US IOOS
Coastal and Ocean Modeling Testbed: Roundup and Progress

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INTEGRATED OCEAN OBSERVING SYSTEM
IOOS®
SURA

Outline

1. Science Priorities and Drivers
2. COMT Infrastructure Accomplishments
3. Project Accomplishments
4. Year Ahead

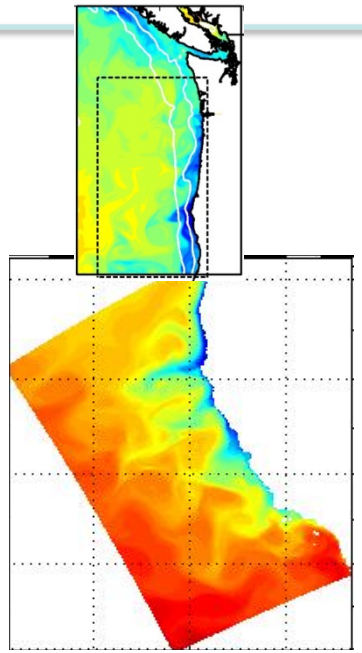
Science Priorities and Drivers

1. Ecological Forecasting Roadmap
2. Storm Surge Roadmap
3. OFS Development Cycle
4. * Federal Operational Requirements
5. * Administrative – ToR, Implementation Plan

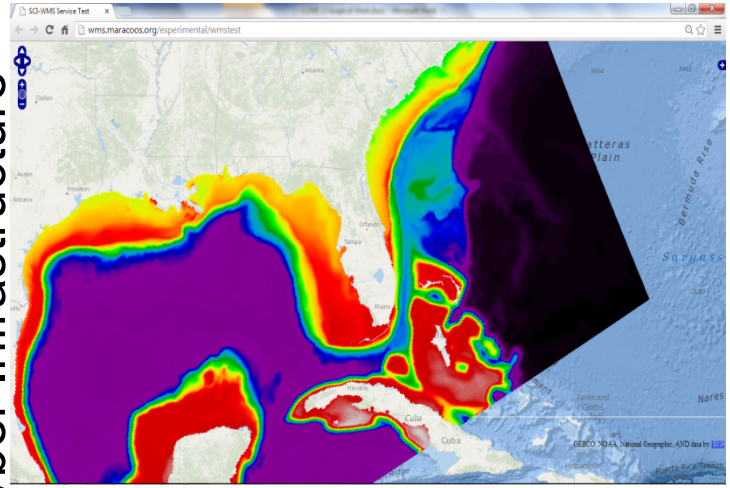
Aspiring Drivers:

- CO-OPS 5 year Requirements Plan
- NOS Implementation Plan
- IOOS RA User requirements

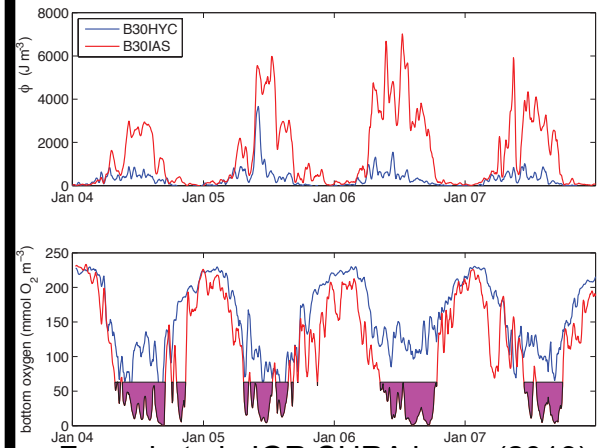
Projects



Cyber Infrastructure



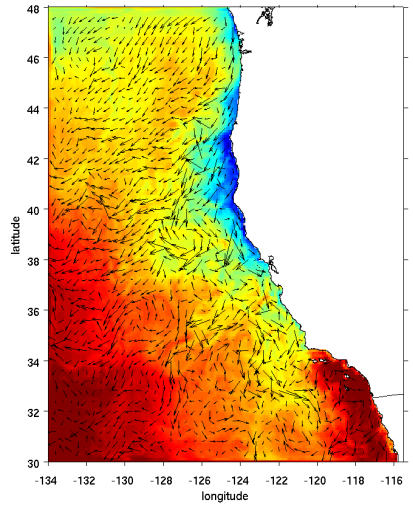
SciWMS image below for Ruoying He's model rendered directly from a DAP server.

