

— An Introduction to the —

# NATIONAL OCEAN SERVICE



# Our Nation's Coast

## Increasing population and economic activities:

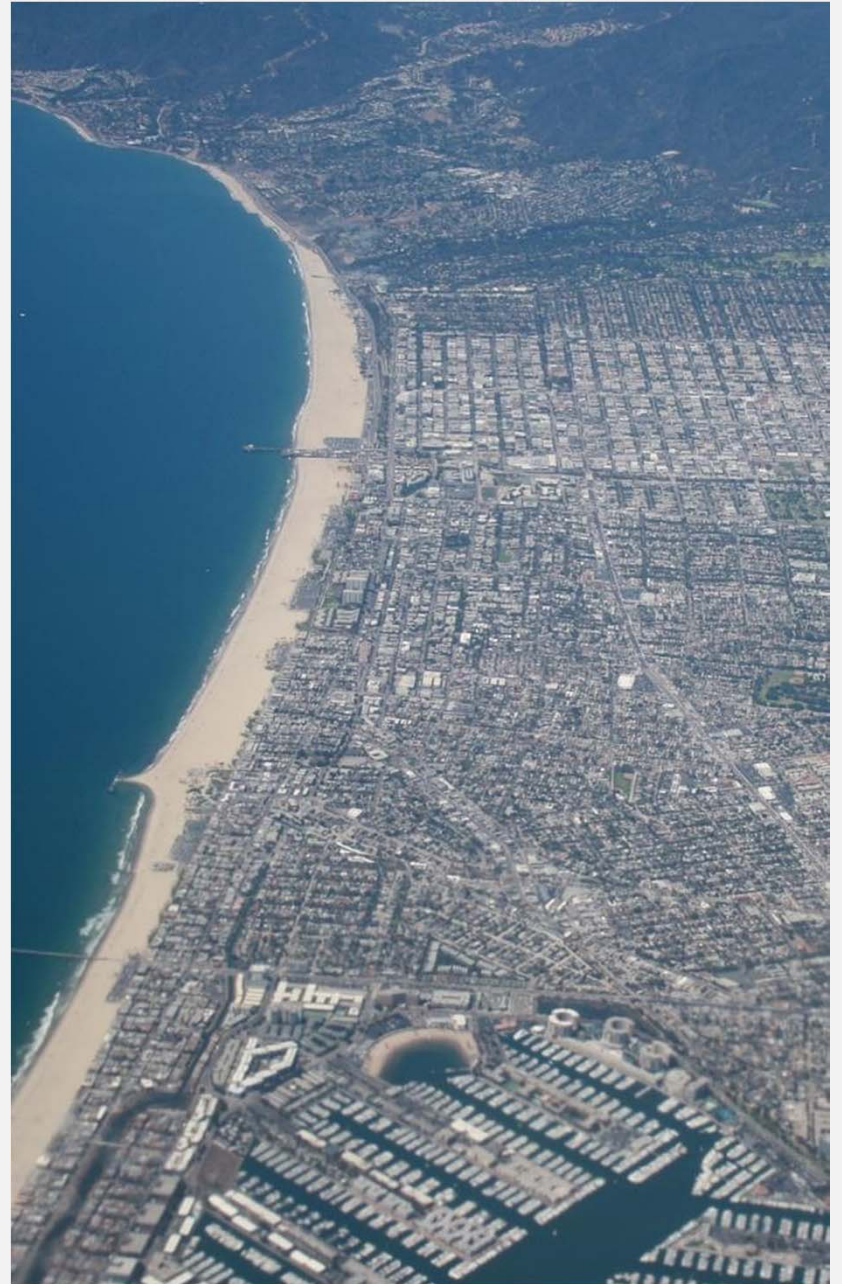
40% percent of the population lives in coastal shoreline counties. In 2013, these counties contributed 46% of the nation's GDP.

