



NOAA Ecological Forecasting Roadmap

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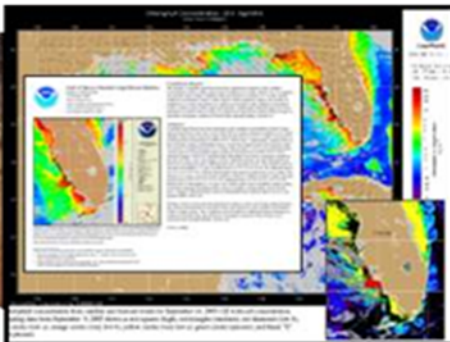
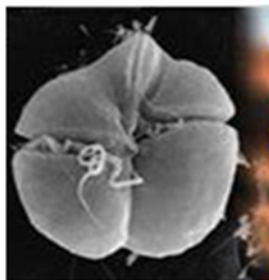
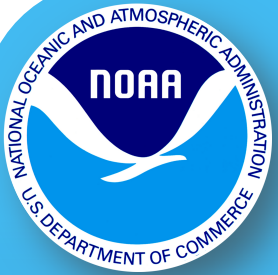


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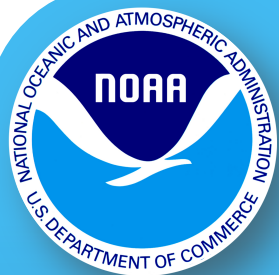


What Are Ecological Forecasts?

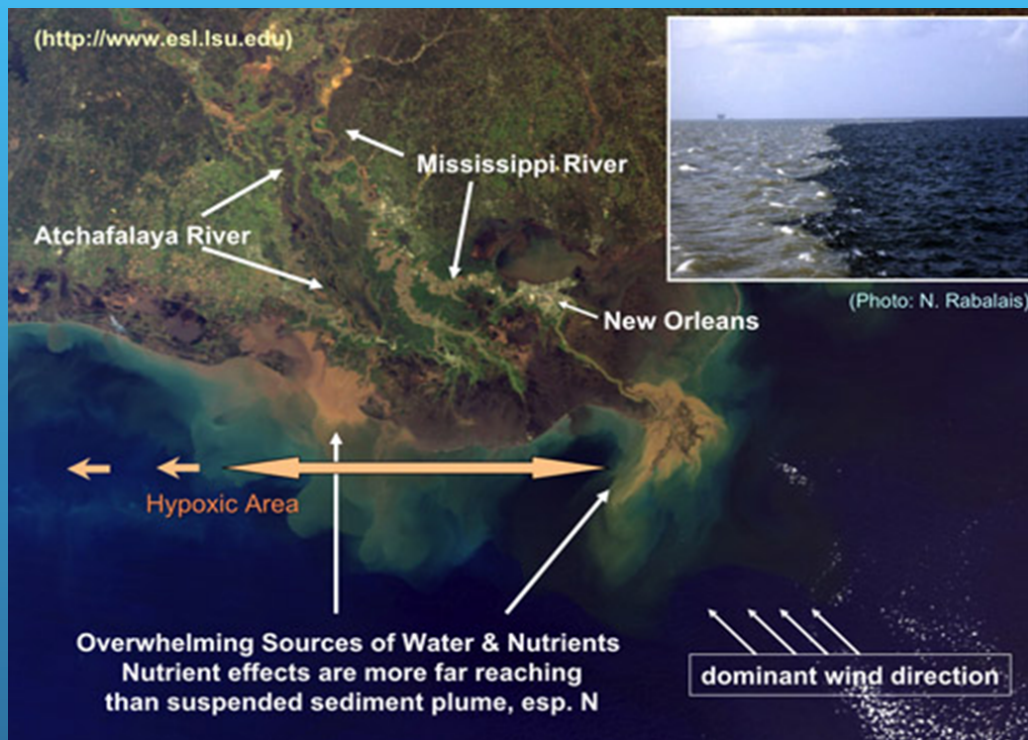
- Ecological forecasts predict likely changes in ecosystems in response to environmental drivers and resulting impacts to people, economies and communities.
- Ecological forecasts provide early warnings of the possible effects of ecosystem changes (e.g., harmful algal blooms, hypoxia, etc.) on coastal systems and human well-being with sufficient lead time to allow for corrective or mitigative actions.

