US IOOS Coastal and Ocean Modeling Testbed

Becky Baltes
COMT Program Manager
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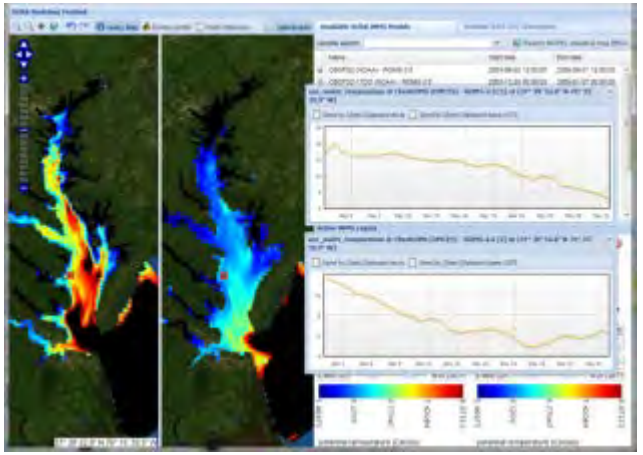
COMT History and Background



- Unique Elements:
  - Intended to be inter-agency
  - Managed by a non-federal partner
- Funding Background
  - 2010: Grant: $4M
  - 2011: Grant: $1M
  - 2012: None
  - 2013: Grant: TBD
- Composition (SURA non-fed partner and lead for execution)
  - 5 teams, 64 scientists/analysts (Smaller for 2011 Grant)
    - 3 Science themes (Inundation, Shelf & Estuarine Hypoxia)
    - 1 Cyberinfrastructure team
    - 1 Technical Steering Group
  - Multi-sector engagement (federal, academia, industry)

COMT Teams

- **Technical Advisory and Evaluation Group**, *Rich Signell, USGS*
  - Provides insight, direction and focus to 4 separate teams trying to unite in the COMT
- **Coastal Inundation**, *Rick Luettich, UNC-CH*
  - Gulf of Mexico and Gulf of Maine storms
- **Shelf Hypoxia**, *John Harding, NGI and Katja Fennel, UD*
  - Hypoxia forecasting in Gulf of Mexico shelf environment
- **Estuarine Hypoxia**, *Carl Friedrichs, VIMS and Marjy Friedrichs, VIMS*
  - Hypoxia forecasting in the Chesapeake Bay
- **Cyber infrastructure**, *Eoin Howlett, ASA and Sarah Graves, UAH*
  - Cyber tool development and testing, support to other teams

Original Testbed Goals

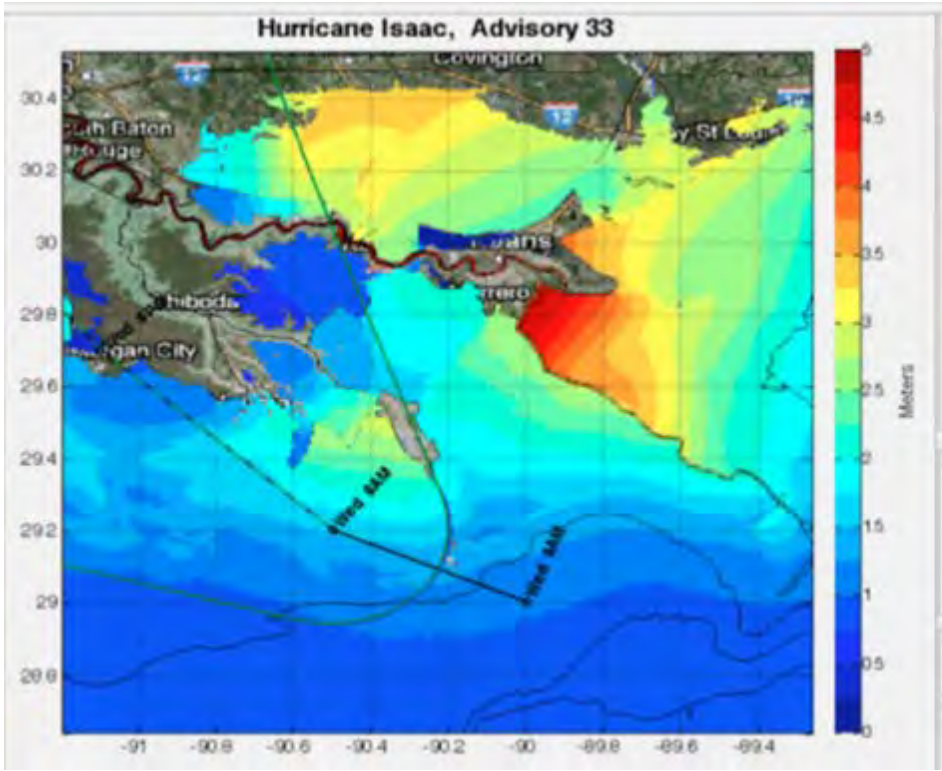
1. Build a common infrastructure for access, analysis and visualization of all ocean model data produced by the Federal Backbone and the IOOS Regions

