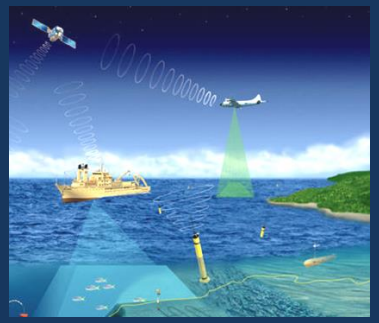
INTERAGENCY WORKING GROUP ON
Ocean and Coastal Mapping

IWG-OCM Update For NCSS



Data Supporting Science
and Sound Decision-Making

Ashley Chappell

January 9, 2018

NOAA IOCM Coordination Team Members

National Environmental Satellite, Data and Information Service:

- NCEI

National Marine Fisheries Service:

- Chesapeake Bay Office
- Office of Habitat Conservation
- Office of Science and Technology
- Regional Science Centers

Office of Marine and Aviation Operations

- Fleet Working Group
- Data Manager

Office of Oceanic and Atmospheric Research:

- Climate Program Office
- Office of Ocean Exploration and Research
- Sea Grant

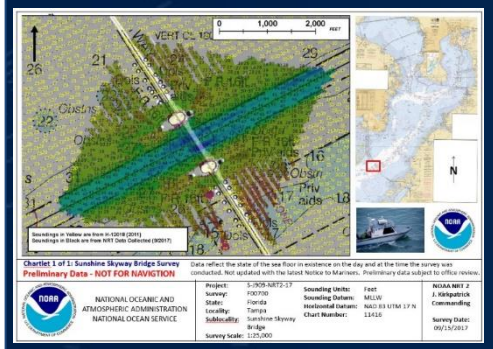
National Ocean Service:

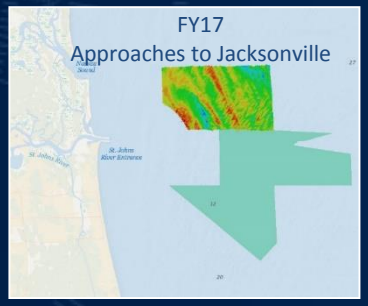
- CO-OPS
- IOOS
- NOAA/UNH Joint Hydrographic Center
- National Centers for Coastal Ocean Science
- National Geodetic Survey
- NOAA Office For Coastal Management
  - National Estuarine Research Reserves
- Office of Coast Survey
- Office of National Marine Sanctuaries
- Office of Response and Restoration
- NOAA Coral Reef Conservation Program

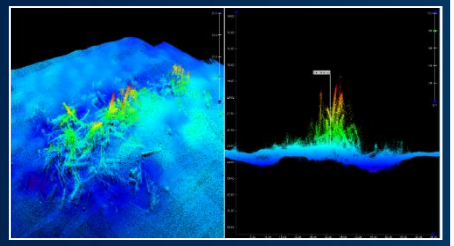
National Weather Service

NOAA's Office of Coast Survey
Florida Based Hydrographic Survey Operations

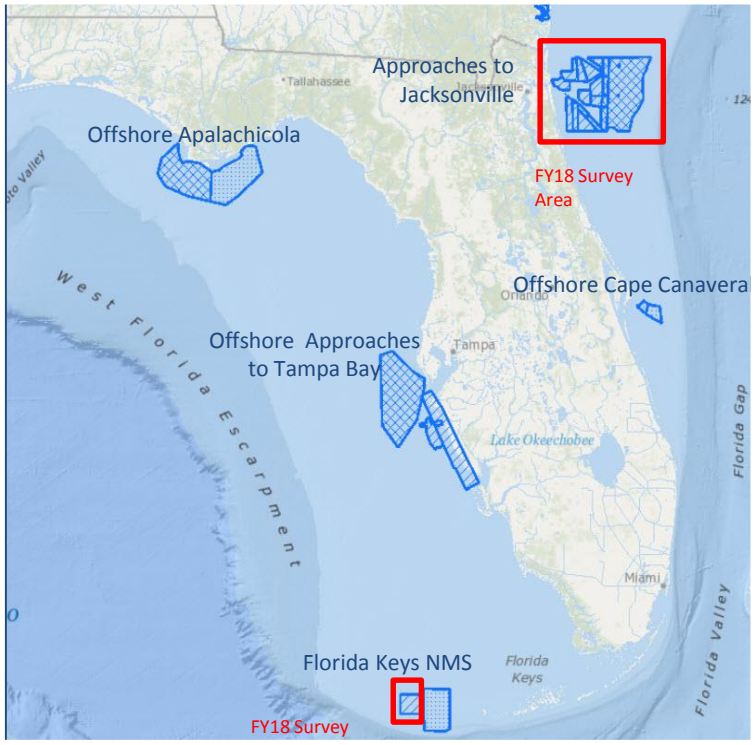
OCS Completed 2017 Hydro Survey Ops







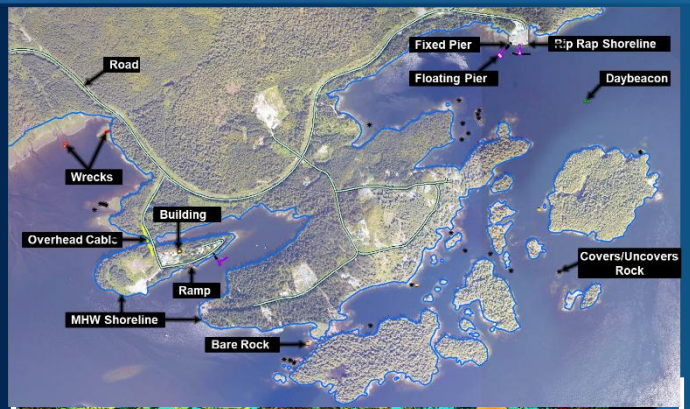
OCS Planned Hydro Survey Ops: 2018 - 2020



NOAA's Coastal Mapping Program

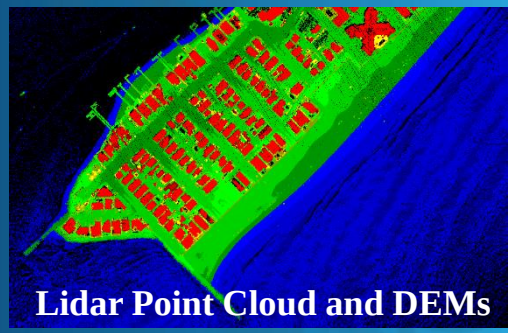
- Define the National Shoreline and nearshore elevation data
- NOAA nautical charts
- Other important applications:
  - Used in defining the United States' territorial limits
  - Coastal resource management
  - Storm surge and coastal flooding modeling
  - GIS analysis
  - Benthic habitat mapping
- Coastal Intelligence and Resiliency…

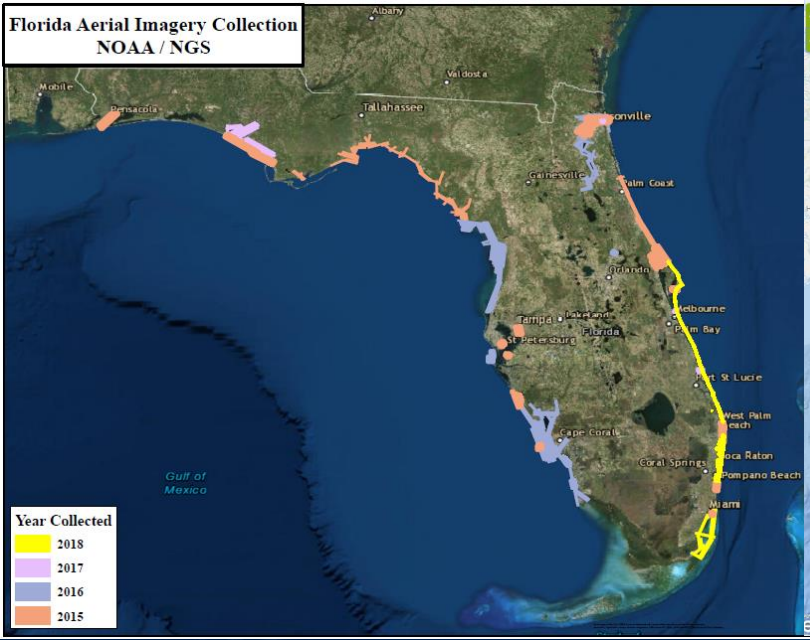
  Map once use many times!
- Emergency Response Imagery