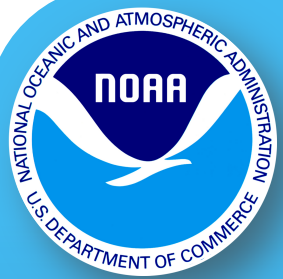
Why is Ecological Forecasting Important?

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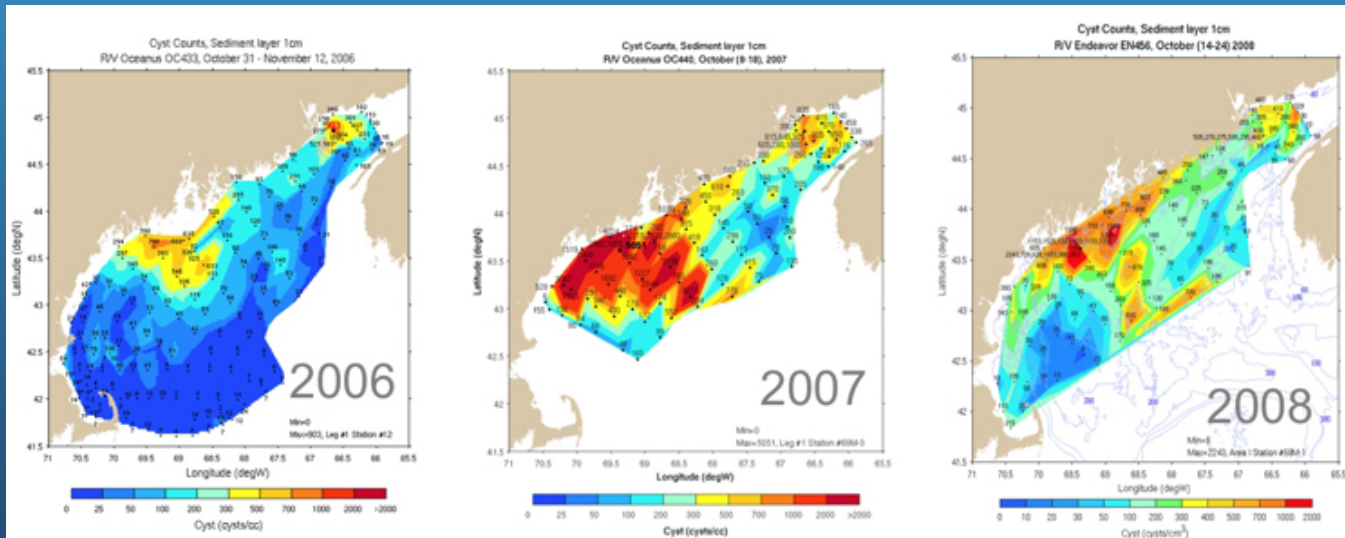
- Oceans and coasts are constantly changing
- Aids scientists to determine environmental conditions
- Allows policy-makers to make informed decisions locally, regionally, or for the coast
- Helps decision-makers respond to natural and man-made disasters, such as chemical run-off and oil spills