2. Improve R2O and O2R by building stronger relationships between academia and operational centers through collaboration

3. Develop skill metrics and assess models in three different regions and dynamic regimes

4. Transition models, tools, toolkits and other capabilities to federal operational facilities

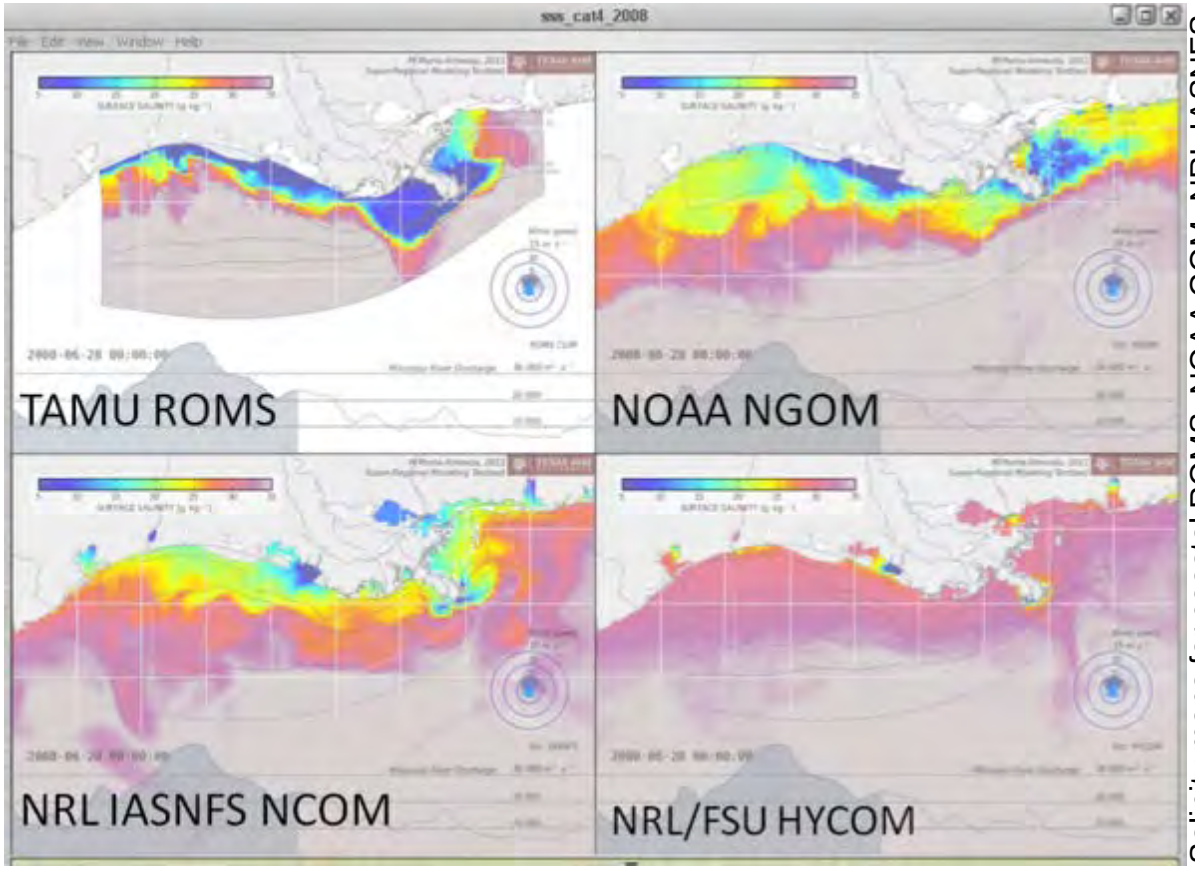
Surge, Waves and Inundation Results



- Data Archiving
- Model Enhancement