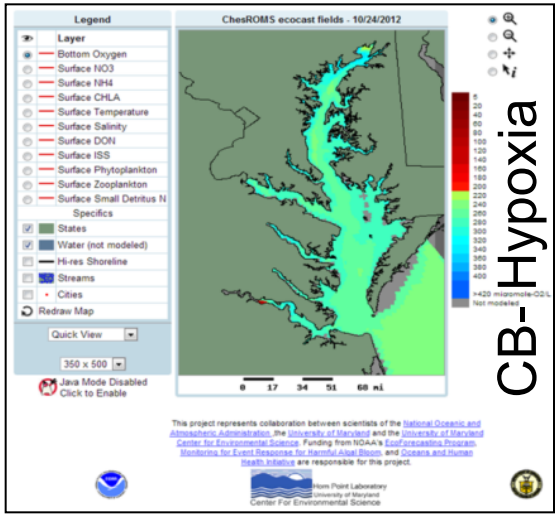


GoMx- Hypoxia

Fennel et al. JGR SURA issue (2013)

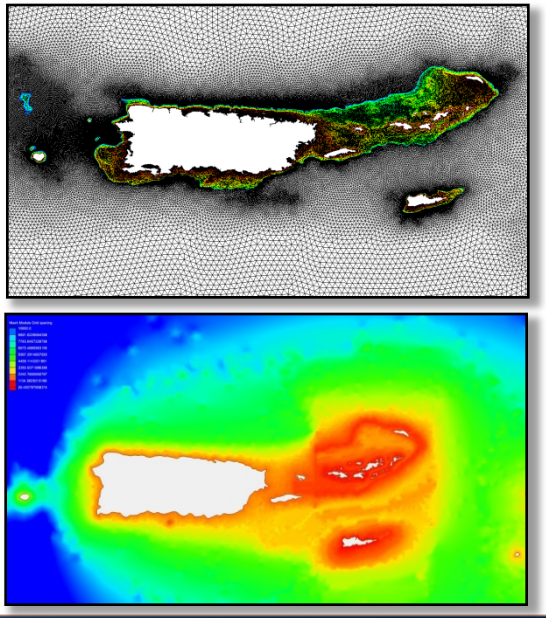
WCOFS





CB- Hypoxia

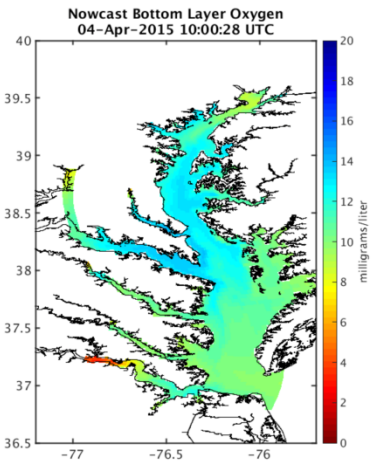
Wave Inundation

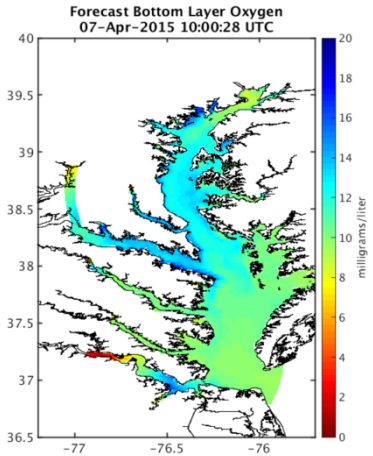


Transitioning an Estuarine Hypoxia Model to Operations in the Chesapeake Bay

<u>Objective</u>:

Assess suite of estuarine dissolved oxygen models to make recommendations for producing predictions of hypoxia within Chesapeake Bay





