

Science at NOAA

UNOLS Annual Meeting, Arlington, VA

The Honorable Dr. Jane Lubchenco

Under Secretary of Commerce for Oceans and Atmosphere & NOAA Administrator
National Oceanic and Atmospheric Administration | NOAA

October 14, 2009



Outline

- 1. Overarching Goals**
- 2. Strategic Priorities**
- 3. Administration Initiatives-**
- 4. Ocean Policy Task Force**
- 5. Budget, ARRA**
- 6. News from the NOAA Fleet**
- 7. NOAA-UNOLS Shared Challenges, Opportunities**



Overarching Goals

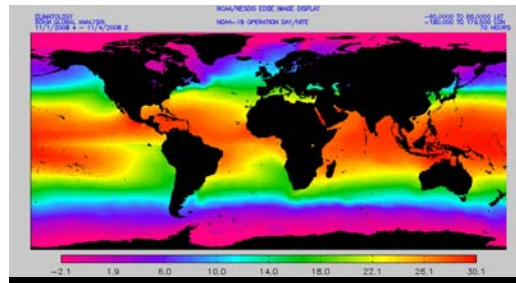
Science, Service, Stewardship

- 1. Strengthen scientific basis for environmental decision-making**
- 2. Improve services: protect life & property, create economic opportunities, enable food & environmental security for all Americans**
- 3. Restore oceans and coasts to be healthy, productive and resilient**

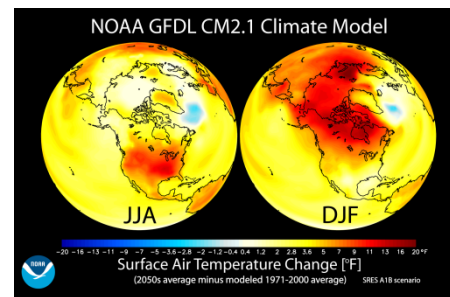


NOAA Strategic Priorities

Sustain Satellite Based Earth Observations

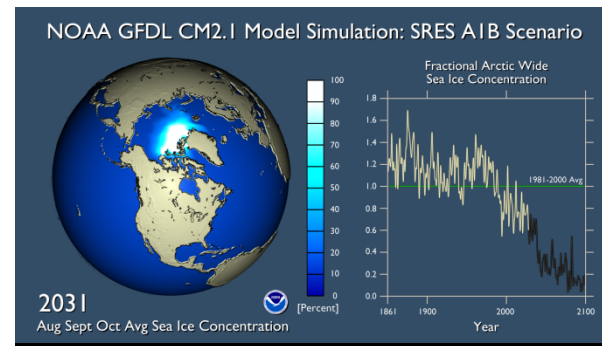


Enhance NOAA's Climate Services and Establish a National Climate Service



Ensure Sustainable Marine Fisheries

Support Healthy Coastal Communities and Ecosystems



Strengthen Arctic Science and Service



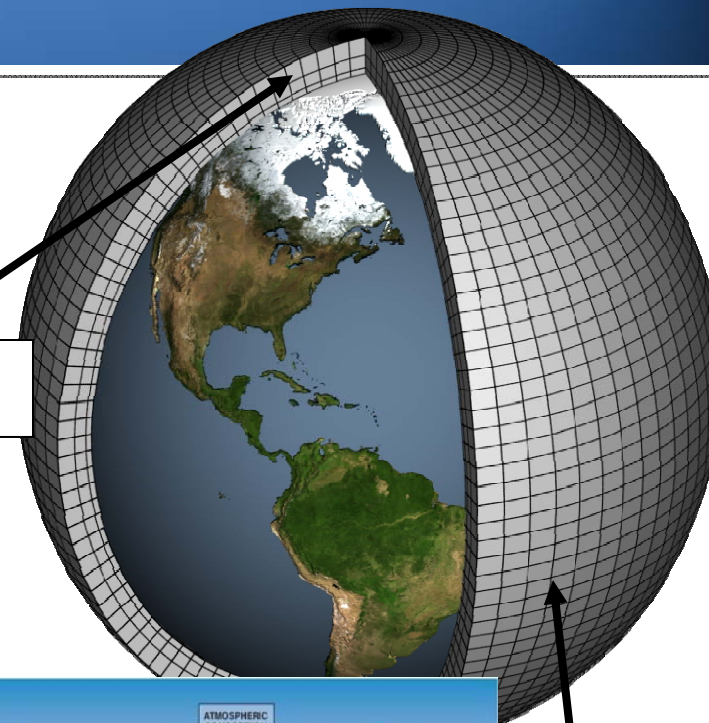
NOAA Climate



Services and Assessment

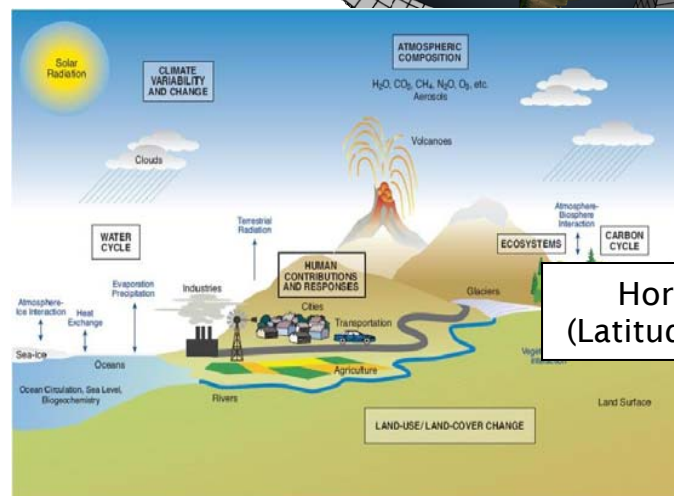
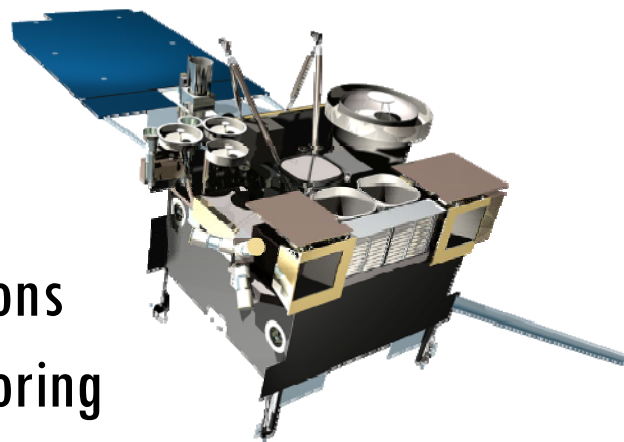
Research and Modeling