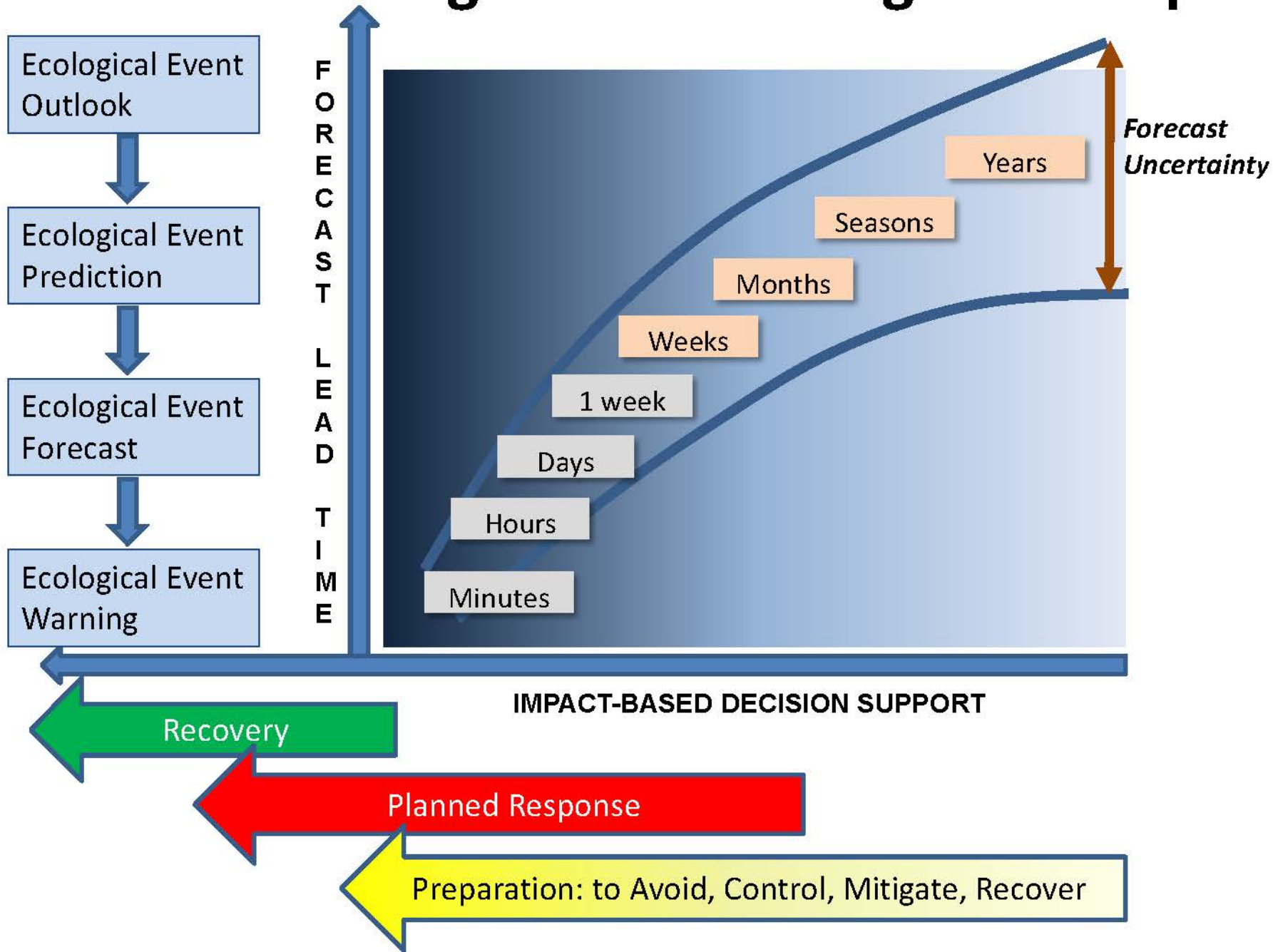


NOAA's Ecological Forecasting Roadmap: What we will achieve

- Strong science to enable delivery of forecasts
- Delivery of more products and services building on existing NOAA and partner capacity
- Delivery of more consistent, efficient, reliable, and national forecasts (tailored to region-specific needs)



NOAA's Ecological Forecasting Roadmap





NOAA Ecological Forecasting Roadmap Structure and Priorities

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Focus Areas:

HABs, Hypoxia, Pathogens,
Habitat/Species Distribution

• Selected based on

- relative maturity and potential readiness to transition to operations
- Nation-wide applicability to NOAA's core missions
- well-identified needs with strong, interested constituencies





Research to Operations (R2O) Importance

R2O provides services to users
Allows researchers to continue improving operational forecasts
Gives broad visibility to the research



Operational analysis continually identifies areas of needed research
Provides reliable up-to-date information for continual research



Forecasts Under Development

HAB:

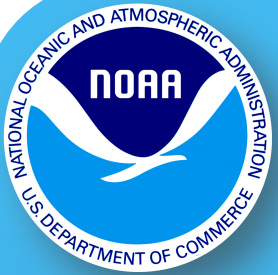
- West Florida Shelf (operational)
- Texas (operational)
- Lake Erie (demo/experimental)
- Gulf of Maine (demo/experimental)
- Puget Sound (demo/experimental)
- Washington Coast (demo/experimental)
- California (future)
- Chesapeake Bay (future)

Hypoxia:

- Gulf of Mexico (demo/experimental)
- Chesapeake Bay (demo/experimental)
- Puget Sound (demo/experimental)