## Pressures are compounded by:

Sea level rise, coastal storms, tsunamis, and coastal development

## Accompanying impacts and risks:

Port congestion, navigation hazards, flooding, shoreline erosion, pollution



# Outline

Three Main NOS Missions

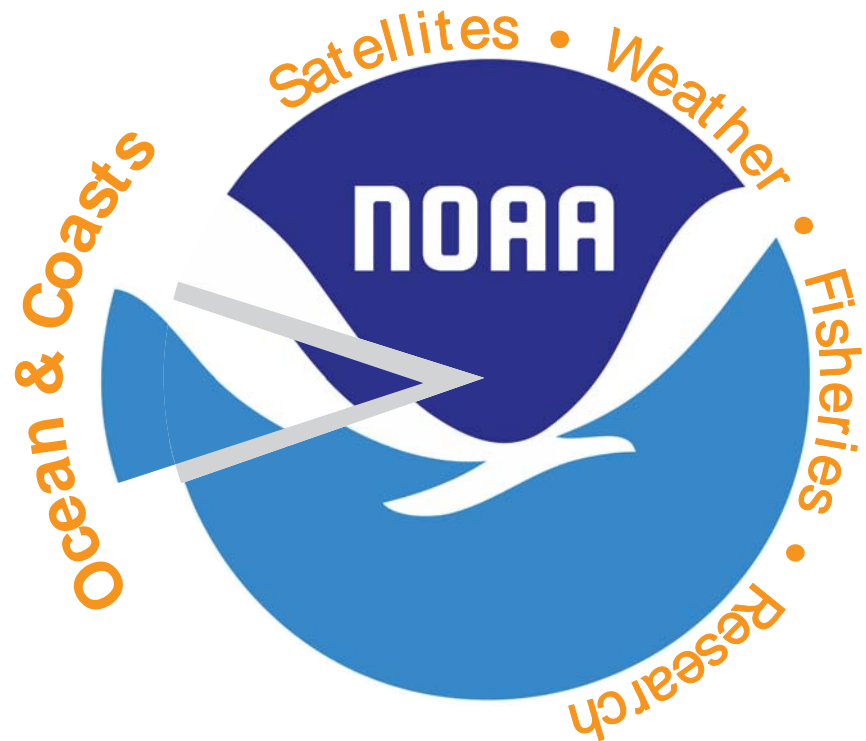
Identifying Priorities among our Missions

Our Organization



# NOS's Unique Missions within NOAA

1. Navigation, Observations and Positioning
2. Coastal Science and Assessment
3. Ocean and Coastal Management and Services





## NOS MISSION:

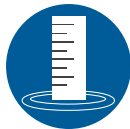
# Navigation, Observations, and Positioning



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



National authority that defines, maintains, and provides access to the **National Spatial Reference System**



NOS maintains the National **Water Level Observation Network (NWLON)**

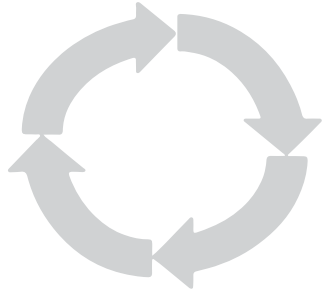


NOS operates the nation's **high frequency radar** and **profiling glider fleet**



NOS MISSION:

## Coastal Science and Assessment



Planning, prevention, response, and modeling tools for **coastal environmental hazards** including oil and chemical spills, marine debris, marine pathogens, harmful algal blooms



**Natural resource damage assessments** as co-trustee protects and restores habitat injured by hazardous waste, oil spills and vessel groundings



**Applied science** to support pollution reduction, ecological forecasting, and coastal ecosystem planning, Mussel Watch monitoring, habitat mapping and assessment



NOS MISSION:  
Ocean and Coastal Management & Services

**7**

States and territories addressing coral reefs

**13**

Sanctuaries plus Papahānaumokuākea and Rose Atoll marine national monuments

**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







# COASTAL RESILIENCE

## Bouncing back & *building beyond*.

### PLAN & BUILD RESILIENCE

Develop and implement plan to become more resilient.



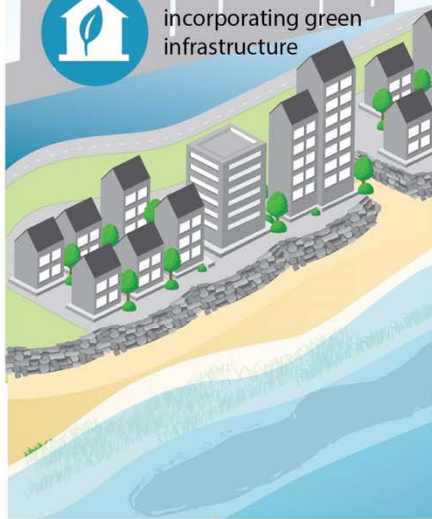
improving forecasts, observation models, computer systems



getting information to decision makers faster



incorporating green infrastructure



### DISASTER STRIKES

Disasters can be imminent or strike unexpectedly.



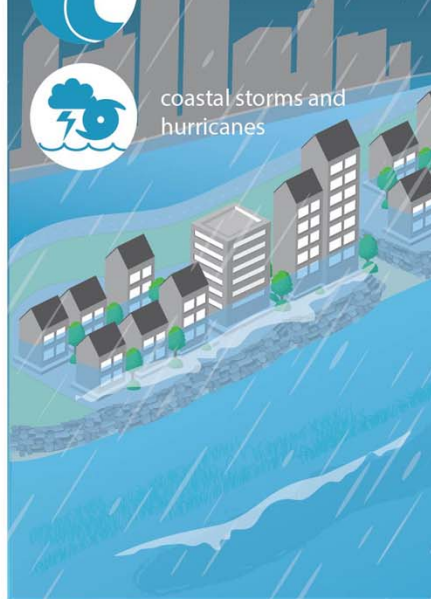
sea level rise



tsunamis



coastal storms and hurricanes



### RESPOND

Immediately take action following a disaster.