Vertical Grid
(Height or Pressure)



Horizontal Grid
(Latitude & Longitude)

Observations and Monitoring



NOAA Climate



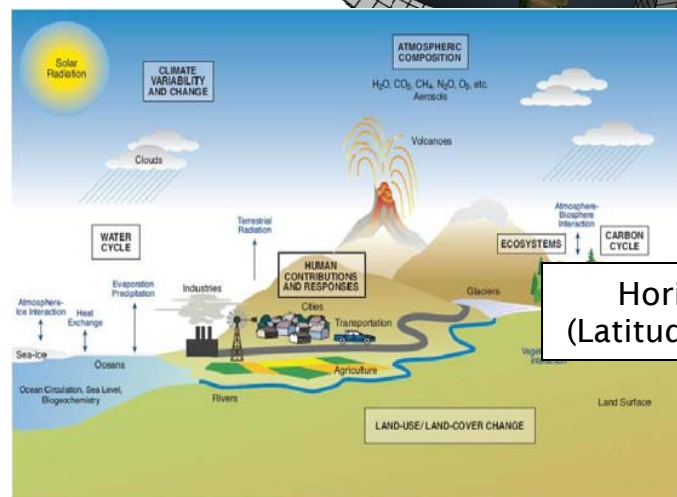
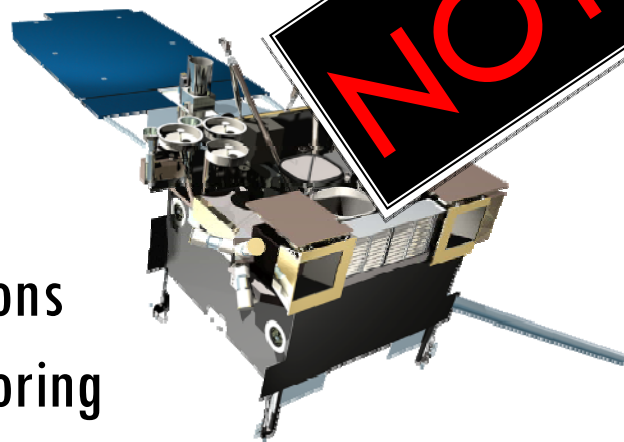
Research and Modeling

Services and Assessments

Vertical (Height)

NOTES ONLY

Observations and Monitoring

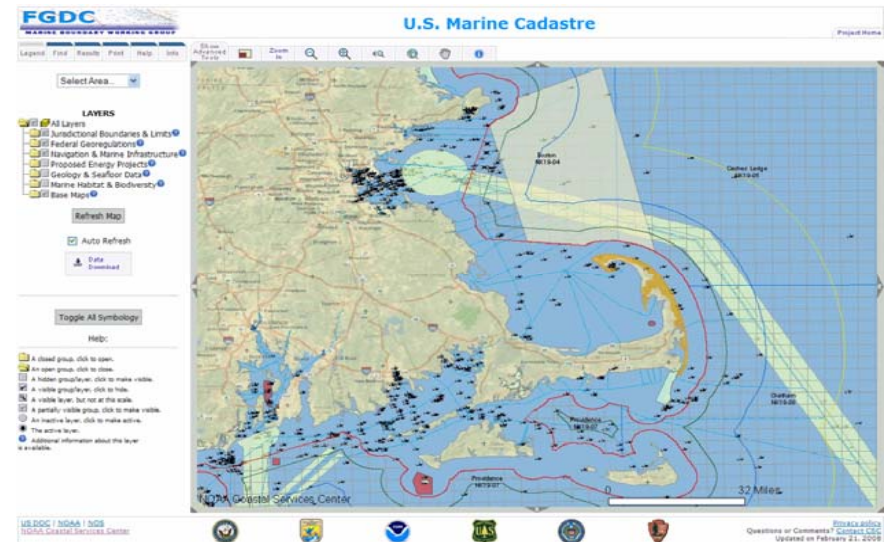


Horizontal Grid (Latitude & Longitude)