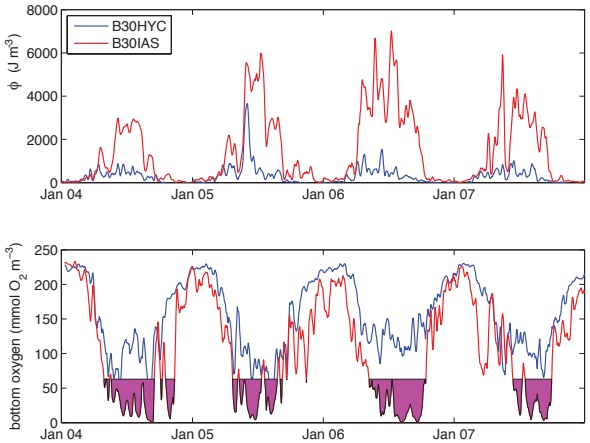
<u>Infrastructure Developments</u>:

- Code is ready for testing
- Learning the requirements for transition
- Connecting to CO-OPS development cycle
- Part of pilot for EFR Hypoxia Team

Seasonal and Short-term Forecast System and Nutrient Load Scenarios for Hypoxia Prediction in the Northern Gulf of Mexico

Objective:

Implement and demonstrate a real-time hypoxia forecasting system applicable to the hypoxia-prone Northern Gulf of Mexico.



Fennel et al. JGR SURA issue (2013)

Infrastructure Developments:

- NCCOS, EPA and ONR engaged in process
- NCCOS coordinating COMT work as it funds complimentary work and plans out year work
- EFR Pilot project in planning process

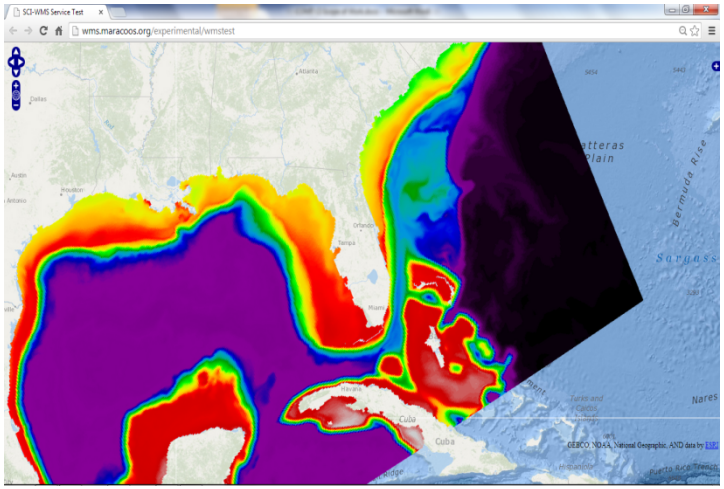
Cyberinfrastructure for COMT

Objective:

- Improve function and performance of SciWMS so it can be used to visualize all compliant model results and observational data stored on the COMT archive server
- Develop a SciWMS based web client to perform the visualization

Infrastructure Developments:

- IOOS Catalog coordination
- Visualization tools

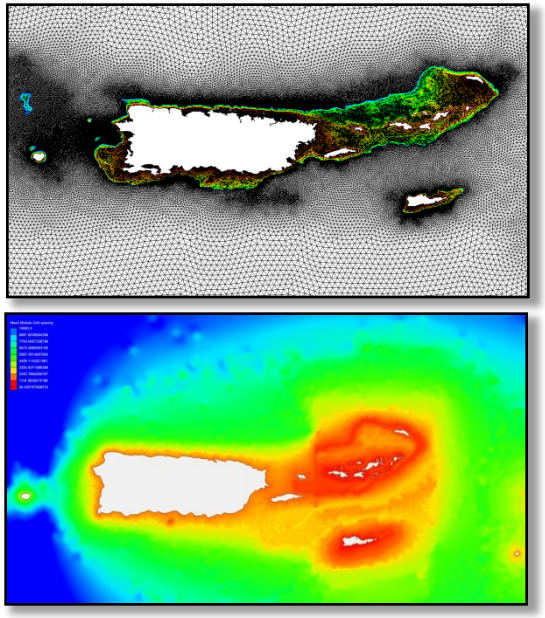


SciWMS image below for Ruoying He's model rendered directly from a DAP server.

Puerto Rico/U.S. Virgin Islands Surge and Wave Inundation

Objectives:

- Extend the present wave/surge operational forecasting capability from mild-sloped coastal areas such as the US East and Gulf of Mexico coasts to steep-sloped areas such as around Caribbean and Pacific islands
- Transition this capability to NOAA's National Hurricane Center and local WFOs.

