Office of Coast Survey

Program Update for HSRP Long Beach Meeting

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Director

April 8, 2015

2015-2019 STRATEGIC PLAN

Mission

Provide the nation with navigation products and information that:

improve ocean-going commerce and coastal economies,

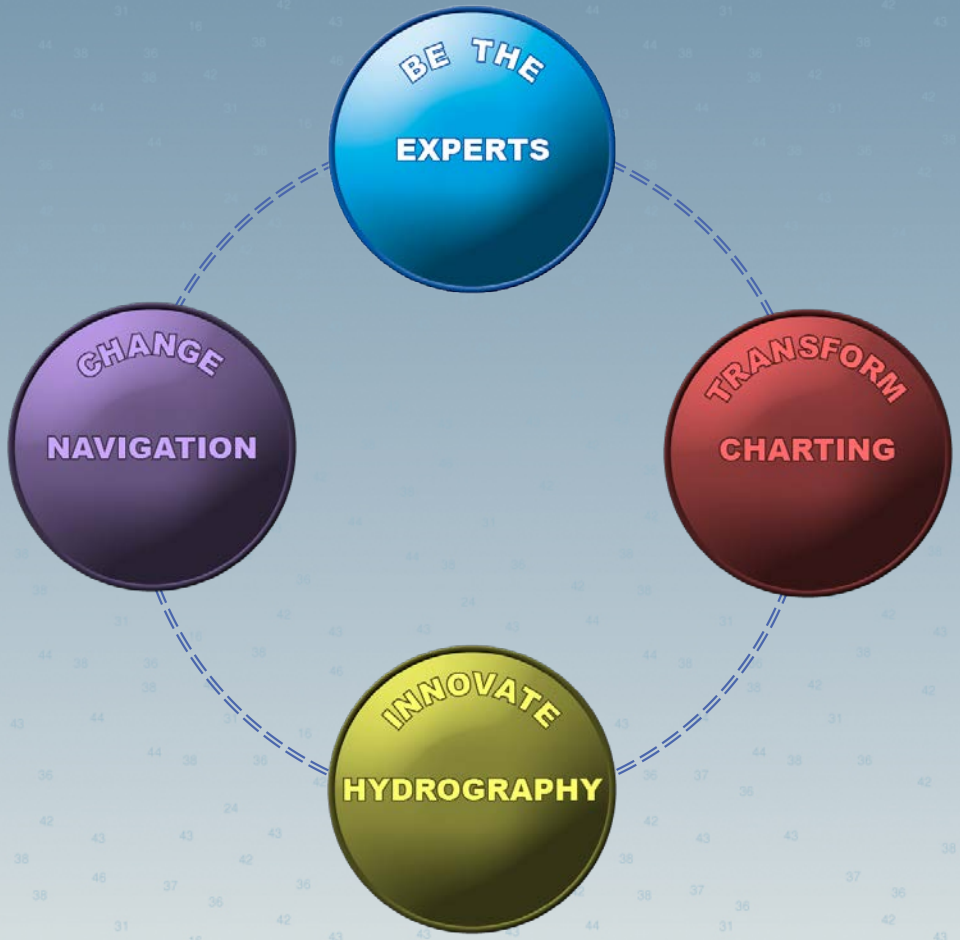
keep people safe,

and protect coastal environments.

2015-2019 STRATEGIC PLAN

Director's Priorities:

1. Be the Experts
2. Transform Charting
3. Innovate Hydrography
4. Change Navigation



1. BE THE EXPERTS

- Continuously evolve our capabilities and capacities to meet our responsibilities as the national authoritative source for hydrography, nautical geospatial data, marine modeling, and U.S. navigational charts

- Continually improve our internal processes and efficiencies, and build (human, physical, and cyber) resources

Coast Survey will...

