



Seabed 2030

Report to USCHC

19 March 2021



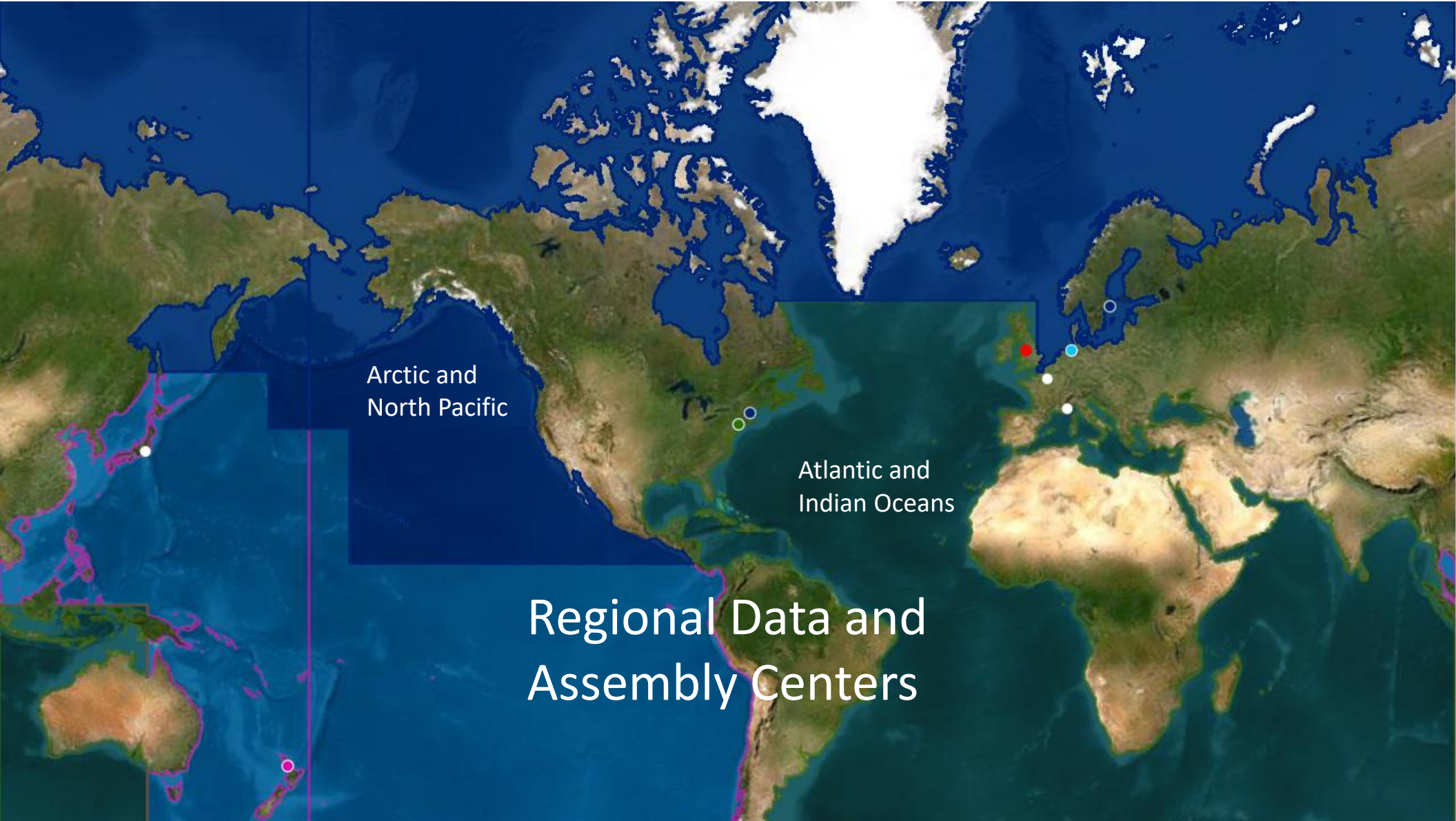
The Nippon Foundation-GEBCO Seabed 2030 Project

100% of the ocean floor mapped by 2030

[Download GEBCO's global grid](#)

[Download polar grids](#)

[Contribute data](#)