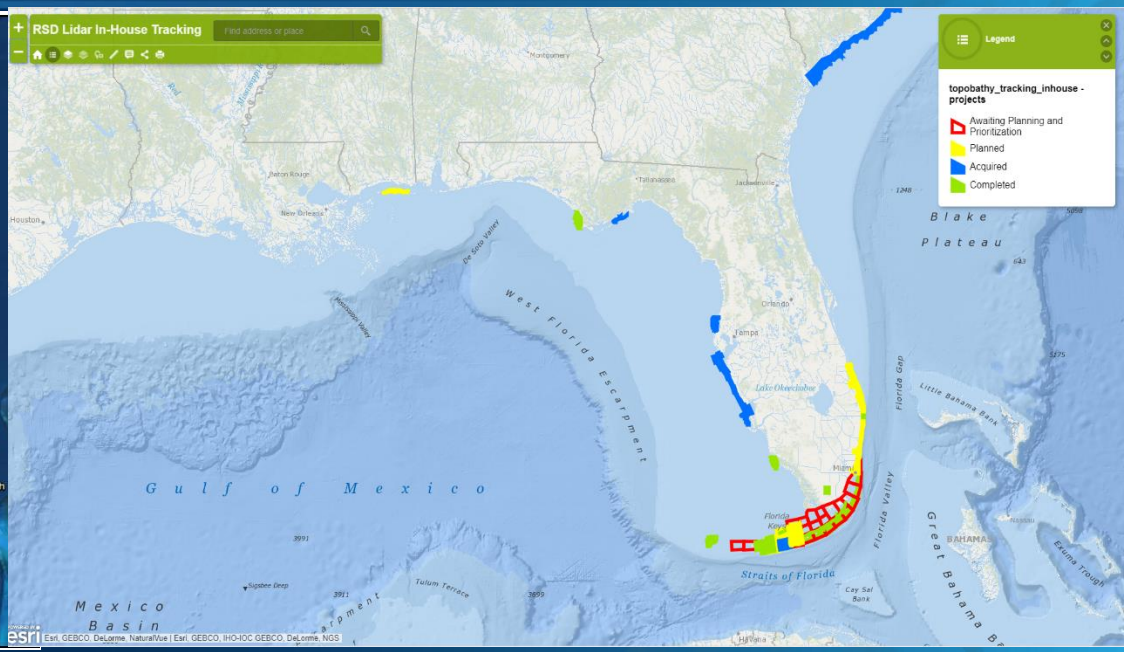


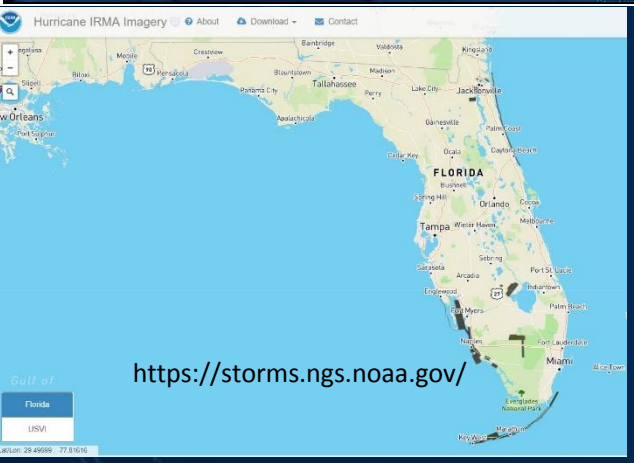
Shoreline
https://www.ngs.noaa.gov/NSDE/

https://coast.noaa.gov/digitalcoast/









https://storms.ngs.noaa.gov/

National Geodetic Survey (NGS) Topobathy 2018 Survey Plans

FL1703-TB-N Miami Intercoastal (Pompano)

FL1701-TB-N Block D, E, F (Keys)

FL1801-TB-N (Blocks H and I) (Keys)

FL1802-TB-N (Highland Beach to Fort Pierce)

2015
Fort DeSoto
Marathon
Tampa Bay
Fort Lauderdale
Dry Tortugas

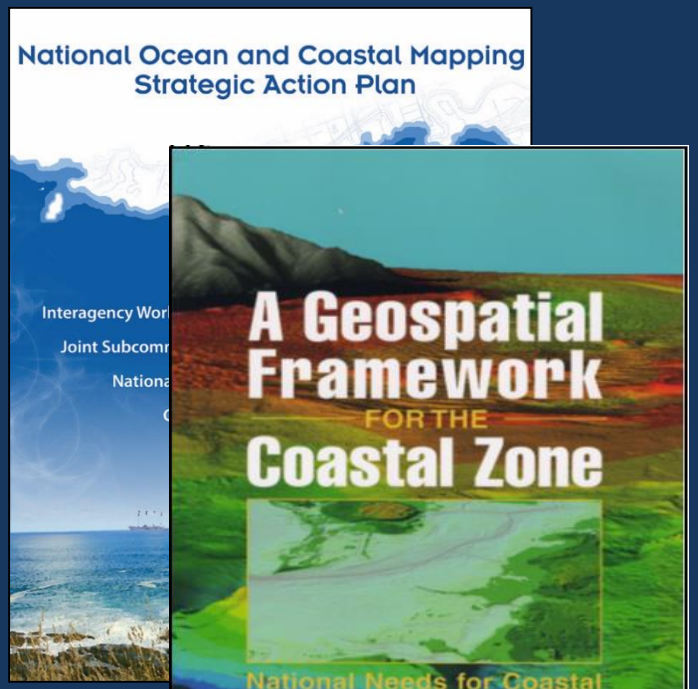
2016
Tarpon Springs
Key West
Everglades
Boca Grande
Marco Island
Sarasota
Keys Outer reef

2017
Keys Outer reef (continued and completed)
St. Joe
Apalachicola
ICW (a portion)
Dog Island
Rainbow River
Irma transects (over outer reef)
Desoto to Boca Grande

The Interagency Working Group on Ocean and Coastal Mapping (IWG-OCM)

WHO:

- NOAA
- USGS
- USACE
- NAVO
- BOEM
- NSF
- NGA
- USCG
- EPA
- FEMA
- NASA
- USDA
- *and other appropriate Federal agencies involved in ocean and coastal mapping.*



- **Co-chaired by NOAA, USGS, and USACE**
- **Charged with facilitating "the coordination of ocean and coastal mapping activities and avoid[ing] duplicating mapping activities…"**

Recent Mandates

Ocean and Coastal Mapping Integration Act, 2009:

- Validated NOAA's vision for IOCM
- Provided focus for interagency coordination
- Authorized previously ad-hoc efforts

SOST implementation plans (stemming from NOP)

- Identifies mapping actions to meet OCMIA
- Provides long term road map
- Coordinates across mapping agencies

National Strategy for the Arctic Region

- Identifies charting as an objective
- Coordination role

The term "ocean and coastal mapping" means the acquisition, processing, and management of physical, biological, geological, chemical, and archaeological characteristics and boundaries of ocean and coastal areas, resources, and sea beds through the use of acoustics, satellites, aerial photogrammetry, light and imaging, direct sampling, and other mapping technologies.

