operations
  - Years to establish credibility, months of negotiation
- Fourteen coastal states (Gulf + Atlantic)
- Early adopters: Department of Homeland Security, Texas Department of Transportation, US Coast Guard
- Secondary: Levee Districts, Risk Managers/Planners, Academic Disaster Research

Financial Model

- Agency specific product revenue: 20%
- Historical data sets: 20%
- Workshops: 10%
- Donations: 5%
- Advertising: 5%
- Research Grants: 40%

3 Month Goals

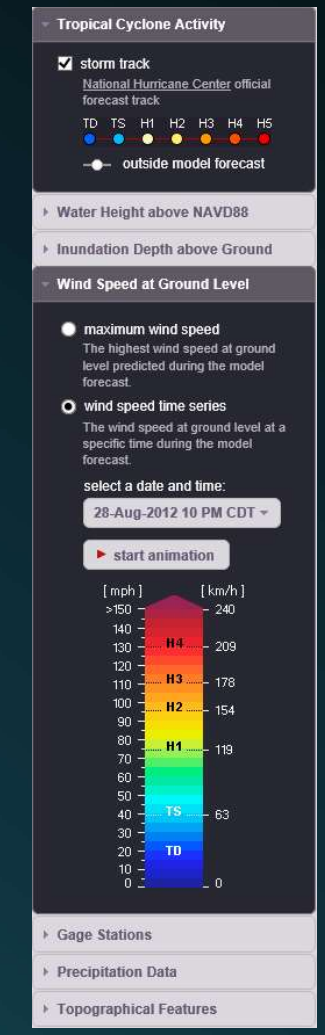
1. CERA re-branding strategy
2. Service request agreement with SGCI
3. Two year revenue/budget plan

6 Month Goals

1. Final negotiations with TXDOT
2. Confirmation of new funding from DHS
3. Initial funding from SDMI

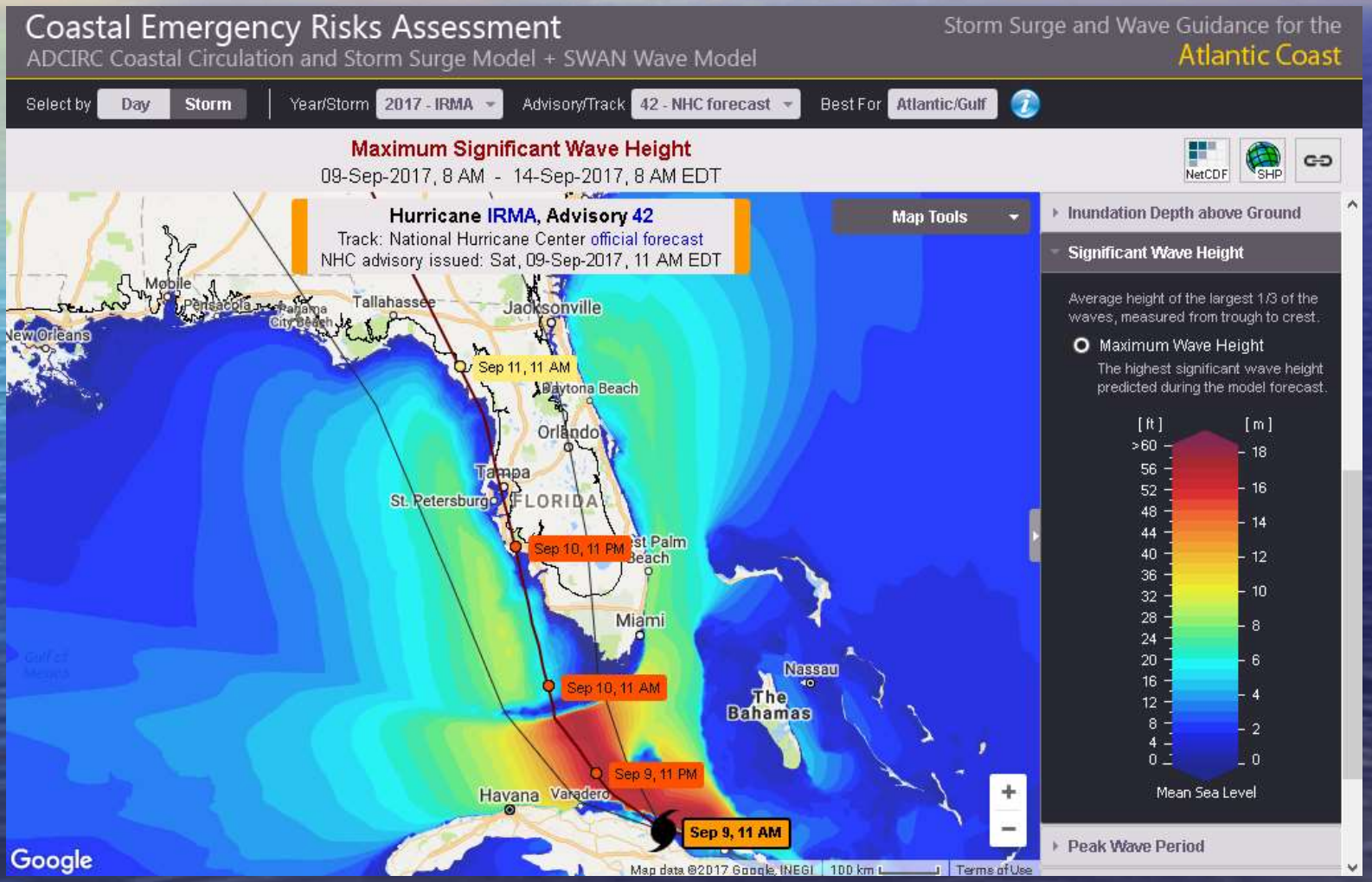
Select a map layer

- When is a map section automatically opened in CERA and how can another layer be displayed?
- Why is the color bar for a layer not visible?
- What is the difference between radio buttons and check boxes?
- Why is the map legend 'incomplete'?
- What is the difference between maximum layers and time series?
- Why do the animations not work?



Outreach and Awareness

Irma 2017: Rapid Damage Assessment for FEMA



ADCIRC for Decision Makers

http://adcirc2018.eventbrite.com

ADCIRC Week: April 9-13, 2018

At NOAA NCEP in College Park, MD