

NOAA's Office of Coast Survey

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Office of Coast Survey

Who is Coast Survey?

- First U.S. science agency
- Formed in 1807
- Responsible for surveying 3.4 million square nautical miles
- Compiles and maintains 1,000 nautical charts
- Responds to disasters and other emergencies
- Develops hydrodynamic models to support coastal management
- Director of Coast Survey serves as the U.S. National Hydrographer



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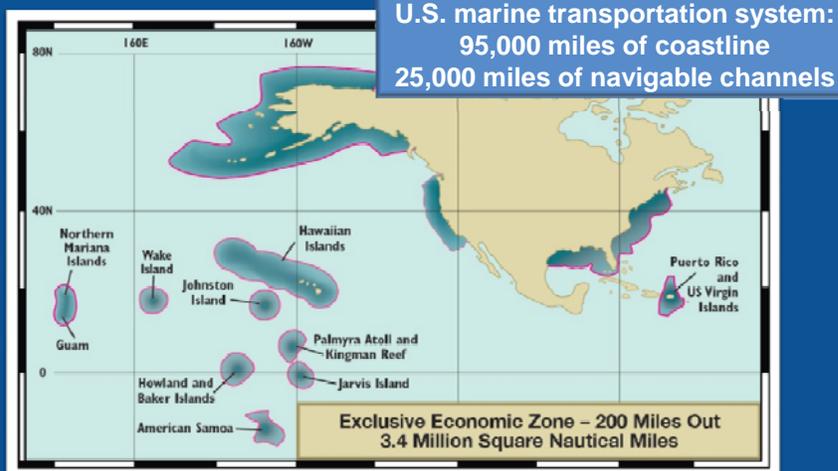
Current legislative mandates

- Coast and Geodetic Survey Act of 1947
 - NOAA to provide nautical charts and products for safe maritime commerce and navigation
- The Hydrographic Service Improvement Acts of 1998/2002/2008
 - Reiterate purpose and authorize increased funding for NOAA's navigation services
- Title 33 of Code of Federal Regulations
 - NOAA nautical charts, U.S. Coast Pilots, tidal and current information must be carried on all self-propelled vessels, including passenger vessels, > than 1600 gross tons
- Ocean and Coastal Mapping Integration Act (2009)
 - Calls for coordinated and comprehensive ocean and coastal mapping across the federal government; gives NOAA a lead role in integrating mapping efforts with federal, state and local governments, and private sector partners.



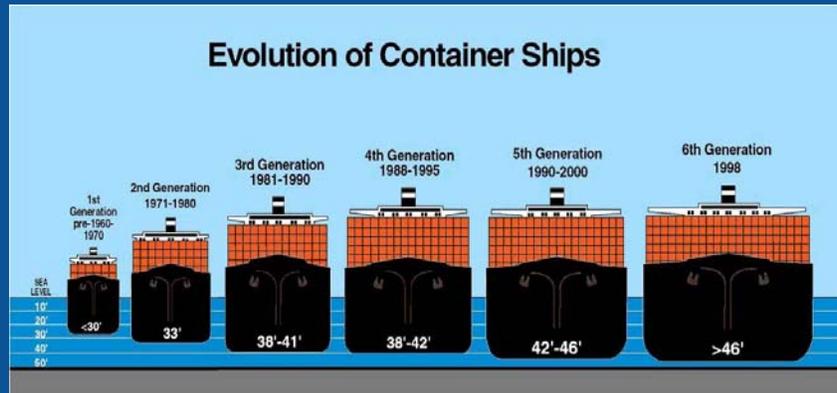
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Scope of coverage



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NOAA provides maritime data critical to keeping commerce moving