Healthy Coastal Communities and Ecosystems

1. Ecosystem-based science
2. Land-sea connection
3. Marine spatial planning
4. Socio-economic and biophysical models



Example: Multi-Purpose Marine Cadastre



Sustainable Fisheries & Protected Species

Ending Overfishing & Implementation of Catch Share Programs



Protected Species



Habitat Conservation

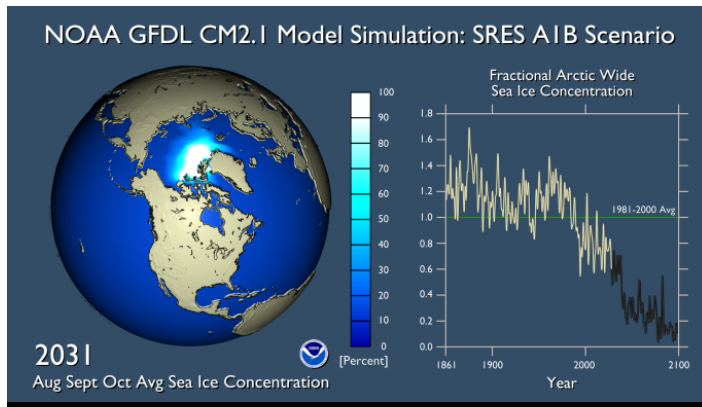
Science to Support Fisheries Management



International Engagement



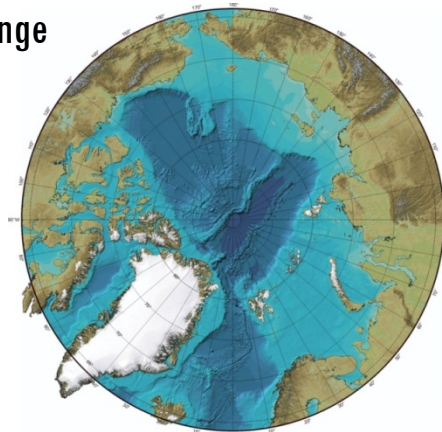
Strengthen Arctic Science and Service



GFDL CM2.1 model-simulated Arctic ice change



Tiksi Atmospheric Observatory Russia



Bathymetric Chart of the Arctic Ocean



Extended Continental Shelf Mapping

Snow Crab



Administration Initiatives

Interagency Task Forces and Working Groups

1. **Scientific Integrity**
2. **Climate and Energy**
3. **Adaptation to Climate Change**
4. **Ocean Policy**



Administration Initiatives

Interagency Task Forces and Working Groups

1. **Scientific Integrity**
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NOTES ONLY



Interagency Ocean Policy Task Force

Established June 12, 2009 by Presidential Memorandum

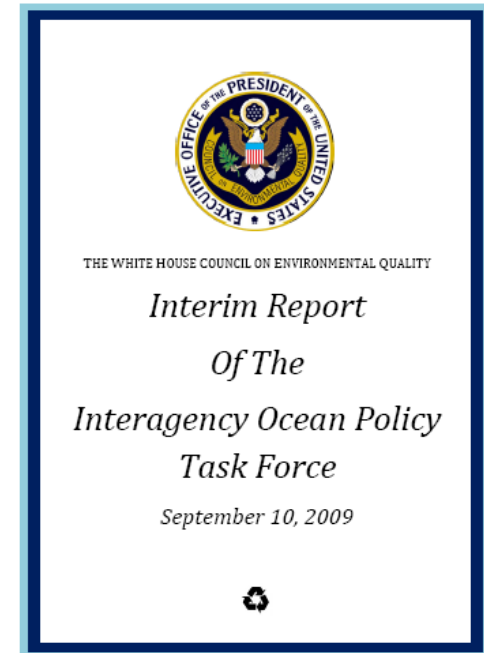
- ✔ Chair Nancy Sutley, CEQ
- ✔ 24 senior policy officials

Deliverables Within 90 Days – Sept 10

- ✔ National Policy
- ✔ Framework for Policy Coordination
- ✔ Implementation Strategies

Within 180 Days – December 9

- ✔ Marine Spatial Planning



www.whitehouse.gov/oceans



Priority Objectives for National Policy Implementation

Ecosystem-Based Management

Coastal and Marine Spatial Planning

Inform Decisions and Improve Understanding

Coordinate and Support

Resiliency and Adaptation to Climate Change and Ocean Acidification

Regional Ecosystem Protection and Restoration

Water Quality and Sustainable Practices on Land

Changing Conditions in the Arctic

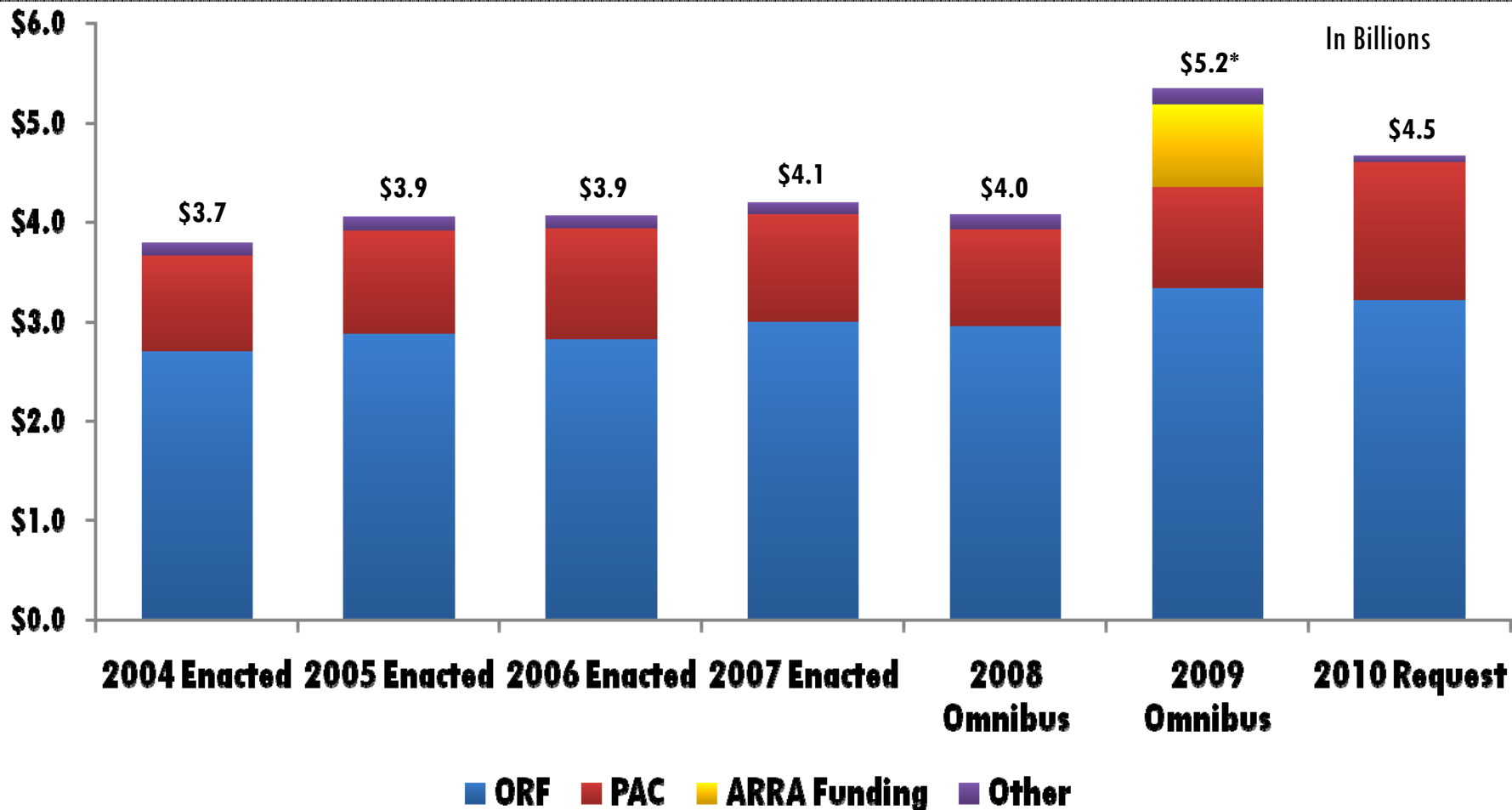
Ocean, Coastal, and Great Lakes Observations and Infrastructure