- ✓ Fulfill customer requirements by correlating strategic decisions to improved market management and analysis
- ✓ Expand access to Coast Survey expertise through additional partnerships and improved education communication
- ✓ Ensure that Coast Survey authoritative data is freely and easily accessible to the public

Coast Survey will…

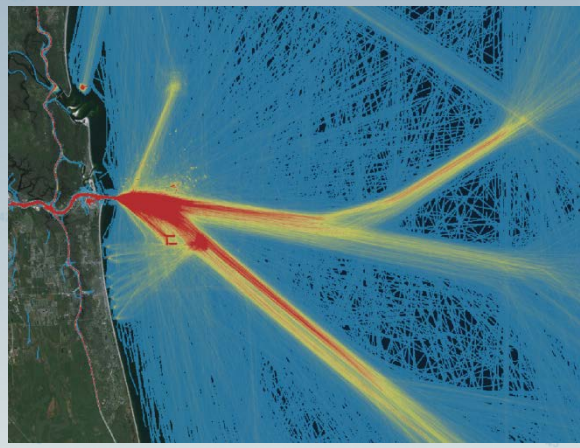
- ✓ Organize Coast Survey data holdings as a collection of interoperable databases
  - on a robust infrastructure that provides 24 X 7 reliable distribution and customer service
- ✓ Ensure that computer files, databases, and server replication capability at Coast Survey's disaster recovery site is at 100 percent
- ✓ Provide Coast Survey employees with robust and cutting edge capacities and capabilities
- ✓ Maintain a work environment that encourages employee collaboration and attracts new talent

2. TRANSFORM CHARTING

- Re-engineer chart production environment for timelier and more accurate navigation products, in an array of formats
- Evolve distribution mechanisms and support product customization to respond to changing customer needs
- Compile and synchronize databases and systems, and build fit-for-use products and distribution systems
- Improvements include
  - matching charted shorelines to the real world
  - publishing critical updates within a week of receipt
  - providing access to official NOAA charting data in a responsive array of systems and formats

Coast Survey will…

- ✓ Partner with the U.S. Army Corps of Engineers, U.S. Coast Guard, and National Geodetic Survey's Remote Sensing Division
  - build workflows and specifications to enable direct ingestion of their data
- ✓ Establish a chart evaluation system, with methodologies for sampling data quality and taking corrective actions, using reports of:
  - current and future vessel traffic
  - public source orthophotos
  - reported discrepancies
  - accidents
  - derived bathymetry



Coast Survey will…

- ✓ Let end users know precisely when and where updates are applied to charts
- ✓ Implement geo-referencing tools to support the distribution of web-enabled metadata
- ✓ Geo-reference all volumes of the *United States Coast Pilot* and offer the publication in international standardized format

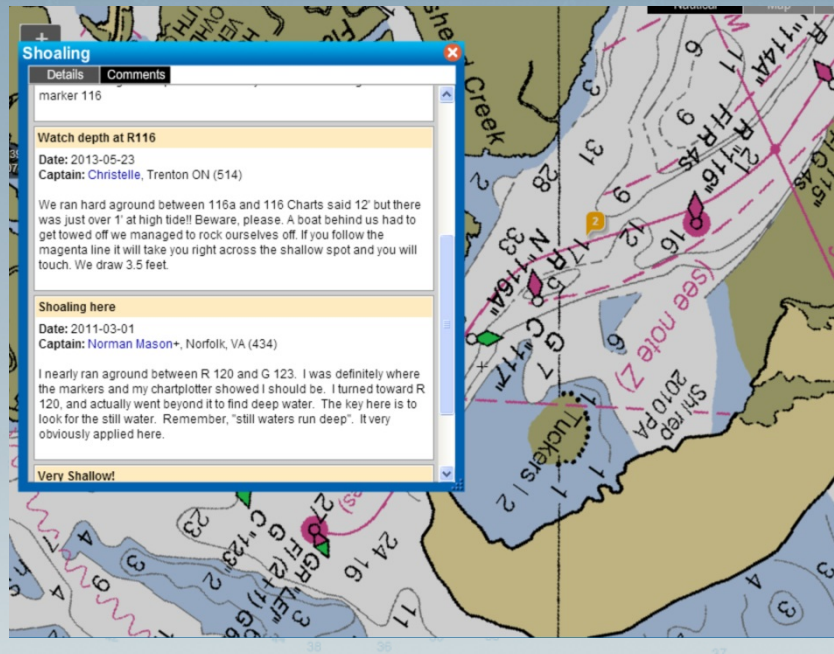
3. INNOVATE HYDROGRAPHY

- Expanding Coast Survey's access to data from a broad range of sources will improve chart content and provide more data for multiple purposes.
  - By diversifying bathymetric data acquisition, we can also reduce effort duplication and maximize the use of resources.