- HPC time
- Skill & Runtime analysis
- Unstructured grid viz tool developed, used to access ~200 storm surge forecasts for Hurricane Isaac (2012)

Shelf Hypoxia Team Results

- Improving Collaboration
- Improving Data
- Model Development
- Supporting Operations

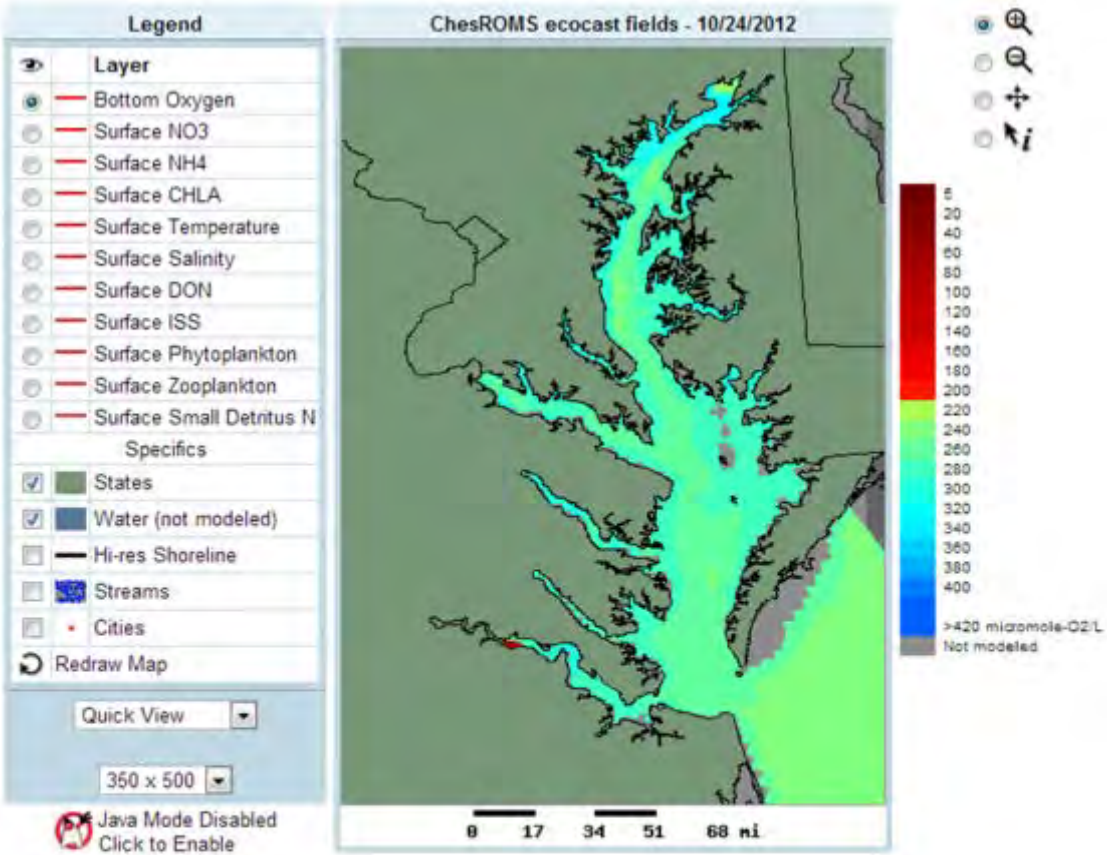


Salinity maps for coastal ROMS, NOAA GOM, NRL IASNFS and NRL/FSU HCOM Gulf, http://pong.tamu.edu/~mma/sura/anims_models.php

