NOAA’s National Ocean Service
Positioning America for the Future:
Communities, Economies, Ecosystems
Outline

Introduction to the National Ocean Service

• Priorities
• Budget
• Where we work

Three Main NOS Missions

• Navigation, Observations and Positioning
• Coastal Science and Assessment
• Ocean and Coastal Management and Services

Hurricane Sandy
Alignment of Priorities

**COMMERCE**
*strategic goals*

- **#3 - Environment**
  3.3. Strengthen the resilience of communities and regions
  3.4. Foster healthy and sustainable marine resources, habitats, and ecosystems

**NOAA**
top priorities for 2014-2016

- America’s Environmental Intelligence Agency
  Priority #1 - Make communities more resilient

**NOS**
priorities

- Coastal Resilience
- Coastal Intelligence
- Place-based Conservation

- 2010 Enacted
- 2011 Spend Plan
- 2012 Spend Plan
- 2013 Spend Plan
- 2014 Spend Plan
- 2015 Enacted
- 2016 President's Budget Request

- PAC
- ORF
National Ocean Service

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Management and Budget
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Navigation, Observations and Positioning
Office of Coast Survey
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Coastal Science and Assessment
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I. Navigation, Observations and Positioning

• NOS conducts hydrographic surveys and shoreline mapping to produce navigational charts that mariners use to navigate safely every day

• National Water Level Observation Network (NWLOC):
  – Measures water level, wind speed / direction, barometric pressure, air and water temperature, conductivity

• Operates the nation’s High Frequency Radar and profiling glider fleet
I. Navigation, Observations and Positioning

- National authority on global positioning including management of the National Spatial Reference System
- Provides the framework for all positioning activities in the Nation
- Define the national shoreline
- Lead Federal Agency for US IOOS
- Integration of ocean observations to improve decision-support tools
- Management of Integrated Ocean and Coastal Mapping
II. Coastal Science and Assessment

Scientific support for all hazard response, including oil and chemical spills, marine debris, marine pathogens, harmful algal blooms

Natural resource damage assessments as co-trustee

Planning, prevention, and modeling tools for coastal environmental hazards

Applied science to support pollution reduction, ecological forecasting, and coastal ecosystem planning and management

• Mussel Watch, ecological forecasting, habitat mapping
III. Ocean and Coastal Management and Services

7 states and territories addressing coral reefs
13 Sanctuaries plus 1 marine national monument
28 National Estuarine Research Reserves
34 state coastal zone management programs
355 members of the national system of MPAs
Many more partners on place-based coastal issues

- Local, county, NGO, private sector partners
Sandy: Before, During and After the Storm

- Real-time water level monitoring
- Navigational surveys to reopen ports
- Geo-referenced aerial photo surveys for damage assessment
- Scientific support for oil spill response
- Scientific support for marine debris assessment and impact analysis
- Long-term recovery planning
- Tools and services to support local decision makers
After Sandy: NRTs, Ports, All-hazards Response

NOAA Ship *Thomas Jefferson* retrieving side scan sonar

Navigation Response Team deploying in NY

Oil Spill Response at Motiva Facility in NY
After Sandy: Response, Recovery, Long-term Planning

Area of Acquired Imagery

NOAA Shoreline Imagery

Sea Level Rise Planning Tool

Marine Debris

Promoting Resilience

Integrated Ocean and Coastal Mapping
http://oceanservice.noaa.gov
Additional Information
Services that Move the U.S. Economy

- Goods through U.S. ports every year: $1.4 trillion
- Coastal areas, including the Great Lakes, account for 156.6 million people and 57% of the U.S. GDP
- Positioning: $2.4 billion in annual benefits
- Houston/Galveston PORTS®: $14 to $15 million in annual benefits
- National marine sanctuaries mean $4 billion annually to local coastal economies
- Coastal mapping provides $241 million in annual benefits
Congressional Mandates