INTERAGENCY WORKING GROUP ON
Ocean and Coastal Mapping

What is IOCM?

IOCM is *planning, acquiring, integrating, and managing* ocean and coastal geospatial data and derivative products for easy access and use by the greatest range of users.

Three primary tasks:

1. Data Acquisition

2. End-to-End Data Management

3. Maximum Use and Re-Use of data

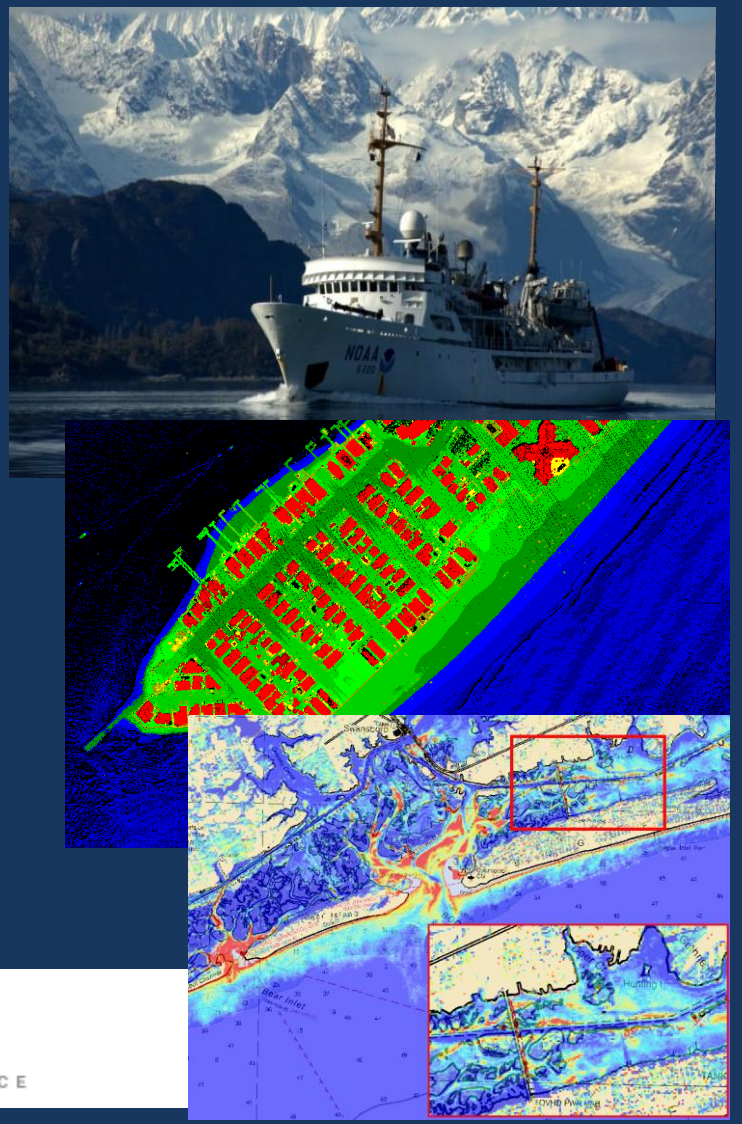
Ocean and Coastal Mapping Integration Act of 2009

Why coordinate & collaborate on Data Acquisition?

- Avoid costly duplication of effort
- Maximize survey time
- Meet science & mission requirements
- R&D on technology, techniques

IOCM:

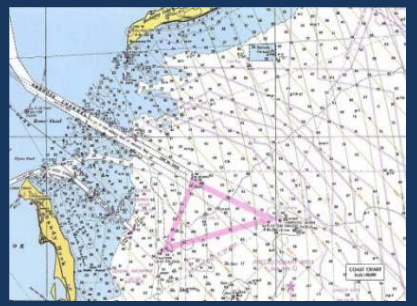
- Identifies mapped areas
- Improves planning
- Enables cross-agency collaboration



NOAA INTEGRATED OCEAN AND COASTAL MAPPING (IOCM)
UNITED STATES DEPARTMENT OF COMMERCE

Why manage data?

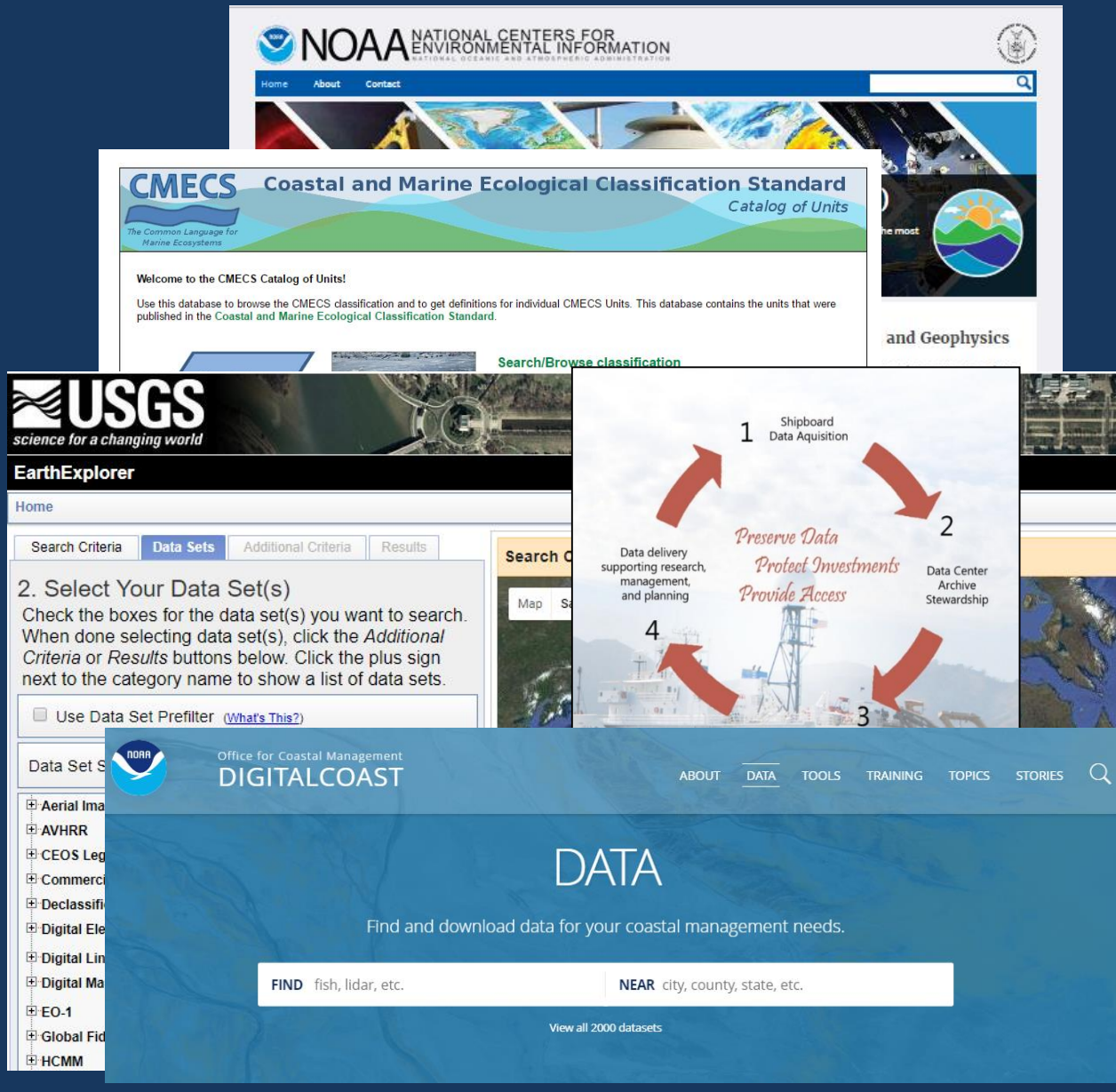
- Enable Agency missions requiring scientific data
- Maximize use of data for multiple purposes
- Avoid costly data loss