- Biogeochemical operating equations transitioned to FVCOM community modeling group in CSDL

Estuarine Hypoxia Results

- Transitioning information to federal agencies
- Model Comparison
- Conducting sensitivity experiments
- New, single term hypoxia model

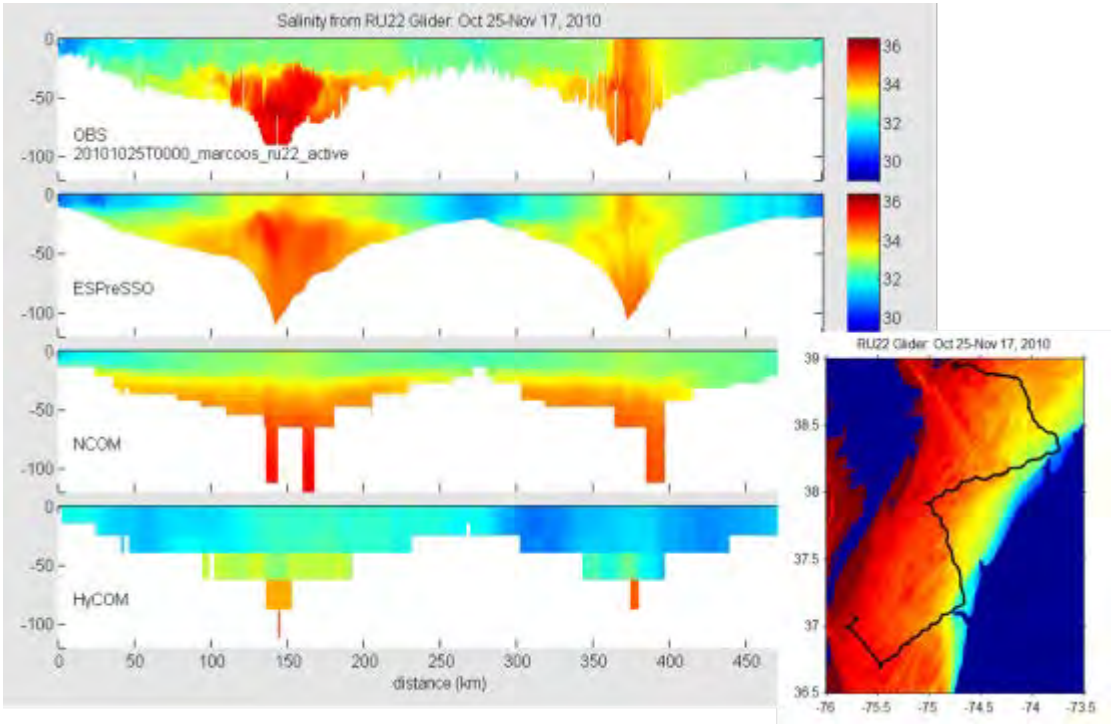


This project represents collaboration between scientists of the National Oceanic and Atmospheric Administration, the University of Maryland and the University of Maryland Center for Environmental Science. Funding from NOAA's EcoForecasting Program, Monitoring for Event Response for Harmful Algal Bloom, and Oceans and Human Health Initiative are responsible for this project.

Horn Point Laboratory
University of Maryland
Center For Environmental Science

Cyber Infrastructure Results

- Interactive Model and Observation Explorer
- Unstructured Grid Support
- NCToolbox
- Matlab as a Web Service
- Skill Assessment Tools
- Collaborative Web Site



Future

- FY13: Complete Proposal Review and initiate new Cooperative Agreement
- Improve transitions and align projects more thoroughly with federal liaisons and operational development planning
- Cyberinfrastructure development for COMT and IOOS DMAC tailored to needs
- Permanent Testbed infrastructure, data archive for models and obs

Contact: Becky Baltes, COMT PM,
becky.baltes@noaa.gov
301-427-2427
http://www.ioos.noaa.gov/modeling/testbed.html

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