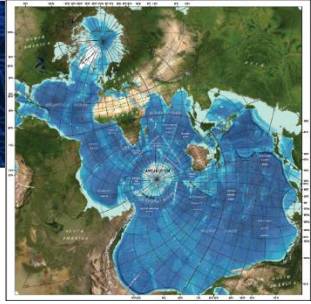


The last great mapping endeavor of our planet

NSHC37-D8

Evert Flier, Chair GEBCO Guiding Committee



GEBCO goals:

1. Develop and constantly improve portrayal of global ocean depths, freely available to public;
2. Act as designated international authority for undersea feature names;
3. Advance development and application of sea floor mapping technology;
4. Encourage and facilitate ocean mapping cooperation to exchange and preserve bathymetric data;
5. Foster collaboration among individuals and organizations to attain a global standard of quality;
6. Identify oceanic areas that are insufficiently mapped;
7. Promote education and training in ocean mapping;
8. Bring together the ocean mapping community and users of bathymetry to increase the use of our data.

GEBCO status:

1. New GEBCO strategy:

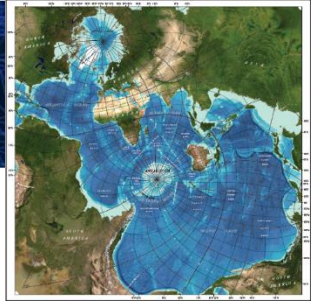
Vision:

To bring knowledge about our planet's seabed to everyone

Mission:

To produce free, open and complete seabed data and information for the world's oceans.

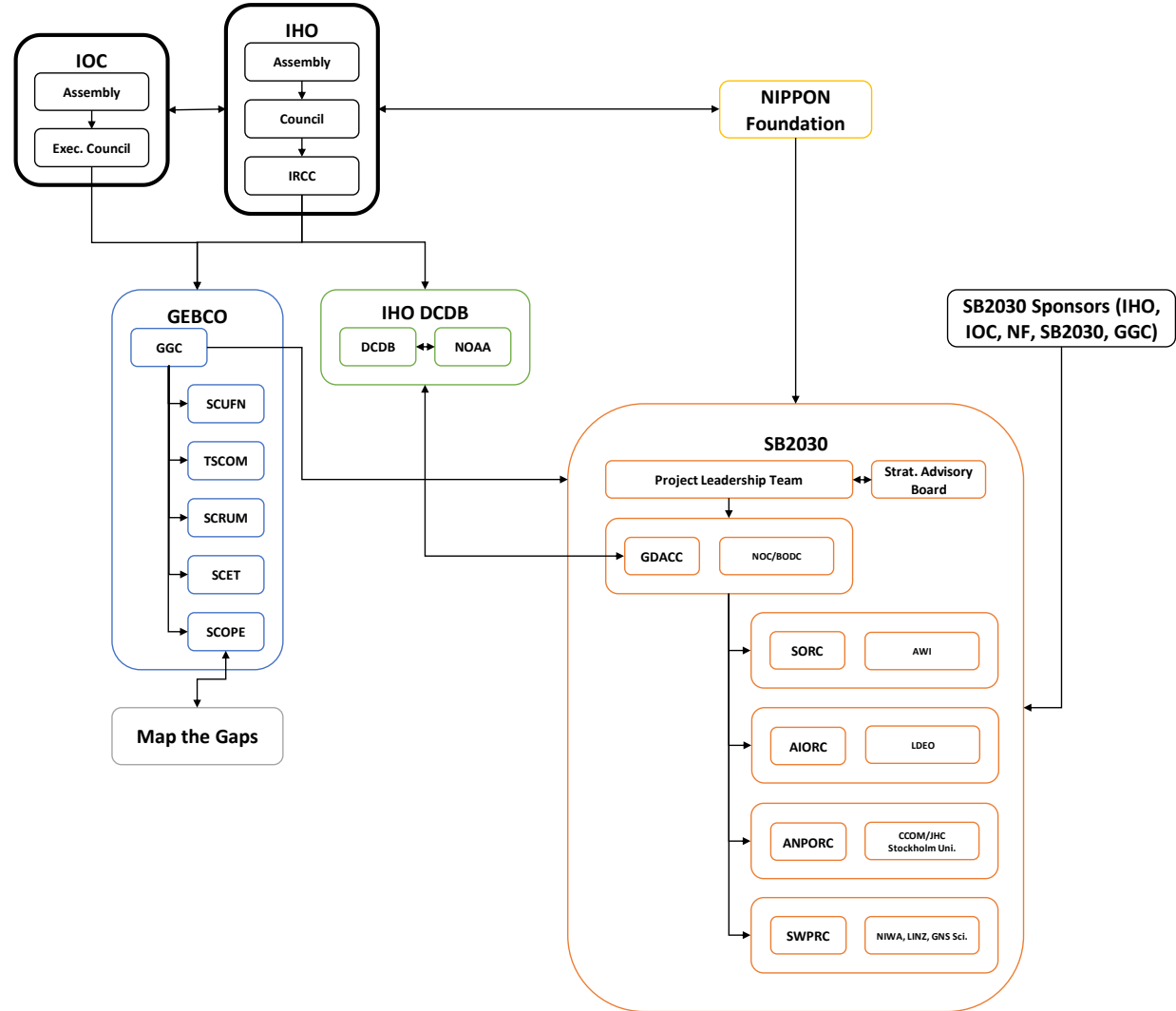
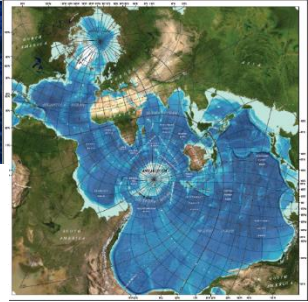
This is achieved by enabling and inspiring seabed mapping efforts through international collaboration, technological innovation, capacity development, and education.



GEBCO status:

2. GEBCO Governance Review

Towards a more future proof organization



THE NIPPON FOUNDATION-GEBCO

SEABED
2030

SEABED 2030

Energizing Ocean Floor Mapping

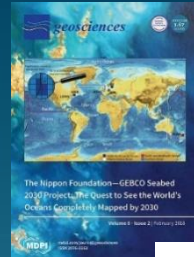


Jamie McMichael-Phillips
Seabed 2030 Director

The Nippon Foundation-GEBCO Seabed 2030 Project



June 2016



June 2017



June 2021

Flagship Programme

Seabed 2030 = accelerator to GEBCO's aim

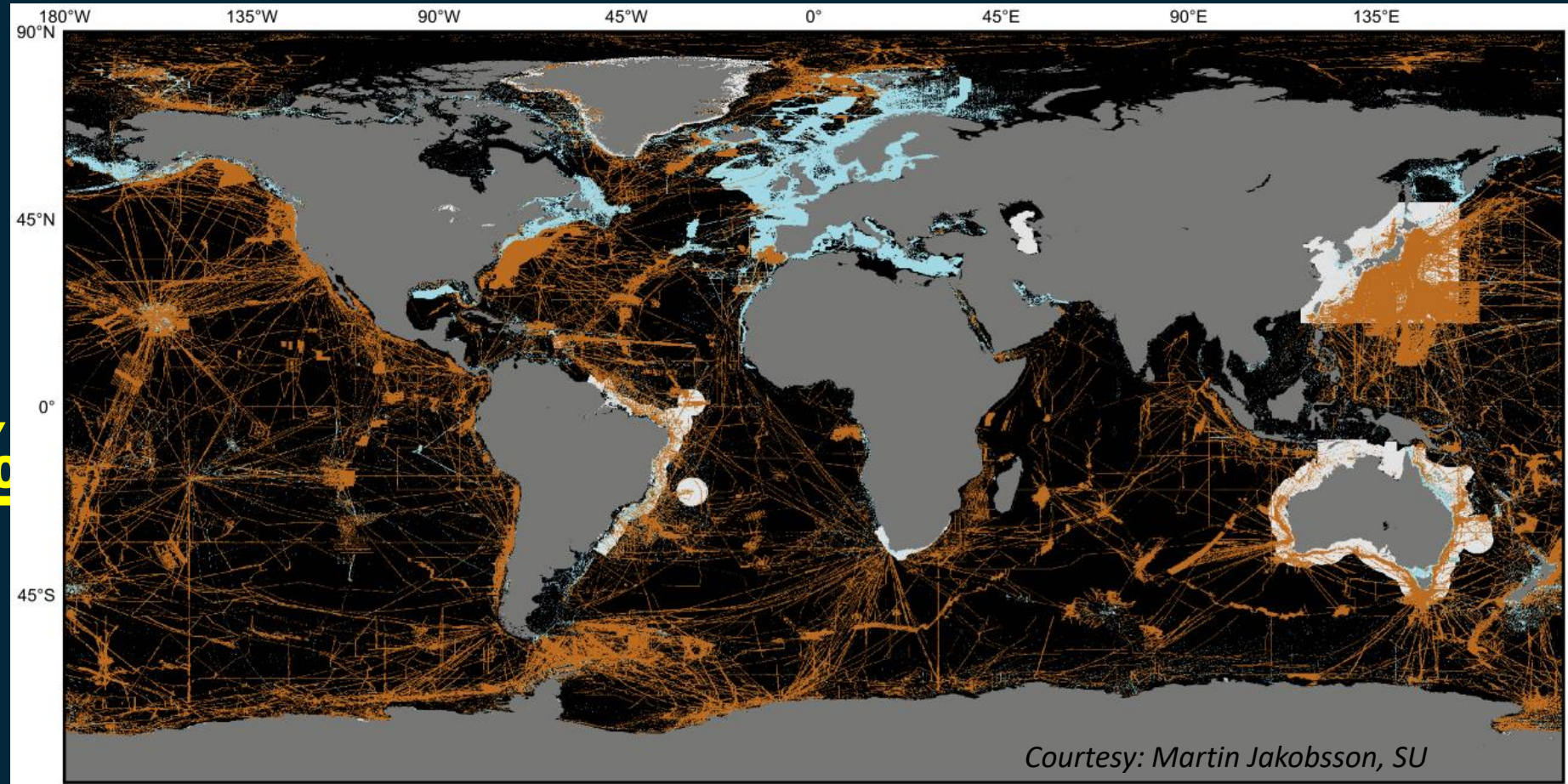
Collaboration to:

- inspire 100% seabed mapping by 2030
- compile the GEBCO Map

Progress so far ...

GEBCO Map:

- 6% in 2017
- Now **24.9%**



3/4 of ocean floor still to go

Progress so far North Sea

Snapshot status 2023
(Univ. Of Stockholm)



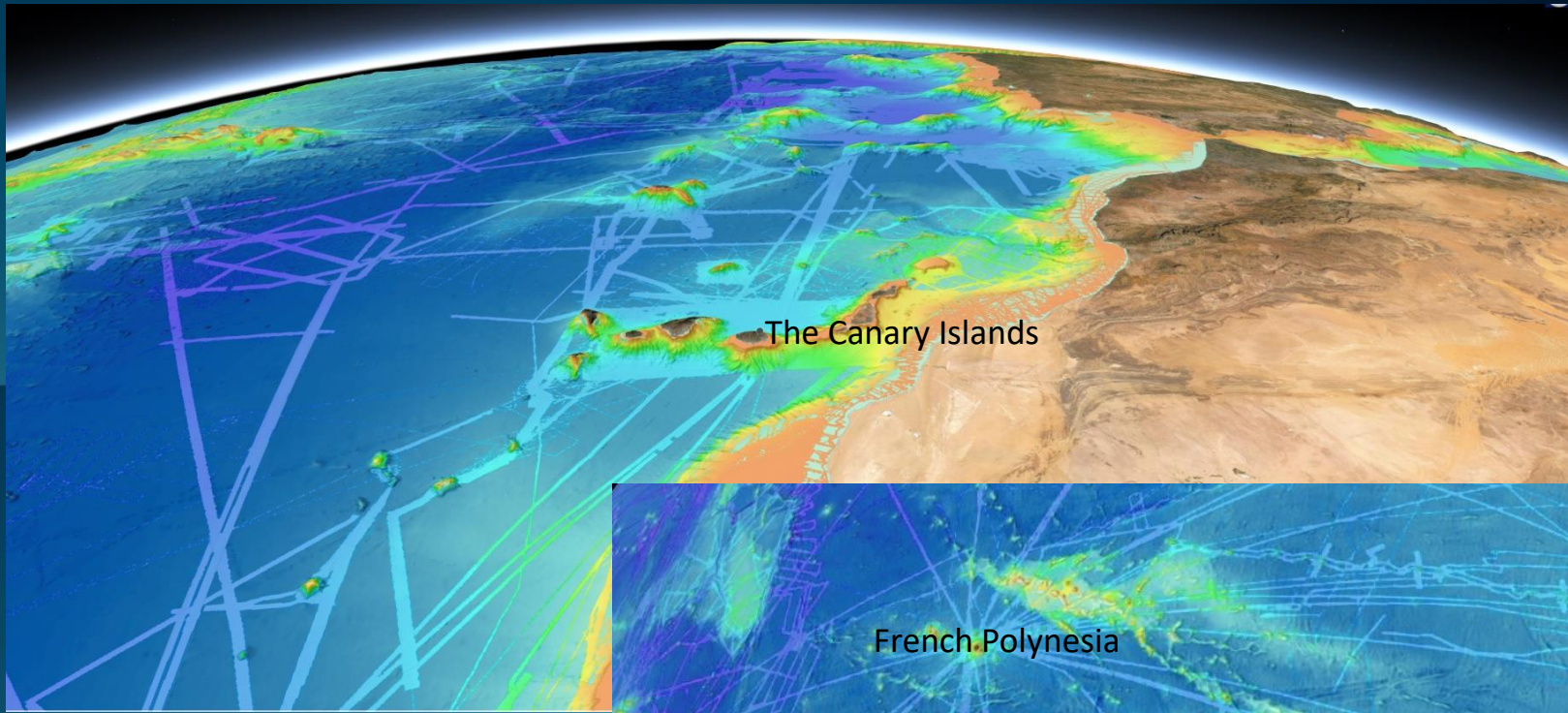
2017 ~6% of global ocean covered with observed data

