

Integrated Ocean and Coastal Mapping



Data Supporting Science
and Sound Decision-Making



Ashley Chappell, IOCM Coordinator

August 31, 2016



NOAA

INTEGRATED OCEAN AND
COASTAL MAPPING (IOCM)

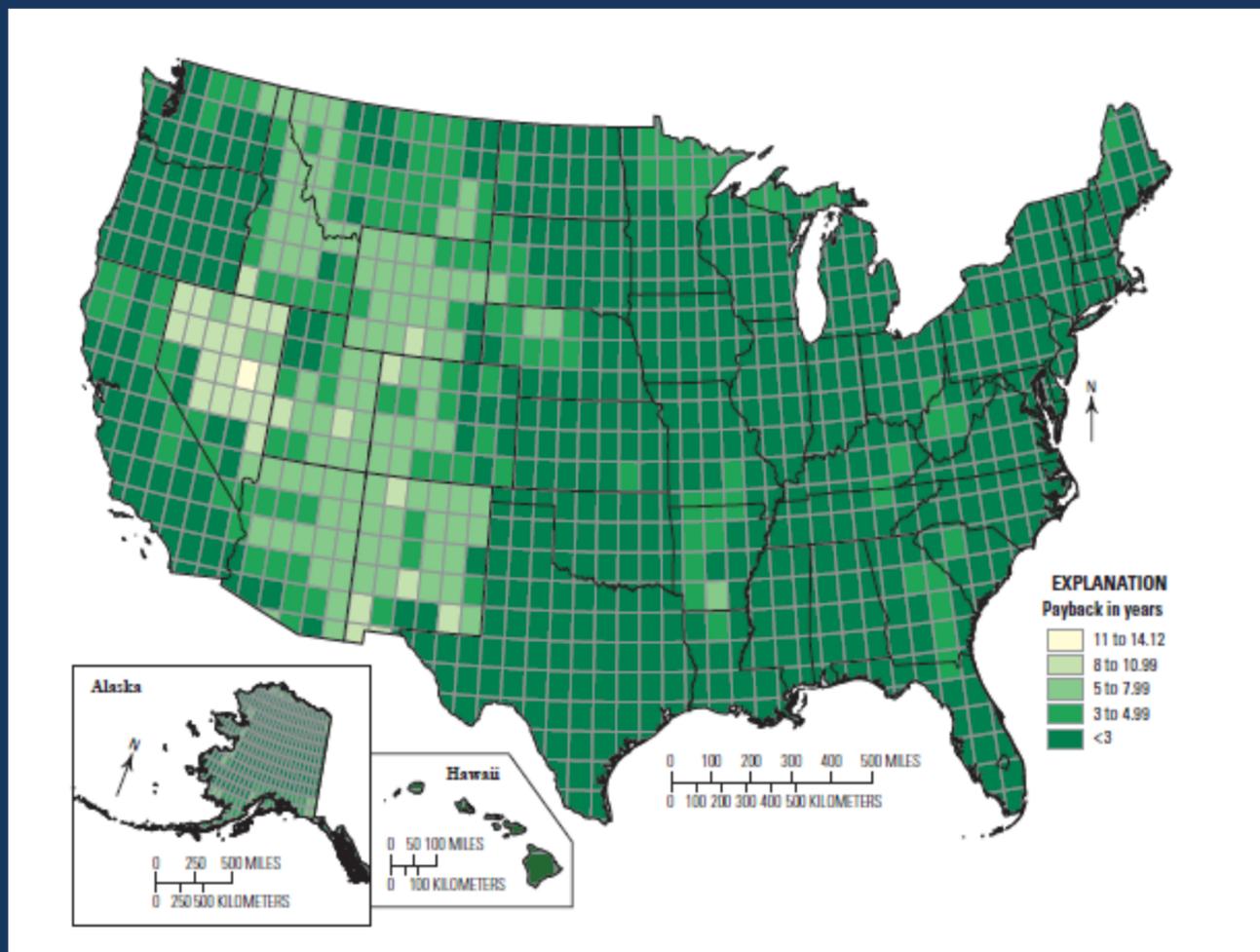
UNITED STATES DEPARTMENT OF COMMERCE

*“Map Once,
Use Many Times”*

National Coastal Mapping Strategy 1.0

Coastal Lidar Elevation for a 3D Nation

- Interagency Working Group on Ocean and Coastal Mapping tasked to develop a NCMS
- Version 1.0 focuses initially on Coastal Lidar
- Public comment period has now ended, in process of addressing feedback before final
- Implementing components underway