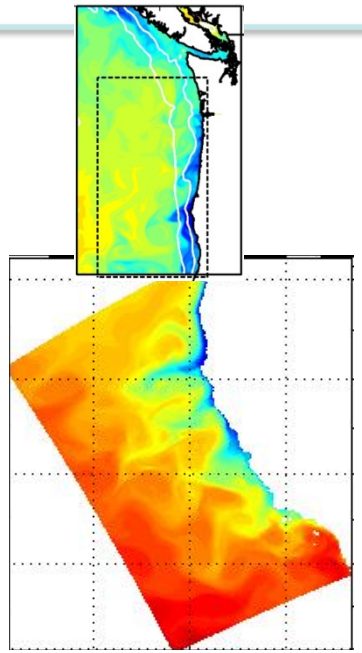


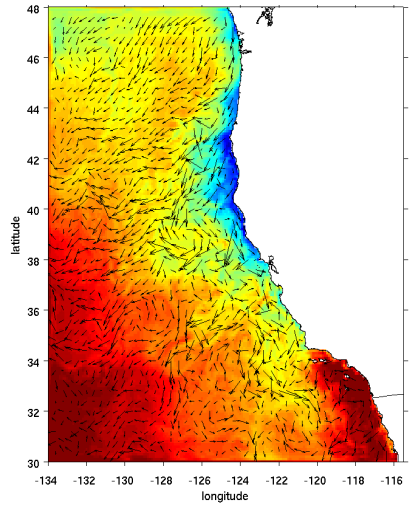
Infrastructure Successes:

- Jamie Rhome's visit to the COMT All Hands Meeting

A model doesn't need to be transitioned for the testbed work to be a success. That's not necessarily even the best case scenario.