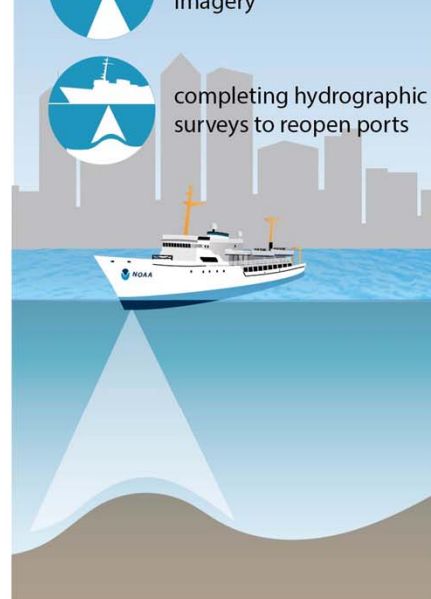
pollution response



damage assessment imagery



completing hydrographic surveys to reopen ports



### RECOVER

Assess resilience and manage adaptively.



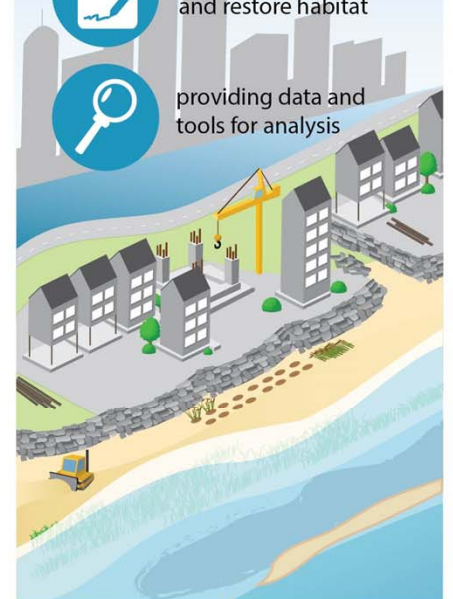
assessing damage to communities, economy, and environment



issuing grants to rebuild and restore habitat



providing data and tools for analysis



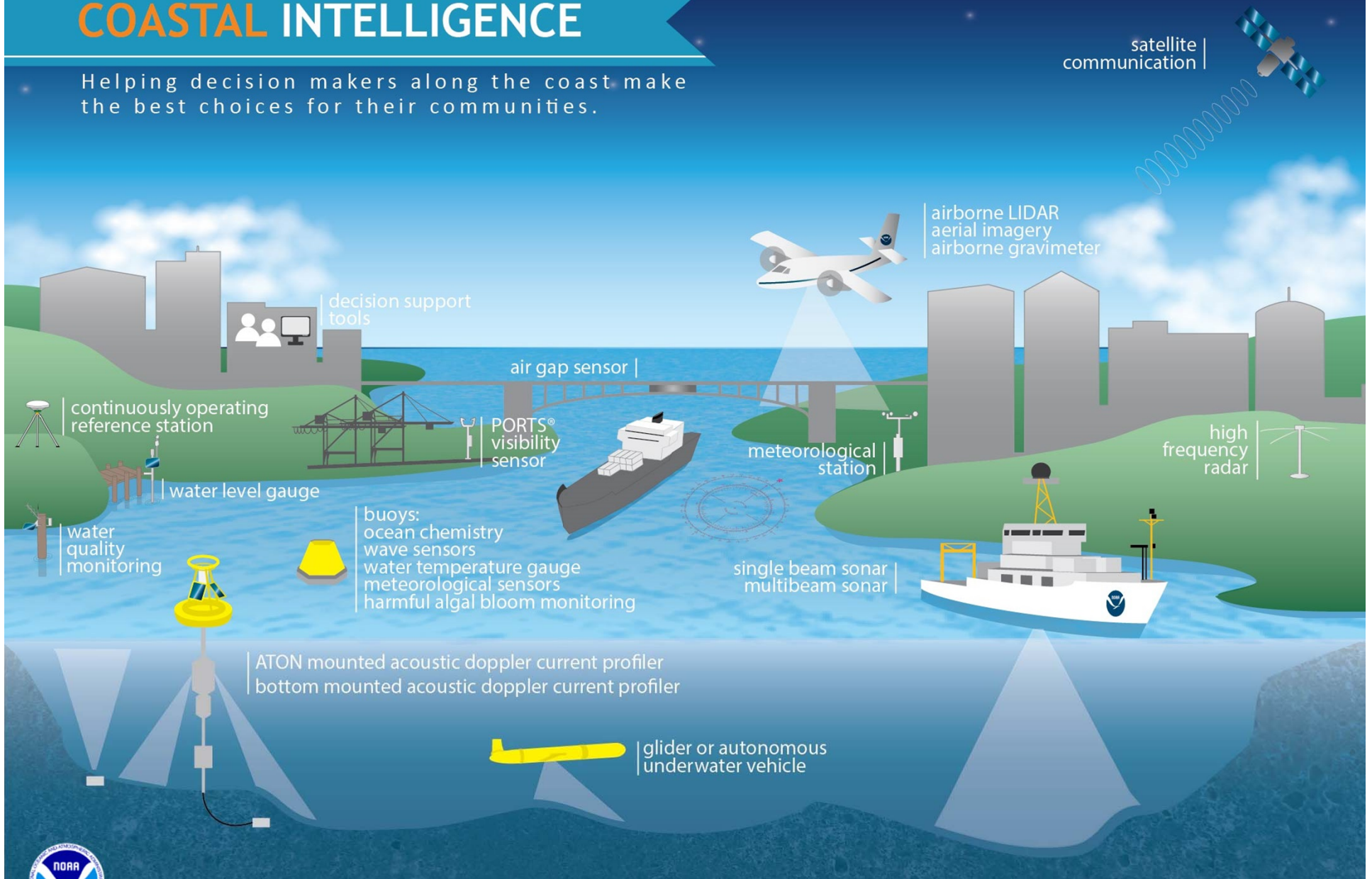
Assess resilience and begin planning for next disaster.  
*Building resilience is an iterative process.*