1. *NOAA survey data*
2. *Authoritative survey data*
3. *Other survey data*
4. *Trusted partner data*
5. *Derived bathymetry*
6. *Crowdsourced data*

3. INNOVATE HYDROGRAPHY

- We will use dynamic sources to update survey priorities
  - automatic identification system [AIS]
  - satellite-derived bathymetry
  - crowdsourcing
- Other criteria include:
  - age of surveys
  - unsurveyed areas
  - known chart discrepancies
  - reported accidents
  - underkeel clearance
  - new uses and products
  - stakeholder requests



Coast Survey will…

- ✓ Increase the use of external data to evaluate and revise survey priorities
- ✓ Consider external hydrographic data where NOAA resources not available
- ✓ Improve data contributions from trusted partners
- ✓ Advance the global crowdsourced bathymetry database
- ✓ Maximize the value of our own data toward other ocean mapping purposes
- ✓ Implement new technologies to improve efficiency

4. CHANGE NAVIGATION

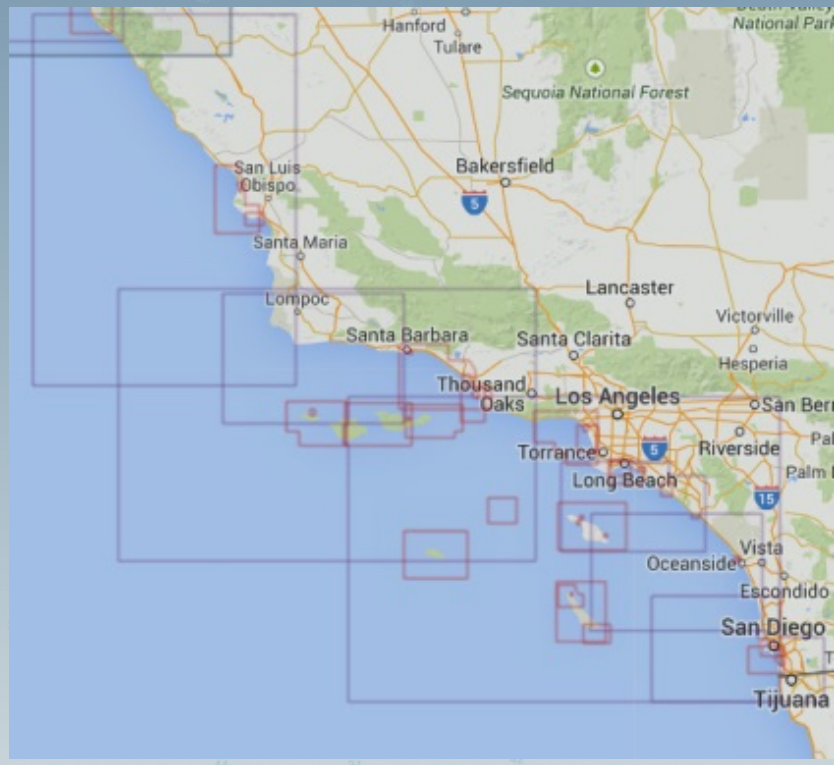
- Support the global transition to electronic navigation
  - demonstrate a substantially advanced set of precision navigation information products

  - make our data ready for easy consumption by commercial enterprises that can provide value-added products and services
  - lead the implementation of international standards for next-generation charts

Coast Survey will...

CHANGE NAVIGATION

- ✓ Analyze the needs and requirements of the top 20 ports relative to NOAA navigation services data availability
- ✓ Improve chart standardization, reduce redundancies where charts with different scales overlap areas, and increase large scale coverage