2023 ~25% of global ocean covered with observed data

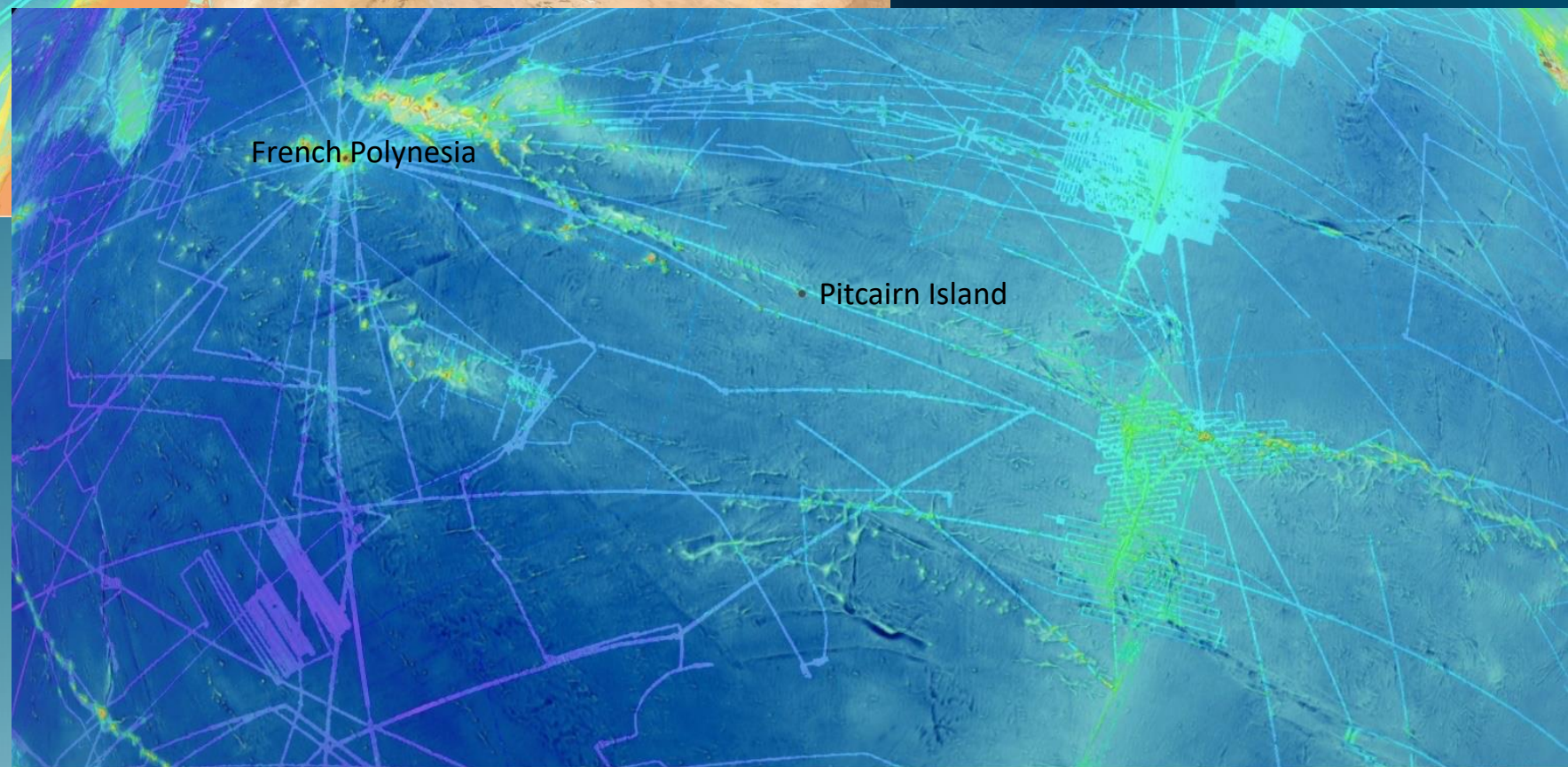


Credit: UNH/CCOM-JHC





**Paucity of
Depth Information**



**To manage
effectively**
...we must map

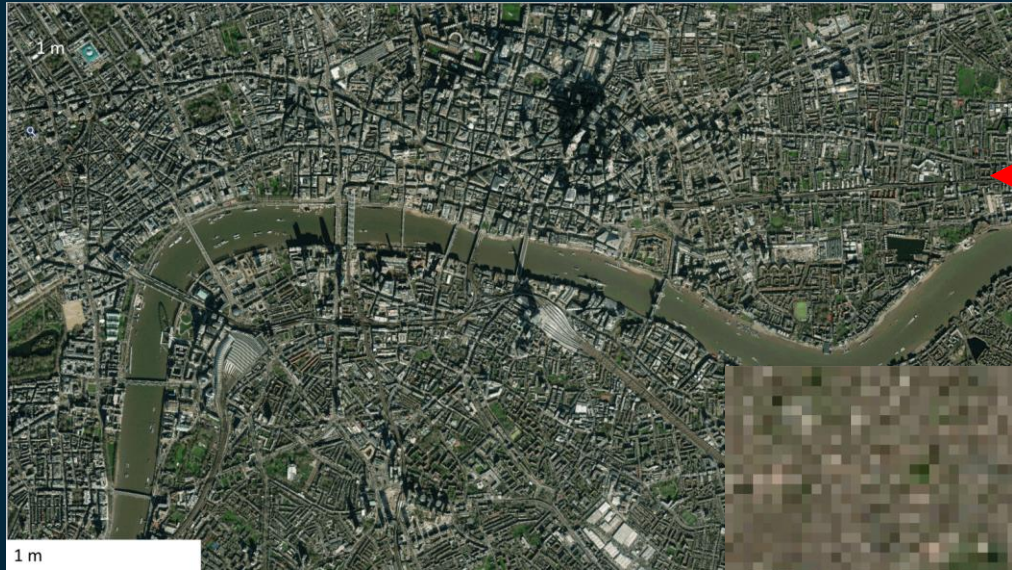
Target Resolutions

- Depth dependent
- We will never ask for data of any higher resolution than:
 - 1 x depth value in 100x100m box

At best only one depth value in area ~ size of a soccer pitch



In Perspective

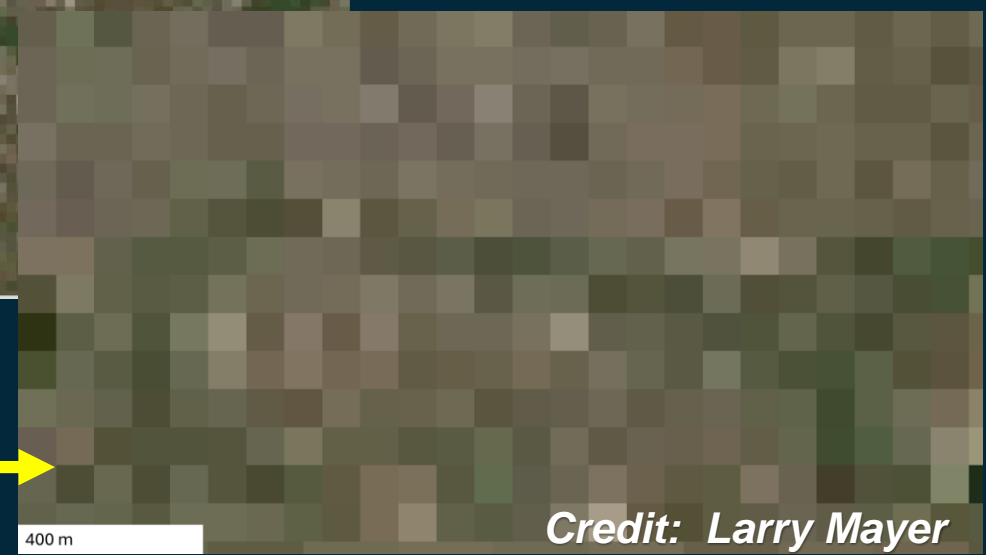


X Not this resolution

✓✓ We ask for this →



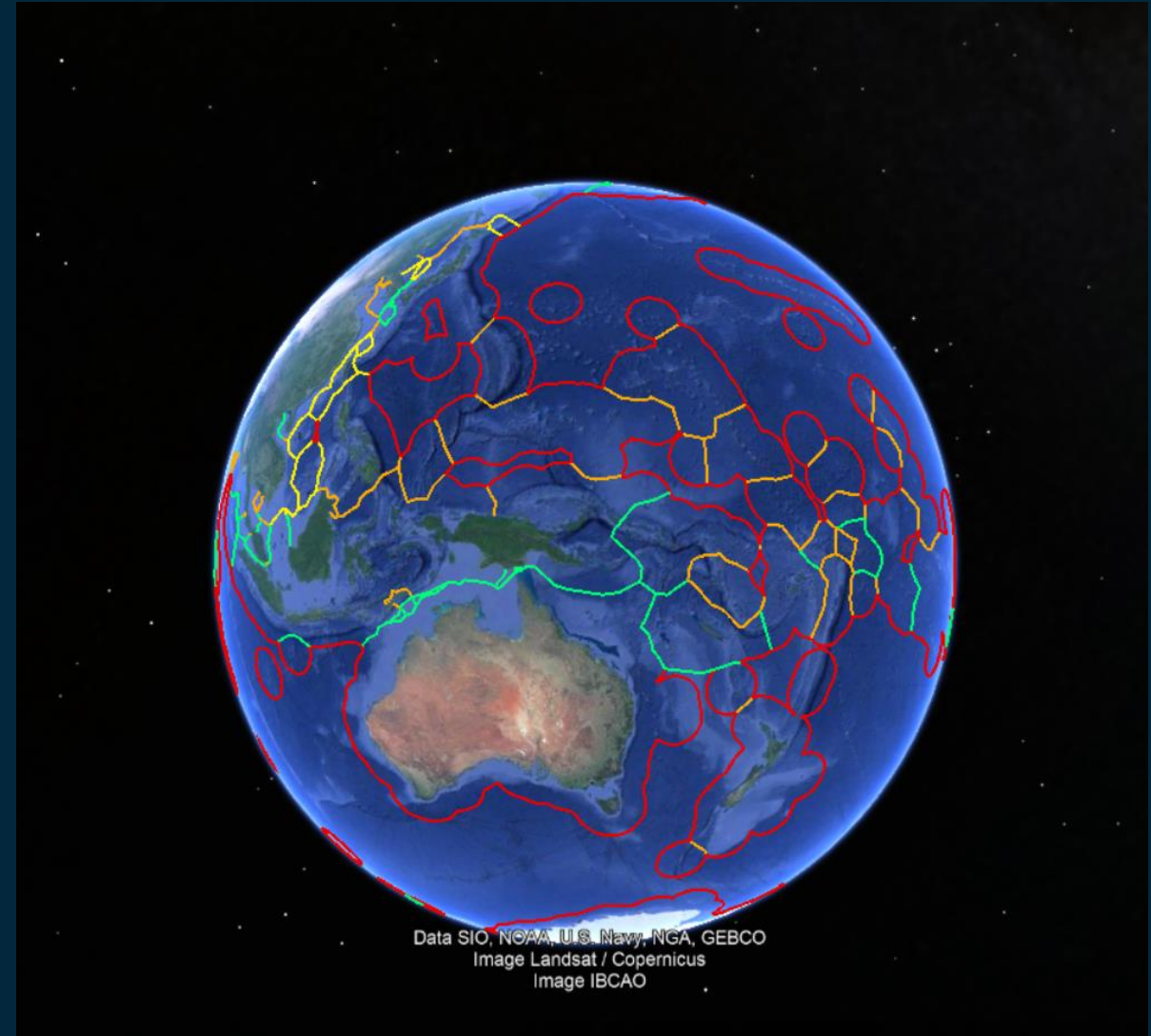
✓ But will work with lower resolution →



Credit: Larry Mayer

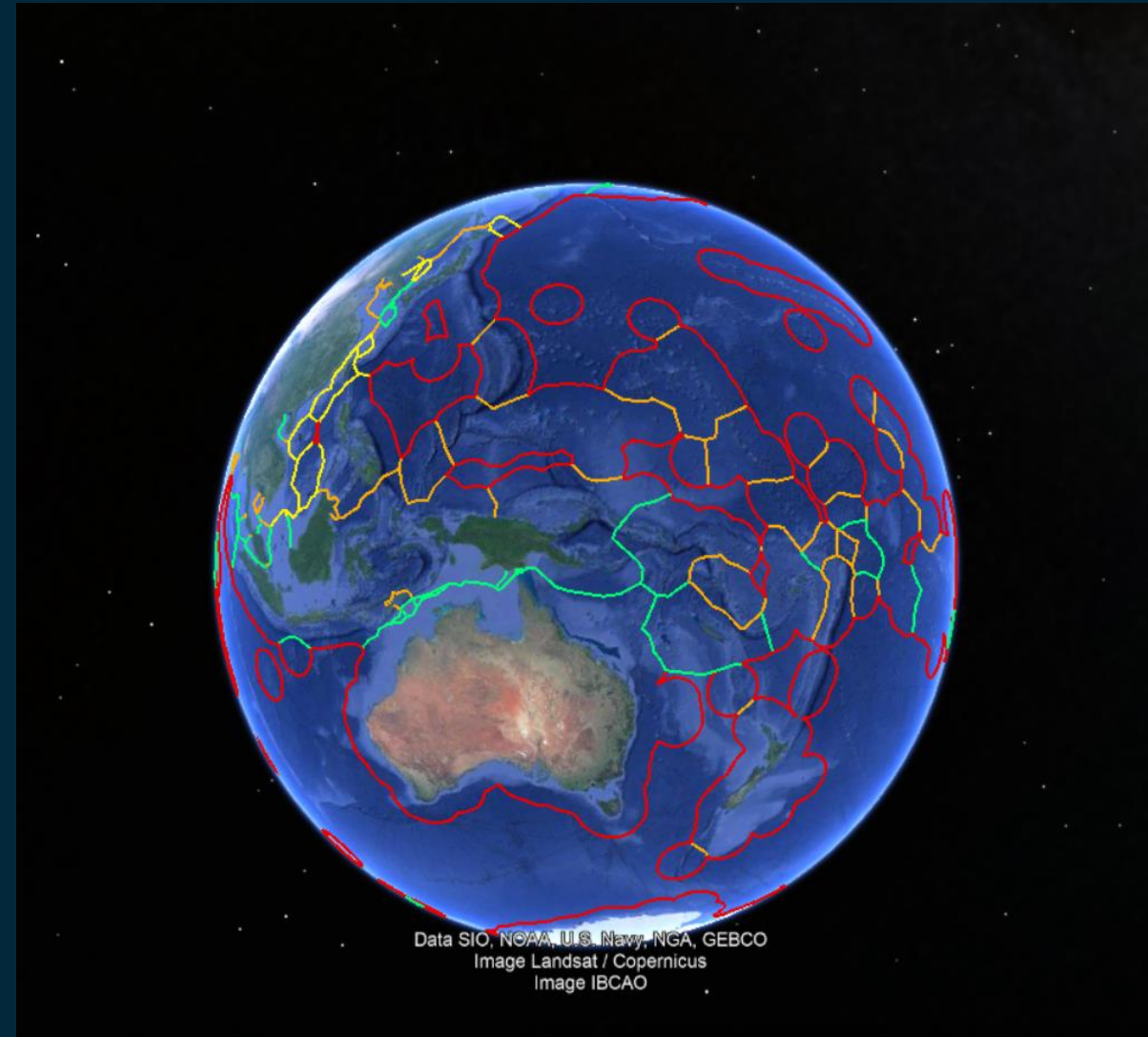
CHALLENGES WE FACE:

- Reluctance to release existing data
- Who will pay for new data collection?
 - especially beyond national jurisdiction
- Even if someone pays – reluctance to grant permission - MSR



OPPORTUNITIES:

- Collaborate in forming regional alliances
 - to encourage new mapping.
- Develop mechanism to allows bathymetry acquisition
 - in support of
 - SB2030
 - SDG14
 - Ocean Decade
 - without MSR regime constraints



WIOBathy Project – Supporting Ocean Mapping



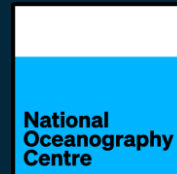
- **Bathymetry Collation & compilation in Western Indian Ocean (WIO)**
 - **Multi-scale & multi-resolution**
 - **First bathymetric map of WIO region**
 - **Supports Seabed 2030 & the GEBCO Map**
- **Project Team of 8 Nippon Foundation-GEBCO Fellows:**
 - **Kenya, Tanzania, Mauritius & Madagascar**
- **Supported by Fellows from South Africa**
- **Championed by The Nippon Foundation**

WIOBathy Project – Supporting Ocean Mapping



- **Led by Dr Amon Kimeli**
 - **Kenya Marine and Fisheries Research Institute (KMFR)**
- **Project now underway**
- **Reaching out to other regional collaborators**
 - **WIO**
 - ***and possible wider ...?***

Thank you



A world map showing bathymetry data, with ocean depths color-coded from light blue (shallow) to dark blue (deep). The map includes labels for continents (North America, South America, Europe, Africa, Asia, Australia) and oceans (Atlantic Ocean, Indian Ocean, Pacific Ocean).

IHO Data Centre for Digital Bathymetry Activities

Jennifer Jencks

Director, IHO DCDB

jennifer.jencks@noaa.gov





IHO


International
Hydrographic
Or

- The IHO DCDB is the recognized IHO repository for all ocean bathymetric data.
- Data are sent to the IHO DCDB, where we provide preservation, discovery and access.
- NOAA has hosted the DCDB since 1990.
- **May 2023: An MOU was signed to reaffirm NOAA's relationship with the IHO as the host of the IHO DCDB**

IHO DCDB Home Contribute Data Crowdsourced Bathymetry CSB Mapping Projects

IHO Data Centre for Digital Bathymetry (DCDB)

The IHO DCDB was established in 1990 to steward the worldwide collection of bathymetric data. The Centre archives and shares, freely and without restrictions, depth data contributed by mariners. The IHO DCDB is hosted by the [U.S. National Oceanic and Atmospheric Administration \(NOAA\)](#) on behalf of the IHO Member States.



IHO DCDB Data Viewer highlighting ship tracks and data availability over the Pacific Ocean and neighboring regions

The DCDB archive includes over 30 terabytes of oceanic depth soundings acquired with multibeam and singlebeam sonars by hydrographic, oceanographic and industry vessels during surveys or while on passage.

The DCDB also archives and provides access to data contributed in support of the [IHO Crowdsourced Bathymetry \(CSB\) initiative](#).

The [IHO DCDB Data Viewer](#) shows the global coverage of the DCDB's bathymetric data holdings as well as the spatial extent of data archived at other repositories via web services.

[Access Data](#)

ngdc.noaa.gov/iho/

During the IHO Assembly, the signing of the MoU was recognized by Dr. Mathias Jonas and RDML Ben Evans





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Organization



FINDABLE

ACCESSIBLE

INTEROPERABLE

REUSABLE



The DCDB is guided by FAIR principles and are committed to providing easy, open access to all public data

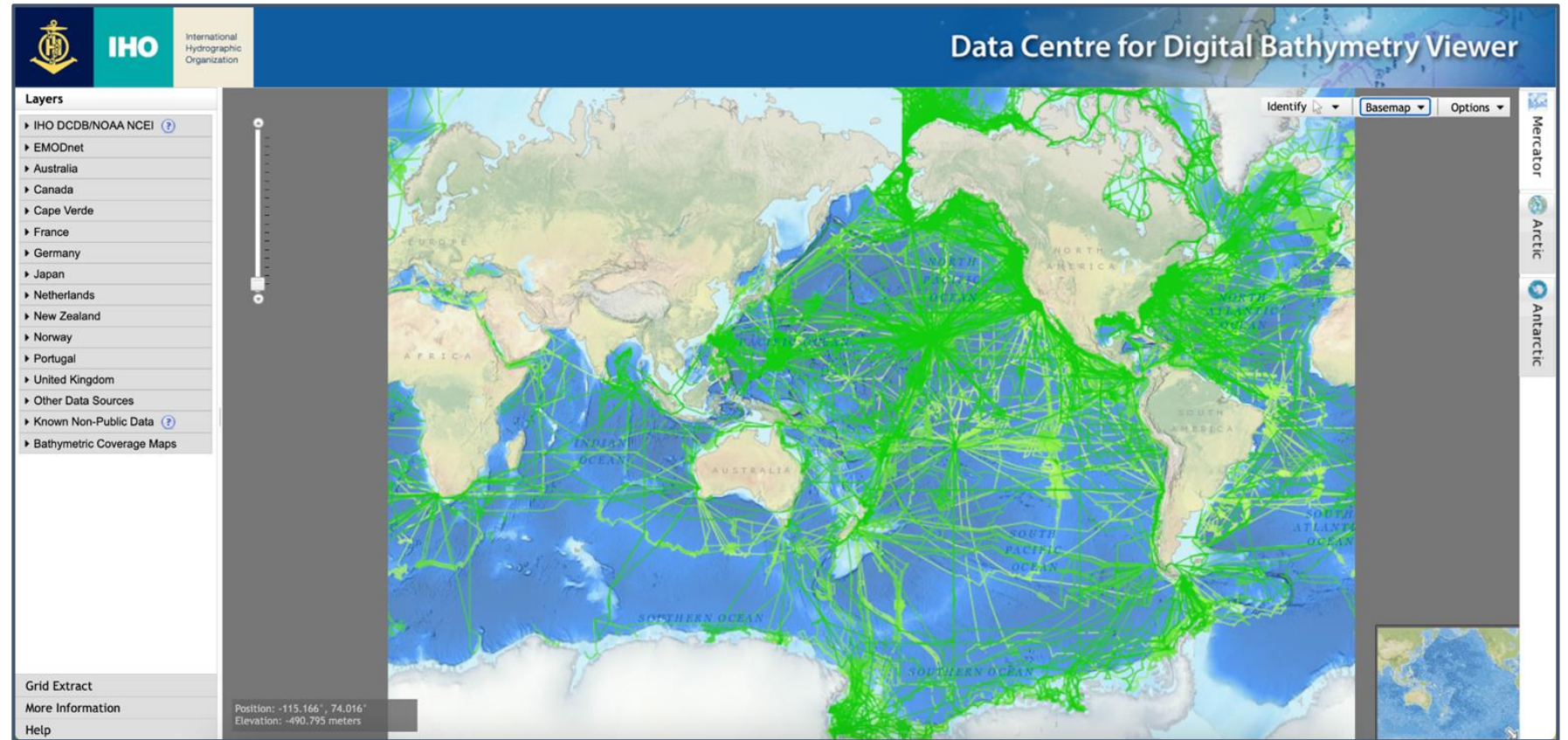


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The World Reference for Raw Bathymetry

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Hydrographic
Organization

- Contains over 3,700 surveys spanning 43 years.
- ~60 different data sources.
- Total size: ~70 TB uncompressed.