“A broad program of basic and applied... scientific research, mapping, monitoring and assessment...is required to build knowledge of ocean, coastal and Great Lakes ecosystems... [to] ensure management and policies are based on sound science.”

STRENGTHEN and INTEGRATE Federal and non-Federal ocean observing systems, sensors, and data collection platforms into a national system and integrate that system into international observation efforts



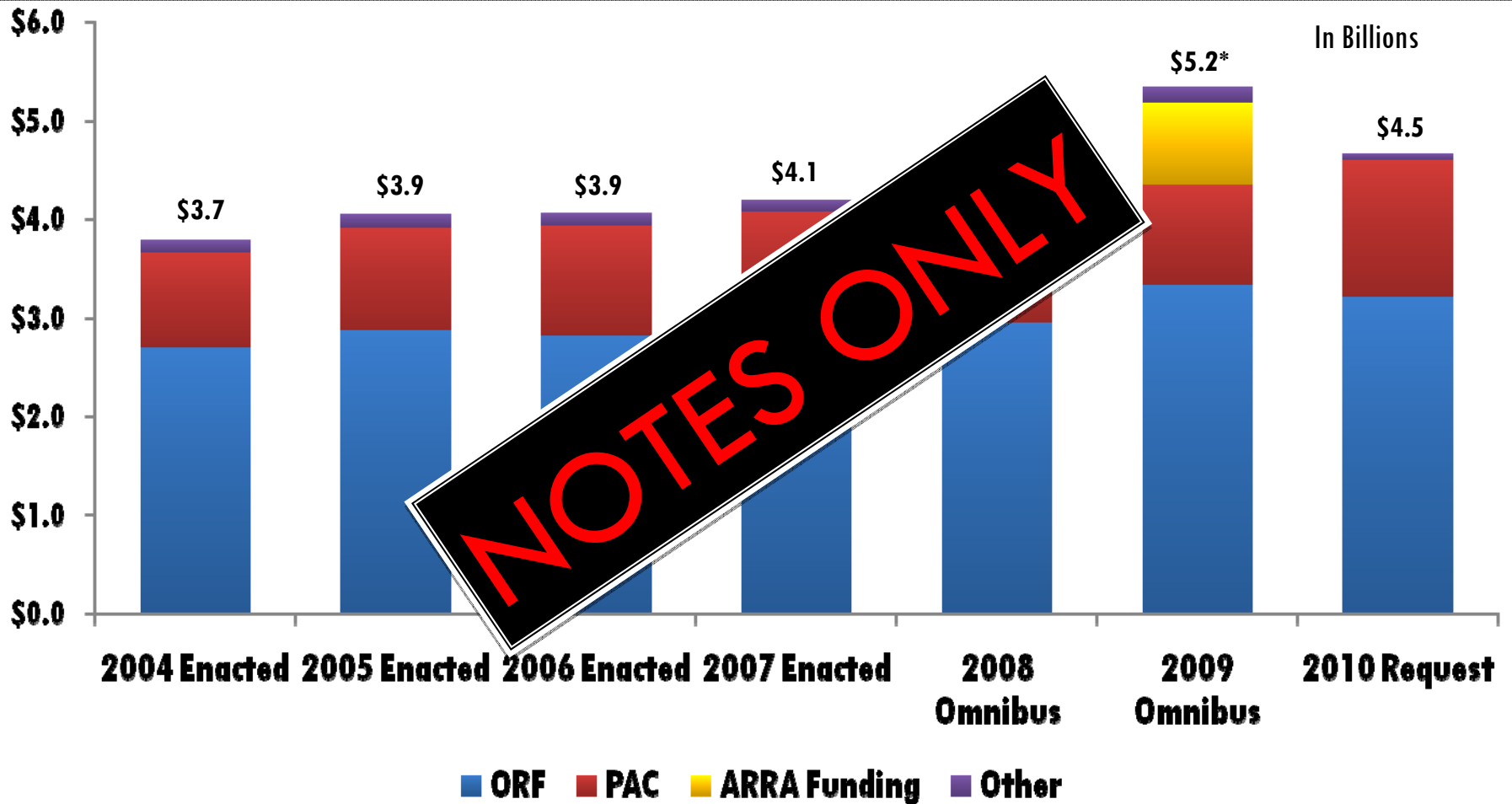
NOAA Appropriations History



*2009 includes \$830M in ARRA (Stimulus Act) Funds



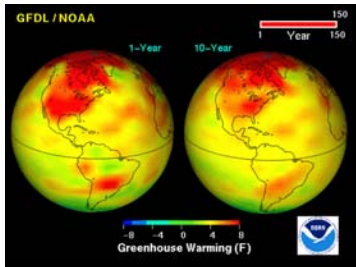
NOAA Appropriations History



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2009 ARRA Funding (\$830M)