- IOCM:
  - Ensures data collected are available for use
  - Processes data for multiple uses
  - Delivers bang for the buck

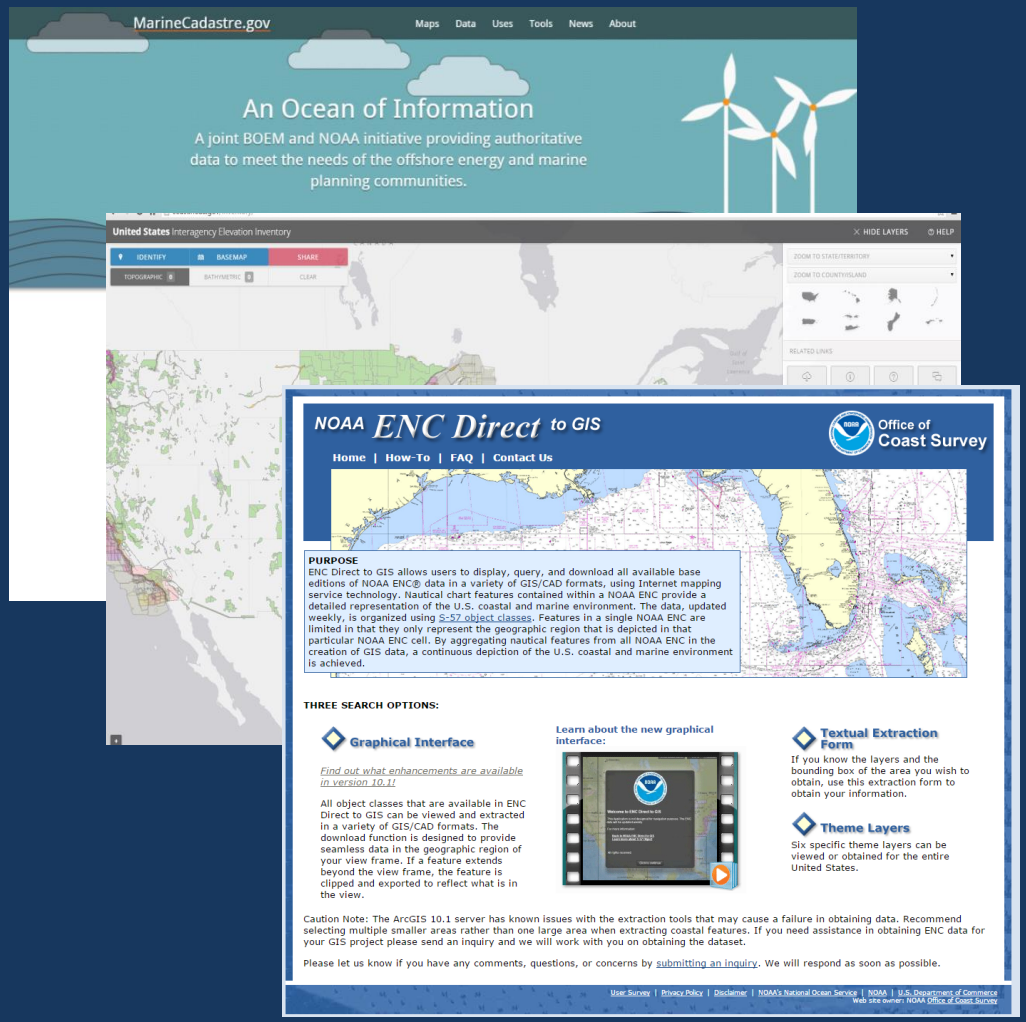
Data Stewardship, Access

- National Centers for Environmental Information
- Digital Coast
- Earth Explorer
- Rolling Deck to Repository
- Coastal and Marine Ecological Classification Standard
- Crowd-sourced Bathymetric Database



Why re-use data?

- Scientifically sound decisions require data
- Data expensive to collect
- Scientific data management is cost-effective
  - 3-month study, 2000% return on investment
- IOCM:
  - Ensures data are available
  - Enables use/re-use of data
  - Supports scientific and management missions



National Coastal Mapping Strategy 1.0

Coastal Lidar Elevation for a 3D Nation

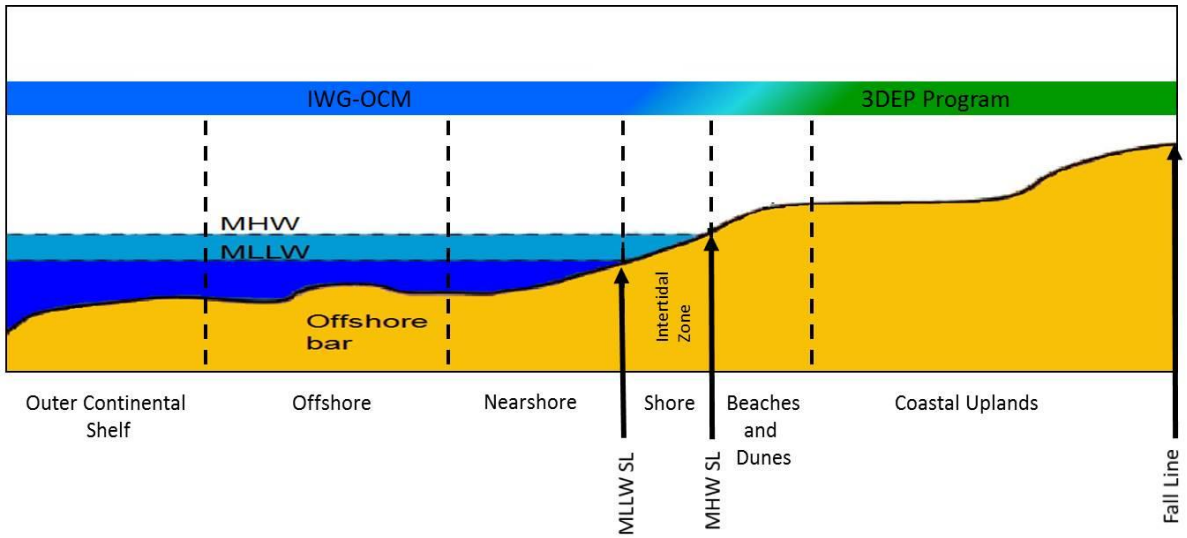
Components:

Regional Coastal Mapping Summits for coordination

Common standards – Bathy Quality Levels aka 3DEP topo QL's

Whole life cycle approach to data

R&D on new tools/techniques for data collection and use.



3D Nation?