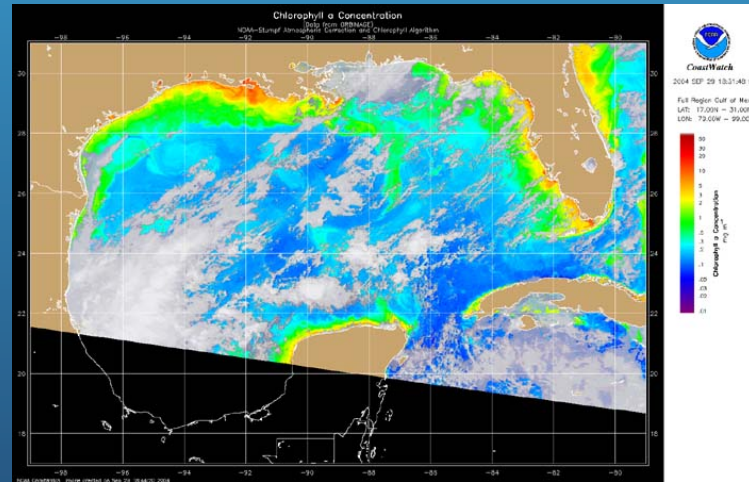
Pathogens:

- Chesapeake Bay (demo/experimental)
- Delaware Bay (demo/experimental)
- Tampa Bay (demo/experimental)
- Gulf of Mexico (future, location may change)



Leveraging Core Infrastructure

- Environmental Intelligence Network
 - Coastal and meteorological observations
- Modeling Backbone
 - NWS/NCEP high performance computing
 - Shared coastal modeling development and community modeling testbed
- Integrated product delivery
 - AWIPS
 - GIS technology
 - NOAA Platforms