The West Coast Project



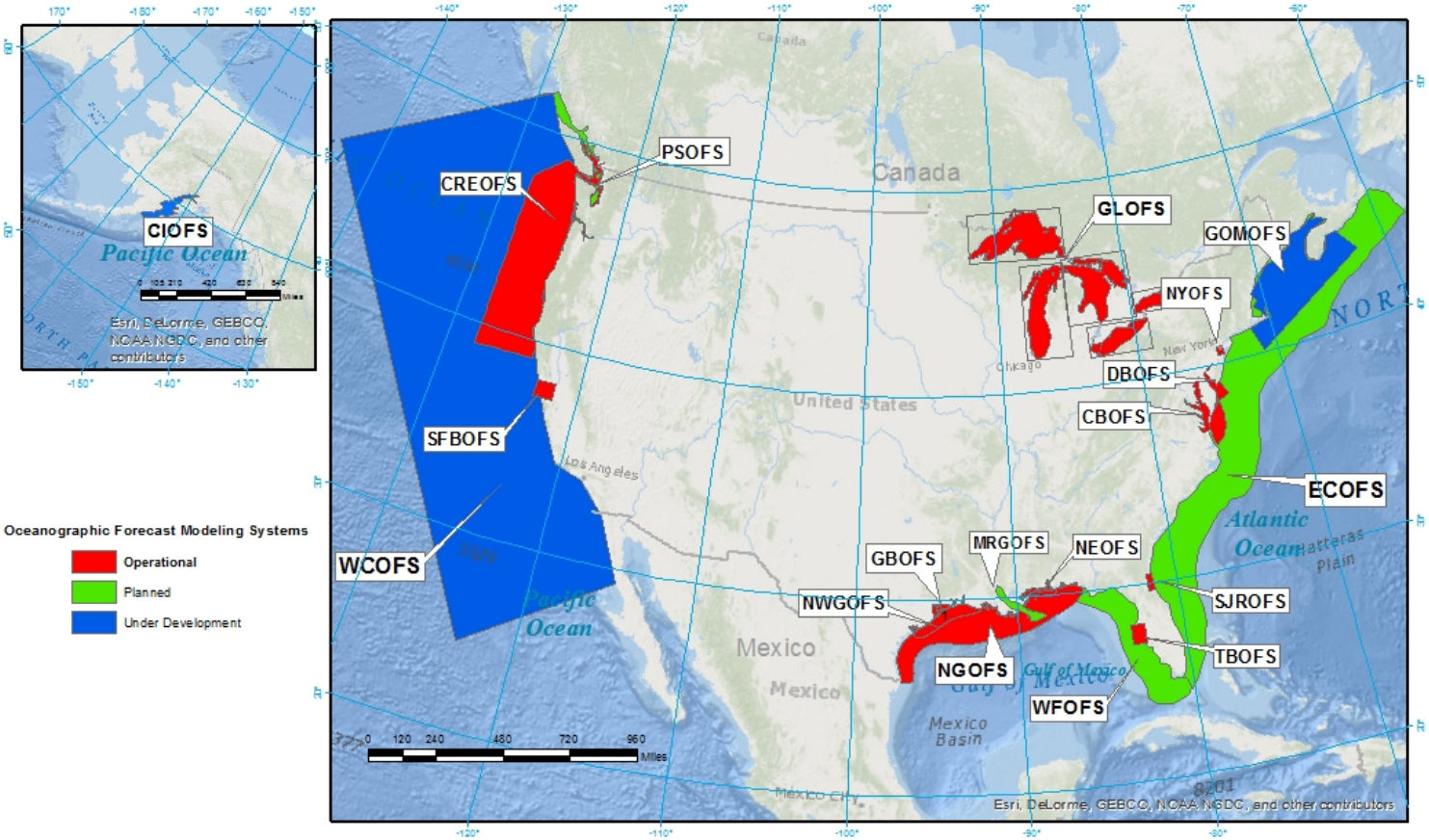


Part of a larger NOAA development project for a West Coast Ocean Forecast System (WCOFS)

Objectives are to:

- Compare 3 ROMS based models as a step toward a coordinated super-regional modeling capability for the U.S. West Coast.
- Compare performance of 3 different bio-chemical models (NPZDO, NEMURO, COSINE) within a single ROMS domain.