NOAA provides up-to-date, accurate, and accessible navigation information



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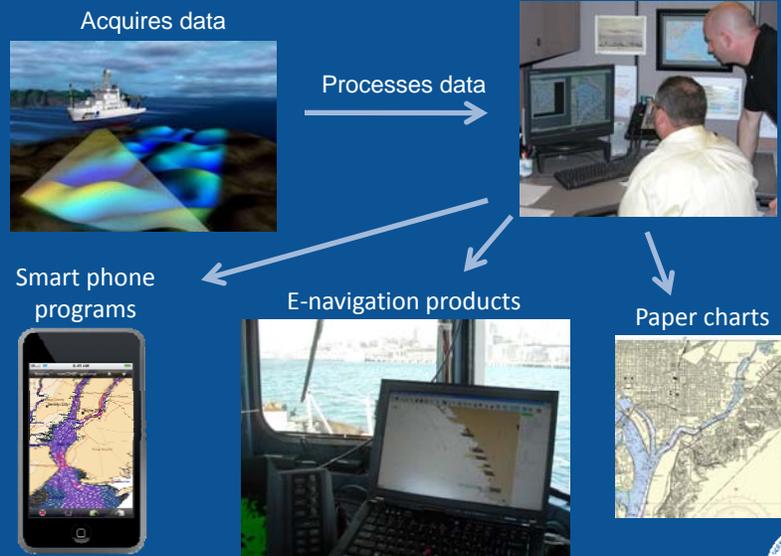
Fulfilling our national mandate: *ensuring the flow of commerce in a safe, environmentally sound manner*

- 326 public/private ports
- 3700 marine terminals
- 13 million jobs, \$1 trillion+ annually to U.S. GDP
- 95% of U.S. foreign trade in/out by ship
- 12 million cruise passengers
- 78 million recreational boaters
- 110,000 fishing vessels



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Navigation product production



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NOAA is the nation's provider of navigation products...

- 1019 paper / raster charts
- 876 electronic navigational charts
- *Coast Pilot*
- PocketChart™
- 1002 Print on Demand charts
- Weekly updates
- PORTS

Over 100 companies are agents for NOAA's nautical charts, selling to millions of recreational boaters, commercial fishermen, and maritime pilots

Dozens of companies sell systems or software that give mariners access to NOAA's electronic navigational charts



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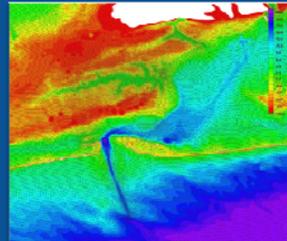


Helping coastal authorities plan for storm surge

NOAA combines seafloor data with land-based elevations to improve simulations of storm surge



Hardened tide stations provide data when most needed for storm surge forecasts



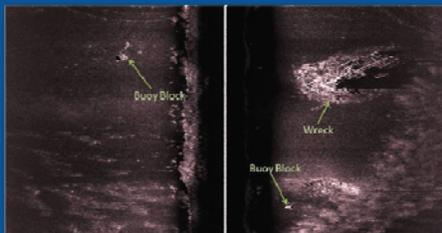
Simulations + geodesy = awareness of flooding potential of evacuation routes

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Speeding the re-opening of ports after hurricanes and other natural disasters

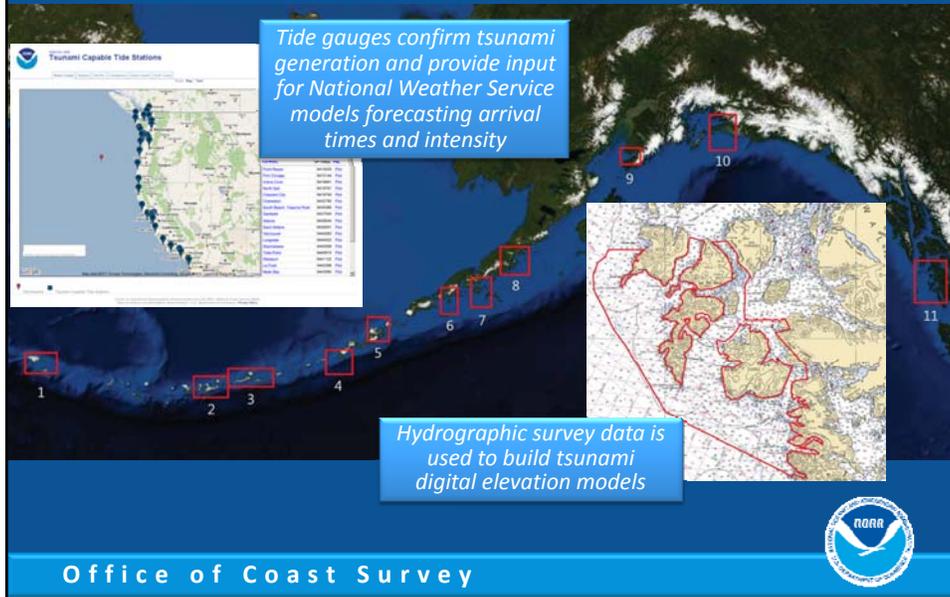
- *Response teams survey ports and channels, searching for submerged debris*
- *Real-time data guides post-storm response*