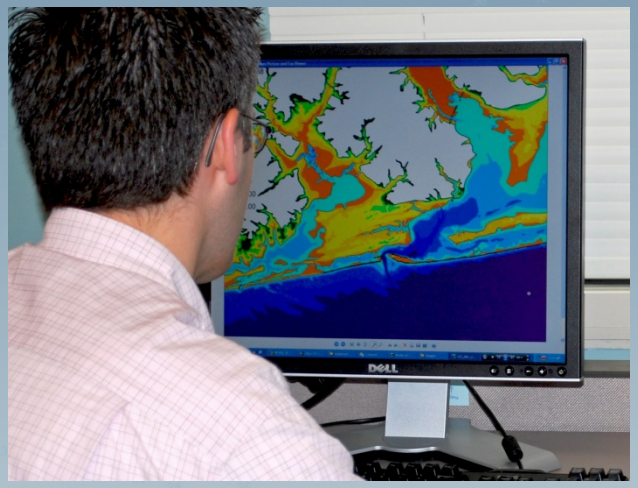


Coast Survey will…

- ✓ Create a one-stop dissemination portal for integrated digital NOAA navigation data
  - including charts, publications, water levels, weather, models, and high-resolution bathymetric overlays
- ✓ Package weather, water levels, and hydrodynamic models into an easily digestible format
  - electronic chart systems, portable pilot units, and mobile devices
- ✓ Develop real-time and predictive electronic chart prototypes that include all navigation information…
  - charts, bathymetry, models, waves, currents, wind, vessel traffic
- ✓ …based on understanding of mariner decisions
  - i.e., underkeel clearance management

Coast Survey will…

- ✓ Expand coverage of our ecological and storm surge models
  - four new geographic areas
- ✓ In partnership with CO-OPS, IOOS, and the Weather Service, lead collection of technical requirements for model-based coastal intelligence
- ✓ Improve forecast guidance (model output) accuracy with more advanced coastal inundation predictions
  - East Coast, Gulf of Mexico, Micronesia



Coast Survey develops the ecological and storm surge models used in coastal resilience planning and emergency management.