**Climate Computing
& Modeling
(\$170M)**



**Habitat
Restoration
(\$167M)**



**Pacific Regional
Center
(\$142M)**



**Southwest Fisheries Science
Center
(\$102M)**



**Fishery Survey Vessel
Construction
(\$78M)**



**Satellite
Development
(\$74M)**



**Hydrographic Survey
(\$40M)**



**Vessel Maintenance &
Repair
(\$20M)**

NOTE: only shows projects \geq \$20M



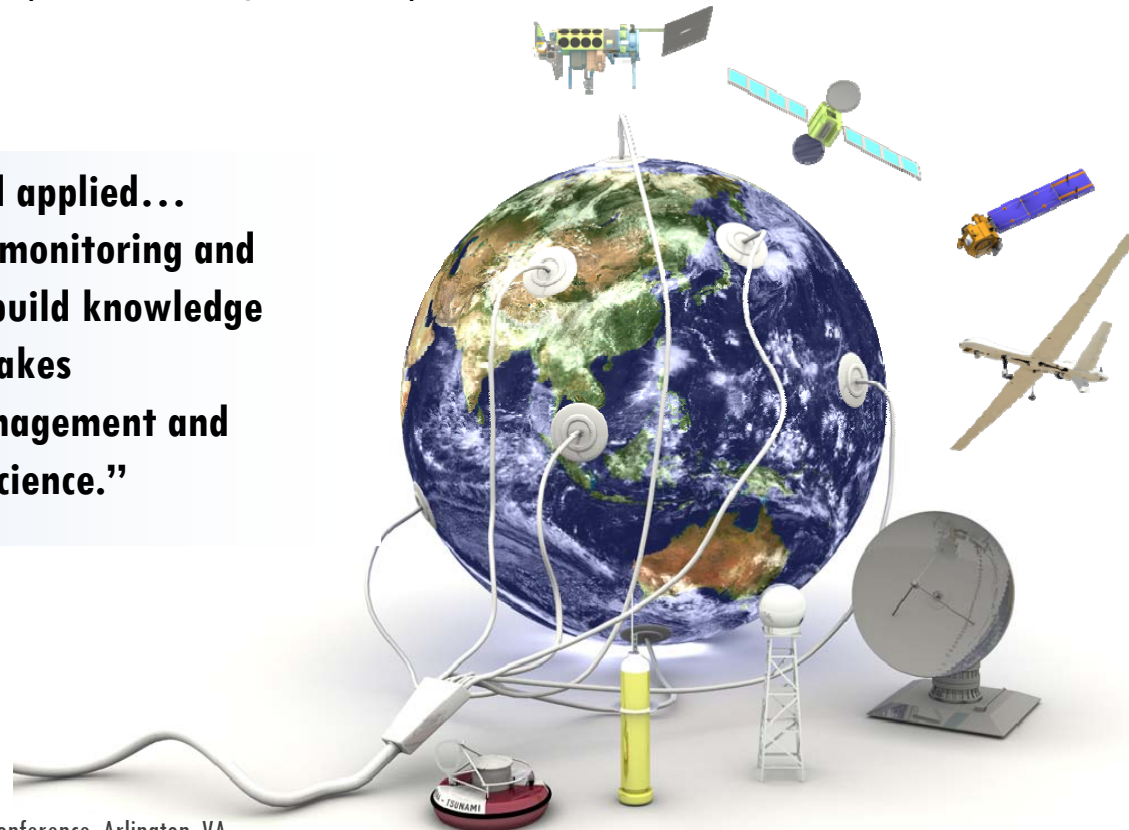
NOAA Science Priorities—UNOLS Annual Conference, Arlington, VA

Integrated Observation Systems Make It All Possible

OCEAN POLICY TASK FORCE RECOMMENDATIONS:

“Strengthen and integrate Federal and non-Federal ocean observing systems, sensors, and data collection platforms into a national system and integrate that system into international observation efforts...”

“A broad program of basic and applied... scientific research, mapping, monitoring and assessment...is required to build knowledge of ocean, coastal and Great Lakes ecosystems...[to] ensure management and policies are based on sound science.”



NOAA Fleet Recapitalization

Two of seven planned acoustically-quiet Fisheries Survey Vessels (FSVs) are conducting operations in Alaska and New England

Two more FSVs expected to be operational in 2010

One Coastal Hydrographic Survey Vessel launched September 2009

Six additional multi-mission NOAA Survey Vessels (NSVs) will be placed in service between 2018 and 2024