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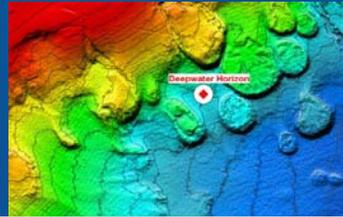
Warning coastal populations of a tsunami



Responding to requests from Coast Guard and Army Corps of Engineers



Responding to a release of hazardous materials / oil spill

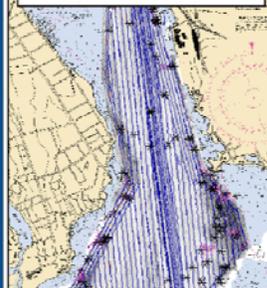
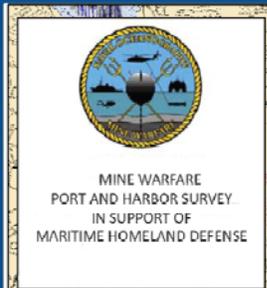


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Contributing to homeland security

Pre-threat hydrographic survey base maps within militarily significant ports in support of Maritime Homeland Defense



NOAA baseline survey of Groton, Conn.



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Helping to resolve boundary disputes

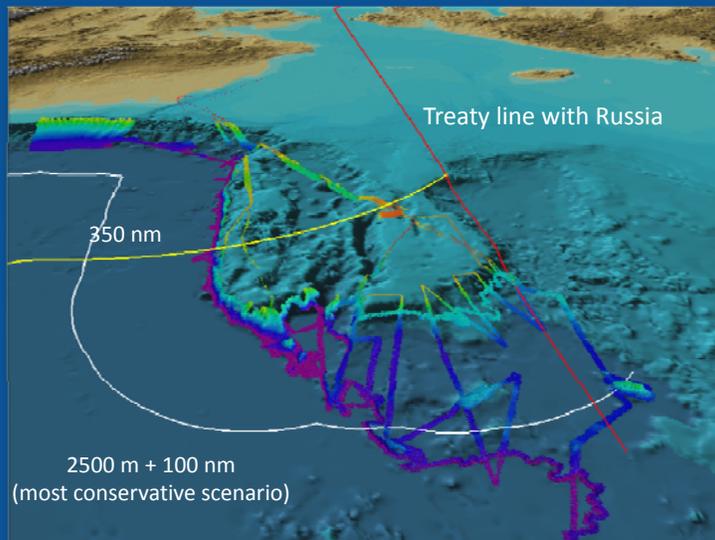


*NOAA provides
35,000 historical
maps & charts
free, online*

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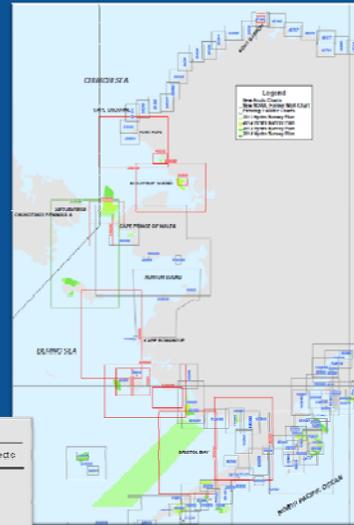
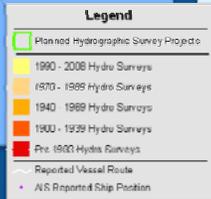
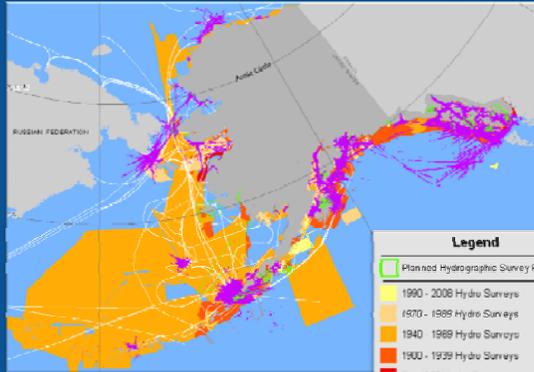
And extending U.S. boundaries...