Arctic and
North Pacific

Atlantic and
Indian Oceans

Regional Data and Assembly Centers



IHO

International
Hydrographic
Organization

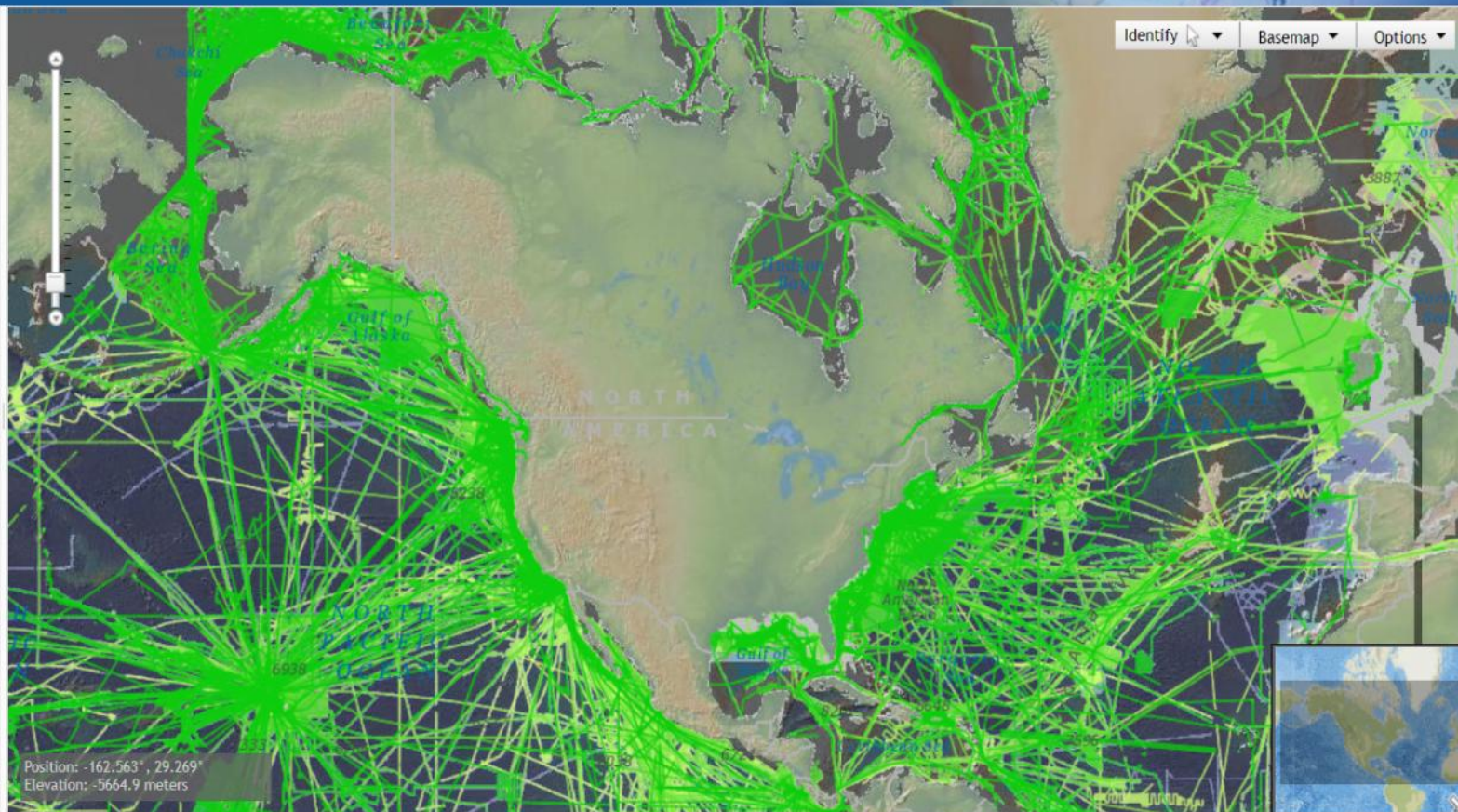
Data Centre for Digital Bathymetry Viewer

Layers

- ▶ IHO DCDB/NOAA NCEI ?
- ▶ EMODnet
- ▶ Australia
- ▼ Canada
 - NRCAN Multibeam Surveys ?
 - NRCAN Multibeam Shaded Relief ?
 - Canadian Hydrographic Service NONNA-10 ?
 - Canadian Hydrographic Service NONNA-100 ?
 - Canadian Hydrographic Service 500m Bathymetry Compilation ?
- ▶ France
- ▶ Japan
- ▶ Netherlands
- ▼ Known Non-Public Data ?
 - UNCLOS Coverage ?
 - Industry ?
- ▼ Bathymetric Coverage Maps
 - Global Multi-Resolution Topography Synthesis (GMRT)
 - GEBCO_2020 Type Identifier ?