# COASTAL INTELLIGENCE

Helping decision makers along the coast make the best choices for their communities.



# CONSERVING OUR OCEAN AND COASTS

## COMMUNITIES

Responsible development protects lives and property by adapting to a changing climate.

## PROTECT AREAS

Protecting special places and keeping coastal areas open to the public supports tourism, recreation, and our economy.

## CORAL REEFS

Research and conservation helps sustain this source of food, medicine, and protection from coastal storms.

## WATER QUALITY

Safeguarding coastal water quality protects human and environmental health, and keeps seafood safe.

## HISTORIC SITES

Preservation connects us to our heritage and culture.

## ESTUARIES & WETLANDS

Long-term stewardship helps to protect critical species, fight pollution, and restore habitat.



# 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 *2014-2016 Top Priorities*

### America's Environmental Intelligence Agency

Priority # 1 – Make communities more Resilient

## NOS *Priorities*

Coastal Resilience

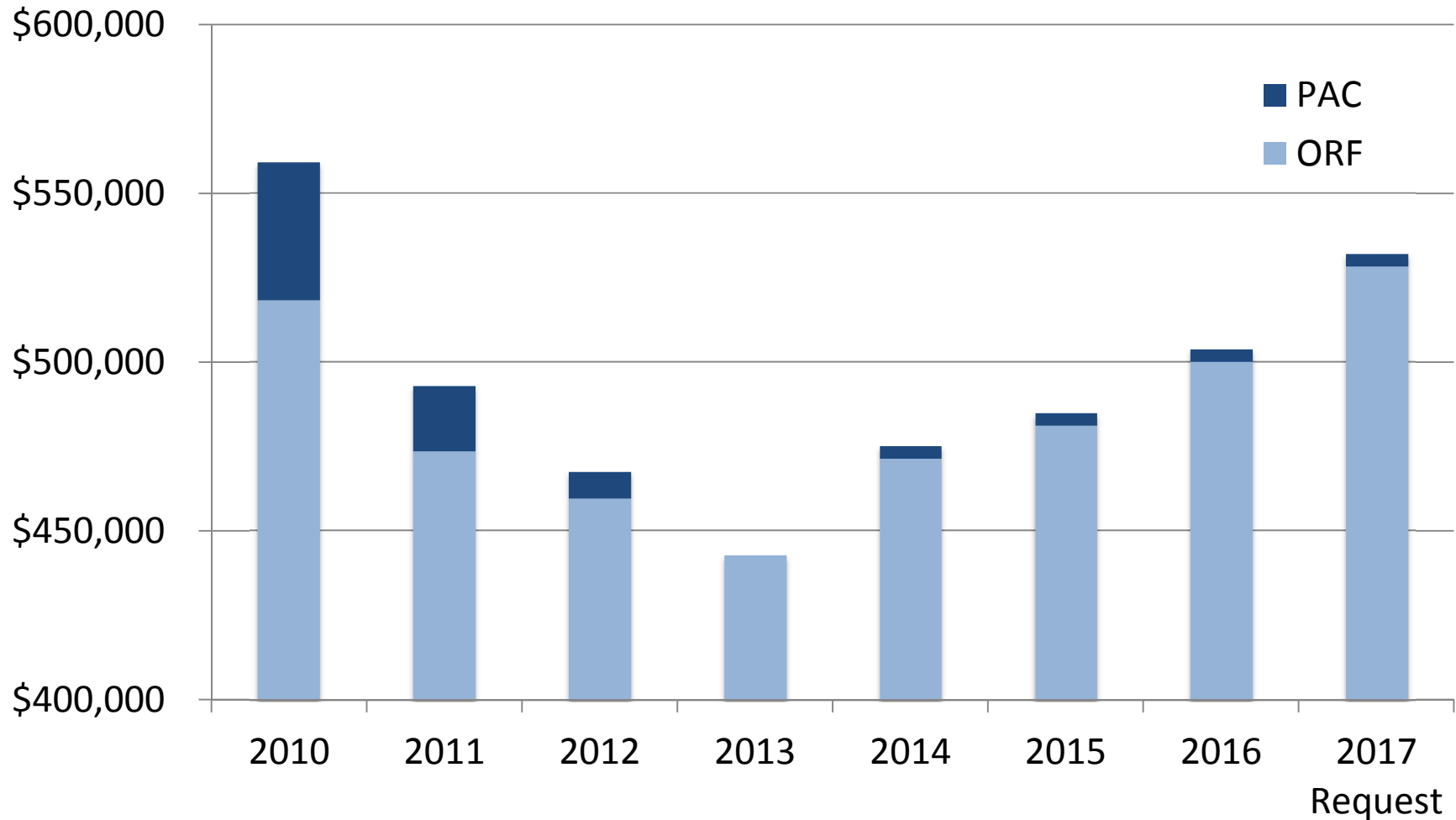
Coastal Intelligence

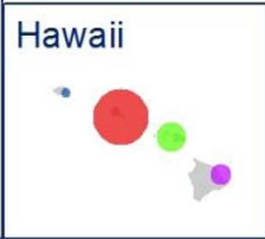
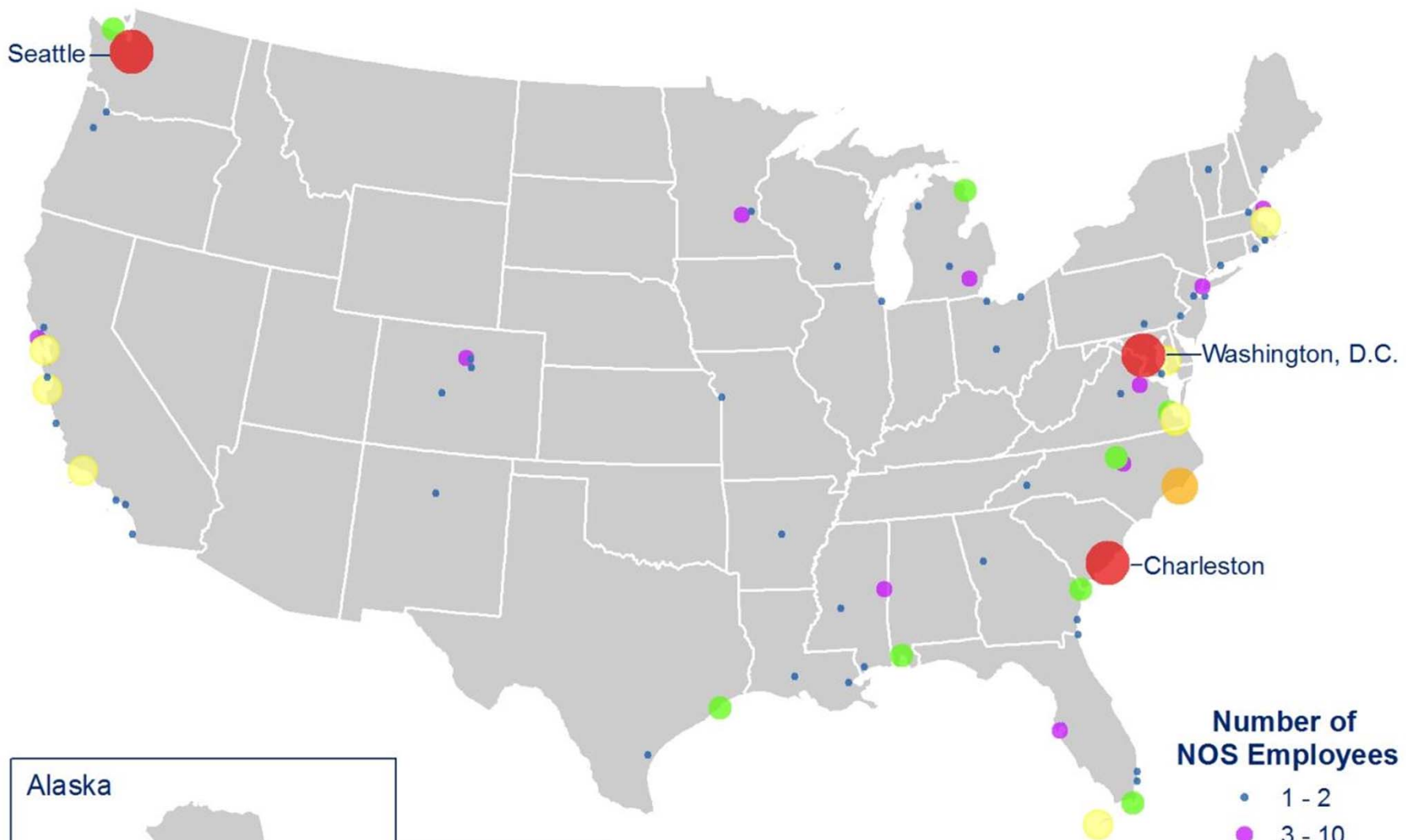
Place-based  
Conservation