- Coastal Zone Management Act
- National Marine Sanctuaries Act
- Coral Reef Conservation Act
- Harmful Algal Bloom and Hypoxia Research and Control Act
- Marine Debris Act of 2012
- Coast and Geodetic Survey Act
- Coastal and Estuarine Land Conservation Program Act
- Hydrographic Services Improvement Act
- Integrated Coastal and Ocean Observation System Act of 2009
- Ocean and Coastal Mapping Integration Act
- Oceans and Human Health Act
- Oil Pollution Act
- CERCLA
NAVIGATION, OBSERVATIONS AND POSITIONING
Office of Coast Survey

- Navigation services
- Hydrographic surveys
- Nautical charting
- Technology research and development
- Emergency response
NAVIGATION, OBSERVATIONS AND POSITIONING
National Geodetic Survey

- Precise positioning products and services
- National Spatial Reference System
- Continuously Operating Reference Stations (CORS)
- Height Modernization
- Online Positioning User Services (OPUS)
- Standards for geodetic surveying, GPS
- Coastal mapping and remote sensing
- Airport surveys for the FAA
NAVIGATION, OBSERVATIONS AND POSITIONING

Center for Operational Oceanographic Products and Services

- Tides, water level, and currents data
- Real-time observations and forecast models
- Long-term sea level change monitoring
- National Water Level Observation Network (NWLOMN)
- Physical Oceanographic Real-Time System (PORTS®)
- Storm QuickLook
- Gulf of Mexico HAB bulletins
NAVIGATION, OBSERVATIONS AND POSITIONING
U.S. Integrated Ocean Observing System Program

• Federal, regional, private, and academic partners
• Integration of ocean observations to improve decision-support tools
• Adapting standards to make data easier to use
• High frequency radar
• Gliders
• Biological observations
COASTAL SCIENCE AND ASSESSMENT
National Centers for Coastal Ocean Science

• Science to reduce pollution for improved coastal and ocean health
• Science to manage threats of harmful algal blooms
• Science to support ecosystem management
• Model and predict climate change impacts to coastal ecosystems
COASTAL SCIENCE AND ASSESSMENT
Office of Response and Restoration

- 24/7 response capability for coastal oil and chemical spills
- Spill planning, prevention, assessment, restoration, and modeling tools
- Scientific expertise for contamination cleanup, marine debris research and prevention, and natural resource damage assessment
COASTAL SCIENCE AND ASSESSMENT
Office for Coastal Management

- Digital Coast
- National Estuarine Research Reserves.
- National Coastal Zone Management Program
- NOAA Coral Reef Conservation Program
- Coastal and Estuarine Land Conservation Program
- Applied Science
- Training and Education
• 13 sanctuaries, one national marine monument
• >150,000 square miles of ocean
• Resource protection
• Tourist destinations
• Education and outreach
• Maritime heritage
• Science and exploration
• Marine protected area planning and management
NOAA RESTORE Act Science Program

• NOAA receives 2.5% of penalties to implement a science program
• Program administered by NOS and overseen by a NOAA-wide board
• Key goals
  • Support Healthy, Diverse & Resilient Coastal Habitats
  • Promote Healthy, Diverse & Sustainable Living Coastal and Marine Resources
  • Support Sustainably Managed Fisheries
  • Support Healthy and Well-managed Offshore Environments
  • Support Healthy, Sustainable, and Resilient Coastal Communities able to adapt to a changing environment
NOAA Ecological Forecasting Roadmap

NOAA’s new Ecological Forecasting Roadmap will:

- Leverage NOAA-wide capability
- Establish priorities and collaborations
- Build-on existing infrastructure and partnerships
- Improve quality and delivery of products and services

To achieve:

- Operational forecasts based on strong science
- Delivery of more consistent, efficient, reliable, and national forecasts (tailored to region-specific needs)

NOAA initial focus areas: Harmful Algal Blooms, Hypoxia, Pathogens