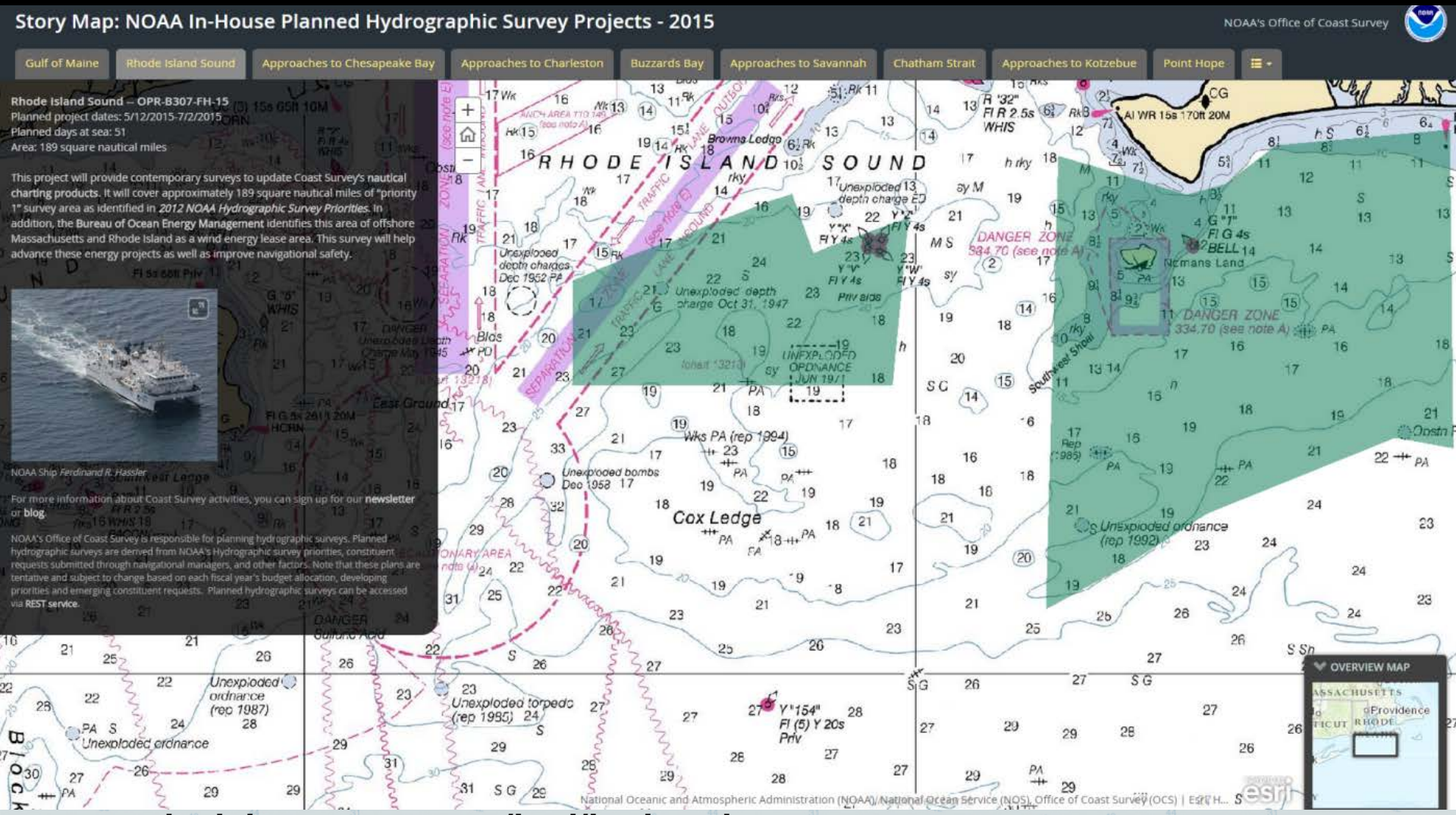
2015 PROGRESS

Performance Measures (High-Level)

MEASURES	GPRA	AOP	FY15 Target
Reduce the Hydrographic Survey Backlog within navigationally significant areas (SNM* per year)	✓	✓	2,556
Acquire approximately 420 SNM* of hydrography in the Arctic (using NOAA hydrographic ships and hydrographic services contracts)	✓	✓	420
Process 110 hydrographic surveys to support nautical chart products and other users, and make the data publicly available via NGDC		✓	110
Perform chart validation in 11 (6%) of the top 175 U.S. seaports with access to a suite of NOAA navigation products and services		✓	11 ports

**SNM = square nautical miles*

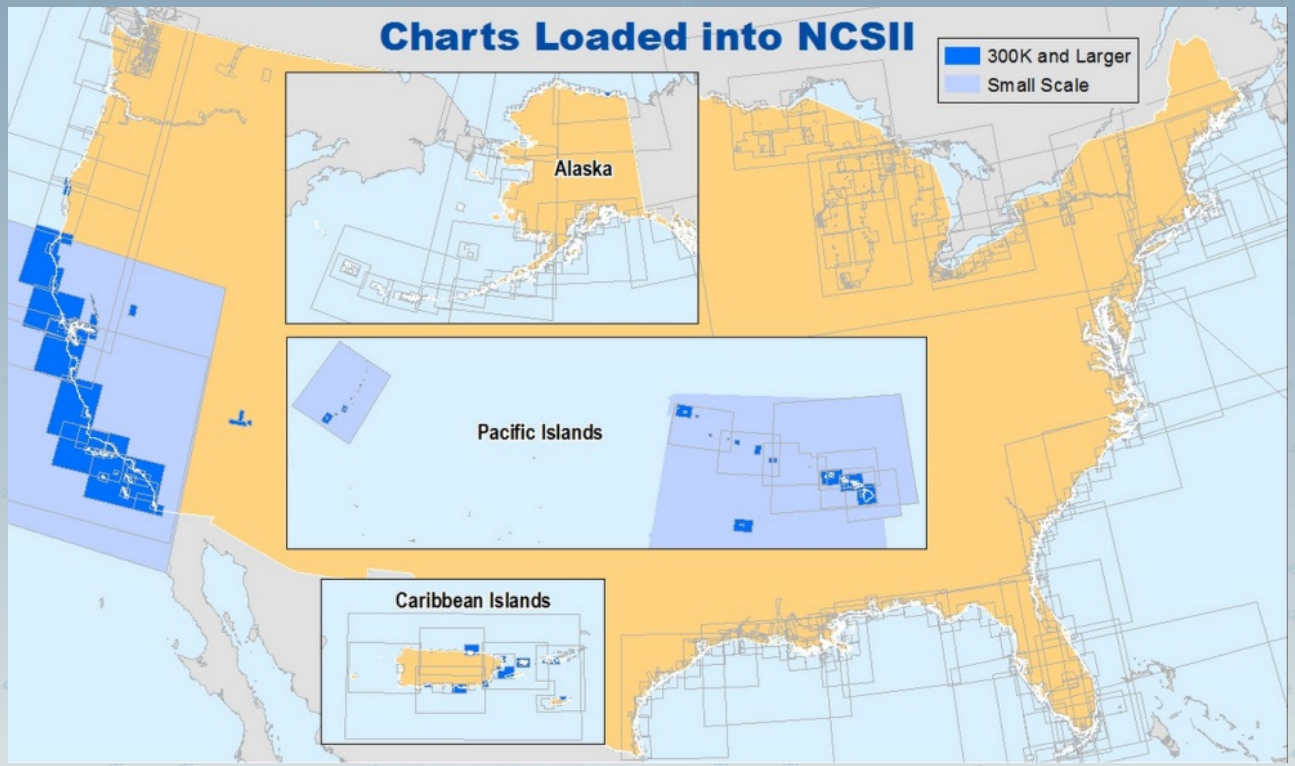
Informing the public about survey projects