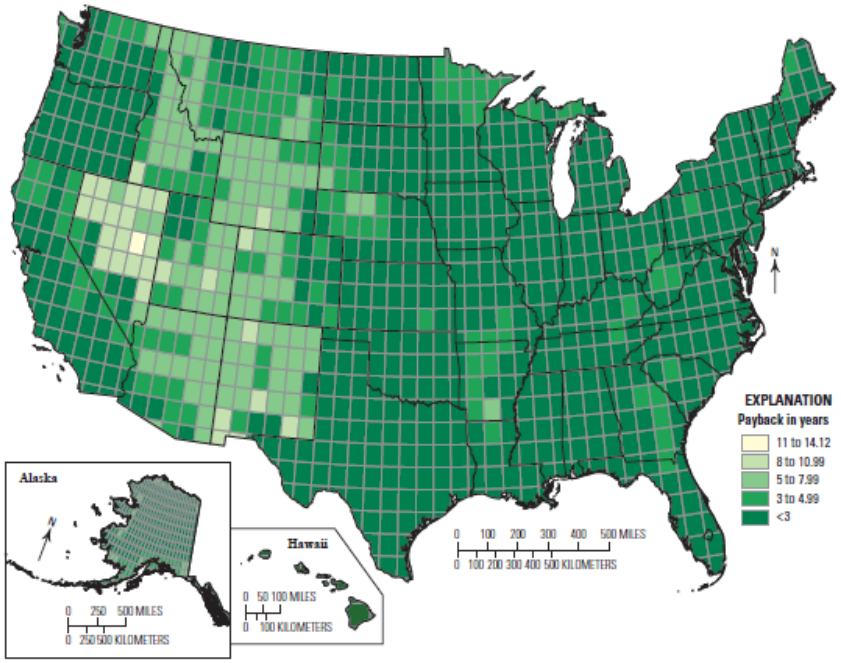
Refresh cycle?

ROI?

NEEA-like study?

National Enhanced Elevation Assessment (NEEA)

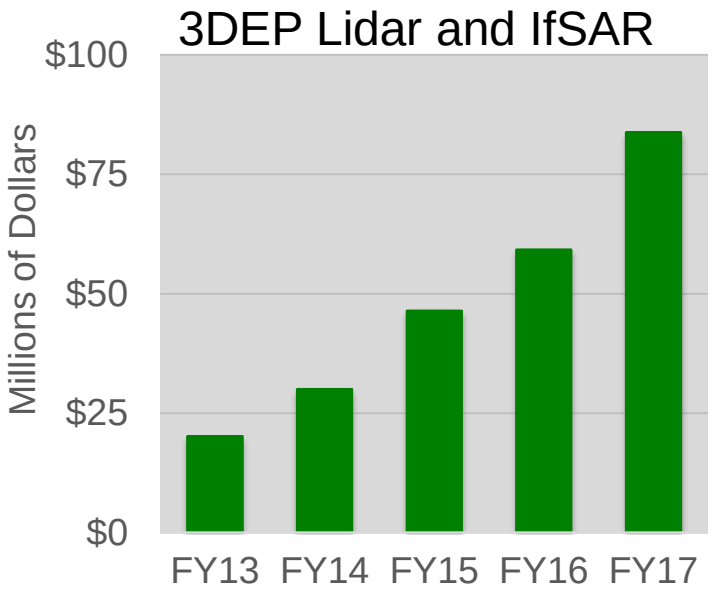
A comprehensive inventory of user requirements and benefits for elevation data



- Conducted in 2010 – 2012
- Data collection
  - 34 Federal Agencies
  - 50 States
  - Local Government, tribal, private, not-for-profits
- Results
  - 602 Mission critical activities that need significantly better data than are currently available
  - Between $1.2 billion and $13 billion in benefits annually
  - Increases in President's budget in FY14-17
  - http://nationalmap.gov/3dep

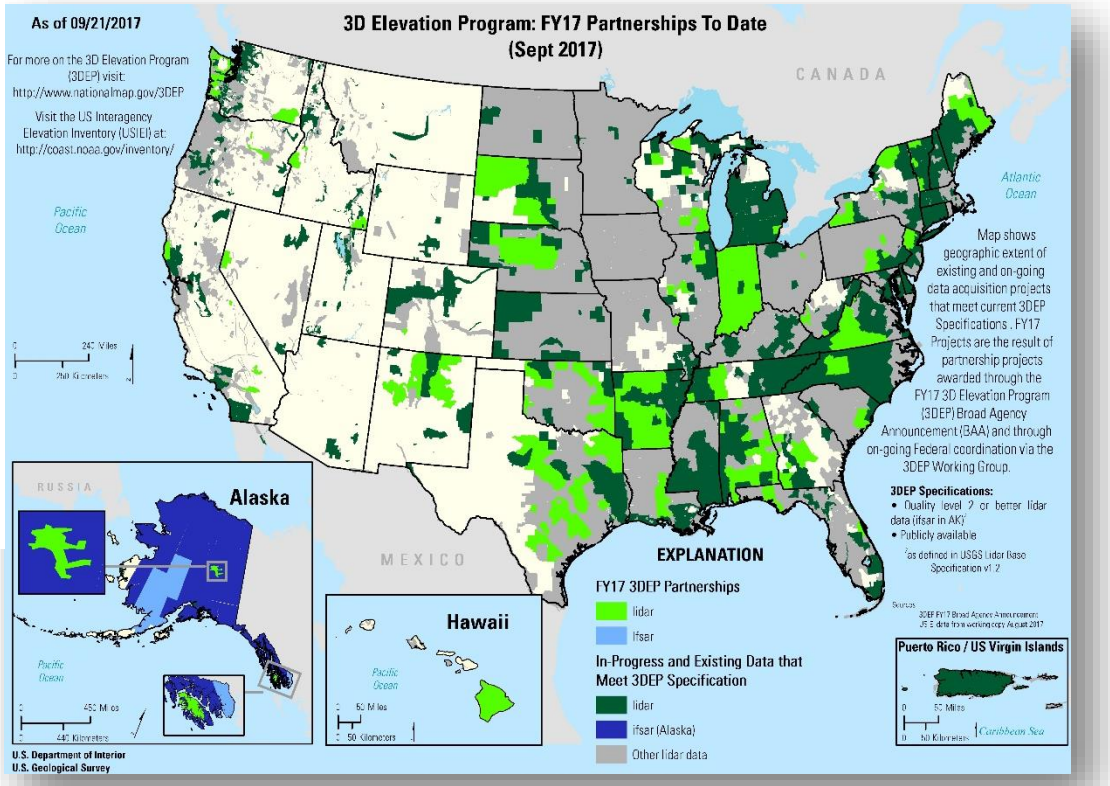
3DEP Growth - Partnerships To Date

Strong coordination and increasing investments (FY13-17)



- Between FY13 and F17, 3DEP data (lidar and IfSAR) have been contracted for 37% of the entire US
- Alaska IfSAR – 92% of state available or in work to date in FY17

Map shows lidar from FY13 – FY17



In FY17, 3DEP data have been contracted for 11.4% of the Nation

Updating User Requirements and Benefits for 3DEP

- Be able to assess new technologies against user requirements and identify the tradeoffs between different approaches
- Plan for the next round of 3DEP after nationwide coverage has been completed
- Improve our understanding and data about requirements and benefits at the state level for the existing and future program
- Improve our understanding of needs to guide development of the next generation of 3DEP Products and Services