ncei.noaa.gov/maps/iho_dcdb/





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Hydrographic
Organization

DATA HOLDINGS



IHO

DCDB Data Holdings - NSHC

ncei.noaa.gov/maps/iho_dcdb/



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

- Crowdsourced Bathymetry Files

Search CSB Files

- U.S. Bathymetry Coverage and Gap Analysis

EMODnet

Australia

Canada

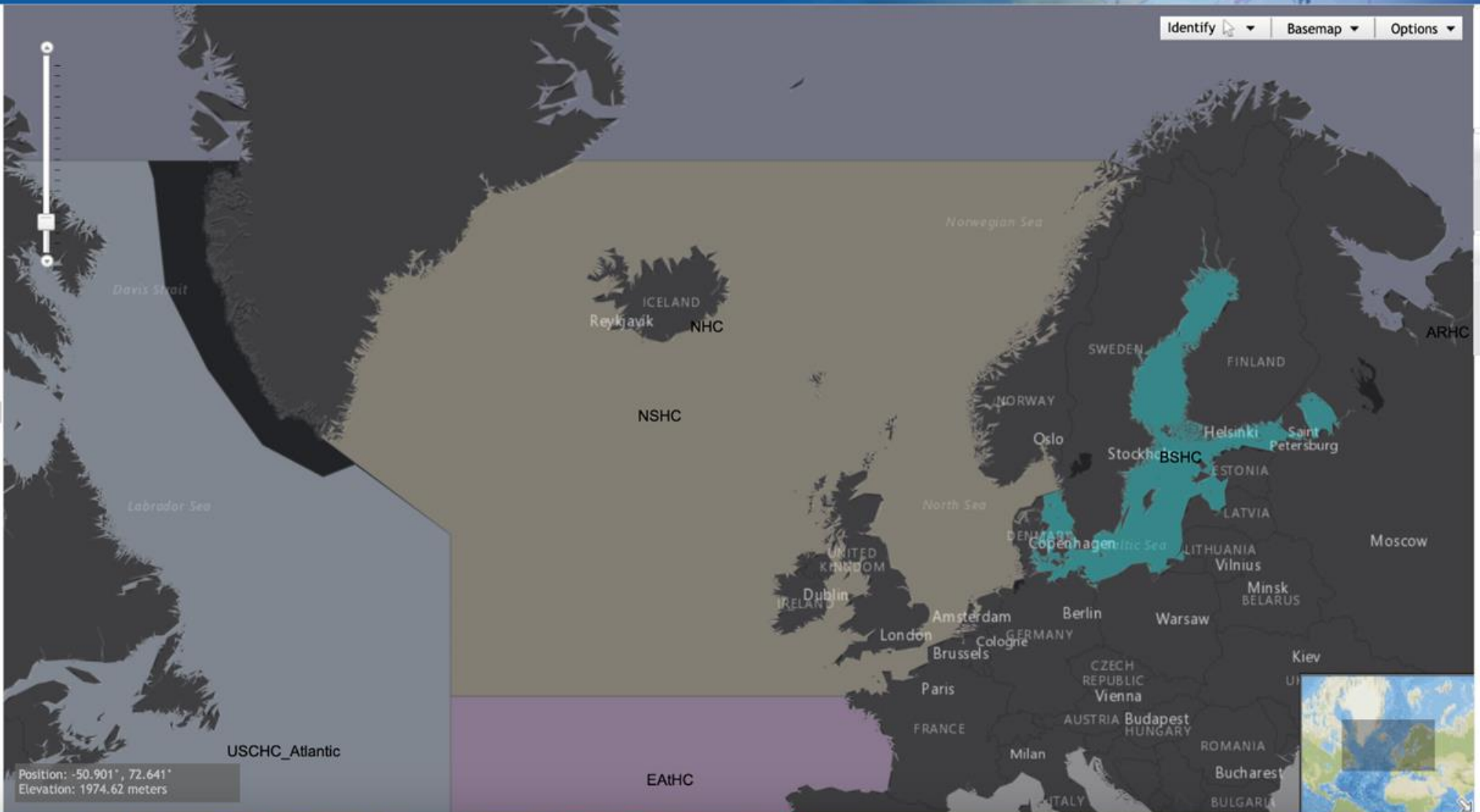
Cape Verde

France

Germany

Japan

Netherlands





IHO

DCDB Data Holdings - Multibeam

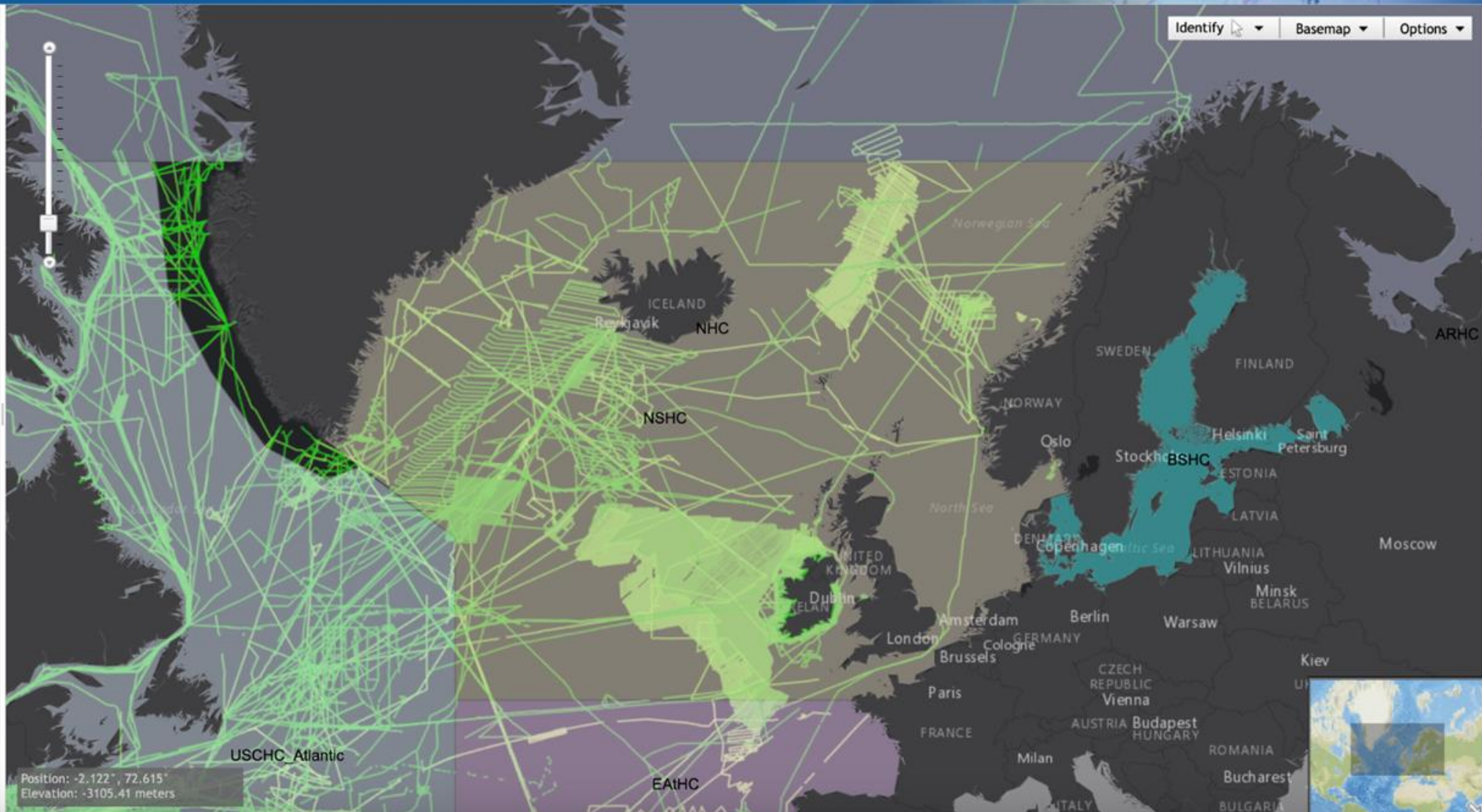
ncei.noaa.gov/maps/iho_dcdb/



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
- Crowdsourced Bathymetry Files
 - Search CSB Files
- U.S. Bathymetry Coverage and Gap Analysis
- EMODnet
- Australia
- Canada
- Cape Verde
- France
- Germany
- Japan
- Netherlands
- New Zealand
- Grid Extract
- More Information
- Help



Identify Basemap Options

Mercator Arctic Antarctic





IHO

DCDB NEW Data Holdings - Multibeam

ncei.noaa.gov/maps/iho_dcdb/



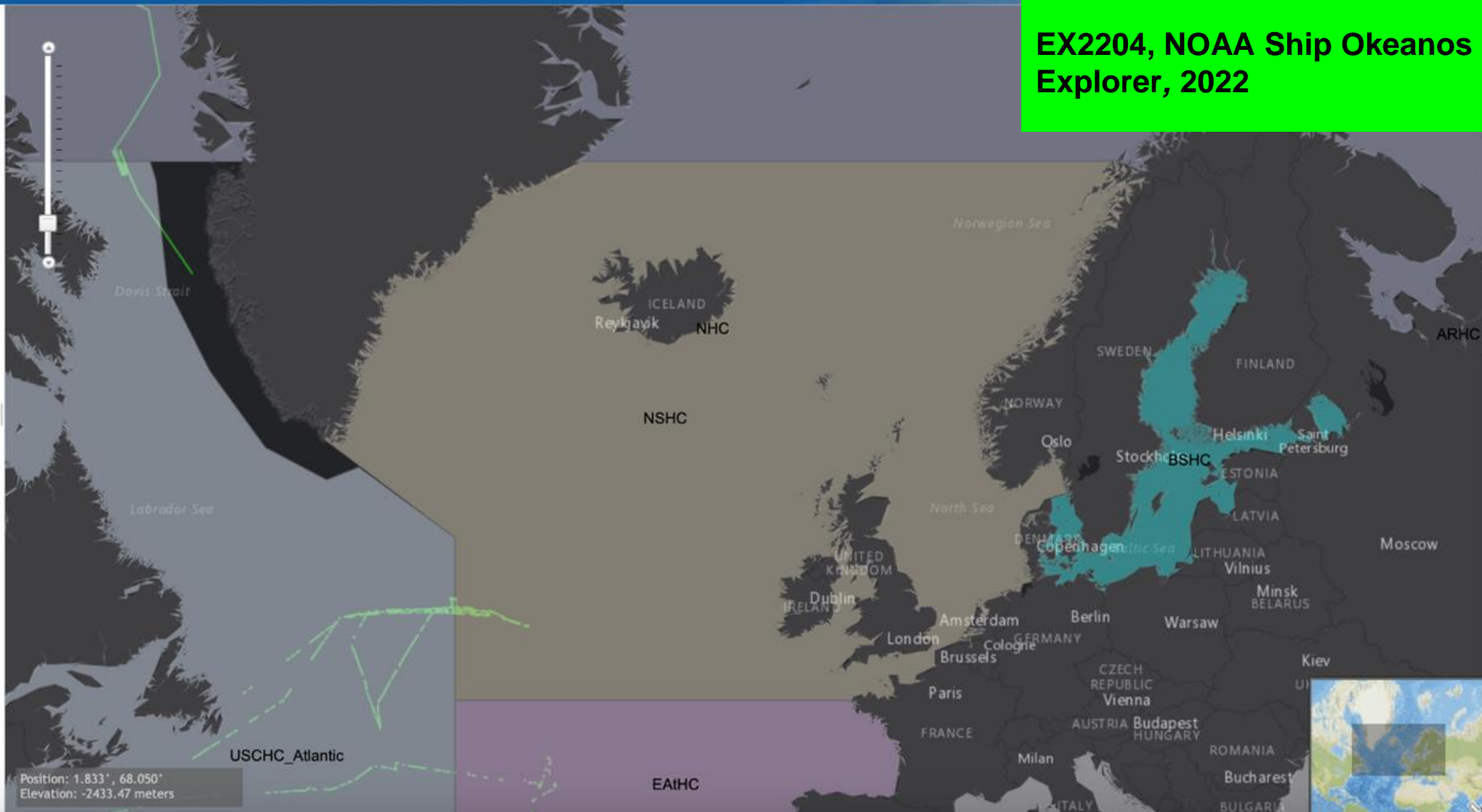
Data Centre for Digital Bathymetry Viewer

1 New Survey:
EX2204, NOAA Ship Okeanos Explorer, 2022

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
- Current filter:
Date Added: 2023-01-01 to 2024-03-06
- Crowdsourced Bathymetry Files
 - Search CSB Files
- U.S. Bathymetry Coverage and Gap Analysis

- EMODnet
- Australia
- Canada
- Cape Verde
- France
- Germany
- Japan
- Netherlands
- Grid Extract
- More Information
- Help



Arctic
Antarctic





IHO

DCDB Data Holdings - Singlebeam



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Data Centre for Digital Bathymetry Viewer

No New SB Surveys

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 X Reset ?

Crowdsourced Bathymetry Files ?

Search CSB Files X Reset ?

U.S. Bathymetry Coverage and Gap Analysis ?