nauticalcharts.noaa.gov/hsd/hydrog.htm

Transitioning to “ENC First”

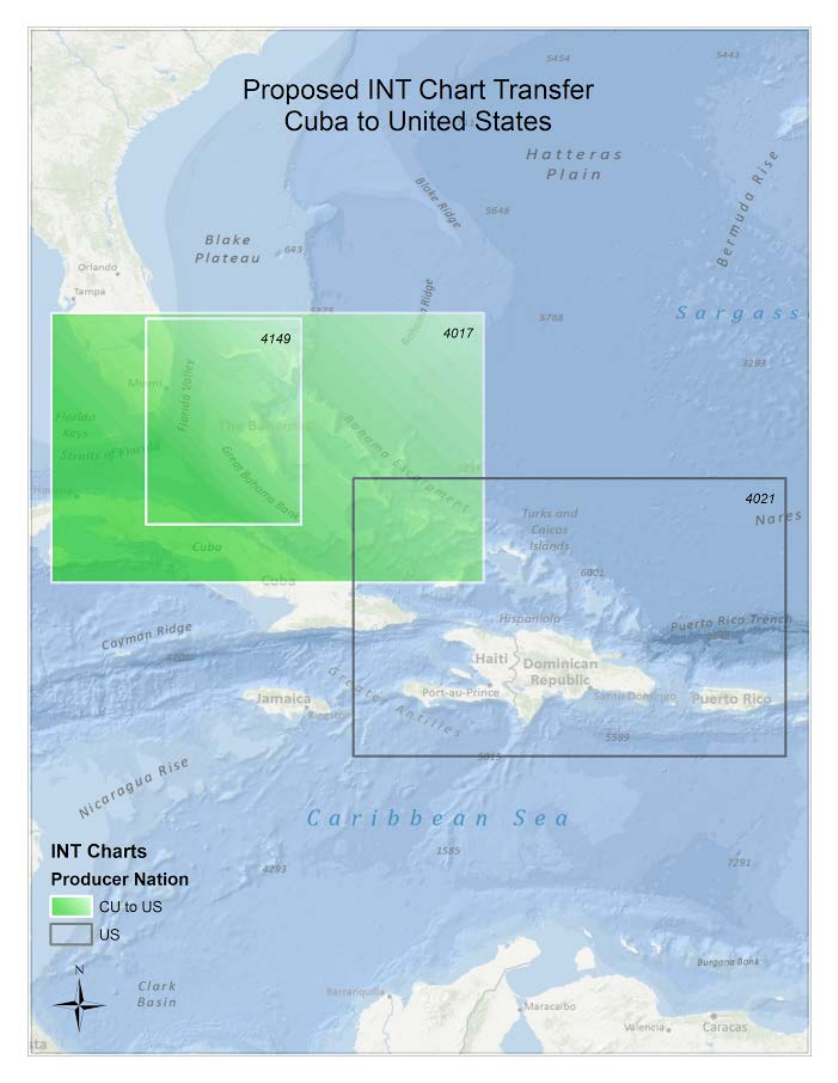
- California, Hawaii, and Puerto Rico are loaded and are being maintained in the new Nautical Information System
- Alaska and Oregon are being loaded now



Building new survey boats

Two new boats, for navigation response teams
Lake Assault Boats, Wisconsin

Collaborating on new international chart 4149



Adding AUV to acquisition platforms

Acquiring more external data

Most recent IOCM example: Coastal Carolina University

MOA with U.S. Army Corps of Engineers

Navigate with confidence