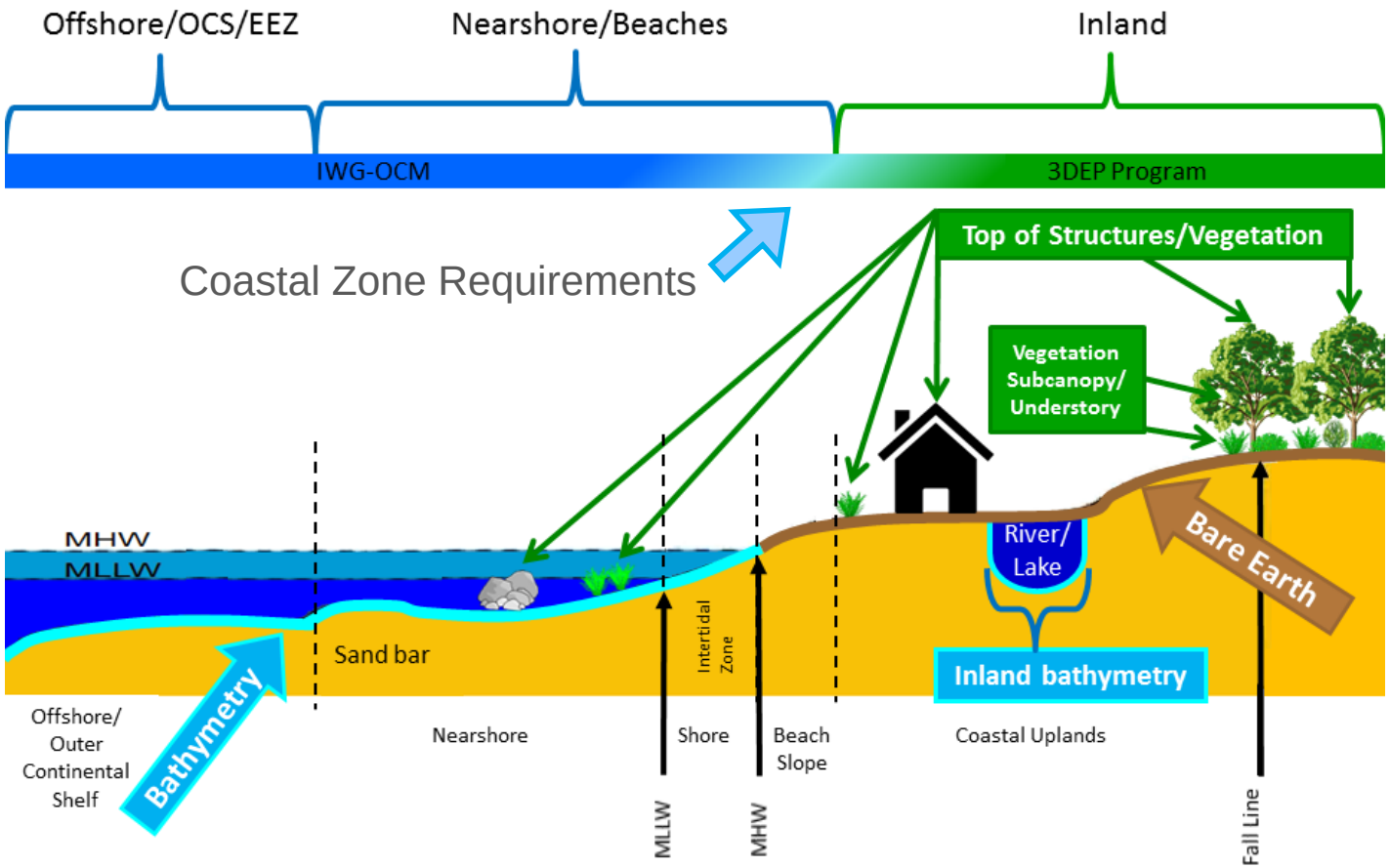
Mapping a 3D Nation: Requirements and Benefits Study Goals

Understand 3D Data Requirements

- Refresh NEEA for the years beyond the initial 8-year acquisition program
- Understand inland, nearshore, and offshore bathymetric data requirements and benefits
- Understand how requirements and benefits dovetail in the coastal zone
- Sensor agnostic/Technology Neutral
  - Focused on need for, and value of, elevation data

3D Nation Study Context

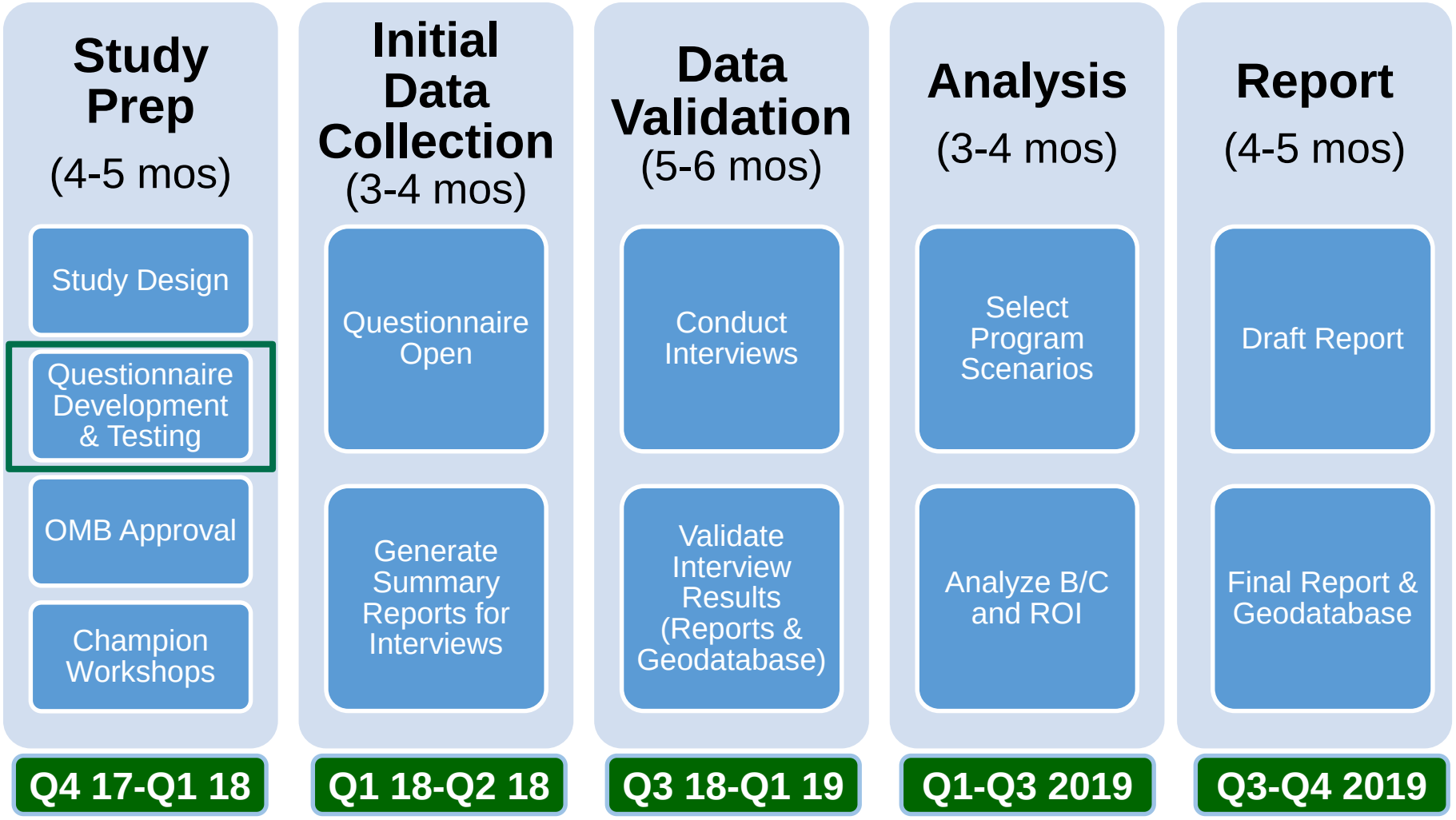
Inland, Nearshore, Offshore and Topo, Bathy, Topo/Bathy



Technology Neutral Approach

USGS science for a changing world | The National Map Your Source for Topographic Information | Dewberry | Interagency Working Group on Ocean and Coastal Mapping | NOAA