NOAA Ships *Bell M. Shimada* and *Pisces*



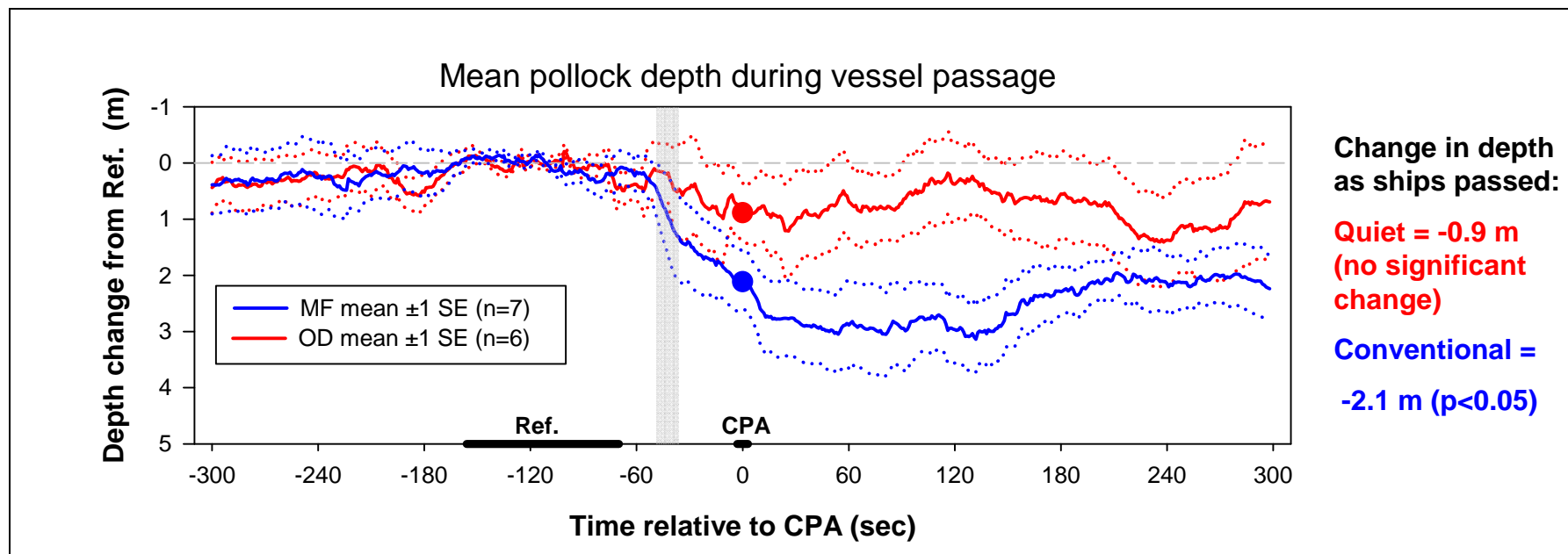
Ferdinand R. Hassler Launch



Impacts of “Acoustically Quiet” Fisheries Survey Vessels

In a survey of Alaskan Pollock, in shallow waters, a new acoustically quiet fisheries survey vessel **saw 31% more fish** than a conventional ship conducting the same survey

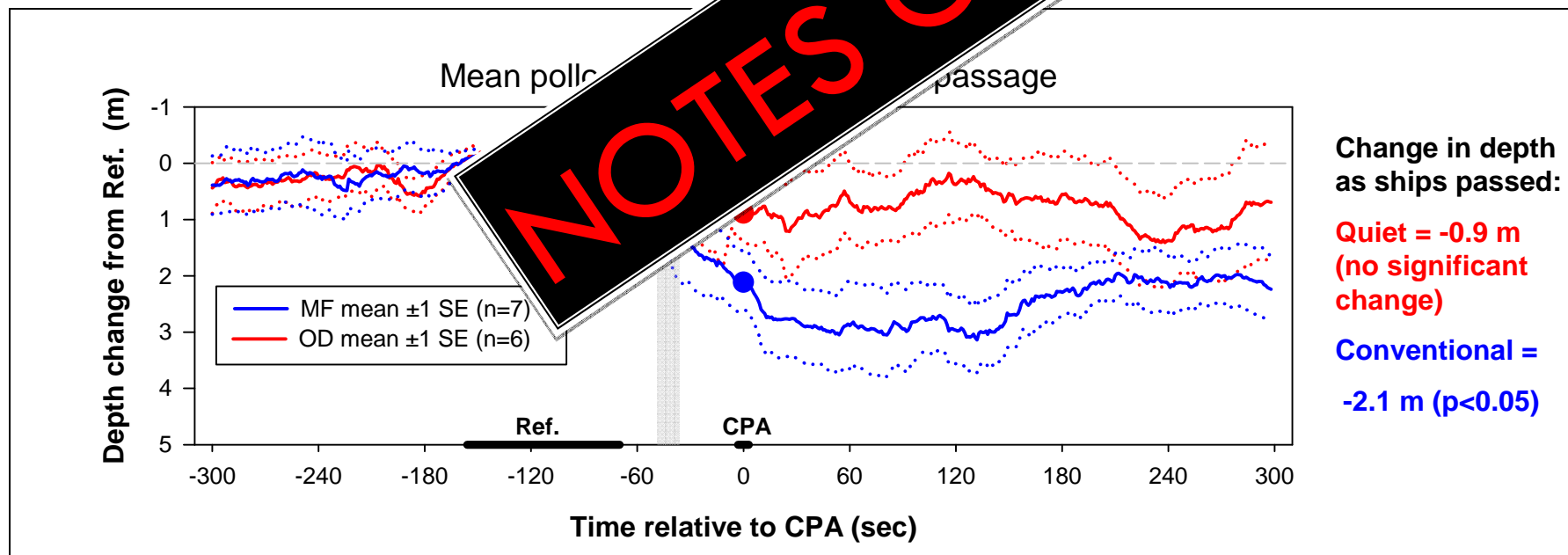
In shallow water, fish showed greater avoidance of a conventional vessel than an acoustically quiet one



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Telepresence and the NOAA Ship *Okeanos Explorer*: A New Paradigm for Ocean Science

The NOAA Ship *Okeanos Explorer*, commissioned August 2008, is NOAA's ship for ocean exploration.

Capabilities include:

- Deep water (6,000m) mapping
- Science-class ROV
- Real-time, broadband satellite transmission of data enables 'telepresence'

Telepresence allows:

- 'Virtual' expedition management with most of the scientists onshore, enabling response to unexpected discoveries
- Improved outreach to students, media, and the general public

Currently working near the Hawaiian Islands, with expedition to Indonesia anticipated in summer of 2010



UNOLS-NOAA Partnerships: Cooperative Projects and Shared Challenges

NOAA and UNOLS already cooperate on several fronts, including joint research cruises