EMODnet

Australia

Canada

Cape Verde

France

Germany

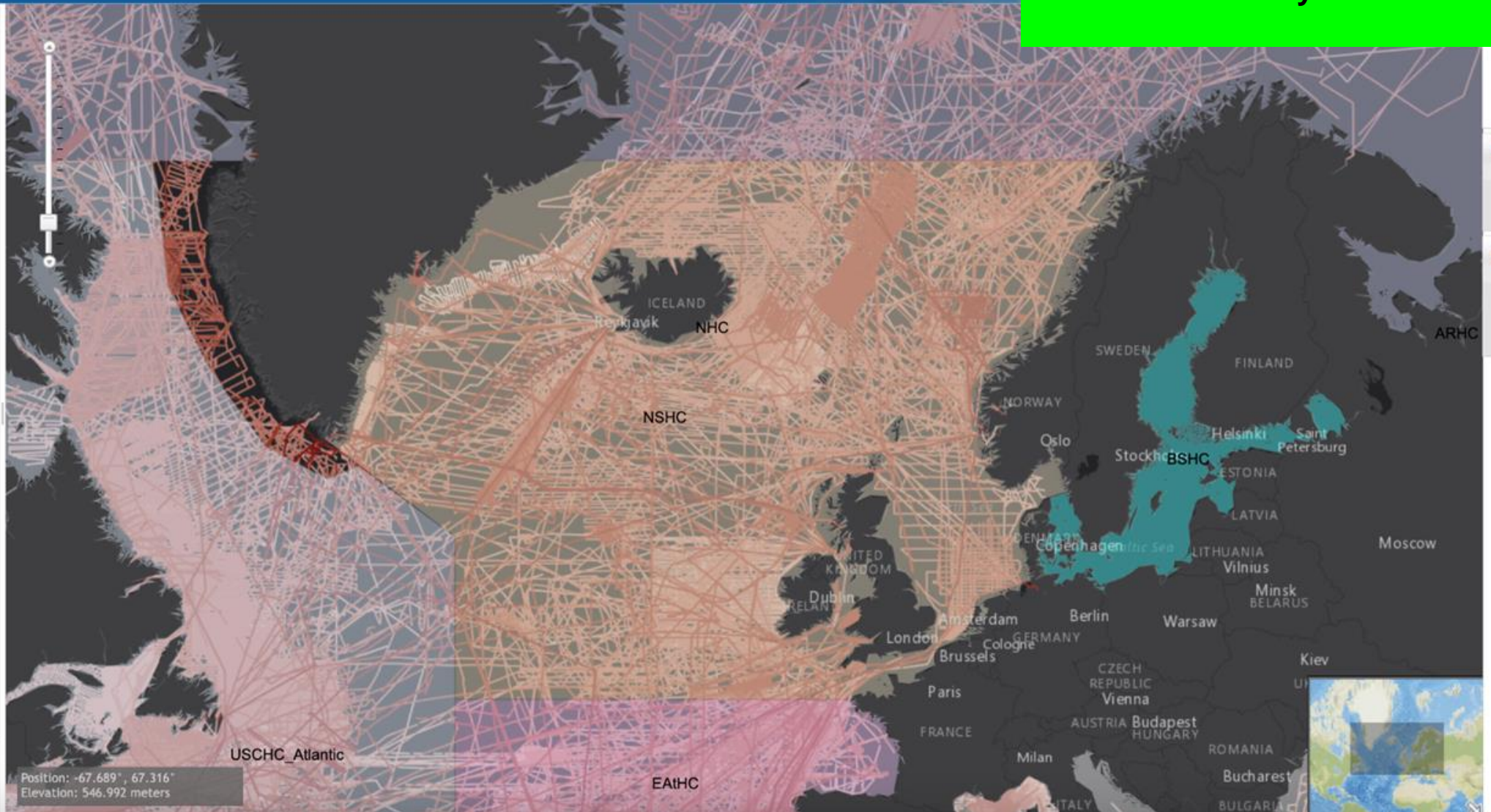
Japan

Netherlands

New Zealand

More Information

Help



Arctic

Antarctic



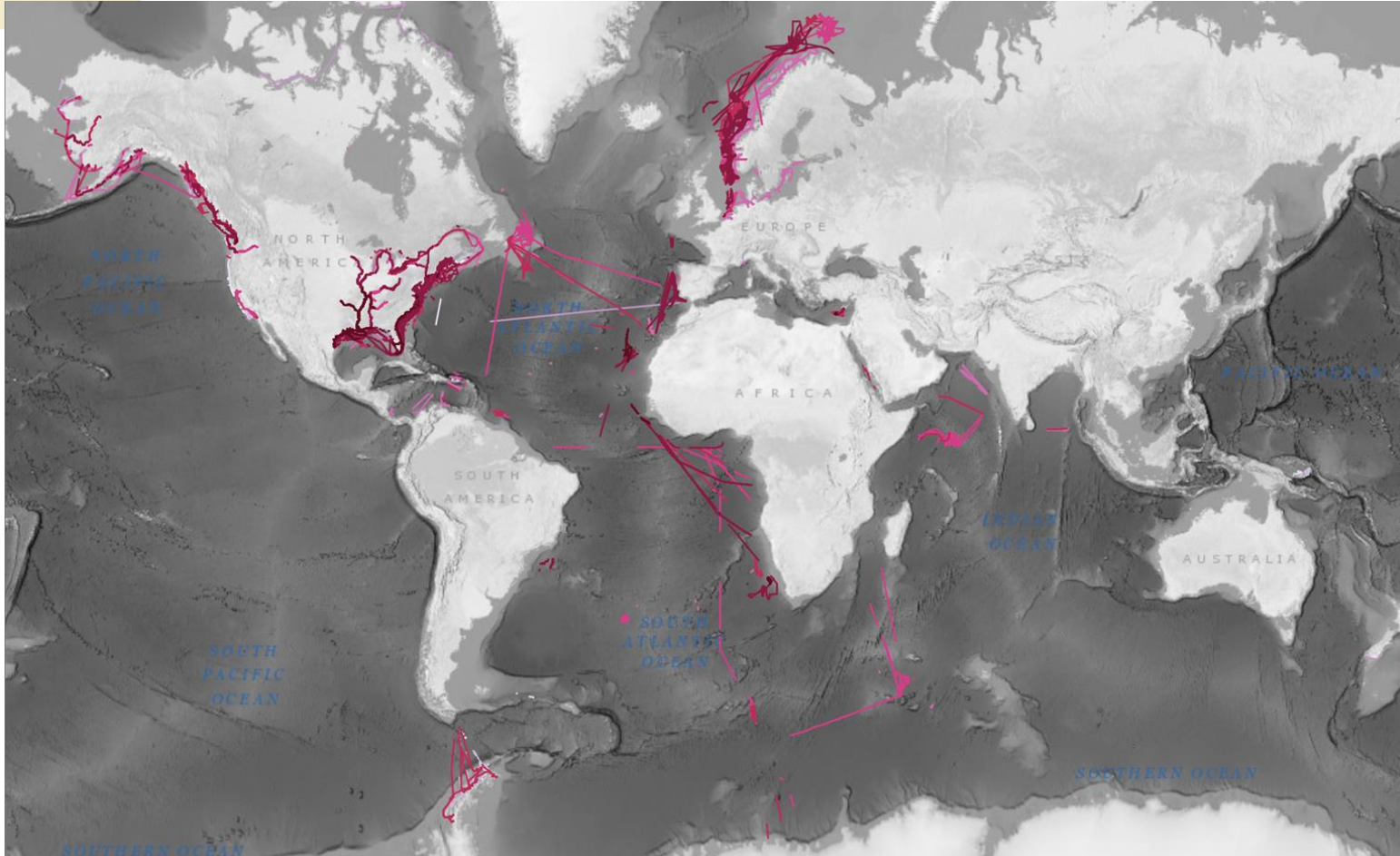


IHO

DCDB Data Holdings - Crowdsourced Bathymetry

Data Contributions: TODAY

International
Hydrographic
Organization



- Rosepoint Navigation Systems
- FarSounder Inc.
- MacGregor Germany/Carnival Cruise Line
- Petroleum Geo-Services (PGS)
- M2Ocean
- Great Lakes Observing System (GLOS)
- Orange Force Marine
- GEC Aqua Map
- Seabed 2030
- **Onboarding in process for:** The Interdisciplinary Center for Development in Ocean Mapping (CIDCO), DockTech, International SeaKeepers, UNH/CCOM, SeaID, COMIT and NOAA.



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DCDB Data Holdings - Crowdsourced Bathymetry



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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

- Crowdsourced Bathymetry Files
 - Search CSB Files

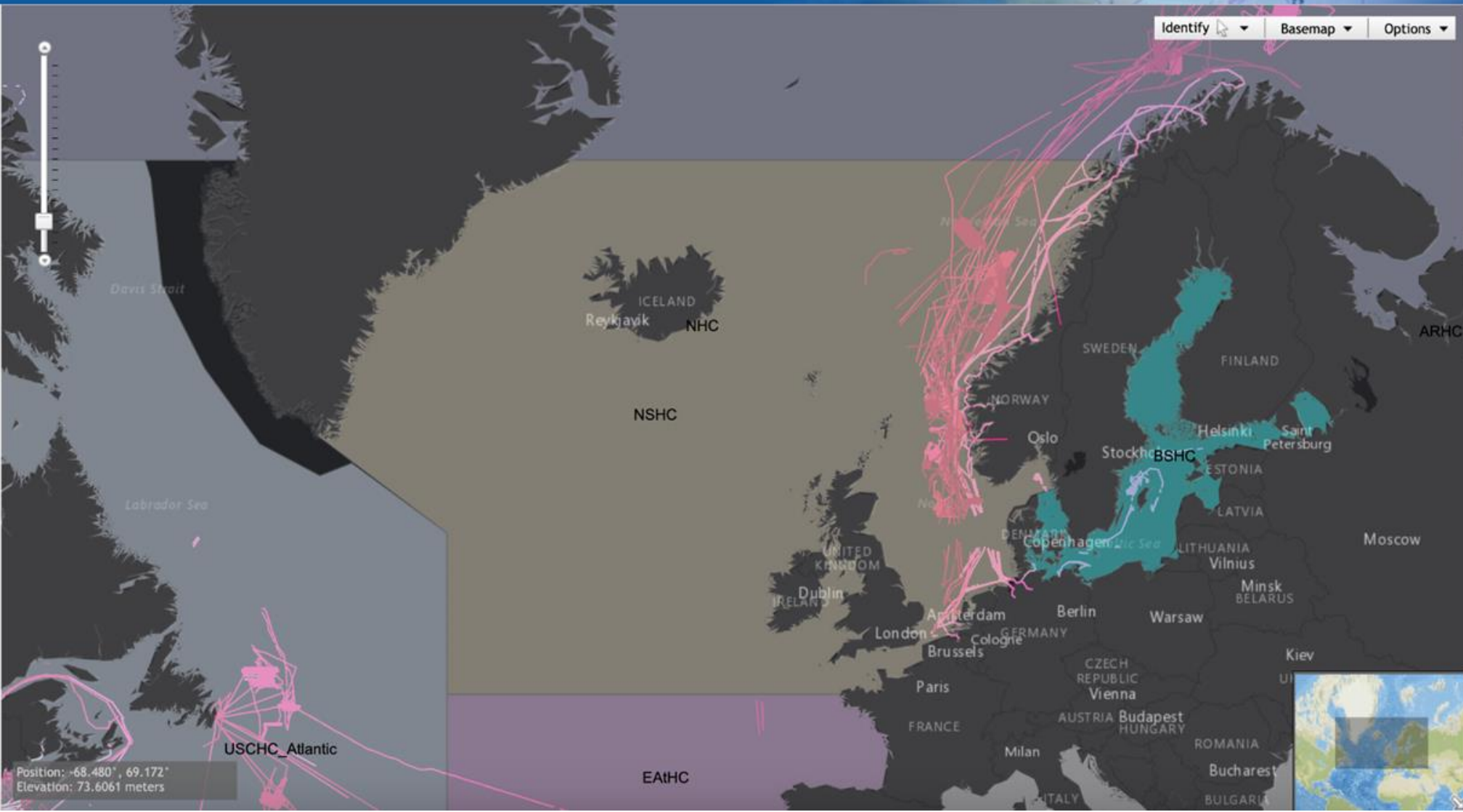
- U.S. Bathymetry Coverage and Gap Analysis

- EMODnet
- Australia
- Canada
- Cape Verde
- France
- Germany
- Japan
- Netherlands
- New Zealand

Grid Extract

More Information

Help



Position: -68.480°, 69.172°
Elevation: 73.6061 meters

Identify Basemap Options

- Mercator
- Arctic
- Antarctic





IHO

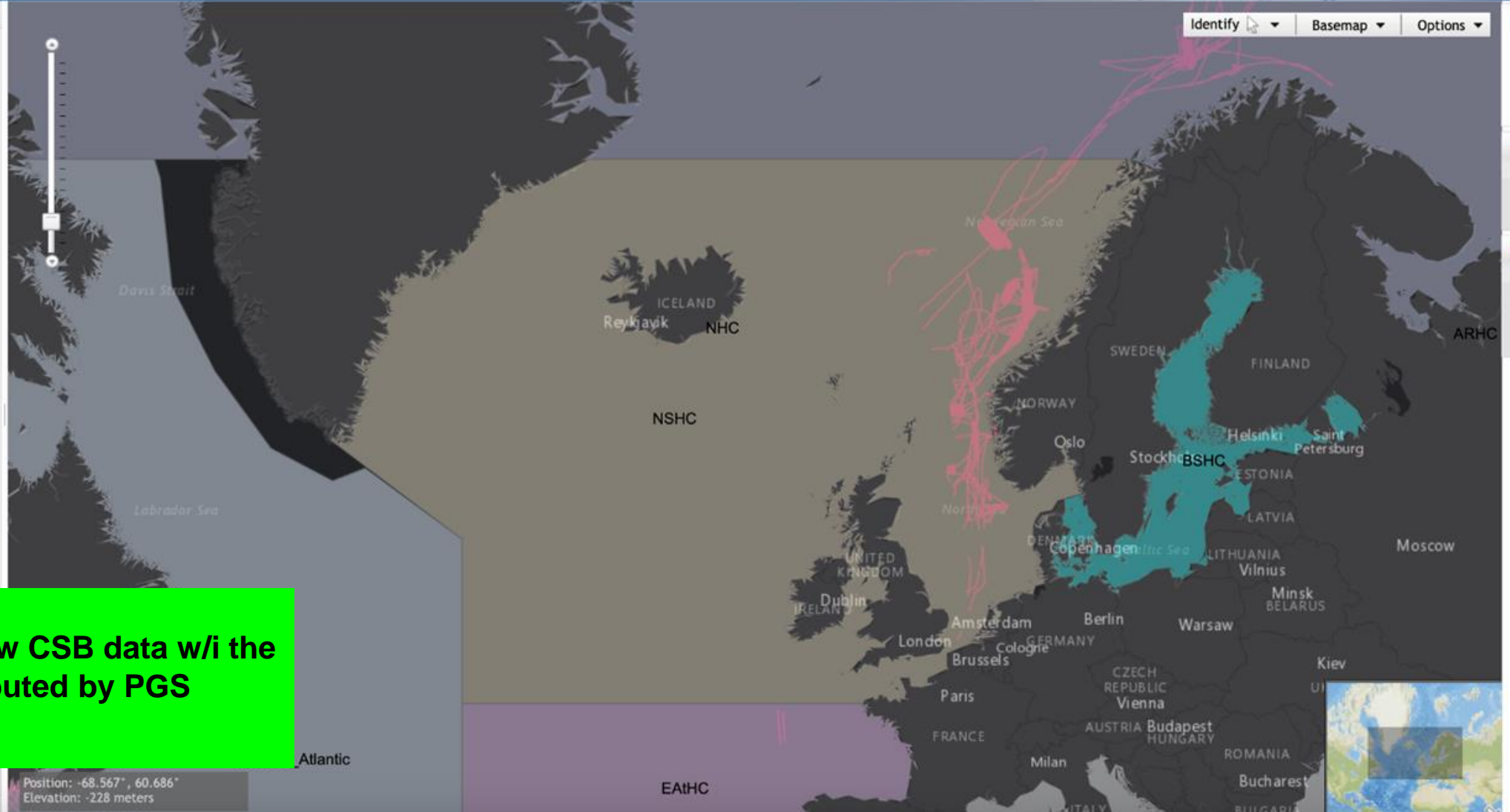
DCDB **NEW** Data Holdings - Crowdsourced Bathymetry



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
- Crowdsourced Bathymetry Files ?
 - Search CSB Files
- Current filter:**
Start Date Added to Database: 2023-03-01
End Date Added to Database: 2024-03-06
- U.S. Bathymetry Coverage and Gap Analysis ?



Almost all new CSB data w/i the NSHC contributed by PGS





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DCDB Web Services - EMODnet

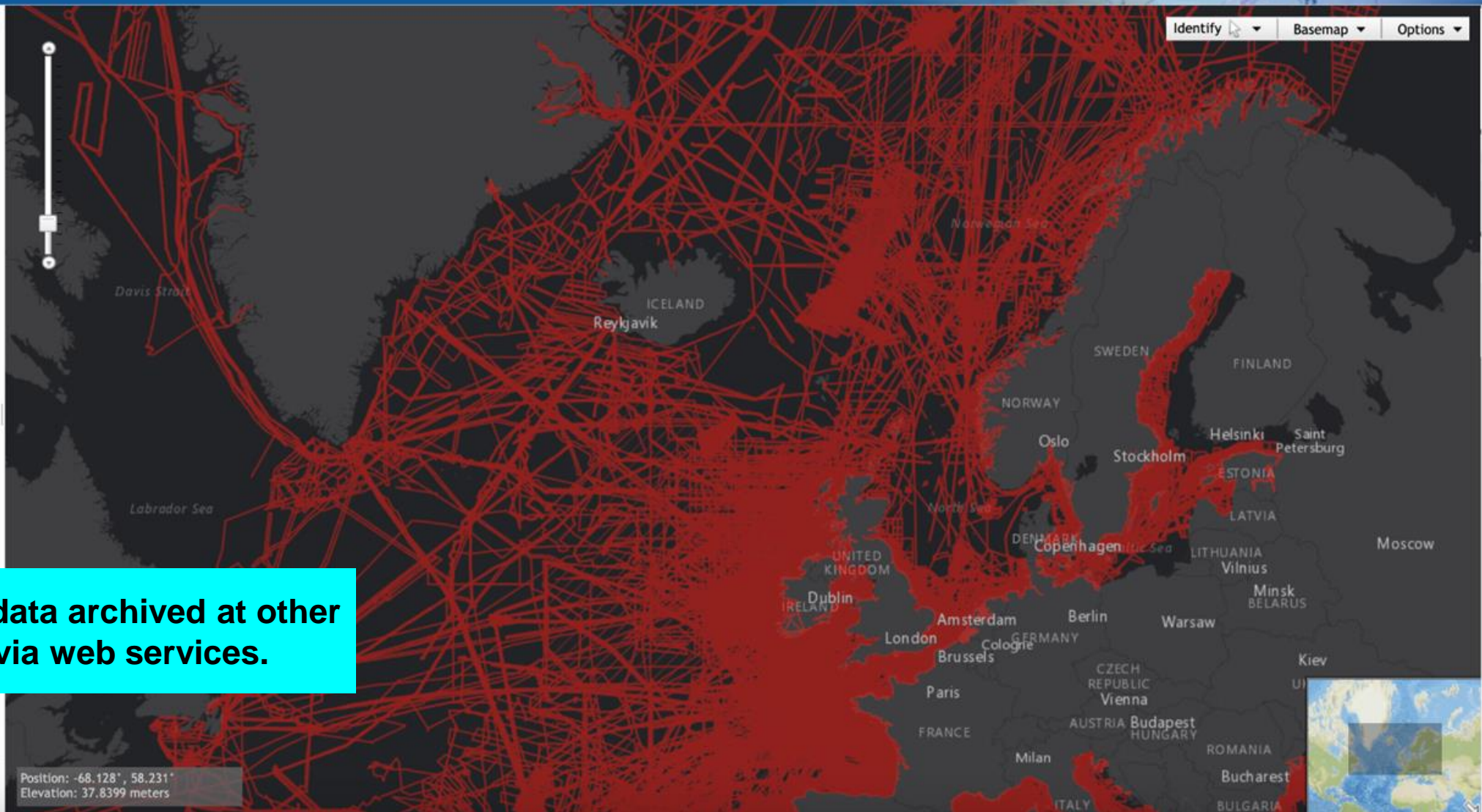


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International Hydrographic Organization

Data Centre for Digital Bathymetry Viewer

- Layers**
- ▶ IHO DCDB/NOAA NCEI ?
 - ▼ EMODnet
 - EMODnet Global Survey Tracks/Polgyons ?
 - EMODnet Digital Terrain Model (DTM) ?
 - ▶ Australia
 - ▶ Canada
 - ▶ Cape Verde
 - ▶ France
 - ▶ Germany
 - ▶ Japan
 - ▶ Netherlands
 - ▶ New Zealand
 - ▶ Norway
 - ▶ Portugal
 - ▶ United Kingdom
 - ▶ Other Data Sources
 - ▶ Known Non-Public Data ?
 - ▶ Bathymetric Coverage Maps



Spatial extent of data archived at other repositories via web services.