More Information

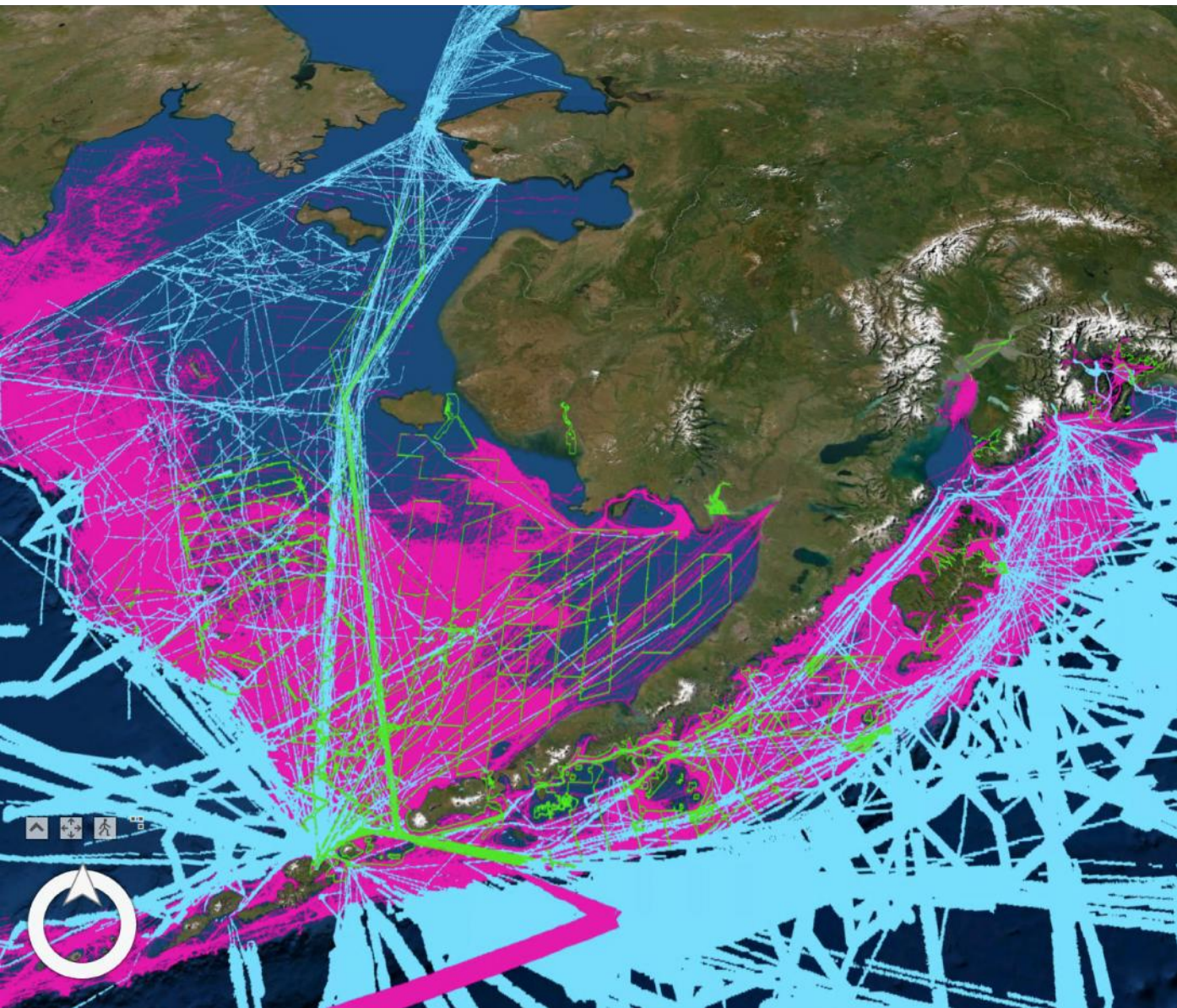
Help



Arctic and N. Pacific RDAC

The screenshot displays the ArcGIS Pro interface for a project named "NorPac2021 - Map_3D". The main map window shows a 3D view of the Arctic and North Pacific regions, overlaid with a dense network of cyan lines representing RDAC (River Drainage Area Classification) data. The map is surrounded by several panels:

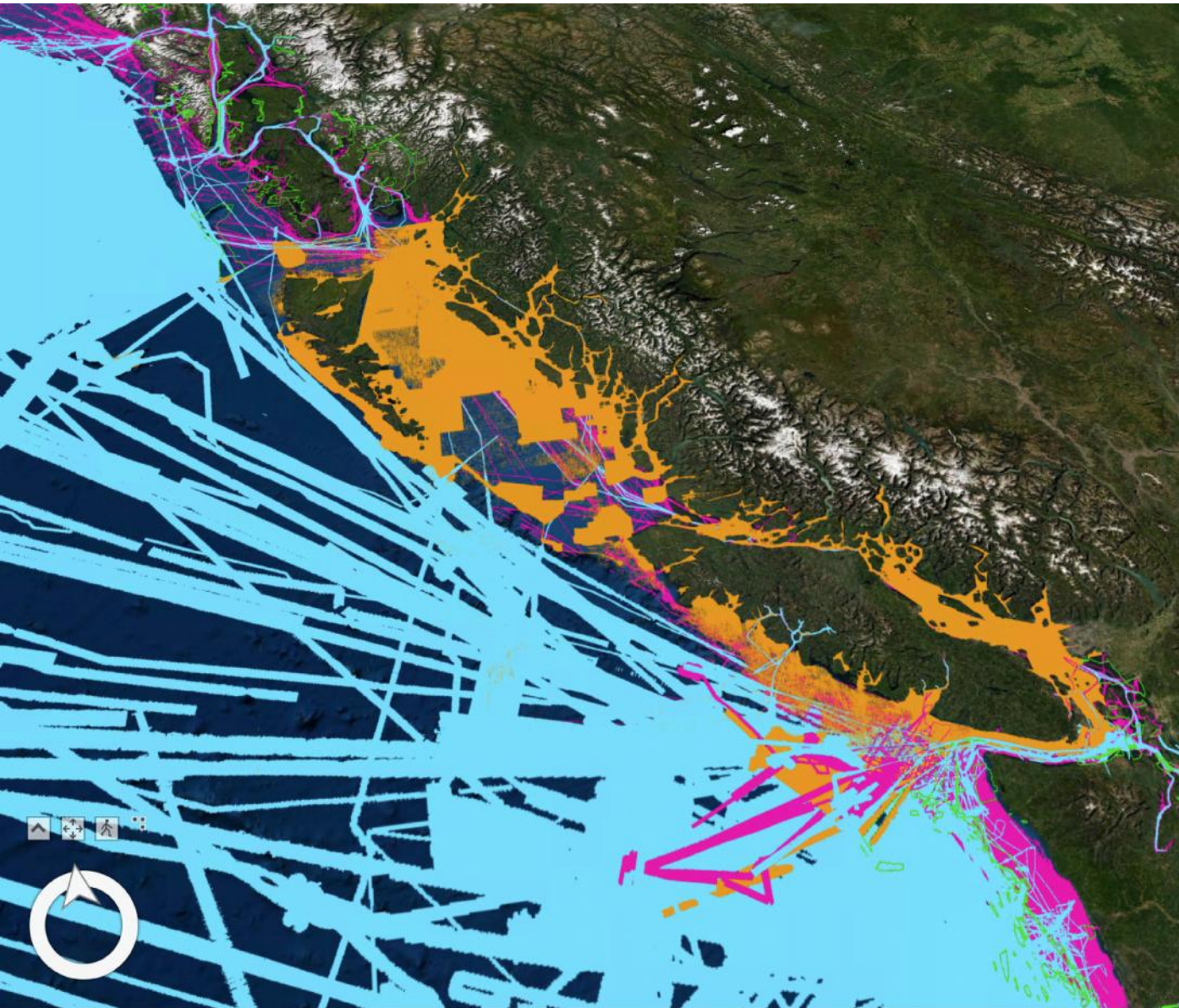
- Top Menu Bar:** Includes Project, Map, Insert, Analysis, View, Edit, Imagery, Share, Appearance, Labeling, and Data.
- Contents Panel (Left):** Lists various data layers in the Drawing Order, including Caladan Oceanic, Fisheries and Oceans Canada, INEGI Mexico, MGDS, NGA, NOAA-NOS, North Pacific Seamount Partners, OET, OLEX, Ocean Networks Canada, R2R, SHOM, SOEST, SOI, Scripps, TerraSond, and <all other values>. It also shows a legend for "multibeam_mosaic" with values 255 and 0, and two checked layers: "NorPac2020_100m_OLEX1-10_v2_EPSG-3857..." and "NorPac2020_100m_OLEX2-10_EPSG-3857.tif".
- Raster Functions Panel (Right):** Provides a search bar for raster functions and lists various analysis tools such as Binary Thresholding, CCDC Analysis, Compute Change, Detect Change Usi..., Generate Trend, Heat Index, Kernel Density, LandTrendr Analysis, NDVI, NDVI Colorized, Predict Using Trend, Process Raster Colle..., Tasseled Cap (Kauth-Tho..., Weighted Overlay, and Weighted Sum.
- Map Window:** Shows a 3D view of the Arctic and North Pacific regions with a dense network of cyan lines representing RDAC data. The map is surrounded by a white circular navigation tool.
- Status Bar (Bottom):** Displays coordinates (6,258,295 m, 130.7572365°W 31.1039387°N, -7.292 m) and "Selected Features: 0".



- Caladan Oceanic
- Fisheries and Oceans Canada
- INEGI Mexico
- MGDS
- NGA
- NOAA-NOS
- North Pacific Seamount Partners
- OET
- OLEX
- Ocean Networks Canada
- R2R
- SHOM
- SOEST
- SOI
- Scripps
- TerraSond
- <all other values>

NCEI_Multibeam_mosaic
 Value
 255
 0

NorPac2020_100m_OLEX1-10_v2_EPSG-3857_



- Caradan Oceanic
- Fisheries and Oceans Canada
- INEGI Mexico
- MGDS
- NGA
- NOAA-NOS
- North Pacific Seamount Partners
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- OLEX
- Ocean Networks Canada
- R2R
- SHOM
- SOEST
- SOI
- Scripps
- TerraSond
- <all other values>