Oceanographic Forecast Modeling Systems



Tentative Schedule

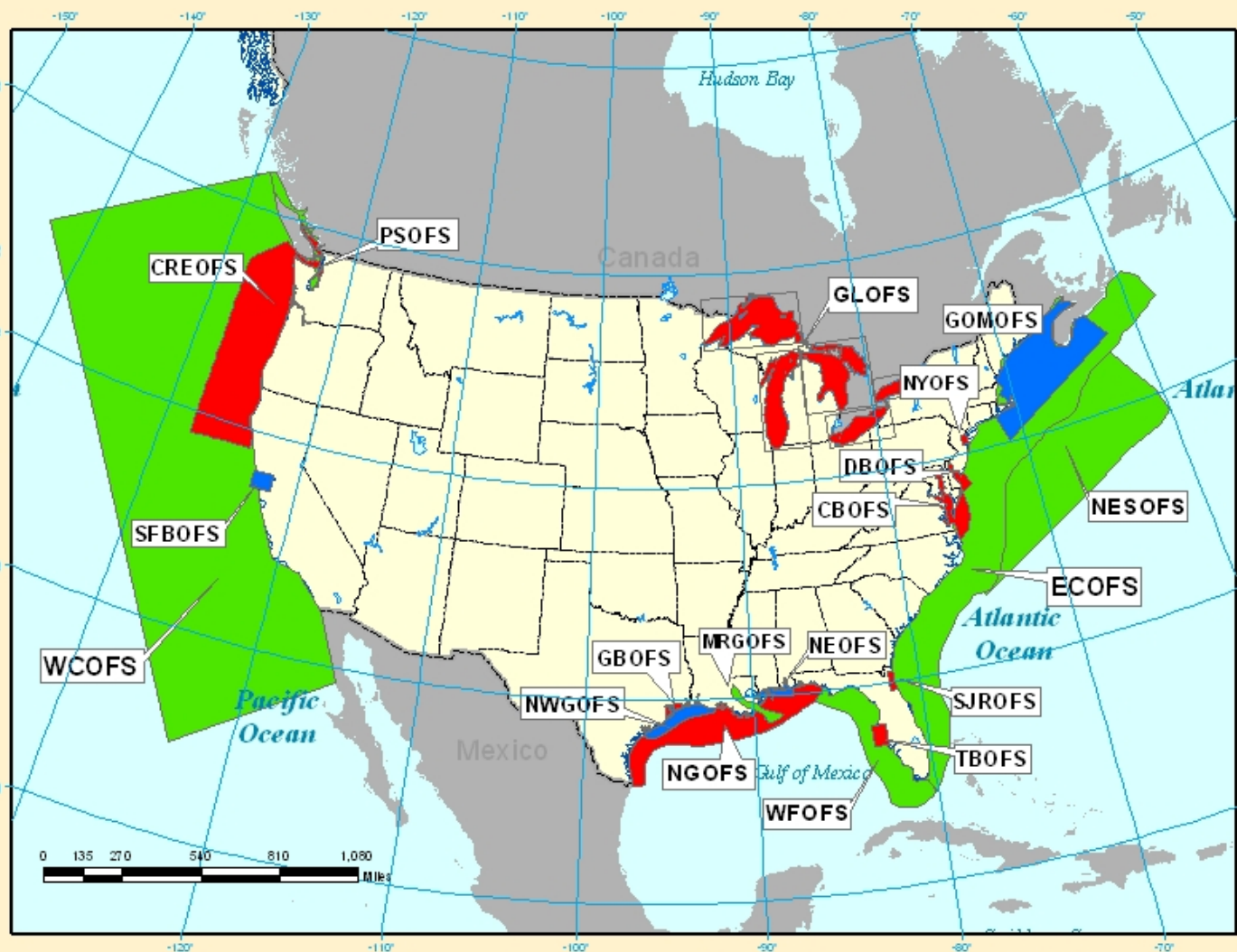
FY14: SFBOFS, NEGOFs, NWGOFS

FY15: CIOFS, GLOFS-Lake Erie (Upgrade)

FY16: GOMOFs, rest of GLOFS (Upgrade)
NYOFs (Upgrade)

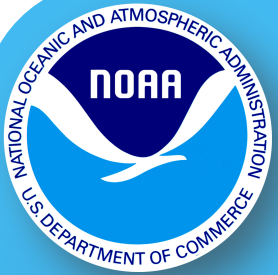
FY17: MRGOFS, SJROFS (Upgrade)

FY18-19: WCOFS, ECOFS, PSOFs,
CREOFs (Upgrade)



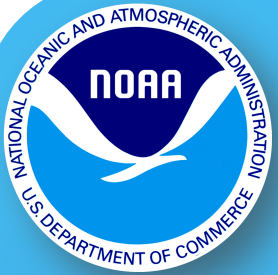
NOAA/National Ocean Service Operational Coastal Modeling Implementation Strategy

*Subject to Revision by NOS Management Based Upon Stakeholder Needs & Budget Opportunities.
January 15, 2013*



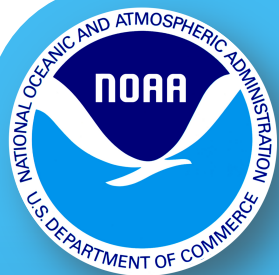
Ecological Forecasting Modeling Gaps

- Need to plan for entire R2O process upfront
 - Identify operator
 - Establish a Con-Ops
 - Understand modeling requirements
 - Identify resources for transition and operation activities
- **Hypoxia:** Build on the initial work of the testbed on Chesapeake Bay Hypoxia and use of hydrodynamic models to improve forecasts.
 - Integrate nutrient-based models with living resource models
- **Pathogens:** Improved capacity for modeling additional environmental parameters (e.g. water clarity, chlorophyll).
- **HAB and Species Distribution:** Evolving
- **Cross-cutting:**
 - Earth system modeling; Advancing coupled physical and biogeochemical models
 - Continue coverage of operational forecast systems; coupling of hydrologic and coastal models



Opportunities for Collaboration

- Observations and Modeling gaps
- Transitioning mature research
- Forecast Development and Delivery
- Outreach
- Webinar Discussion
 - Discussion of priorities and key activities
 - Identify specific areas of collaboration
 - Integrate partnership opportunities into the revised EFR Action Plan



Questions & Discussion

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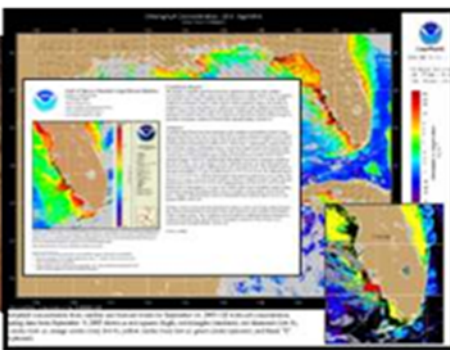
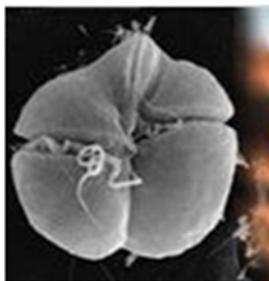


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