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Preparing for new Arctic transportation routes



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The NOAA fleet supports charting



Rainier
Seattle, WA
1968

Bay Hydro II
Silver Spring, MD
2008



Fairweather
Ketchikan, AK
1968, 2010

Hassler
FY12 (target)



Thomas Jefferson
Norfolk, VA
1992

King Air
2009



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NOAA builds expertise through hands-on experience



Acquiring data



Responding to emergencies



Conducting hydrographic surveys



Creating and updating charts



Measuring tides



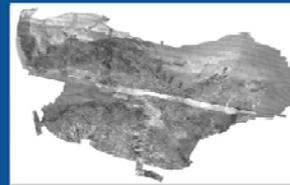
Developing models

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Navigation Services observations are foundation for many NOAA sciences

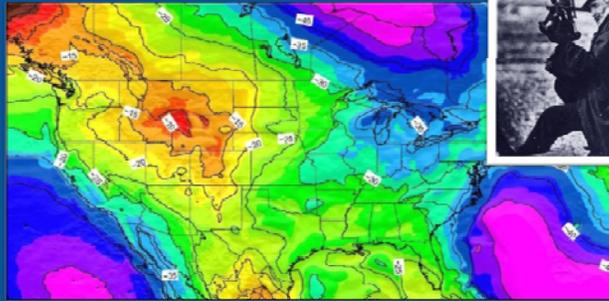
- Positioning (X/Y, heights)
- Water levels
- Shoreline/bathymetry
 - Coastal resilience
 - Ecosystem management
 - Fisheries habitat characterization
 - Emergency planning
 - Energy siting



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NOAA's Offices of Coast & Geodetic Survey has set the nation's geospatial infrastructure since the 19th century



NOAA manages the National Spatial Reference System, which is the foundation for mapping and charting, land use, flood-risk determination, and coastal management

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Developing and applying new technologies and techniques

- Autonomous underwater vehicles
- GPS water level buoys
- Water level gauging improvements
- Visibility sensors
- Ellipsoidally referenced surveys
- LIDAR techniques
- Hydrographic surveying processing enhancements



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Coordinating mapping in the U.S.

Map once, use many times

Department of Commerce

NOAA Ocean Service
 NOAA National Marine Fisheries Service
 NOAA National Environmental Satellite, Data and Information Service
 NOAA Office of Oceanic and Atmospheric Research
 NOAA Marine and Aviation Operations

Congress mandated mapping coordination between federal agencies with the 2009 *Ocean and Coastal Mapping Integration Act* (P.L. 111-11, Title XII, Subtitle B)

Department of Defense

Army Corps of Engineers
 NAVOCEANO
 National Geospatial-Intelligence Agency

Department of Interior

U.S. Geological Survey
 Bureau of Land Management
 U.S. Fish and Wildlife Service
 National Park Service
 Bureau of Ocean Energy Management, Regulation and Enforcement

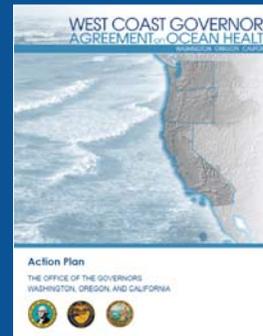
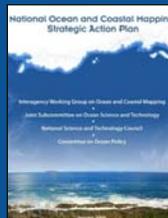


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NOAA coordinates with federal, state, and local partners

Integrated ocean and coastal mapping facilitates intra- and inter-agency coordination and partnerships

- Streamlining operations
- Reducing redundancies
- Improving efficiencies
- Developing common standards
- Stimulating innovation and technology development



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Agencies cooperate

- Bathy/topographic digital elevation models (NOAA/USGS)
- Board of Geographic Names (NOAA/USGS)
- Homeland security surveys (NOAA/Navy/Coast Guard)
- Law of the Sea surveys – UNCLOS (NOAA/Navy/Coast Guard)
- NRTs are emergency support in national response for maritime incidents and emergencies (NOAA/Navy/Coast Guard)
- Channel survey data evaluation (NOAA/Army Corps of Engineers)
- Local Notice to Mariners
- Obstruction surveys (NOAA/Coast Guard/Army Corps of Engineers)
- Maritime boundaries, official national baseline determination (NOAA/States)



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NOAA & NGA collaborate

NOAA uses NGA charts for U.S. waters. We share technology, data, and practices.