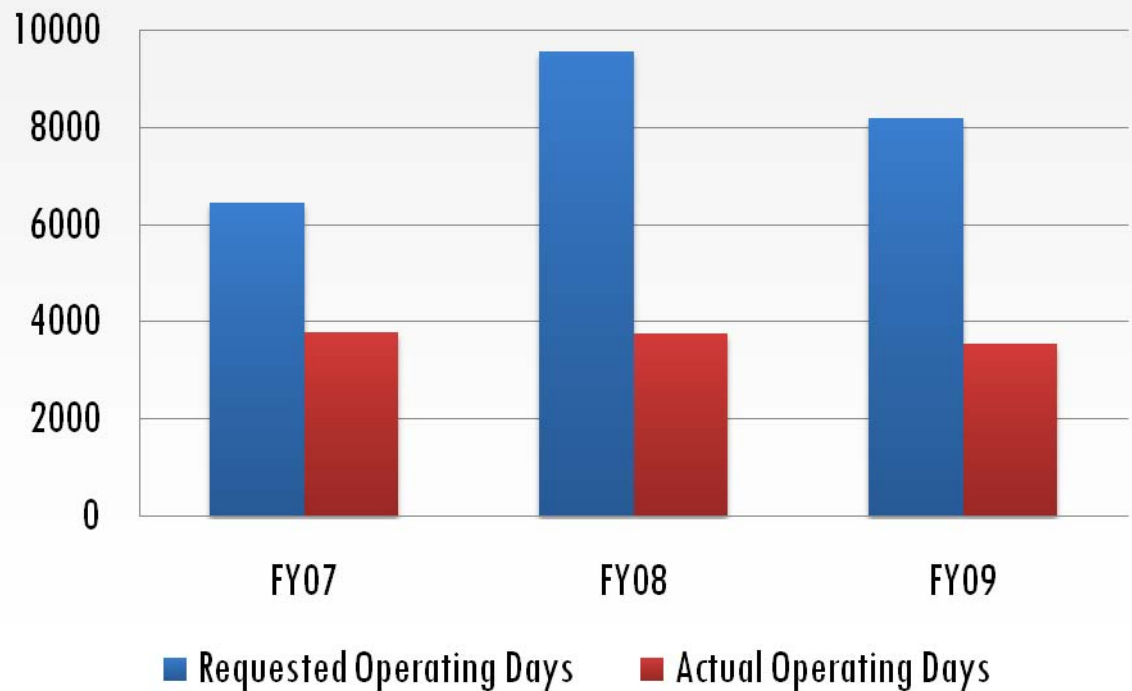
We also share challenges:

- 🌊 Demand for sea days far outstrips supply
- 🌊 The timing of the budget cycle makes scheduling a challenge



ROV *Medea* retrieved on NOAA Ship *Ronald H. Brown*

NOAA Ship Requested vs. Actual Operating Days, FY'07-FY'09



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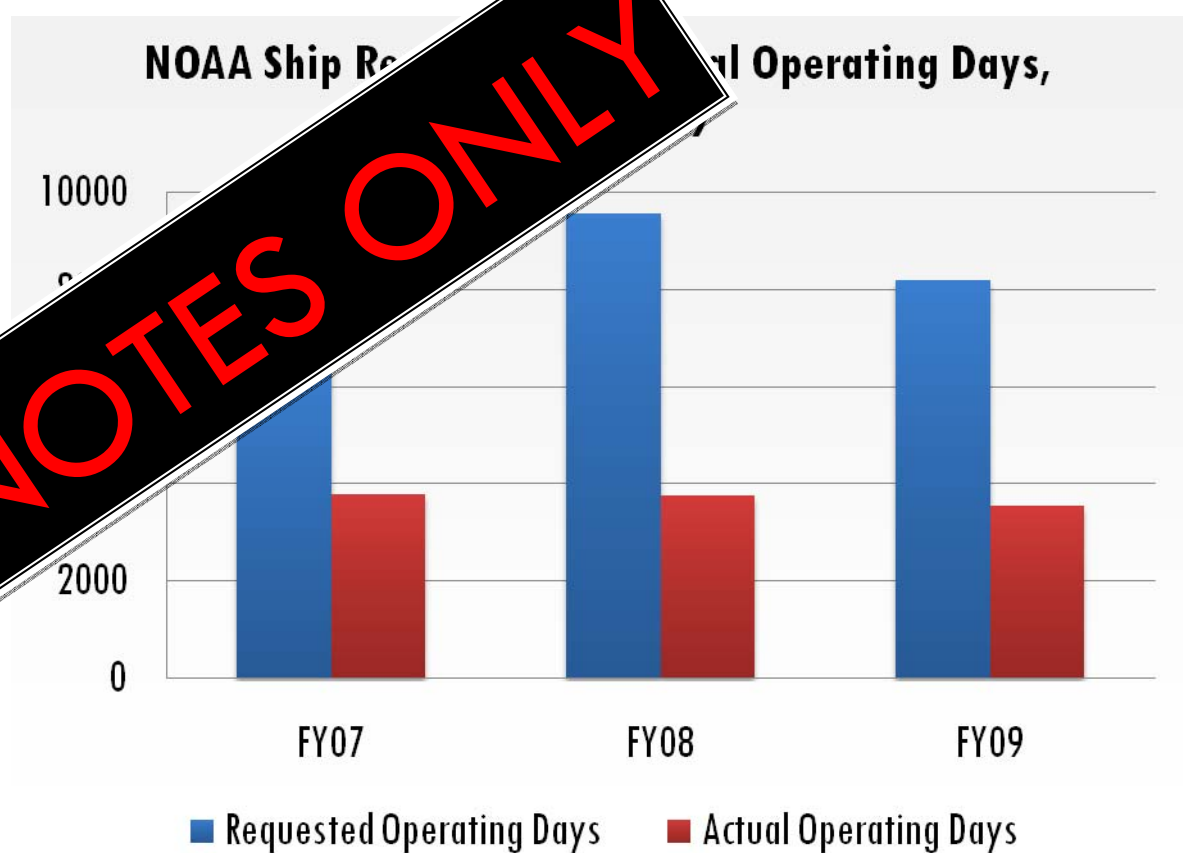
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UNOLS-NOAA Partnerships: Shared Goals and Opportunities

Implementing Ocean Policy Task Force Recommendations to strengthen and integrate the nation's ocean observing systems