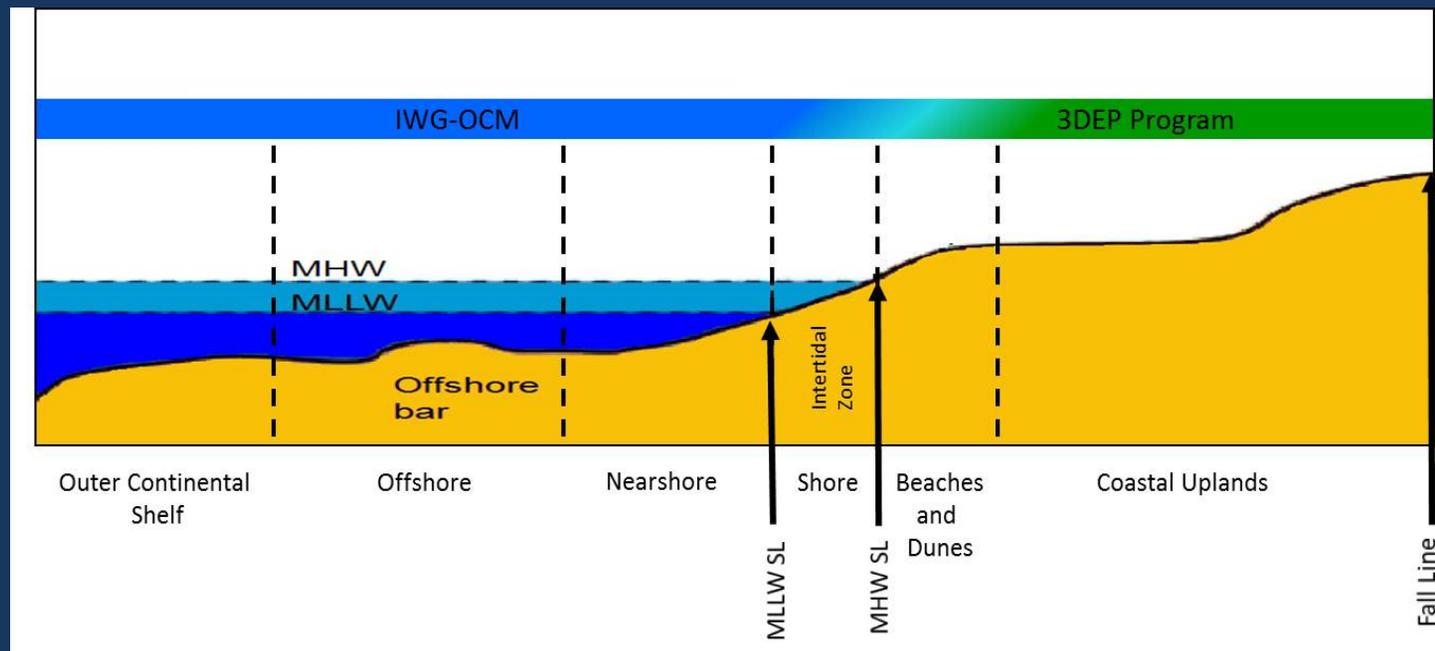
USGS analysis of 2012 NEEA Study ROI of lidar data, based on multiple-use requirements /uses; note high ROI at coasts

National Coastal Mapping Strategy 1.0

Coastal Lidar Elevation for a 3D Nation

Four Components:

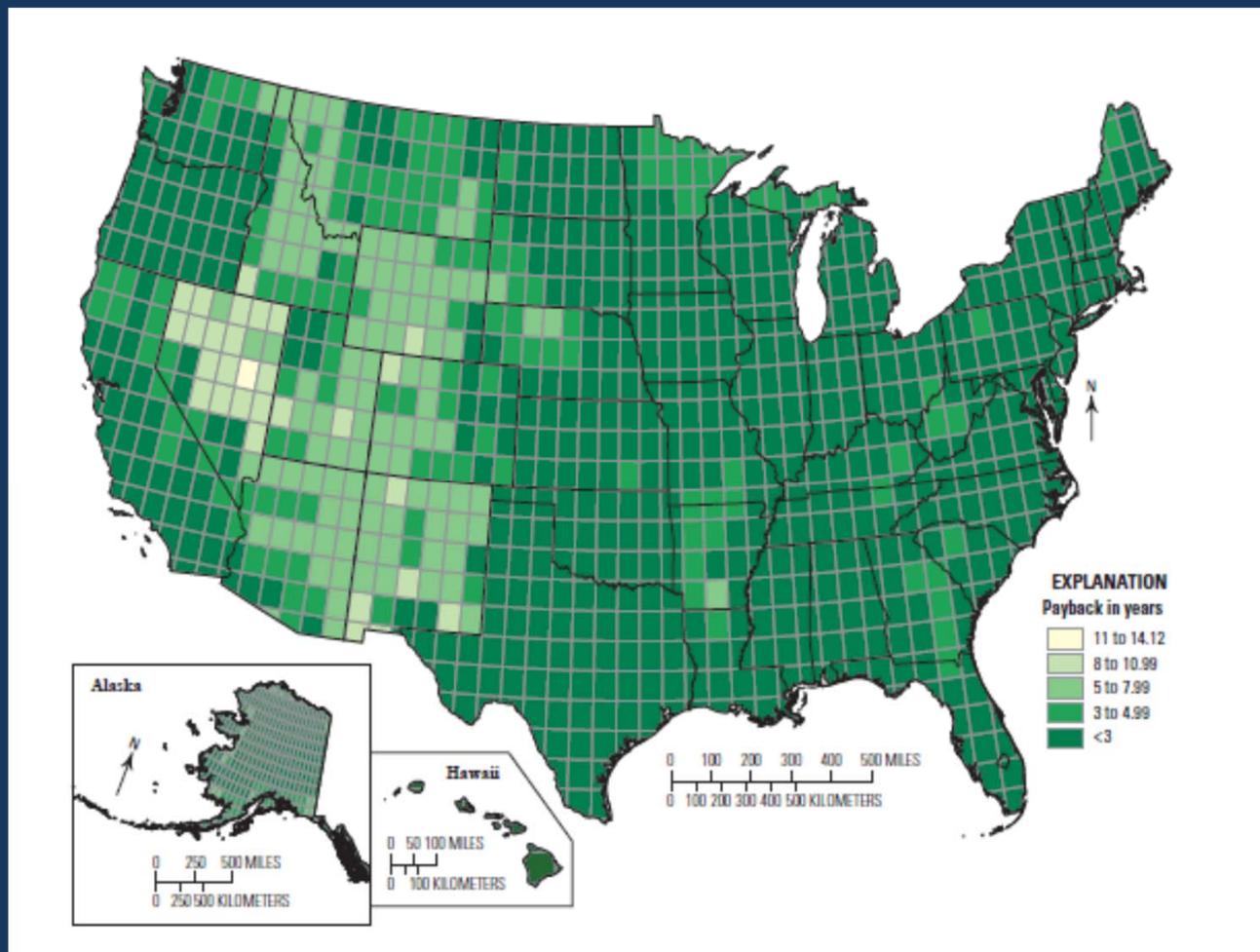
- Annual Coastal Mapping Summit for coordination
- Common standards
- Whole life cycle approach to data
- R&D on new tools/techniques for data collection and use.