- Grid Extract
- More Information
- Help



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DCDB Web Services - France



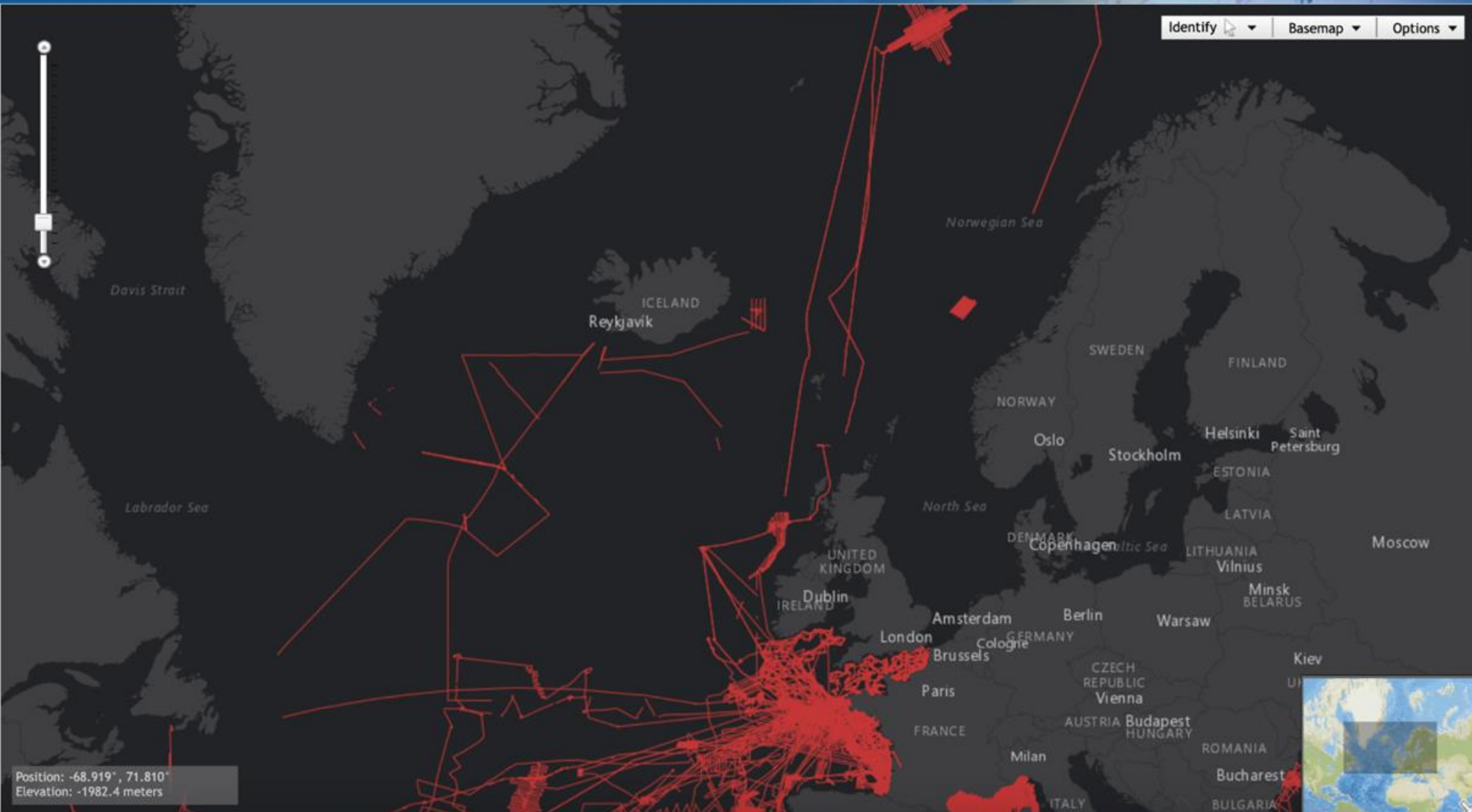
IHO

International Hydrographic Organization

Data Centre for Digital Bathymetry Viewer

- Layers**
- ▶ IHO DCDB/NOAA NCEI [?](#)
 - ▶ EMODnet
 - ▶ Australia
 - ▶ Canada
 - ▶ Cape Verde
 - ▼ France
 - IFREMER RAW Multibeam [?](#)
 - SHOM Bathymetric Grids [?](#)
 - ▶ Germany
 - ▶ Japan
 - ▶ Netherlands
 - ▶ New Zealand
 - ▶ Norway
 - ▶ Portugal
 - ▶ United Kingdom
 - ▶ Other Data Sources
 - ▶ Known Non-Public Data [?](#)
 - ▶ Bathymetric Coverage Maps

- Grid Extract
- More Information
- Help



- Mercator
- Arctic
- Antarctic





IHO

DCDB Web Services - Germany



IHO

International Hydrographic Organization

Data Centre for Digital Bathymetry Viewer

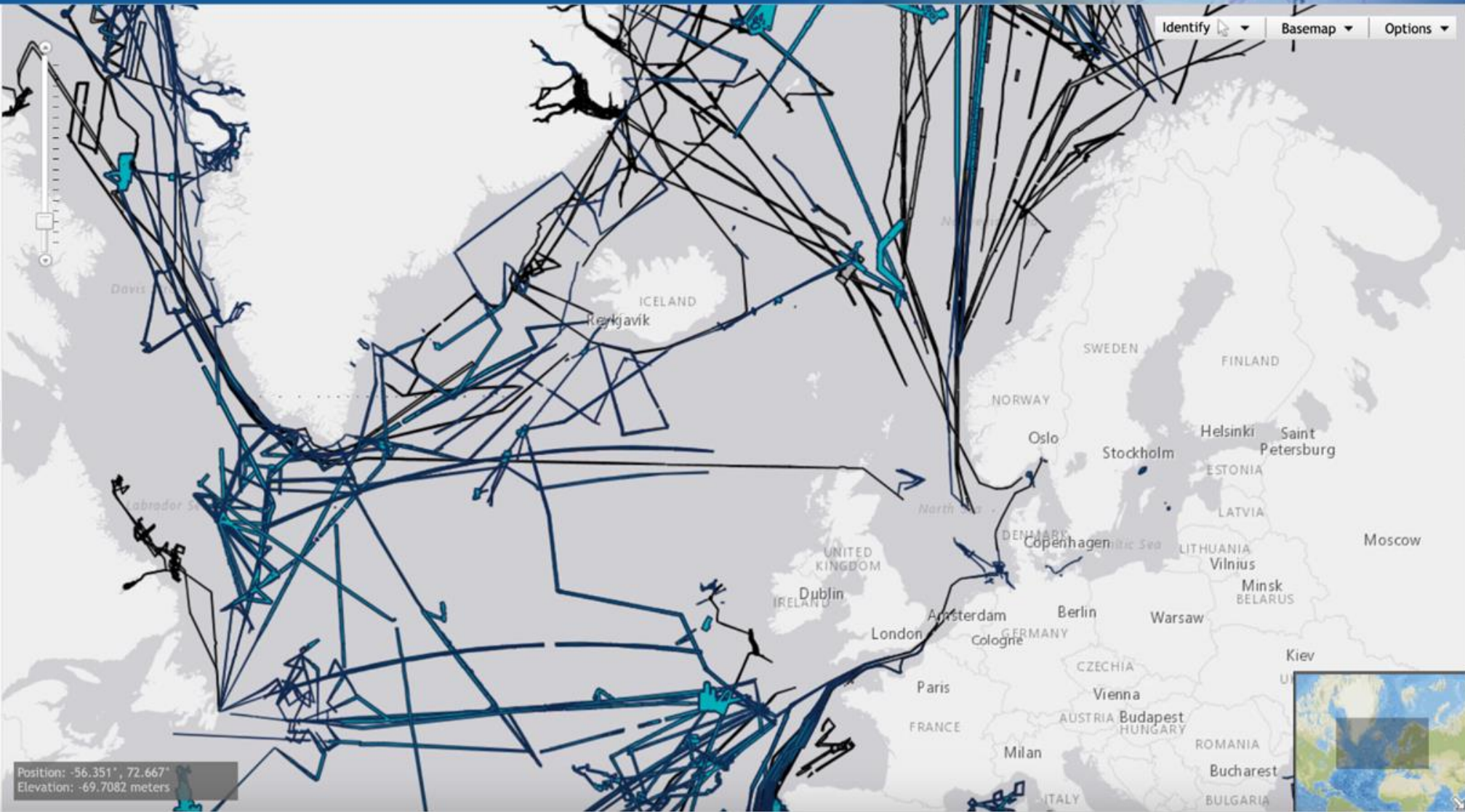
Layers

- ▶ IHO DCDB/NOAA NCEI [?](#)
- ▶ EMODnet
- ▶ Australia
- ▶ Canada
- ▶ Cape Verde
- ▶ France
- ▼ Germany
 - AWI Processed Multibeam Data Coverages [?](#)
 - PANGAEA Multibeam Raw Data Footprints [?](#)
 - PANGAEA Multibeam Processed Data Footprints [?](#)
 - PANGAEA Multibeam Raw Data Bathymetry [?](#)
 - PANGAEA Multibeam Processed Data Bathymetry [?](#)
- ▶ Japan
- ▶ Netherlands
- ▶ New Zealand
- ▶ Norway
- ▶ Portugal
- ▶ United Kingdom
- ▶ Other Data Sources
- ▶ Known Non-Public Data [?](#)
- ▶ Bathymetric Coverage Maps

Grid Extract

More Information

Help



Position: -56.351°, 72.667°
 Elevation: -69.7082 meters

Identify [?](#) Basemap [?](#) Options [?](#)

- Mercator
- Arctic
- Antarctic





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DCDB Web Services - Netherlands



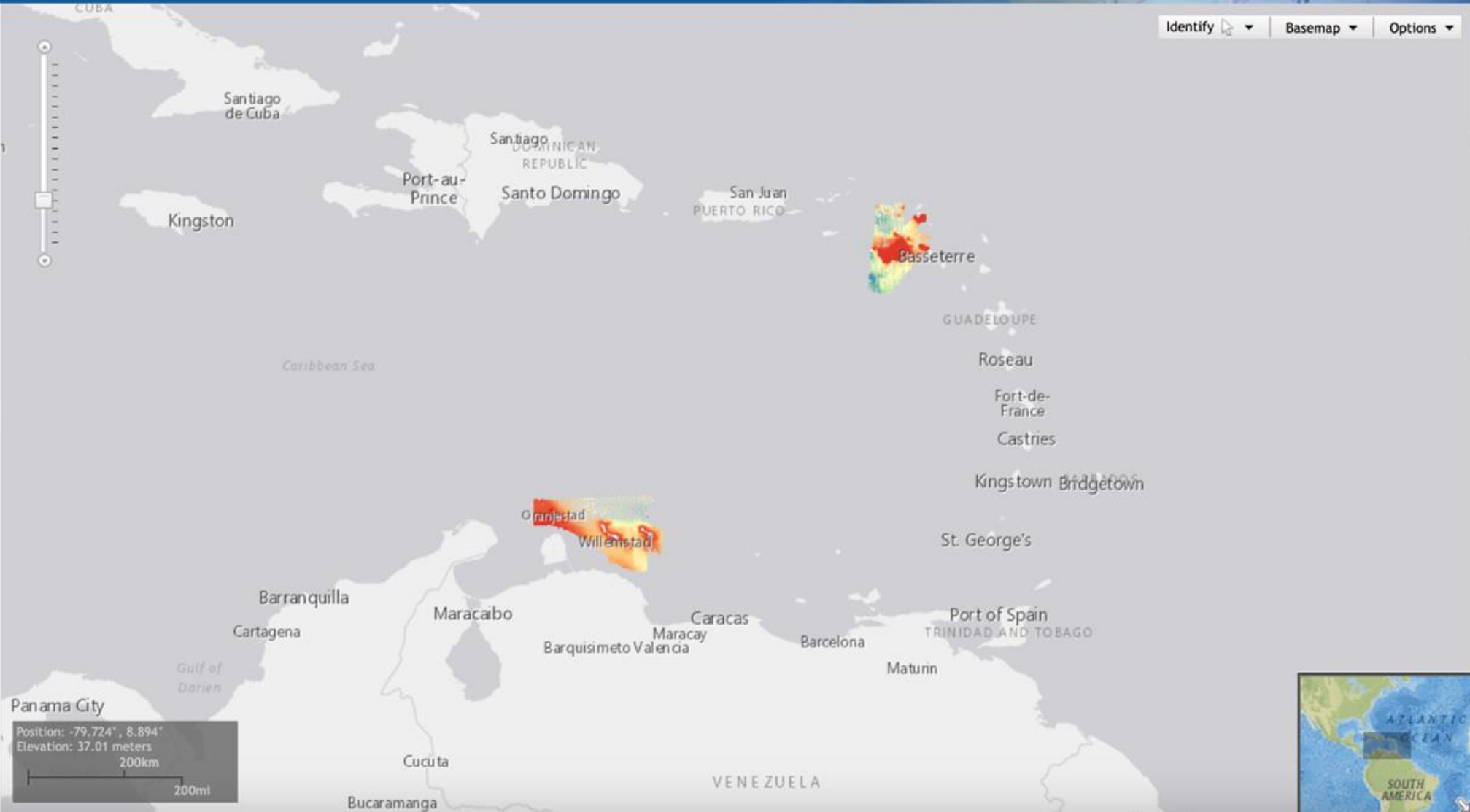
IHO

International Hydrographic Organization

Data Centre for Digital Bathymetry Viewer

- Layers**
- ▶ IHO DCDB/NOAA NCEI ?
 - ▶ EMODnet
 - ▶ Australia
 - ▶ Canada
 - ▶ Cape Verde
 - ▶ France
 - ▶ Germany
 - ▶ Japan
 - ▼ Netherlands
 - Netherlands Caribbean Grids ?
 - ▶ New Zealand
 - ▶ Norway
 - ▶ Portugal
 - ▶ United Kingdom
 - ▶ Other Data Sources
 - ▶ Known Non-Public Data ?
 - ▶ Bathymetric Coverage Maps