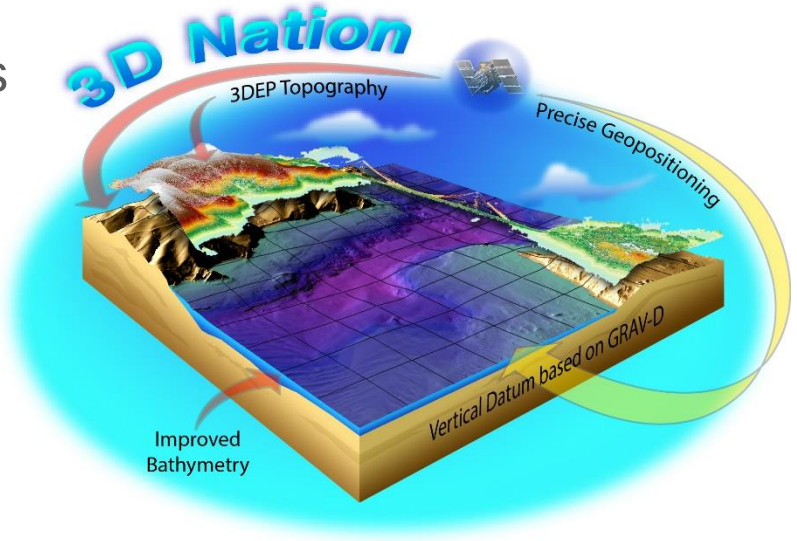
Study Phases - Draft Timeline



3D Nation Stakeholders

Federal, State, Local, Non-Profit, Private, & Academia

- Federal departments and agencies
- Federal commissions or committees
- 50 states plus D.C. and territories
- Local, regional, and Tribal stakeholders
- Non-profits
- Private/commercial
- Academia



USGS science for a changing world
The National Map Your Source for Topographic Information
Dewberry
Interagency Working Group on Ocean and Coastal Mapping
NOAA

State Agency Participant Types

- Archaeology/cultural heritage
- Biological survey
- Coastal resource management/Coastal zone management
- Economic and community development
- Emergency management
- Energy
- Environmental protection/management
- Fisheries management/aquaculture
- Forestry/rangeland management
- Geology
- GIS
- Habitat management
- Mining
- Natural resources/conservation
- Oil and gas
- Permitting/planning
- Recreation
- Regulatory
- State university
- Transportation
- Water management/resources
- Water quality
- Wildlife management

State Champions will help identify participants

USGS science for a changing world
The National Map Your Source for Topographic Information
Dewberry
Interagency Working Group on Ocean and Coastal Mapping
NOAA

Local and Regional Participant Types

- Tribal entities
- Local government agencies
- Integrated Ocean Observing System (IOOS) regional associations
- Metropolitan and/or regional councils/districts
- Port authorities
- Regional commissions or councils
- Scientific and research organizations
- Non-profits

What We Need Your Help With

- Take the survey
- Get the word out to your colleagues and associates
- Identify study participants and their contact information
- Help with questionnaire – invitations and follow ups with non-respondents if needed
- Participate in follow up interviews/workshops
- Help gain consensus on responses
- Review and sign off on validated responses

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The National Map Your Source for Topographic Information
Dewberry
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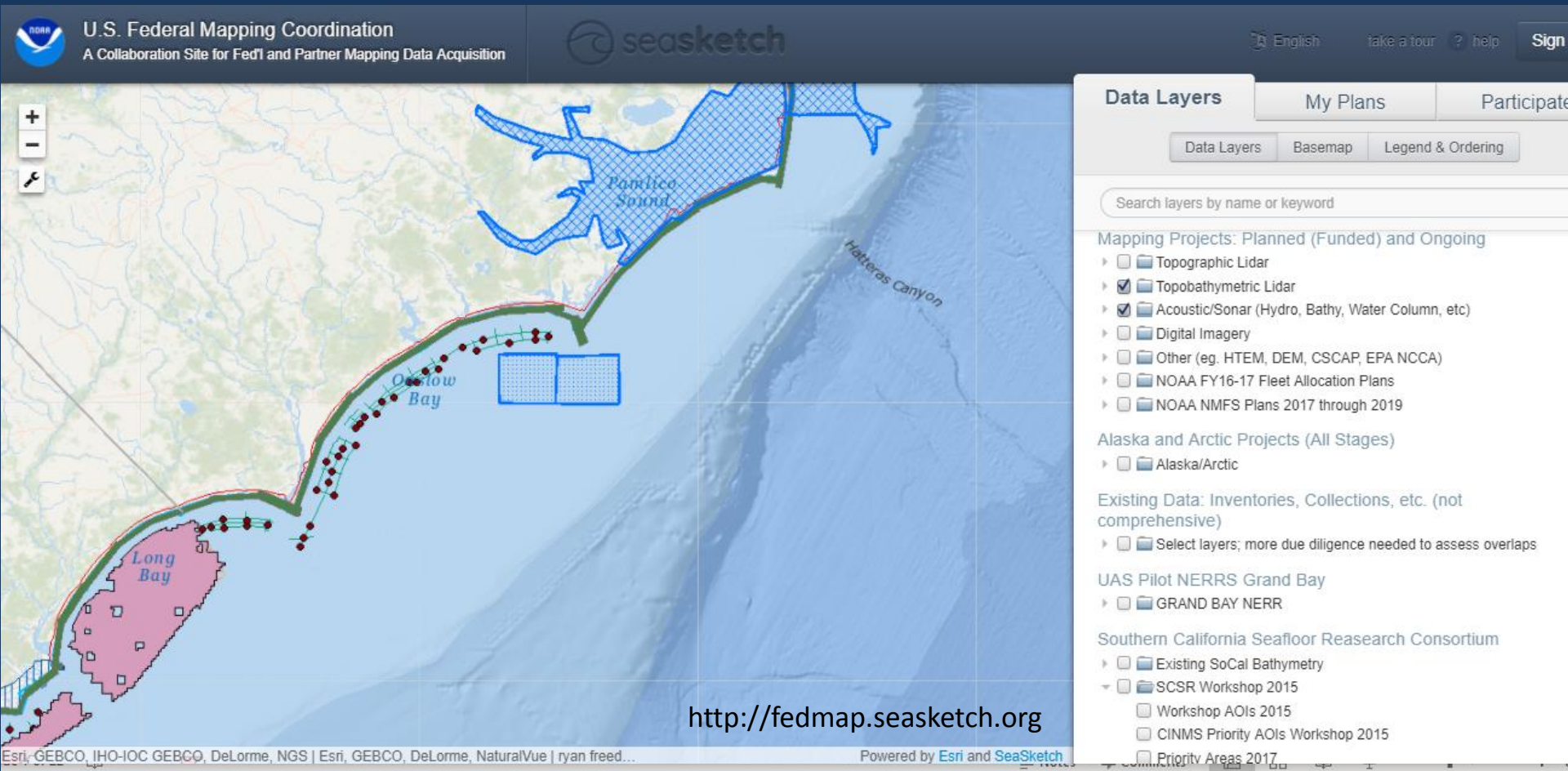
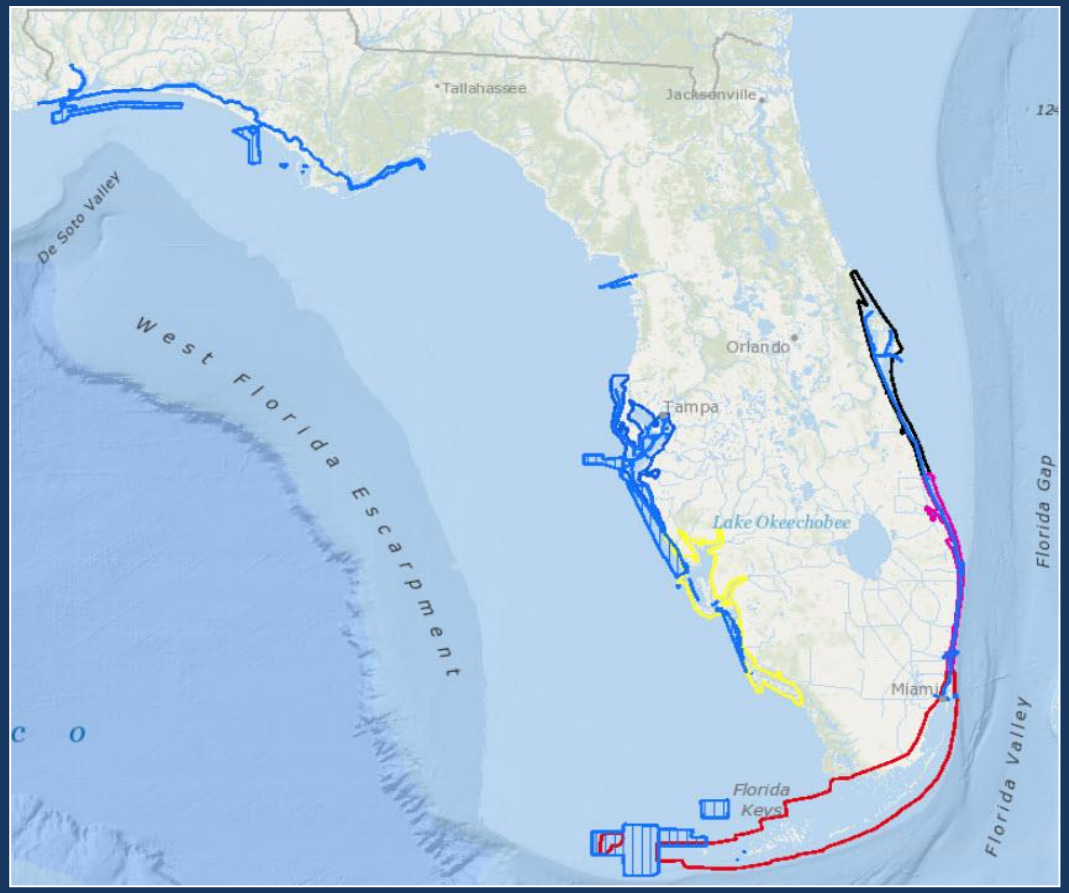
U.S. Federal Mapping Coordination Site