NCEI_Multibeam_mosaic

Value

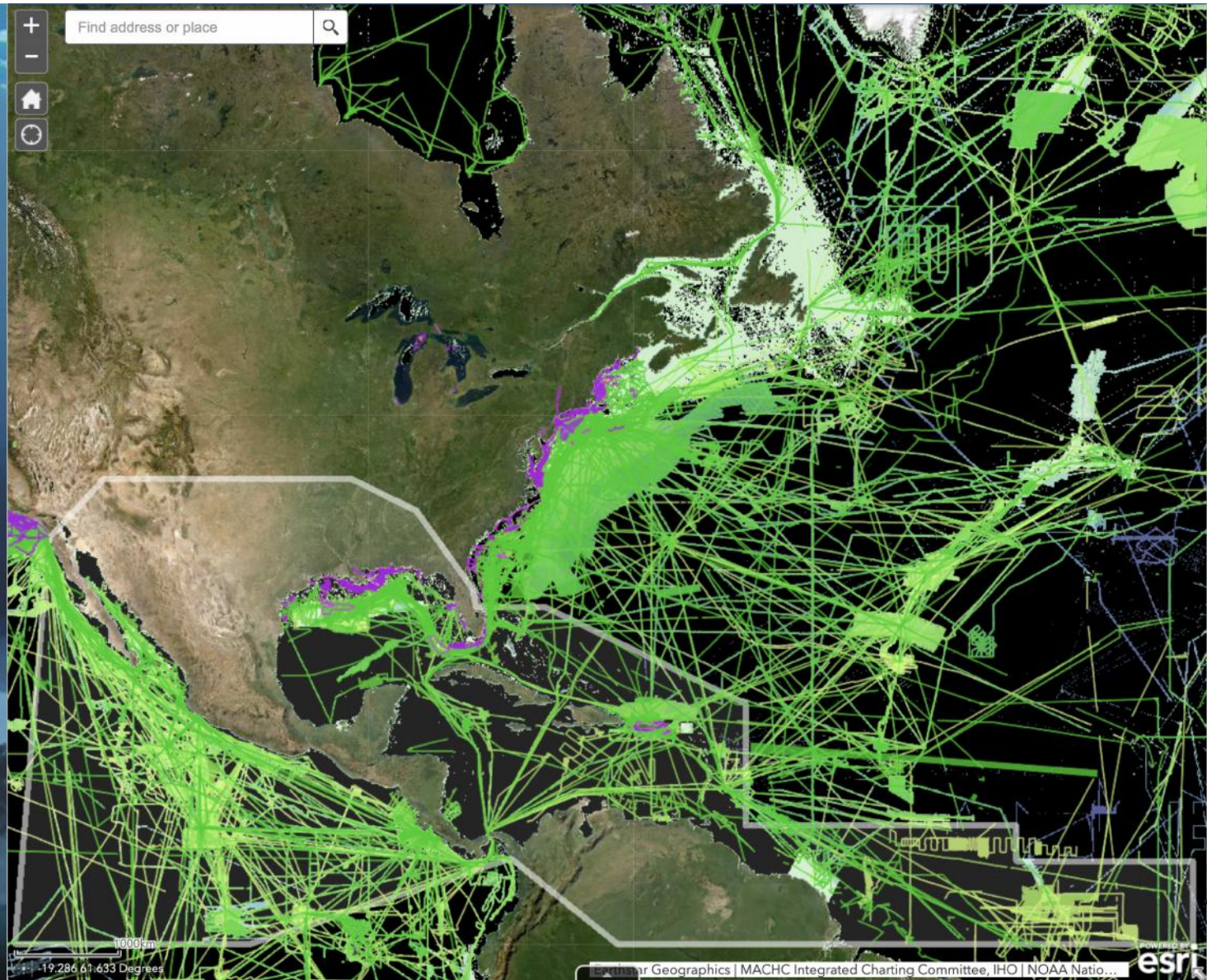
- 255
- 0

NorPac2020_100m_OLEX1-10_v2_EPSG-3857_

-

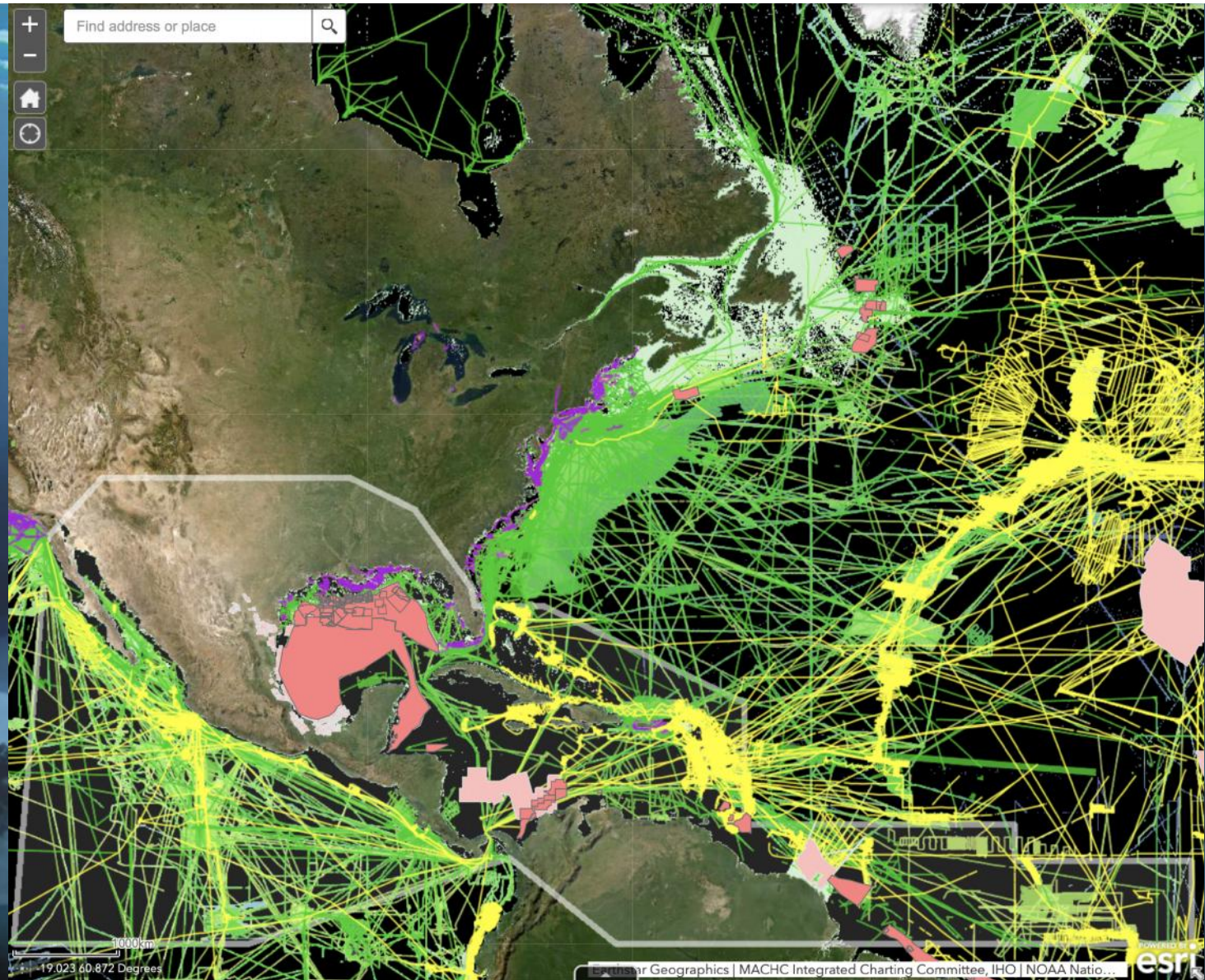
Atlantic and Indian Oceans RDAC

GEBCO 2020
& known public data
(IHO DCDB)



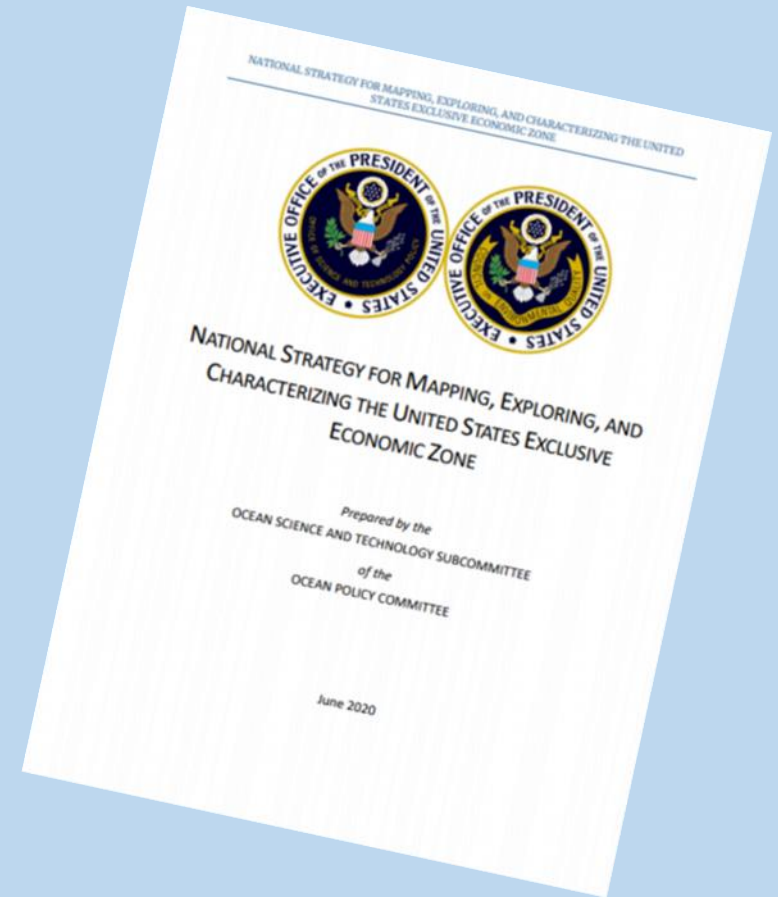
Atlantic and Indian Oceans RDAC

GEBCO 2020
& known public data
(IHO DCDB)
and known non-public
data



National Ocean Mapping, Exploring, and Characterization of the U.S. EEZ (NOMECE)

- A national strategy for mapping, exploring, and characterizing the U.S. EEZ
- Presidential memo (Nov. 2019) now under consideration as Ocean Exploration Bill
- 11 agencies looking at the next 20 years (2020-2040)
- Council
 - Co-chairs: RDML Shep Smith & Dr. Alan Leonardi (NOAA) & Dr. John Haines (USGS)



NOMECC Continued

Five Goals:

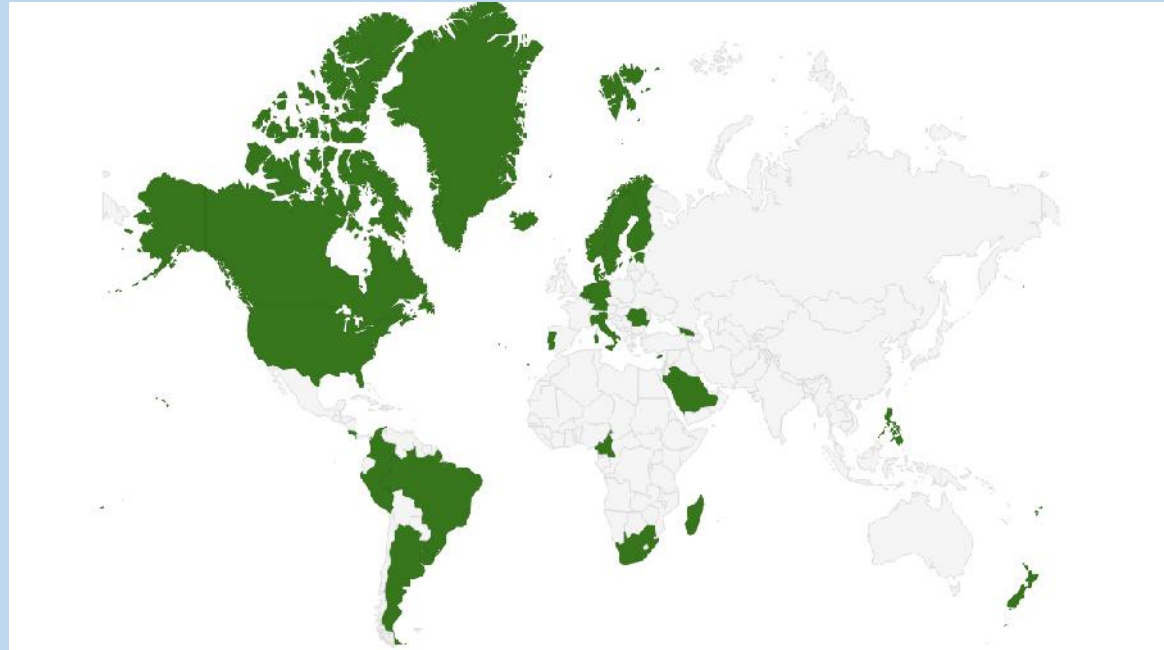
1. Coordinate Interagency Efforts and Resources to Map, Explore, and Characterize the U.S. EEZ
2. Map the U.S. EEZ
3. Explore and Characterize Priority Areas of the U.S. EEZ
4. Develop and Mature New and Emerging Science & Technologies to Map, Explore, and Characterize
5. Build Partnerships Beyond Federal Agencies to Map, Explore, and Characterize

Seabed 2030 & Crowdsourced Bathymetry



IHO CL 21/2020 & IRCC CL 01/2020

- All Coastal States are now requested to indicate their position on the provision of CSB data from ships within waters subject to their national jurisdiction into the public domain
- To date, 30 coastal states (green) have replied positively
- The geographic filter will be updated in 2021 to reflect updated coastal state positions.



iho.int/uploads/user/circular_letters/eng_2020/CL21_2020_EN_v1.pdf

iho.int/uploads/user/Inter-Regional%20Coordination/IRCC/IRCC_Letters/IRCC_Letter_2020_01_CSB_Activities.pdf

Crowd-Sourced Data

The screenshot displays the 'Data Centre for Digital Bathymetry Viewer' interface. At the top left is the IHO (International Hydrographic Organization) logo. The main title 'Data Centre for Digital Bathymetry Viewer' is positioned at the top right. The interface features a 'Layers' panel on the left, a central map area, and a 'Mercator' projection control on the right. The map shows the North Pacific Ocean with purple lines representing bathymetry data. Key geographical features labeled include Hudson Bay, Gulf of Mexico, and the North Pacific Ocean. The map also shows the United States, Canada, and Mexico. A status bar at the bottom indicates the current position: 'Position: -76.519°, 39.245°' and 'Elevation: 4.31711 meters'. A browser notification 'Inbox - Mozilla Thunderbird' is visible at the bottom center.

IHO International Hydrographic Organization

Data Centre for Digital Bathymetry Viewer

Layers

- IHO DCDB/NOAA NCEI ?
 - Multibeam Surveys ?
 - Multibeam Survey Footprints
 - Multibeam Bathymetry Mosaic ?
 - Single-Beam Surveys ?
 - Single-Beam Sounding Density ?
 - NOAA Hydrographic Surveys:
 - All Surveys with Digital Data
 - Surveys with BAGs
 - BAG Shaded Relief Imagery ?
- Search NCEI/DCDB Surveys
- Reset ?
- Crowdsourced Bathymetry Files ?
- Search CSB Files
- Reset ?
- U.S. Bathymetry Coverage and Gap Analysis ?