National Coastal Mapping Strategy 2.0

Ocean Elevations for a 3D Nation

- Version 2.0 will include:
 - Offshore/OCS
 - Acoustic
 - Aerial photography, HSS
- Building from agency inputs such as NOAA Hydro Survey Priorities work, BOEM priority areas for survey, etc.
- Scoping study for NEEA Update and Coastal/Offshore Elevation Requirements and Benefits Study



USGS analysis of 2012 NEEA Study ROI of lidar data, based on multiple-use requirements /uses; note high ROI at coasts

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

U.S. Federal Mapping Coordination
A Demonstration Site for Federal Mapping Data Acquisition Coordination

seasketch

English take a tour ? help Sign In

Data Layers My Plans Participate

Data Layers Basemap Legend & Ordering

Search layers by name or keyword

Mapping Priorities: Needs, Requirements

- Areas of Interest (specifying of data types is optional)

3DEP Mapping Areas of Interest

- 3DEP 3D Elevation Program Areas of Interest

Planned and Ongoing Mapping Projects

- Topographic Lidar
- Topobathymetric Lidar
 - NOAA
 - USACE
 - JALBTCX Planned and Ongoing Topobathymetric Lidar

The USACE National Coastal Mapping Program (NCMP) acquires high-resolution topographic/bathymetric lidar elevation and imagery on a recurring basis along the sandy shorelines of the US. The typical survey footprint includes an approximately 1-mile wide swath of topography, bathymetry, and imagery 500 m onshore and 1000 m offshore. Planned survey areas and timelines provided in this service are based on the 5-year NCMP update cycle, which follows counter-clockwise along the US West Coast, Gulf Coast, East Coast and Great Lakes. Surveys to support USACE project-specific missions and external partners beyond the standard NCMP footprint are included constituent to requests from project managers. This survey work is coordinated with Federal mapping partners through the Interagency Working Group on Ocean and Coastal Mapping and the 3D Elevation Program.

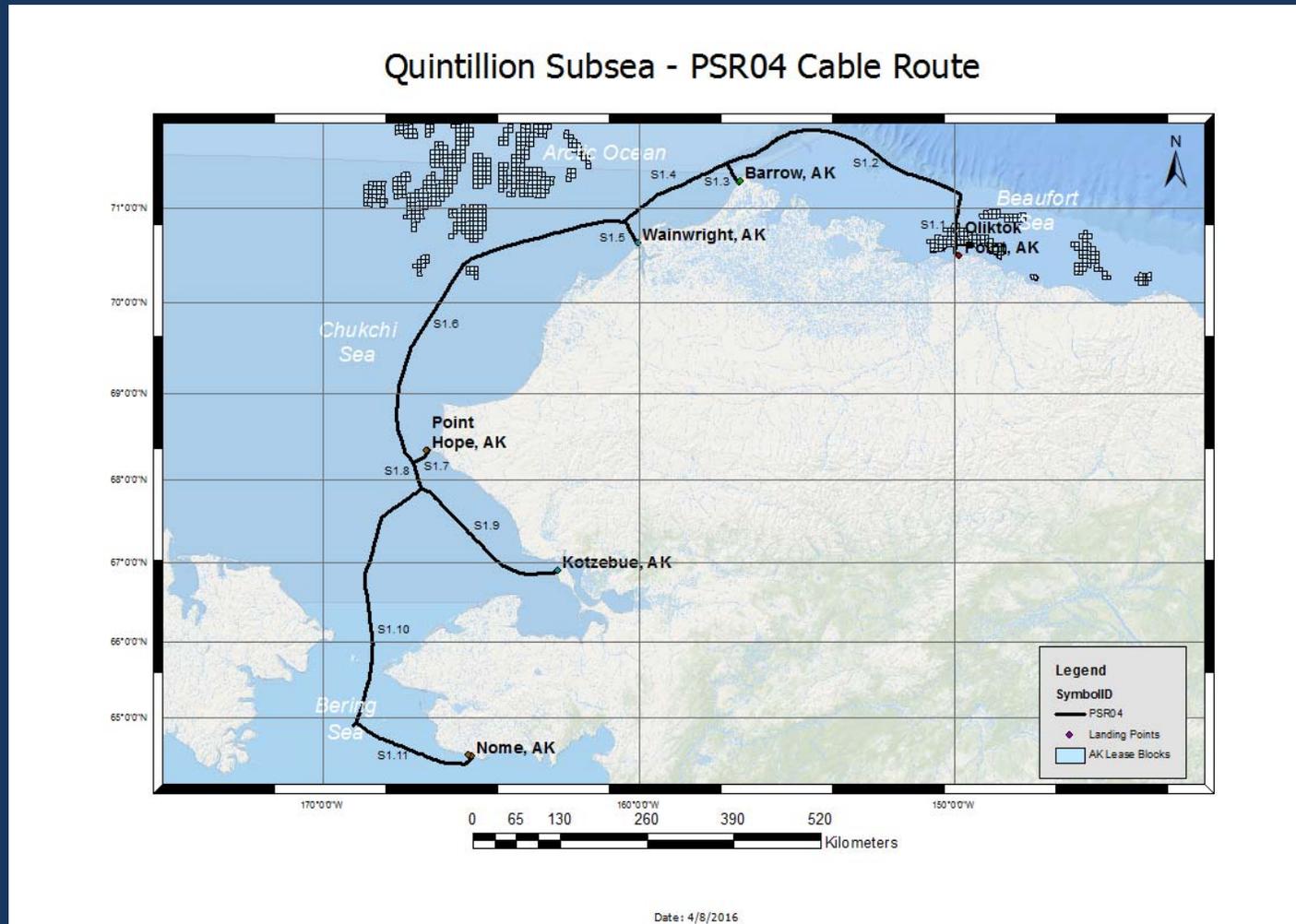
- USACE Planned Topobathy Lidar Project Areas - 2015
- USACE Planned Topobathy Lidar Project Areas - 2016
- USACE Planned Topobathy Lidar Project Areas - 2017