NOS OFS Plans

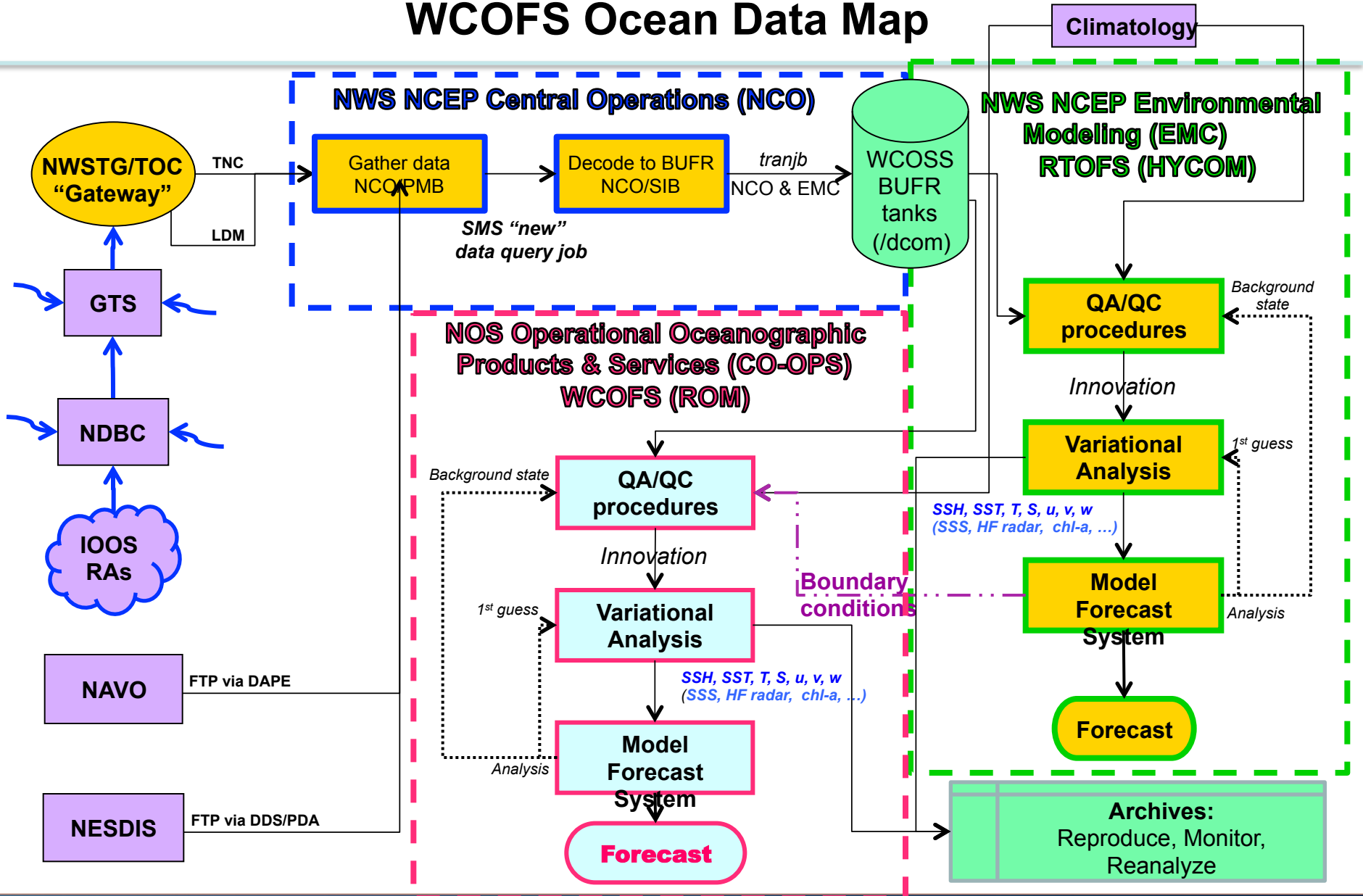


NOAA/National Ocean Service
Operational Coastal Modeling Implementation Strategy

Subject to Revision by NOS Management Based Upon Stakeholder Needs & Budget Opportunities.
December 2014

JGW Kelley, NOS/CSDL/MMAP

WCOFS Ocean Data Map

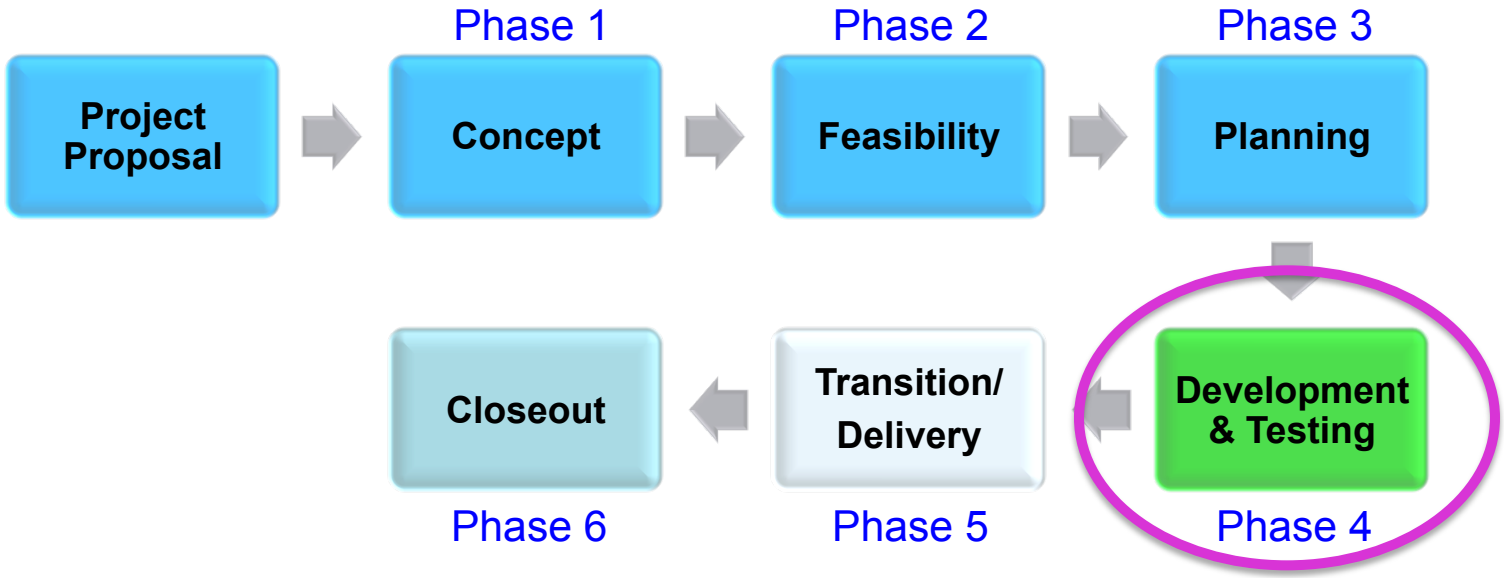


Systems Development Life Cycle

WCOFS Research and Development::