EMODnet

Australia

Canada

More Information

Help

Identify Basemap Options

Mercator

Arctic

Antarctic

NORTH PACIFIC OCEAN

Hudson Bay

Gulf of Mexico

United States

Canada

Mexico

Los Angeles

Chicago

New York

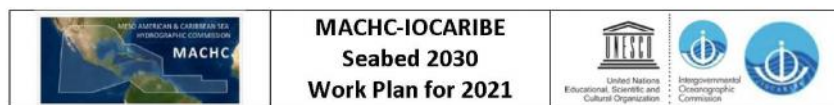
North Atlantic

North

Position: -76.519°, 39.245°
Elevation: 4.31711 meters

Inbox - Mozilla Thunderbird

MACHC Strategy/Goals



Goal 1: Contribute Existing Non-Public Bathymetric Data to the IHO DCDB and GEBCO Grid

Objective 1.1. Identify existing non-public bathymetric data and create/share polygons delineating the extent of data coverage for integration into the Seabed 2030 - MACHC Web App

#	Action Item	Responsible Party	Due Date
001	Assemble information (polygons) about existing non-public bathymetric data falling under its remit not yet identified on the MACHC Web App to identify gaps.	Coastal States	As soon as possible
002	Broadly communicate the steps to submit polygons showing data coverage of existing data to both the RDACC and the IHO DCDB.	Seabed2030 Coordinator	Ongoing

Objective 1.2. Share existing bathymetric data in the MACHC region for inclusion in the GEBCO Grid and long-term preservation and public accessibility via the IHO DCDB.

#	Action Item	Responsible Party	Due Date
003	Look at existing regulatory requirements, legislation, bilateral, contractual or other arrangements for surveying within national waters of jurisdiction to reassess what bathymetric data can be made publicly available and at what resolution is acceptable to the government and to the data owner.	Coastal States	May
004	Broadly communicate the steps to submit data to the IHO DCDB and the RDACC.	Seabed2030 Coordinator	Ongoing
005	Contribute multibeam, single-beam and ENC data to the IHO DCDB, wherever possible, for long-term archive and data access.	Coastal States	As soon as possible
006	Contribute national bathymetric data products to the RDACC at the appropriate resolution approved by the national authorities for integration into the GEBCO grid.	Coastal States	As soon as possible

Goal 2: Increase Data Coverage

Objective 2.1. Design, implement, and resource coordinated mapping campaigns based on identified data gaps.

#	Action Item	Responsible Party	Due Date
008	Assemble information and polygons about upcoming surveys and data acquisition opportunities in national waters of jurisdiction to integrate into the WebApp to define data gaps and plan coordinated mapping campaigns.	Coastal States and Seabed2030 Coordinator	As soon as possible
009	Identify gap areas in the MACHC region without any kind of bathymetric data (distances greater than 1,000 m) providing the polygons to the respective Coastal States.	Seabed2030 Coordinator	March

Objective 2.2. Encourage the acquisition of mapping data by academic and industry survey vessels during transits through the region to fill gaps in data coverage.

#	Action Item	Responsible Party	Due Date
010	Explore with national authorities expanded permissions for opportunistic data acquisition via research and survey vessels during transits, consistent with national policy.	Coastal States	Ongoing

Objective 2.3. Encourage the collection and contribution of crowdsourced bathymetry (CSB) data among volunteer commercial and non-commercial vessels.

#	Action Item	Responsible Party	Due Date
011	Respond to IRCC CL 1/2020 or IHO CL 21/2020 to allow for the provision of CSB data from ships within waters subject to their national jurisdiction into the public domain, according to national policy, or update it.	MACHC Members and Associate Members	As soon as possible
012	Consider carrying CSB field trials with designated "trusted nodes" (data liaisons) and data collectors (mariners) in the region to provide data to the IHO DCDB.	Interested Coastal States	As soon as possible

Goal 3: Build Capacity for mapping contributions

Objective 3.1. Expand and enhance the suite of IHO DCDB and Seabed 2030 RDACC tools available to support and assist data contributors through the packaging and provision of data at any resolution or access level.

#	Action Item	Responsible Party	Due Date
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Menu of Possible USCHC Goals

Add non-public data to IHO DCDB and GEBCO Grids

- Identify known existing non-public data and develop coverage polygons

- Identify barriers to release on known non-public data

- Develop plan to make presently non-public data available wherever there are not existing barriers, and endeavor to remove barriers where they do exist

Increase Data Coverage

- Identify barriers, including environmental compliance requirements, to full-time operation of MBES by hydrographic, other agency, and academic vessels during transits; commit to/approve continuous operation of these systems in US and Canadian waters whenever practicable

- Develop strategy to obtain bathymetry, backscatter, and related data sets from offshore wind siting surveys in US and Canada waters

- Employ the SB2030 Transit Planner for multibeam data collection on coastal and ocean transits of multibeam-equipped vessels

- Facilitate, accept, archive and share CSB data in USCHC waters

- Undertake or support CSB trusted system projects with full availability of resultant CSB sounding data

Manage for Success

- Commit to USCHC “sponsorship” of USCHC waters outside of areas of national jurisdiction

 - Continued HO participation in Atlantic Seabed Mapping International Working Group (ASMIWG)

 - Identification of scientific mapping opportunities in these international waters

- For CHS—determine if interest in establishing Canada gap-analysis still exists, and if so, what are operating assumptions and what approach is envisioned.

- For CHS—identify a CHS POC for SB2030 activity to work with USCHC SB2030 liaison (A. Armstrong)

- Institute a goal-tracking process and report on SB2030 progress at annual USCHC meetings