NOAA

- Surveys and charts for U.S. waters for marine transportation
- Provides publicly accessible charts from website and thru partnerships with private industry
- Customers: Commercial shipping, commercial fishing, recreational boating, military, homeland security, non-navigation users

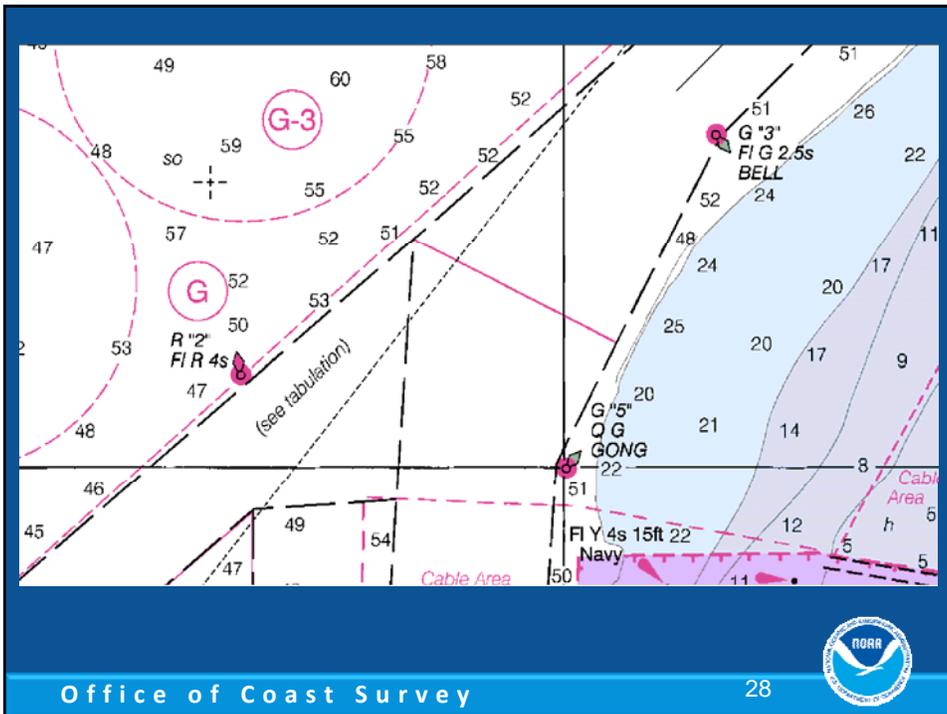
NGA

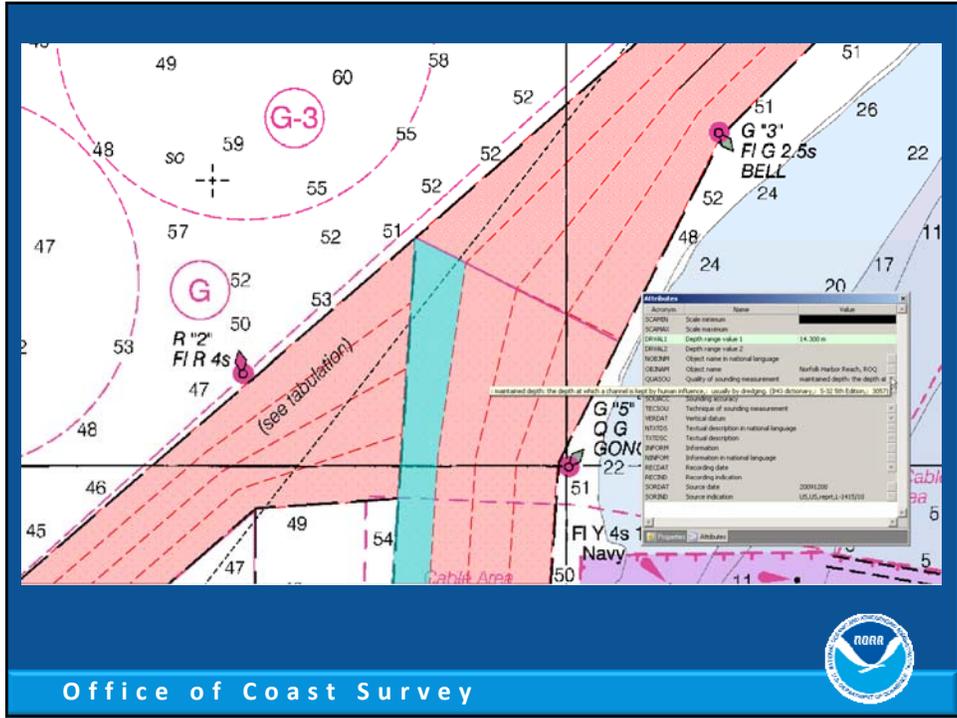
- Charts international
- Maintains classified information, provides public charts thru NOAA
- Customers: Defense and intelligence agencies



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FUTURE COLLABORATION





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