- Reviewed by the **Project Review Board (PRB)** and the **Model Advisory Board (MAB)**
- **Passed the gate criteria to enter Phase 4 – Development and Testing**

WCOFS Operations: Reviewed by the MAB

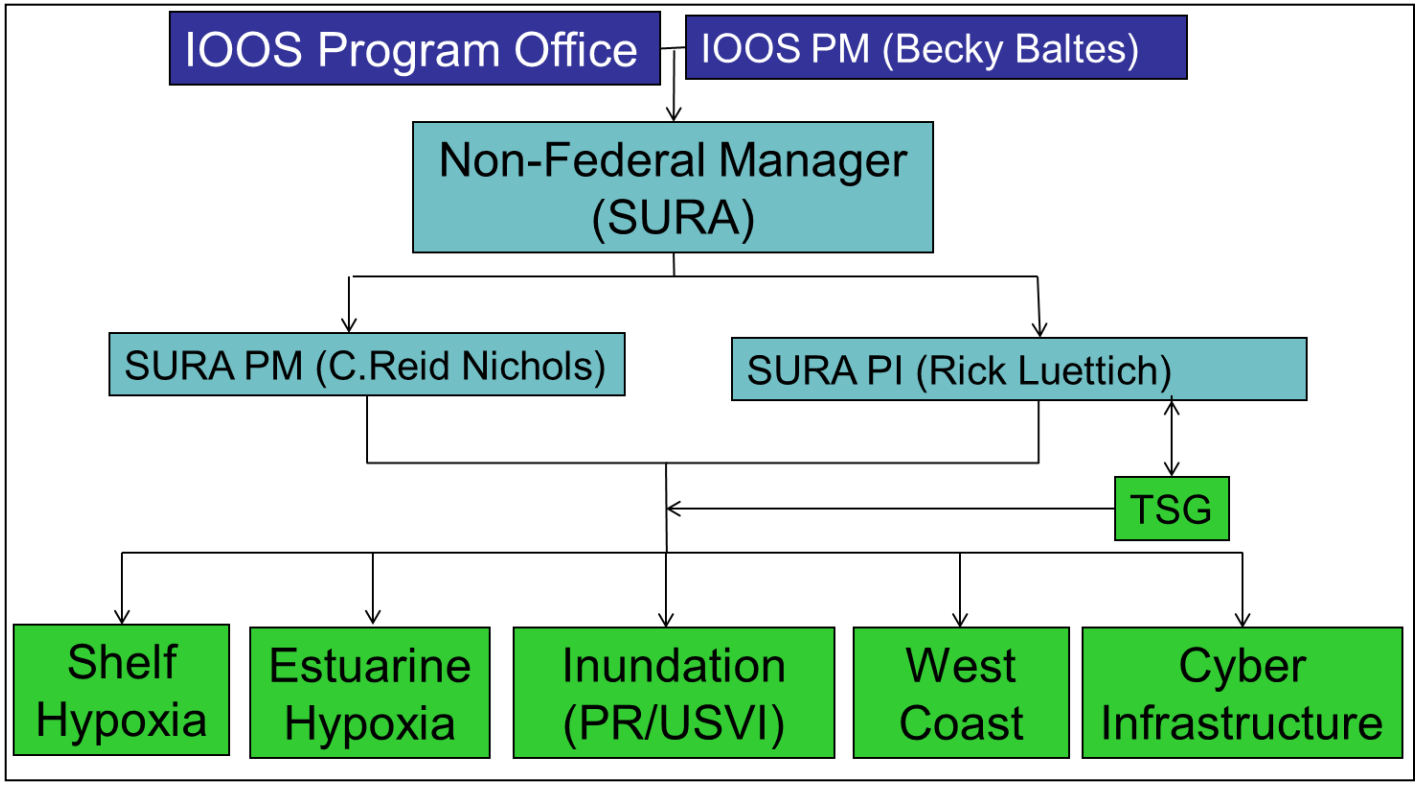


COMT Future

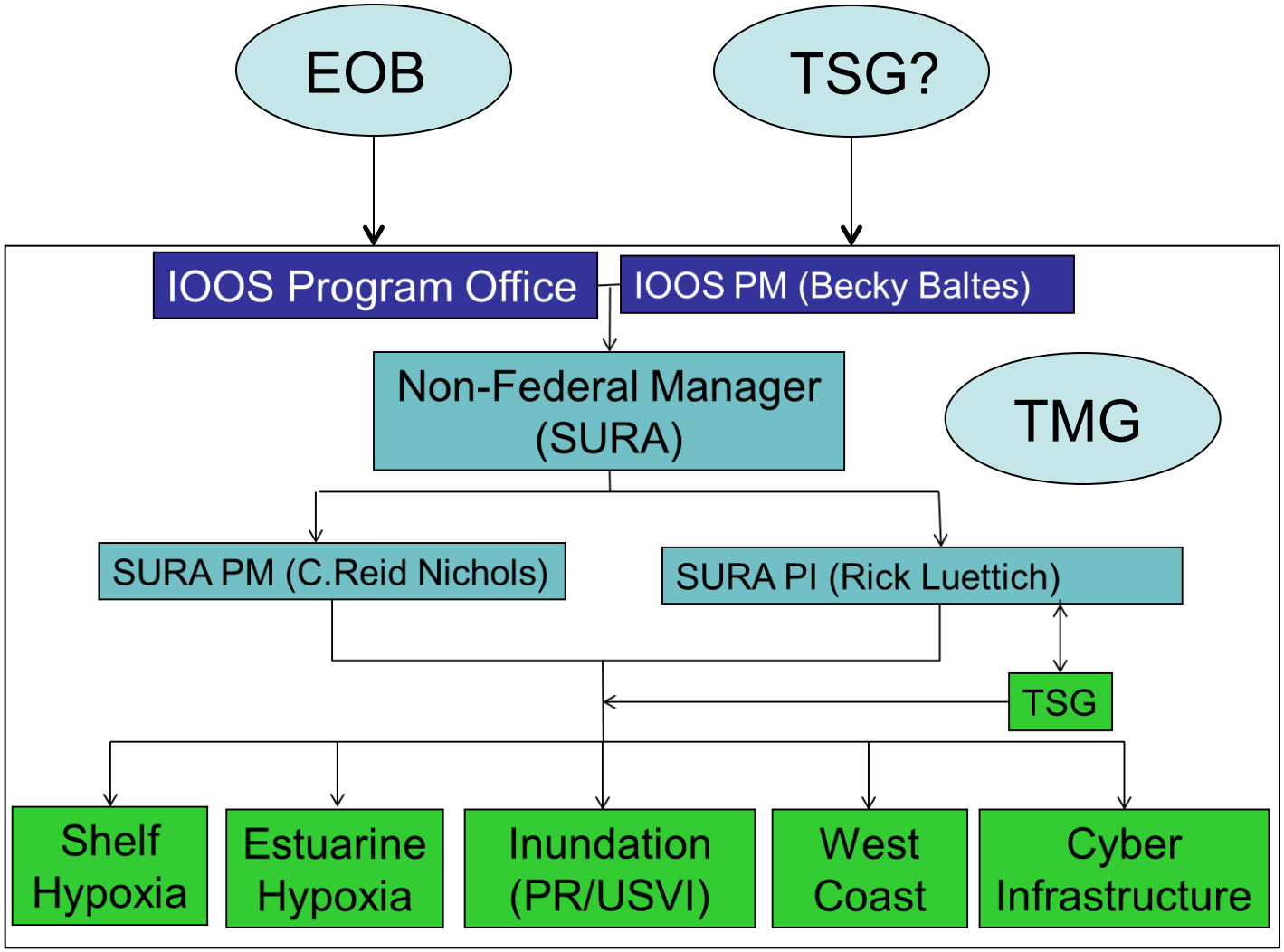
- Funding for FY15-FY17
- Make progress on the “Aspiring Drivers”
- Connecting with CO-OPS/CSDL Requirements process
- Connect with other agencies for coastal processes
- Re-evaluate ToR and governing structure

Back Up Slides

Organizational Chart



Organizational Chart



COMT Ongoing Goals

1. Advance 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. Advance skill metrics and assess models in different regions and dynamic regimes

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

5. Allow for both continuity of effort and new projects