- IWG-OCM and 3DEP agencies are using Seasketch tool to share info on acquisition plans, data needs, coordination
- Additional tools available for use – forums, sketching



Hurricane Season 2017
Hurricane Supplemental Funding Request-- *Pending*

- NOAA Hurricane Supplemental Funding Request pending approval through Congress
  - $20M Pres Request
  - $40M House Mark
- Outlined/highlighted areas in graphic represent impacted areas from Hurricane Irma and interagency priorities for mapping
- Collaborative effort involving NOAA's OCS, NGS, CO-OPS, IOOS and other partner agencies and stakeholders
- Coordinated recovery mapping effort that brings the full suite of NOAA navigation, observation and positioning capabilities to impacted areas



NOAA INTEGRATED OCEAN AND COASTAL MAPPING (IOCM)
UNITED STATES DEPARTMENT OF COMMERCE

"Map Once, Use Many Tims"

SEABED 2030

Seabed 2030 is a global initiative led by the General Bathymetric Chart of Oceans (GEBCO) Guiding Committee and The Nippon Foundation with the aim to facilitate *the complete mapping of the ocean floor by the year 2030*.

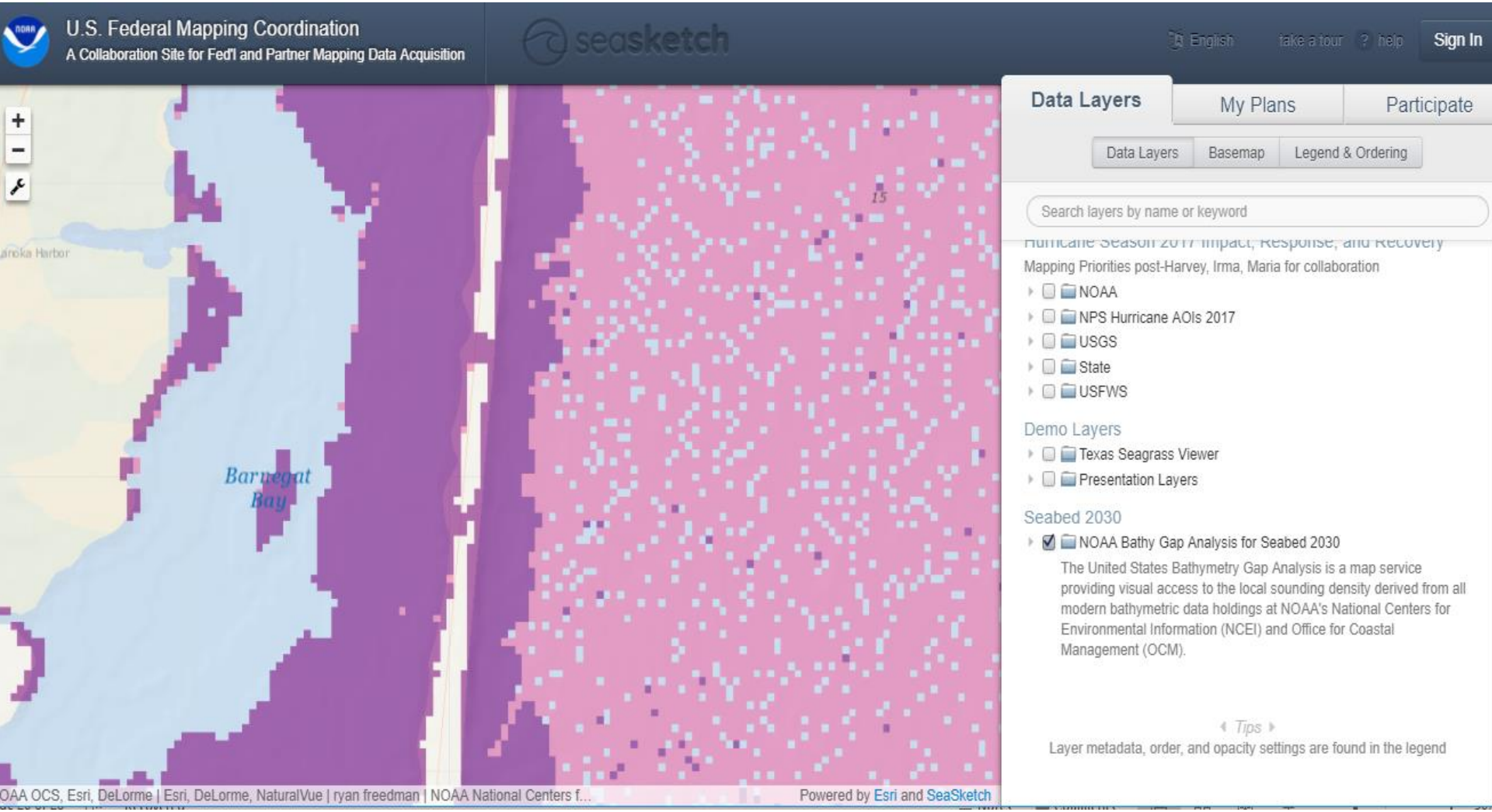
GEBCO

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

THE NIPPON FOUNDATION

Bathymetric Gap Analysis



- Participate in the IWG-OCM
- Coastal/Ocean Mapping Strategy
- 3D Nation Questionnaire
- Define and share clear requirements for mapping data
  - Locations
  - Specifications
  - Classification schemes
- Make data accessible via archives and portals

Questions?

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240.429.0293