# NOS Budget Trends: FY10-FY17





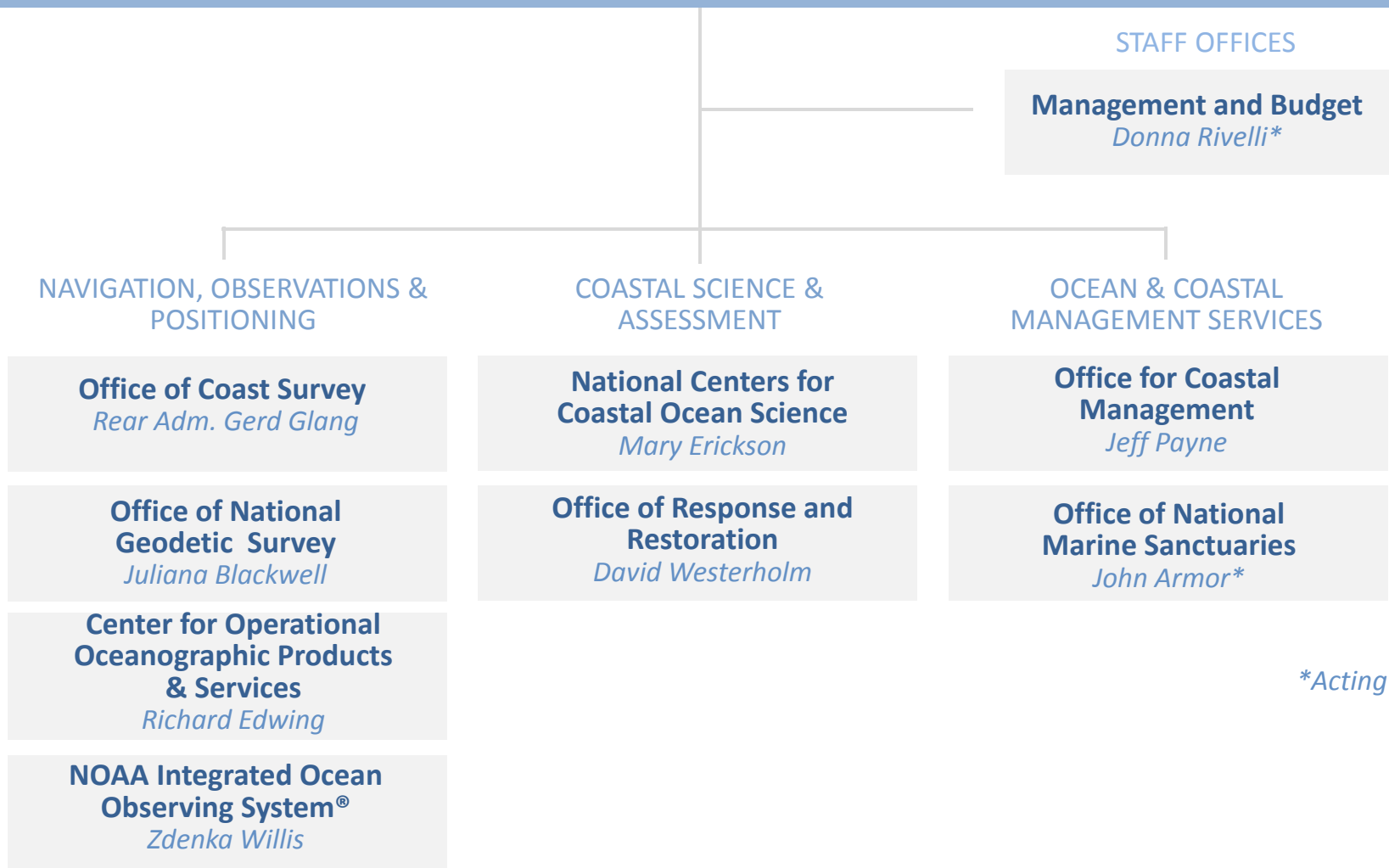
*Not pictured*

- Puerto Rico
- Guam
- Northern Mariana Islands



# NATIONAL OCEAN SERVICE

Dr. Russell Callender Assistant Administrator  
Christopher Cartwright Acting Deputy Assistant Administrator



