NOAA and OAR Approaches to Research Planning

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NOAA’s Research Engine

Innovation | Incubation | Integration
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Climate | Weather and Air Quality | Ocean and Coastal Resources
NOAA Goals

- Oceans
- Weather
- Climate
- Coastal Economies
Oceanic & Atmospheric Research

Vision

A society that uses the results of our research as the scientific basis for more productive and harmonious relationships between humans and the environment.

Mission

To conduct environmental research, provide scientific information and research leadership, and transfer research into products and services to help NOAA meet the evolving economic, social, and environmental needs of the Nation.
Office of Oceanic and Atmospheric Research
A Proposed Climate Service

- The President’s FY 2012 Budget Request includes a Climate Service Line Office within NOAA.

- The proposed Climate Service will bring together NOAA’s existing climate research, observations, monitoring, modeling, information product development and delivery, and decision support functions.

- It will sustain core capabilities and improve understanding and the characterization of the nation’s vulnerability to climate change.
  - Arctic Watch
  - Water Resources Research to Operations
  - Carbon Observing and Analysis System
  - Earth System Modeling
  - Global Ocean Observing System
NOAA’s Changing Strategic Directions

1998 - 2008
- Ocean Commission Blueprint
- NOAA Strategic Plan
- NOAA 20 Year Vision
- NOAA 5 Year Research Plan

2008 - Future
- National Ocean Policy
- Next Generation Strategic Plan
- Proposed Climate Service
- OAR Restructuring

Requirements and Drivers

NOAA Actions
- Creation of:
  - NOAA SAB
  - NOAA Research Council
  - Five Strategic Mission Goals
  - Matrix Program Structure

- NOAA Science Workshop and Grand Challenges
- Strengthening Science Mission Goals
- Enterprise Objectives
NOAA Science Workshop

Strengthening NOAA Science

April 20 – 22, 2010

First–of–its–kind meeting to engage active NOAA scientists and science managers to identify grand science challenges for NOAA over the next five to twenty years

Overarching Grand Challenge

*Develop and apply holistic, integrated Earth system approaches to understand the processes that connect changes in the atmosphere, ocean, space, land surface, and cryosphere with ecosystems, organisms and humans over different scales.*

Also identified 7 topic specific challenges and 2 cross cutting challenges
Drivers for NOAA Research

**Policy Drivers**
- United States Global Change Research Program (USGCRP)
- US National Ocean Policy
- NOAA Next Generation Strategic Plan
- NOAA 5-Year Research Plan
- NOAA 20-Year Research Vision
- National Response Framework

**Legislative Drivers**
- Clean Air Act
- National Climate Program Act
- America COMPETES Act
NOAA’s Next Generation Strategic Plan

NOAA's Mission:
Science, Service, and Stewardship
- To understand and predict changes in climate, weather, oceans, and coasts,
- To share that knowledge and information with others, and
- To conserve and manage coastal and marine ecosystems and resources

NOAA’s Vision:
Resilient Ecosystems, Communities, and Economies
Healthy ecosystems, communities, and economies that are resilient in the face of change.
NOAA’s Next Generation Strategic Plan

**NOAA’s Vision of the Future:**

**Resilient Ecosystems, Communities & Economies**

- Healthy ecosystems, communities, and economies that are resilient in the face of change

**Science & Technology Enterprise**
- A holistic understanding of the earth system through research
- Accurate, reliable data from integrated earth observations
- An integrated environmental modeling system

**Resilient Coastal Communities & Economies**
- Resilient coastal communities
- Ocean and coastal planning, management
- Safe, sound, efficient marine transportation
- Improved coastal water quality
- Safe, sound arctic access, management

**Improved Understanding of Ecosystems**
- Recovered, sustained species
- Healthy habitats sustain resources, communities
- Sustainable fisheries, safe seafood

**Climate Adaptation & Mitigation**
- Improved scientific understanding
- Assessments identify impacts, inform decisions
- Mitigation, adaptation choices supported
- A climate literate public

**Reduced Loss of Life, Property, Disruption**
- Improved freshwater management
- Transportation efficiency, safety
- Healthy people, communities
- Productive, efficient economy

**Weather Ready Nation**
- An engaged, educated public for informed environmental decisions
- Integrated services for evolving demands of regional stakeholders
- International partnerships and policy leadership

**Healthy Oceans**
NOAA 5-Yr Research Plan

• Emphasizes the integration of the observational, experimental, analytical, and modeling tools that are the core of NOAA’s research
  - Identifies specific research milestones and objectives to reach our Strategic Plan Goals and Objectives,
  - Encourages transformational research, and
  - Based on societal needs

• Developed by NOAA Research Council
  - Input from NOAA line offices and mission goals, external partners, along with public commentary
NOAA 5-Yr Research Plan

Overarching Research Questions

- What factors influence ecosystem processes and ... forecasts [of] their future state?

- What is the current state of biodiversity in the oceans, and what impacts will external forces have on this diversity...?

- What improvements to observing systems, analysis approaches and models will allow [lead] us to better predict[ions] ...?

- How are uncertainties ... best estimated and communicated?

- How can the ... warning times for ... high-impact environmental events be increased significantly?
NOAA Research Science Reviews

- Conducted every 4 years to evaluate the **quality**, **relevance**, and **performance** of OAR laboratory research
  - Last ARL Review: 2005 Core Capabilities Analysis

- Assist labs in strategically positioning for and planning future science

- Intended to ensure that research is preeminent and linked to the NOAA Strategic Plan

- The Review Panel is asked to evaluate lab science areas based on specific questions within the Charge to the Review Panel
NOAA Research Tenets

Preeminent Research
Value to Society
Culture of Transparency