- Grid Extract
- More Information
- Help



Identify ▾ Basemap ▾ Options ▾

- Mercator
- Arctic
- Antarctic



IHO

DCDB Web Services - Norway



IHO

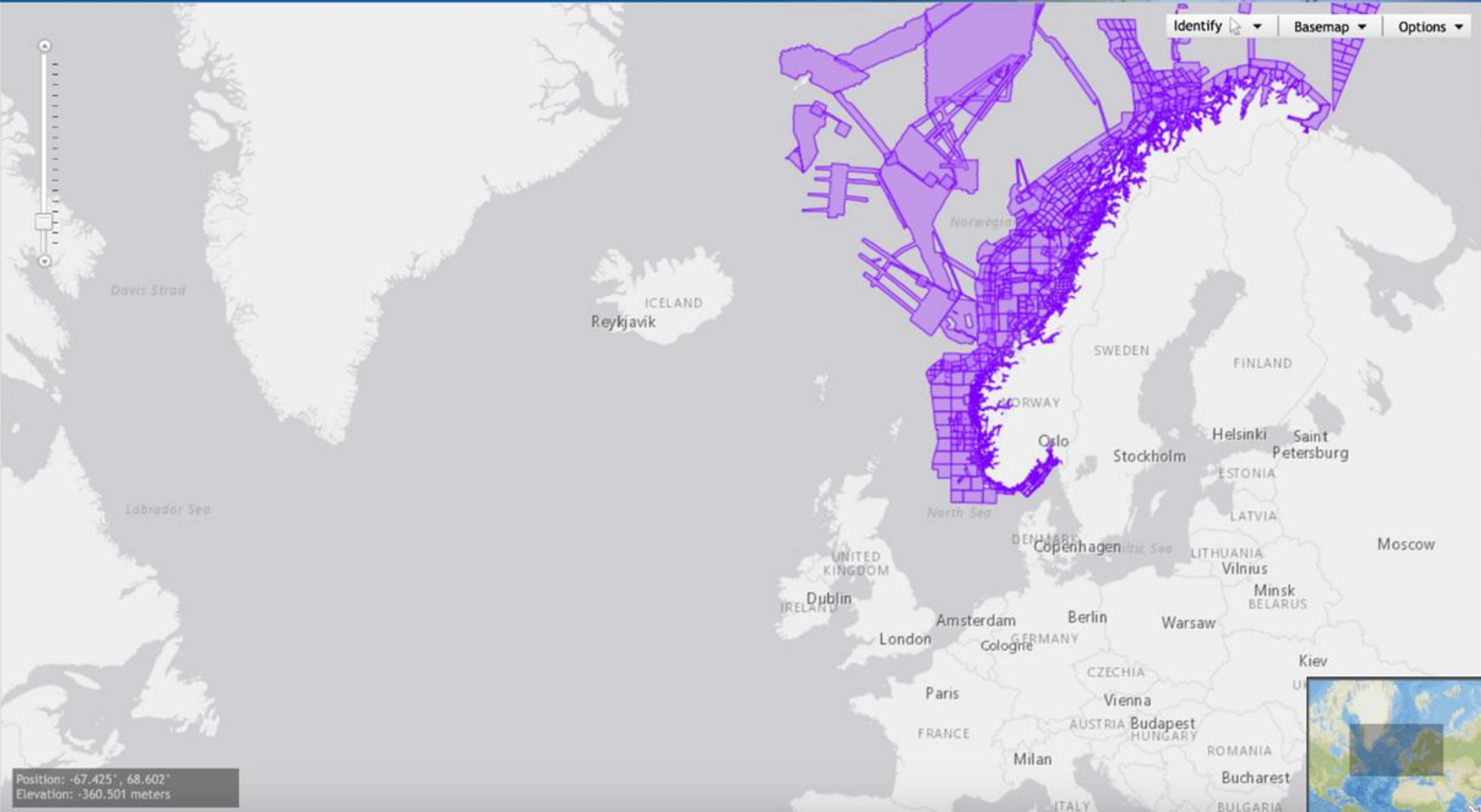
International Hydrographic Organization

Data Centre for Digital Bathymetry Viewer

Layers

- ▶ IHO DCDB/NOAA NCEI [?](#)
- ▶ EMODnet
- ▶ Australia
- ▶ Canada
- ▶ Cape Verde
- ▶ France
- ▶ Germany
- ▶ Japan
- ▶ Netherlands
- ▶ New Zealand
- ▼ Norway
 - MAREANO Multibeam Surveys [?](#)
 - MAREANO Multibeam Shaded Relief [?](#)
 - MAREANO Single-Beam Surveys [?](#)
- ▶ Portugal
- ▶ United Kingdom
- ▶ Other Data Sources
- ▶ Known Non-Public Data [?](#)
- ▶ Bathymetric Coverage Maps

- Grid Extract
- More Information
- Help



Position: -67.425°, 68.602°
 Elevation: -360.501 meters

Identify [▼](#) Basemap [▼](#) Options [▼](#)

- Mercator
- Arctic
- Antarctic





IHO

DCDB Web Services - United Kingdom



IHO

International Hydrographic Organization

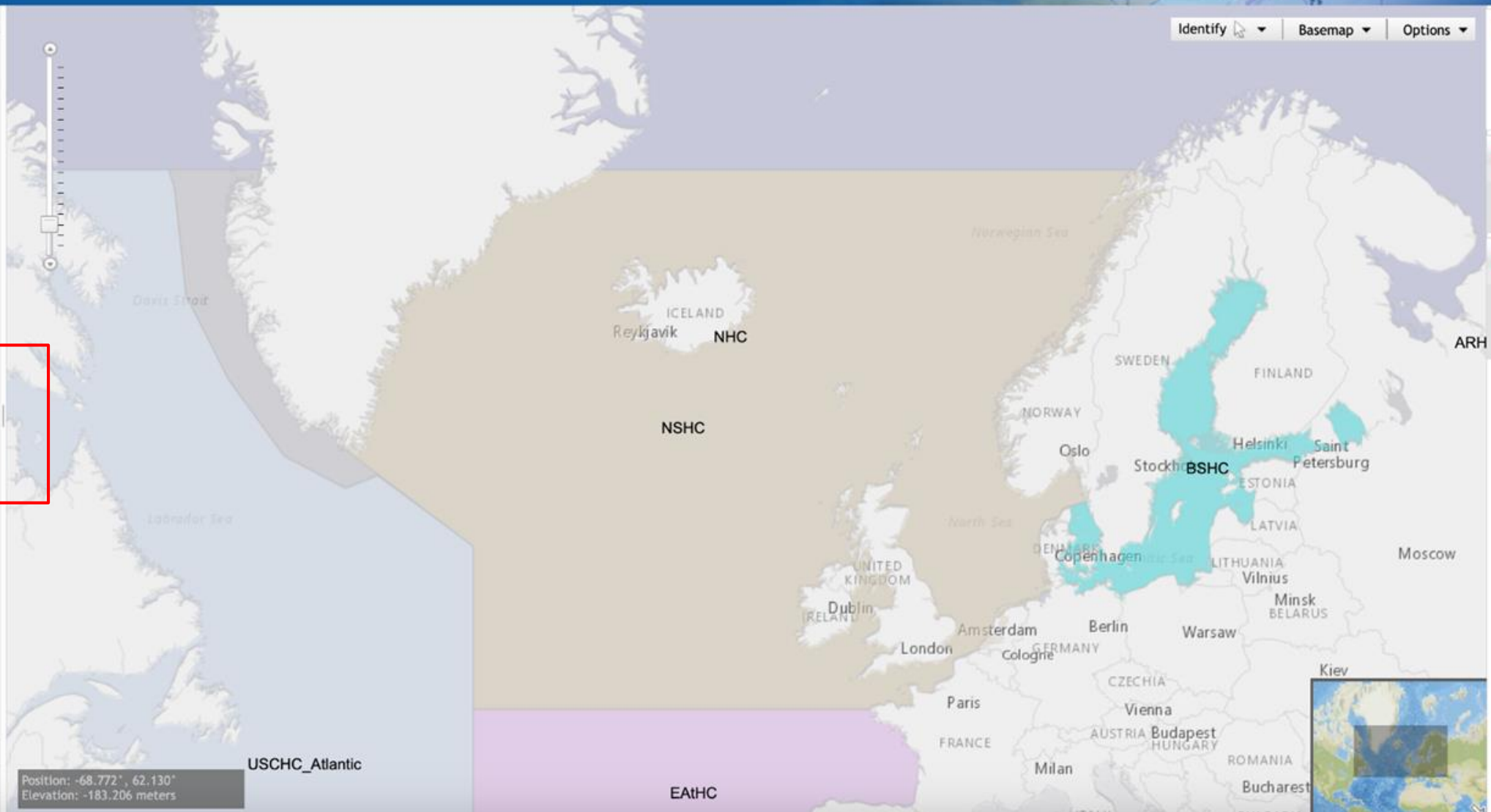
Data Centre for Digital Bathymetry Viewer

Layers

- ▶ IHO DCDB/NOAA NCEI ?
- ▶ EMODnet
- ▶ Australia
- ▶ Canada
- ▶ Cape Verde
- ▶ France
- ▶ Germany
- ▶ Japan
- ▶ Netherlands
- ▶ New Zealand
- ▶ Norway
- ▶ Portugal
- ▼ United Kingdom

Note: the UKHO layer is currently unavailable on this map viewer. Please see their interactive map at <https://seabed.admiralty.co.uk/>.

UKHO Bathymetric Survey Coverage ?
- ▶ Other Data Sources
- ▶ Known Non-Public Data ?
- ▶ Bathymetric Coverage Maps



Identify ▼ Basemap ▼ Options ▼

- Mercator
- Arctic
- Antarctic

Grid Extract
 More Information
 Help

Position: -68.772°, 62.130°
 Elevation: -183.206 meters

USCHC_Atlantic

EAHC

Moscow

Kiev

Bucharest



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Hydrographic
Organization

Thank you for your web services!

ncei.noaa.gov/maps/iho_dcdb/

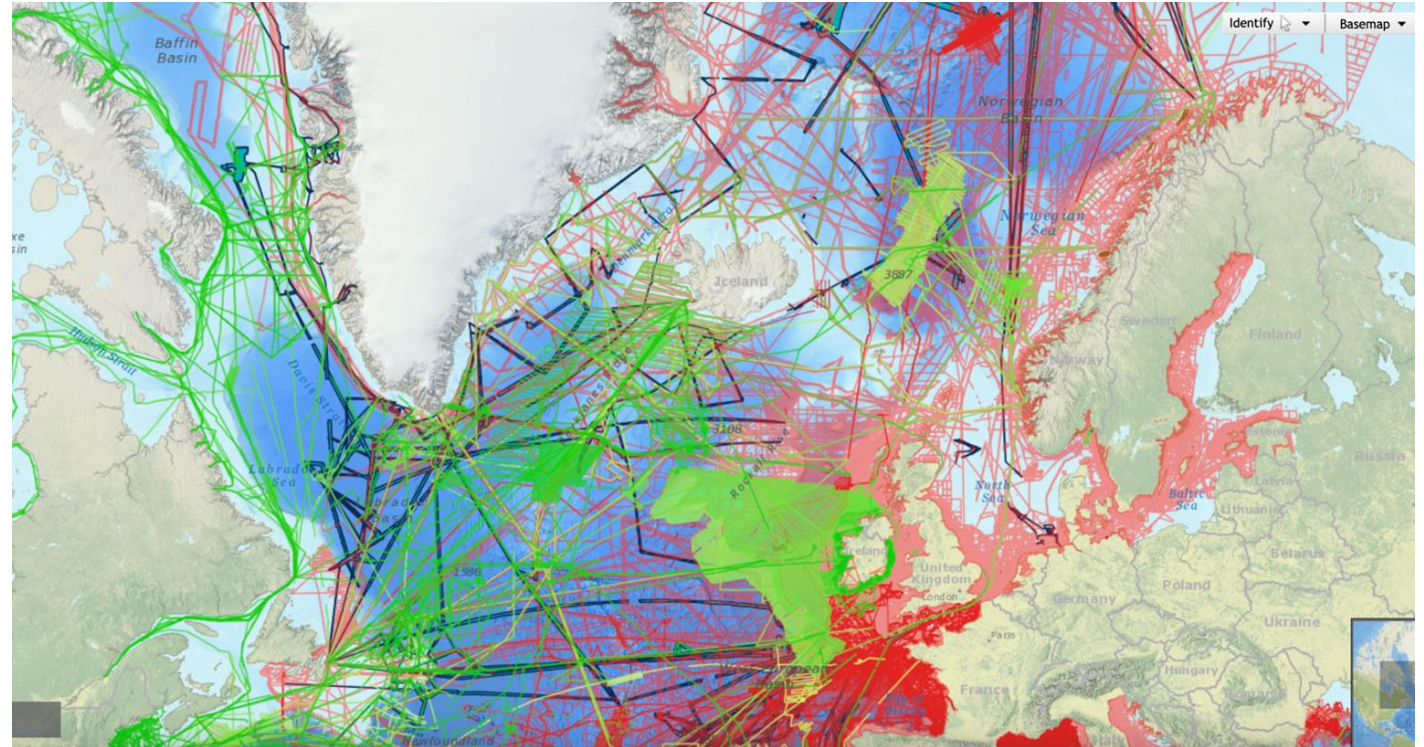


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NSHC Members are reminded to:

International
Hydrographic
Organization

- Contact the DCDB if issues arise when attempting to discover or access data
- Consider contributing data to the DCDB
- Consider building and/or including your web services in the DCDB viewer



ncei.noaa.gov/maps/iho_dcdb/

jennifer.jencks@noaa.gov

A world map showing bathymetry (ocean depths) in shades of blue. The map is overlaid with white text. The text reads: "Crowdsourced Bathymetry" in a large, bold, sans-serif font, and "A benefit for all States" in a slightly smaller, bold, sans-serif font below it. The map labels continents like North America, South America, Europe, Africa, Asia, and Australia, and oceans like Atlantic, Pacific, Indian, and Mid-Indian. It also shows various ocean basins and depth contours.