Speaking with 'one voice' on Capitol Hill to promote ocean science

ROV *Jason* retrieved
on the NOAA Ship
Ronald H. Brown



A spiny crab spotted during the Lophelia II
2009 Deepwater Coral Expedition



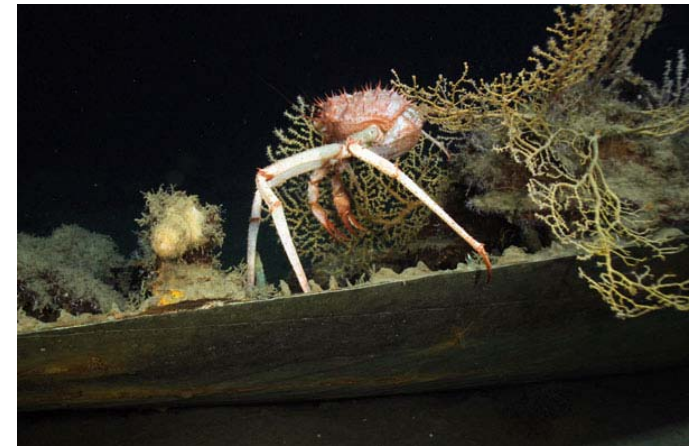
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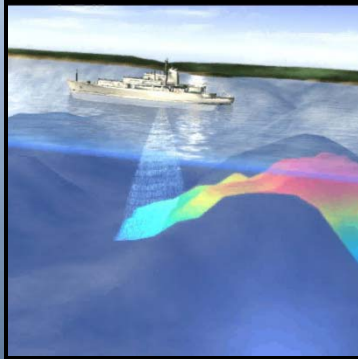
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How we work

Inclusive, Transparent, Accountable

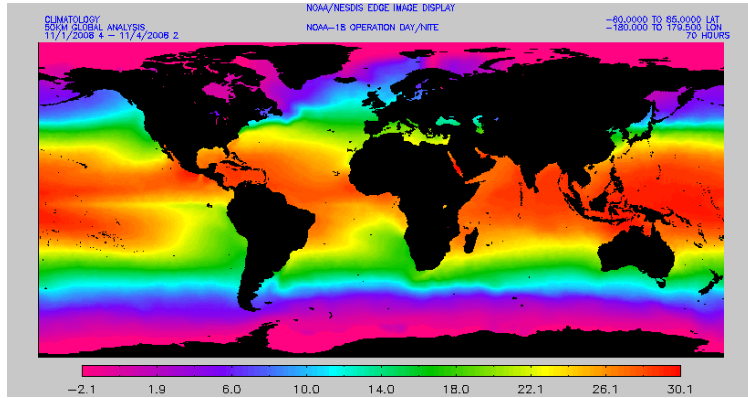
Responsive, adaptive

Regional opportunities

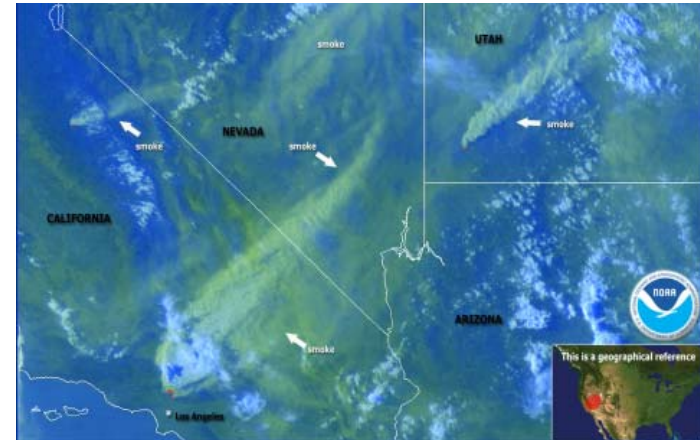
Partners, including regulated communities



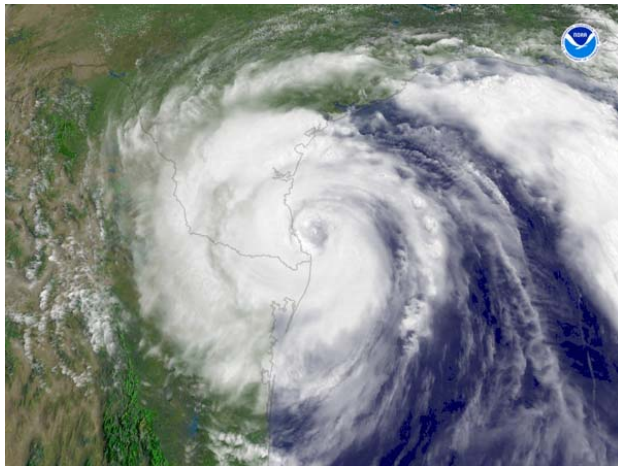
Satellite Based Observing



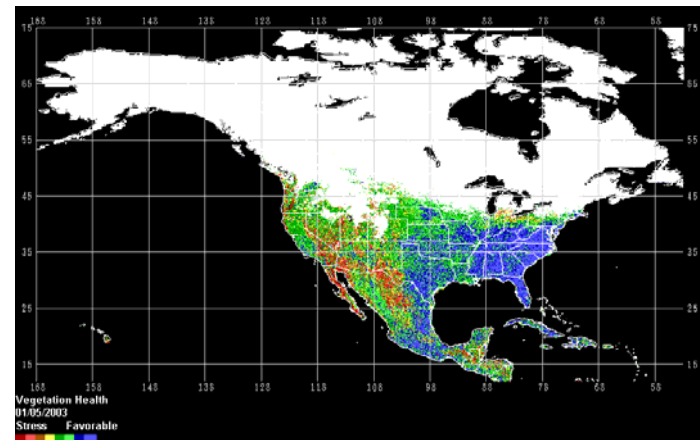
Global Sea Surface Temperature



Fire and Smoke Monitoring



Hurricane Forecasting



Vegetation Indices



UNOLS-NOAA Partnerships: Cooperative Projects and Shared Challenges

NOAA Ship Operating Days, FY00-FY09