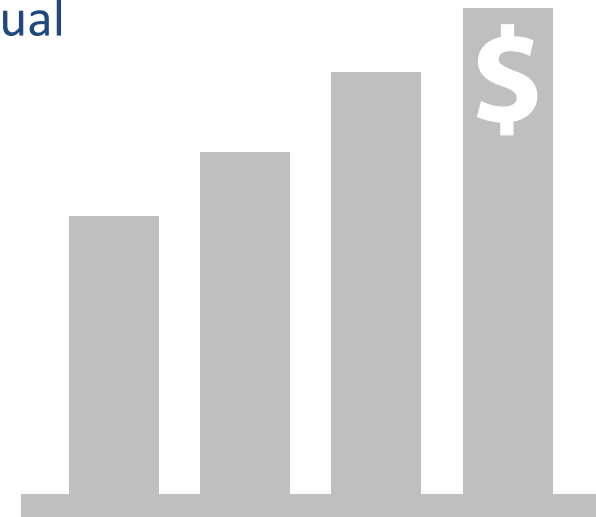
*\*Acting*

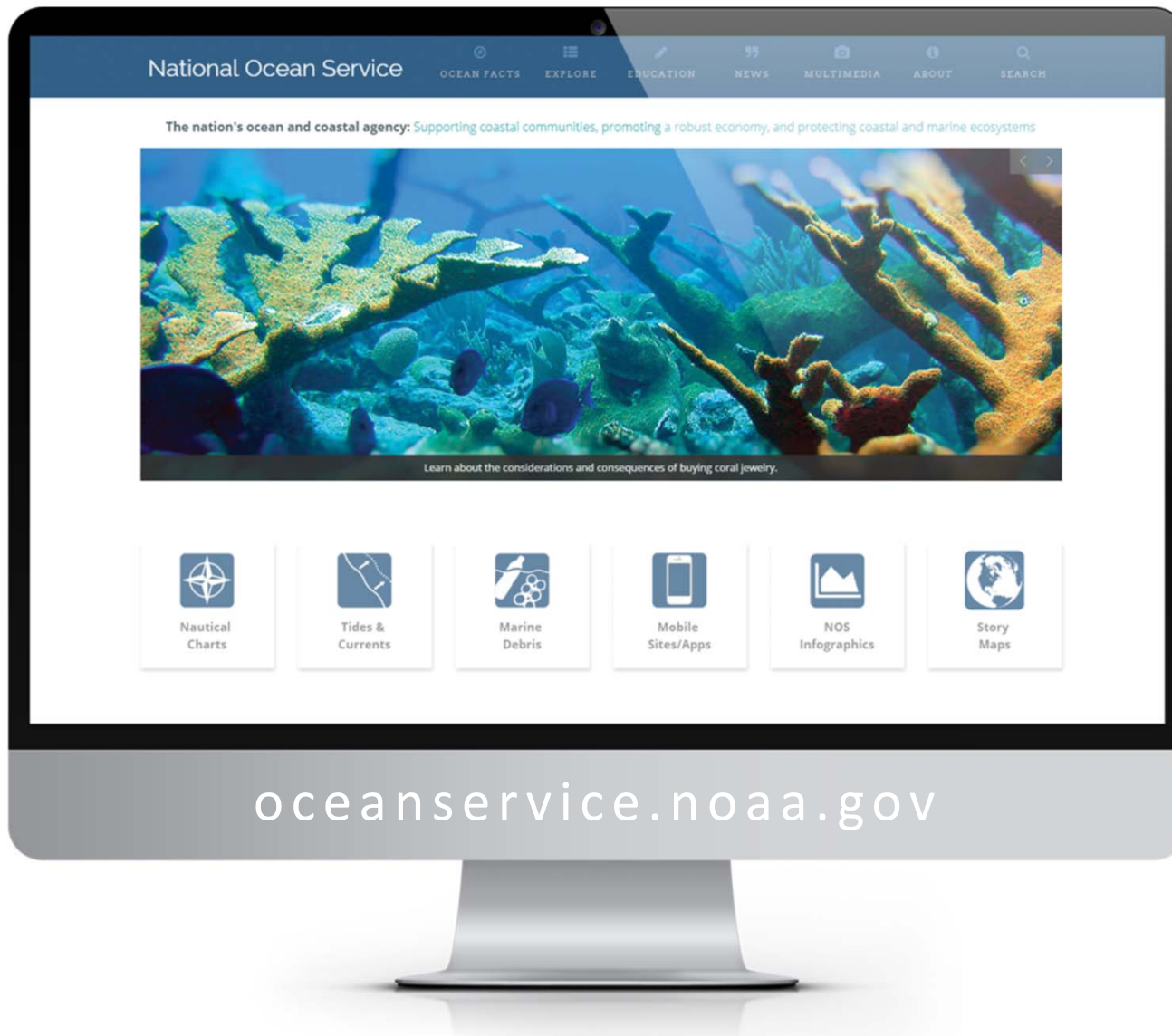




# Services that Move the U.S. Economy

- 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 \$8 billion annually to local coastal economies
- Coastal mapping provides \$241 million in annual benefits