- USGS
- Acoustic/Sonar (Hydro, Bathy, Water Column, etc)
 - Federal
 - NOAA
 - NOAA AEFSC FISHPAC_16_tracklines
 - NOAA OCS Survey Plans 2015-17
 - NOAA_ESI_SF_Bay_Bathy
 - NOAA NCCOS FY 15/16 Survey Plans
 - NOAA Office of Ocean Exploration Planned Acquisitions

<http://www.seasketch.org/#projecthomepage/5272840f6ec5f42d210016e4>

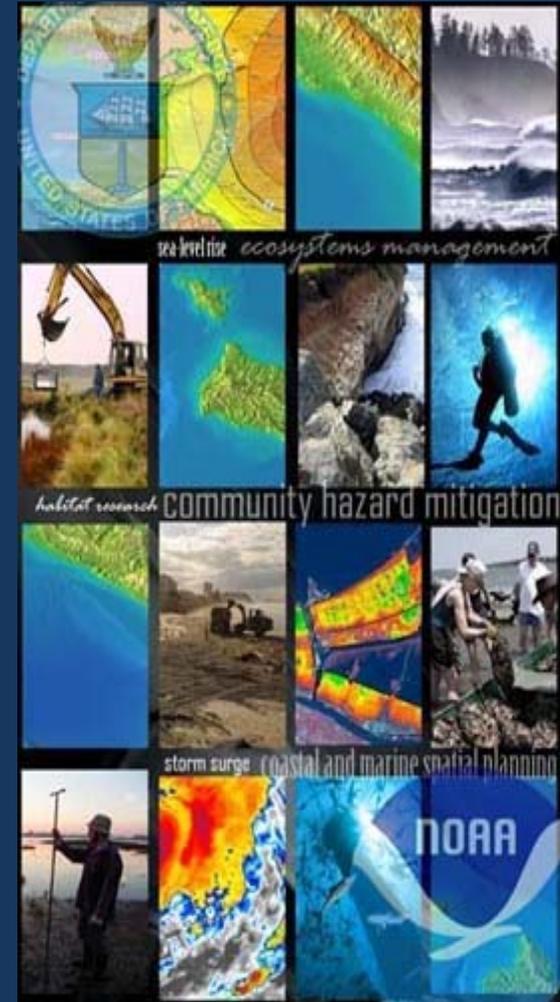
Quintillion Data Sharing Agreement

- Signing of agreement for Quintillion data in Arctic is imminent
- 500m wide survey for submarine cable to coastal communities
- Quintillion specs expected to meet hydro specs
- Good extension of PAR route corridor to communities



IOCM Team Focus 2016-17

- Update IOCM multibeam std
- National Coastal Mapping Strategy 2.0 – ocean/acoustic focus
- NEEA study follow-on for ocean/coastal – ROI, benefit
- Regional Coastal Summits (collaboration, Seasketch tool)
 - Great Lakes Spring 2017
 - Pacific Islands, Southeast TBD
- IOCM Ctr continues work on data for charting, additional uses
- NOAA/UNOLS R2R – data while transiting, projects into Seasketch for multi-mission assessment ahead of sailing
- Crowdsourced Bathy – work with NCEI on IHO DCDB engagement avenues, explore VOS
- OCNMS multi-mission cruise continues in 2017 (habitat, hydro), USF West Florida Shelf RESTORE act project, Cook Inlet shoreline, Gulf of AK?
- IOCM website portal to portals/data/tools
- CMECS website move to IOCM
- FGDC Elevation Theme strategic/implementation plans
- OCMIA re-authorization



NOAA

**INTEGRATED OCEAN AND
COASTAL MAPPING (IOCM)**

UNITED STATES DEPARTMENT OF COMMERCE

*“Map Once,
Use Many Times”*

BACKGROUND

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



NOAA

INTEGRATED OCEAN AND
COASTAL MAPPING (IOCM)

UNITED STATES DEPARTMENT OF COMMERCE

*“Map Once,
Use Many Times”*

Why coordinate & collaborate on Data Acquisition?

- Avoid costly duplication of effort
- Maximize survey time
- Meet science & mission requirements

IOCM:

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



NOAA

INTEGRATED OCEAN AND
COASTAL MAPPING (IOCM)

UNITED STATES DEPARTMENT OF COMMERCE

*“Map Once,
Use Many Times”*

Why manage data?