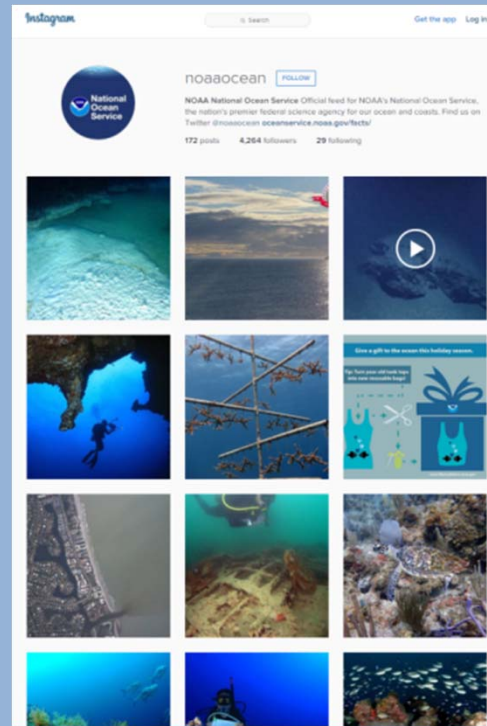




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NATIONAL OCEAN SERVICE

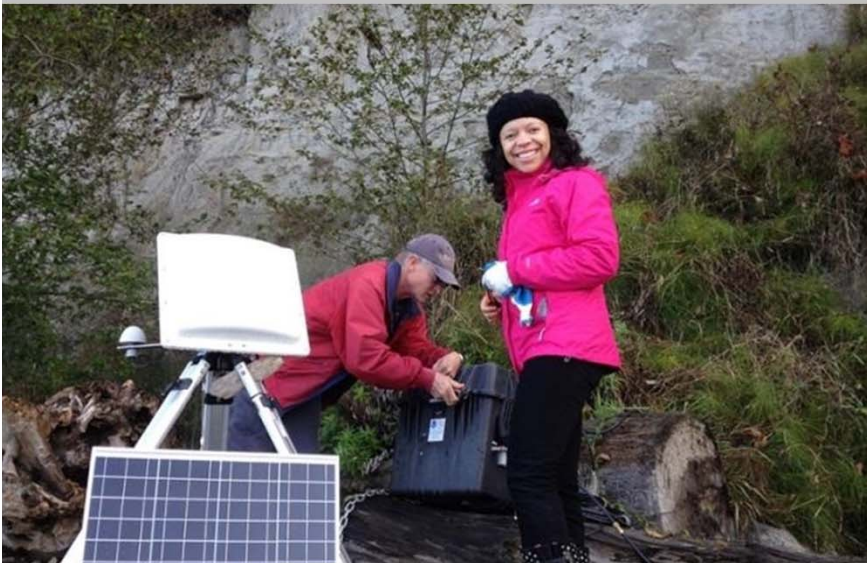
oceanservice.noaa.gov

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# BACK UP SLIDES





## NAVIGATION, OBSERVATIONS, AND POSITIONING

### Office of Coast Survey

- Nautical charts
- Emergency navigation response
- Navigation services
- Hydrographic surveys
- Modeling
- Research and development





## 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)
- Geodetic standards for surveying
- 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 (NWLON)
- Physical Oceanographic Real-Time System (PORTS®)
- Storm QuickLook
- Operational ecological forecasting





## 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







## OCEAN AND COASTAL MANAGEMENT AND SERVICES

### Office of National Marine Sanctuaries

- 13 sanctuaries, plus Papahānaumokuākea and Rose Atoll marine national monuments
- >170,000 square miles of ocean
- Resource protection
- Tourist destinations
- Education and outreach
- Maritime heritage
- Science and exploration
- Marine protected area planning and management







## OCEAN AND COASTAL MANAGEMENT AND SERVICES

# 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



# NOAA RESTORE Act Science Program

## *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 receives 2.5% of penalties to implement a science program
- Program administered by NOS and overseen by a NOAA-wide board



# NOAA Ecological Forecasting Roadmap

## *NOAA's 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**



# 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
- Comprehensive Environmental Response, Compensation, and Liability Act