- Enable NOAA's mission 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



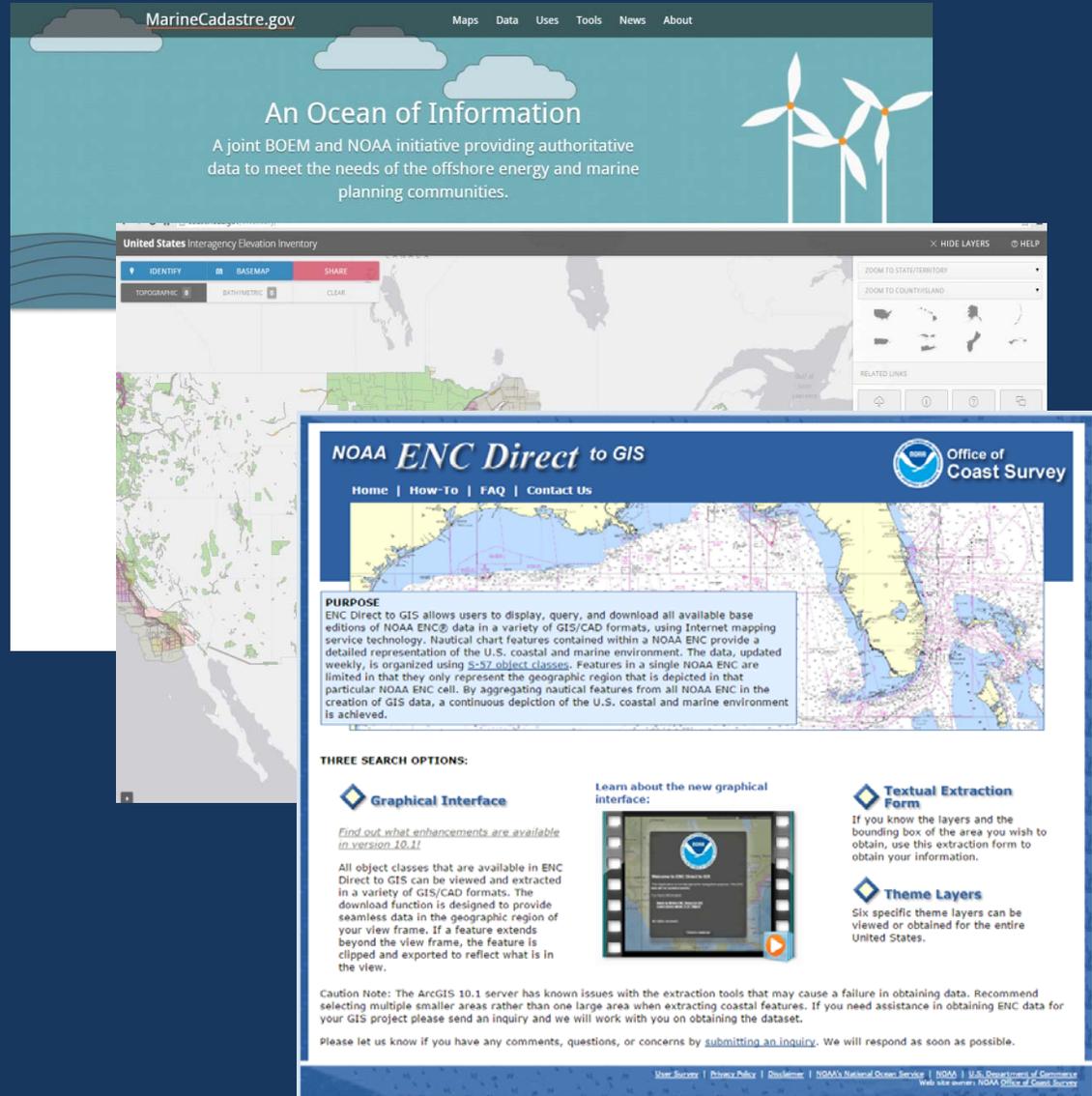
NOAA

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

*“Map Once,
Use Many Times”*

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



MarineCadastre.gov Maps Data Uses Tools News About

An Ocean of Information
A joint BOEM and NOAA initiative providing authoritative data to meet the needs of the offshore energy and marine planning communities.

United States Interagency Elevation Inventory

IDENTIFY BASEMAP SHARE

TOPOGRAPHIC BATHYMETRIC CLEAR

ZOOM TO STATE/TERRITORY

ZOOM TO COUNTY/ISLAND

RELATED LINKS

NOAA ENC Direct to GIS Office of Coast Survey

Home | How-To | FAQ | Contact Us

PURPOSE
ENC Direct to GIS allows users to display, query, and download all available base editions of NOAA ENC® data in a variety of GIS/CAD formats, using Internet mapping service technology. Nautical chart features contained within a NOAA ENC provide a detailed representation of the U.S. coastal and marine environment. The data, updated weekly, is organized using s-57 object classes. Features in a single NOAA ENC are limited in that they only represent the geographic region that is depicted in that particular NOAA ENC cell. By aggregating nautical features from all NOAA ENC in the creation of GIS data, a continuous depiction of the U.S. coastal and marine environment is achieved.

THREE SEARCH OPTIONS:

- ◆ **Graphical Interface**
Find out what enhancements are available in version 10.1!
All object classes that are available in ENC Direct to GIS can be viewed and extracted in a variety of GIS/CAD formats. The download function is designed to provide seamless data in the geographic region of your view frame. If a feature extends beyond the view frame, the feature is clipped and exported to reflect what is in the view.
- ◆ **Textual Extraction Form**
If you know the layers and the bounding box of the area you wish to obtain, use this extraction form to obtain your information.
- ◆ **Theme Layers**
Six specific theme layers can be viewed or obtained for the entire United States.

Caution Note: The ArcGIS 10.1 server has known issues with the extraction tools that may cause a failure in obtaining data. Recommend selecting multiple smaller areas rather than one large area when extracting coastal features. If you need assistance in obtaining ENC data for your GIS project please send an inquiry and we will work with you on obtaining the dataset.

Please let us know if you have any comments, questions, or concerns by [submitting an inquiry](#). We will respond as soon as possible.

User Success | Privacy Policy | Disclaimer | NOAA's National Ocean Service | NOAA | U.S. Department of Commerce
Web site owned by NOAA Office of Coast Survey



NOAA

INTEGRATED OCEAN AND COASTAL MAPPING (IOCM)

UNITED STATES DEPARTMENT OF COMMERCE

*“Map Once,
Use Many Times”*

Who is IOCM?

Ashley Chappell

Sasha Pryborowski

Deana Mastin

Adam Reed

Paul Turner

IOCM Center at UNH

21 NOAA programs

11 Federal Agencies



YOU



NOAA

INTEGRATED OCEAN AND
COASTAL MAPPING (IOCM)

UNITED STATES DEPARTMENT OF COMMERCE

*“Map Once,
Use Many Times”*