Crowdsourced Bathymetry

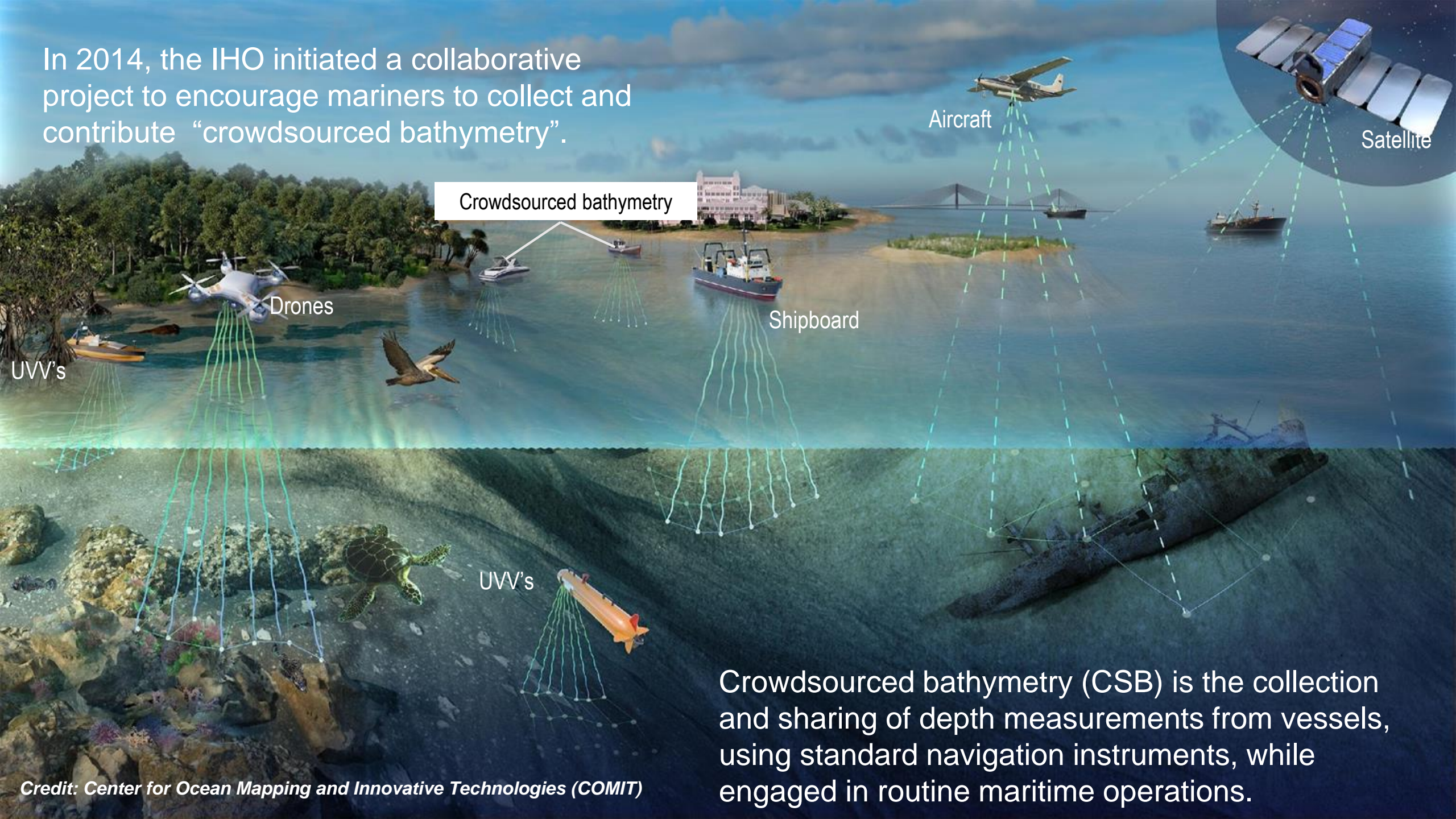
A benefit for all States

Evert Flier

NSHC CSB/Seabed 2030 Coordinator
CSBWG Member



In 2014, the IHO initiated a collaborative project to encourage mariners to collect and contribute “crowdsourced bathymetry”.



Crowdsourced bathymetry (CSB) is the collection and sharing of depth measurements from vessels, using standard navigation instruments, while engaged in routine maritime operations.

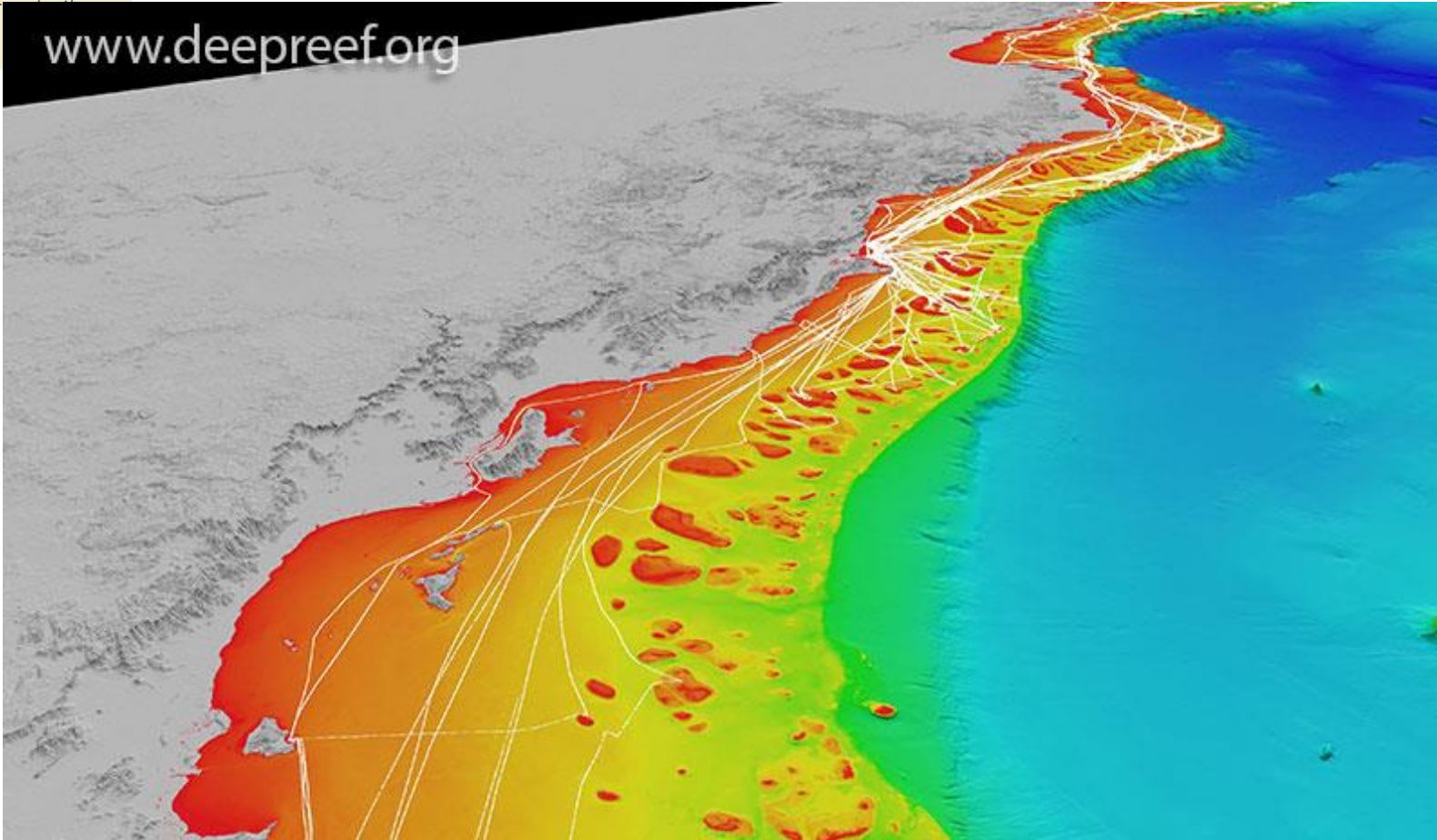


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The Value of CSB Data

International
Hydrographic
Or

www.deepreef.org



- Data with scientific, commercial & research value at little to no cost to the public sector
- Fill gaps where data is scarce
- Useful along shallow, complex coastlines
- Improving safety of navigation

3D view of northern Great Barrier Reef showing all vessel tracks as of December 2019.

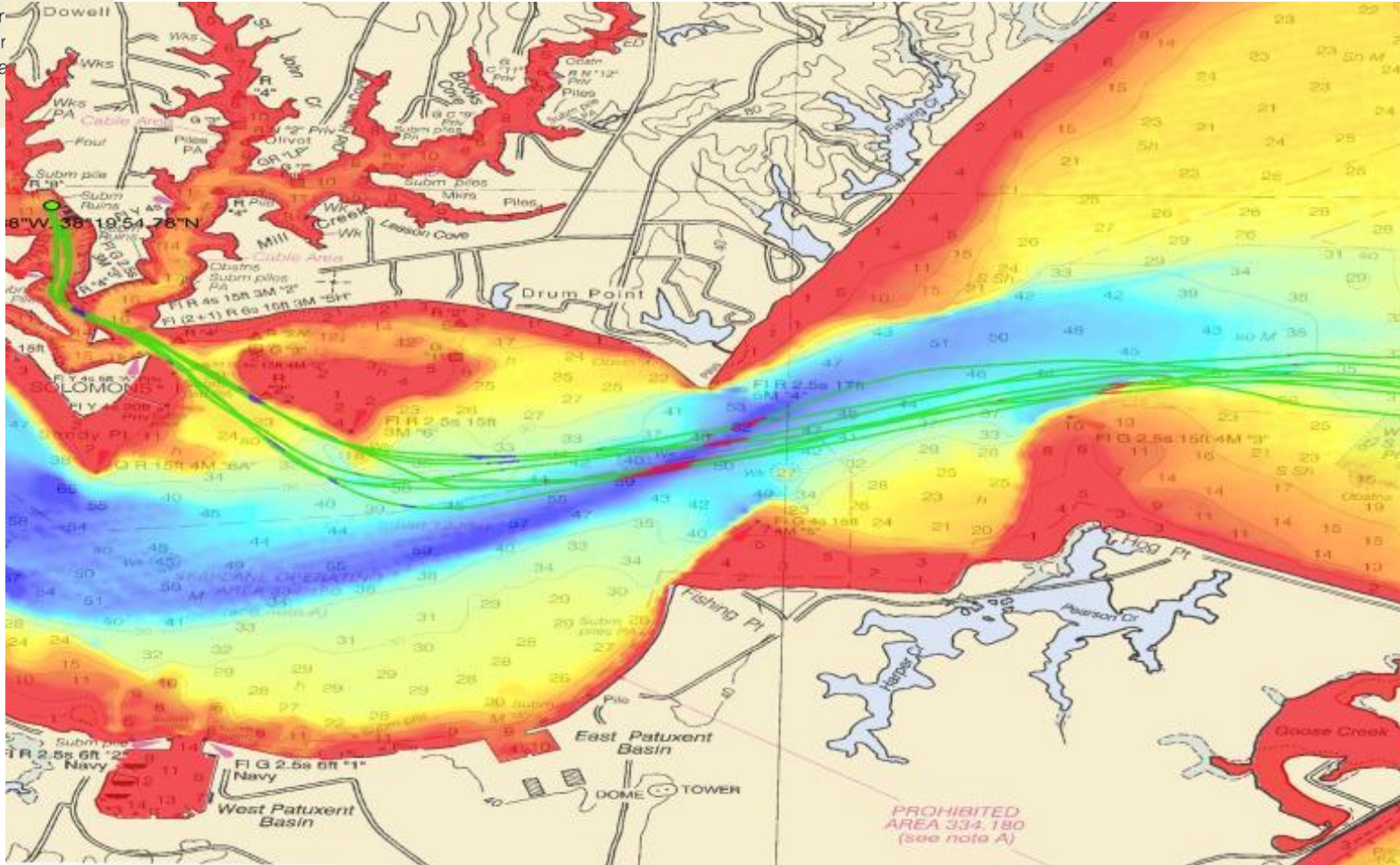
Credit: Robin Beaman



IHO

CSB as a Validation Tool for a Resurvey Scheme

Inter
Hydr
Orga



CSB test tracks collected on NOAA's Research Vessel Bay Hydro II in green overlaid on multibeam survey data demonstrates how changes can be detected. Image courtesy of NOAA.

- CSB data as a complementary data set, not as a replacement
- Identify changes
- Confirm whether charts are appropriate for the latest traffic patterns.
- Serve as an early warning system for potential navigational hazards
- Assist in routine survey planning and prioritization.



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CSB-BASED RESOURCES

CURRENT & UNDER DEVELOPMENT

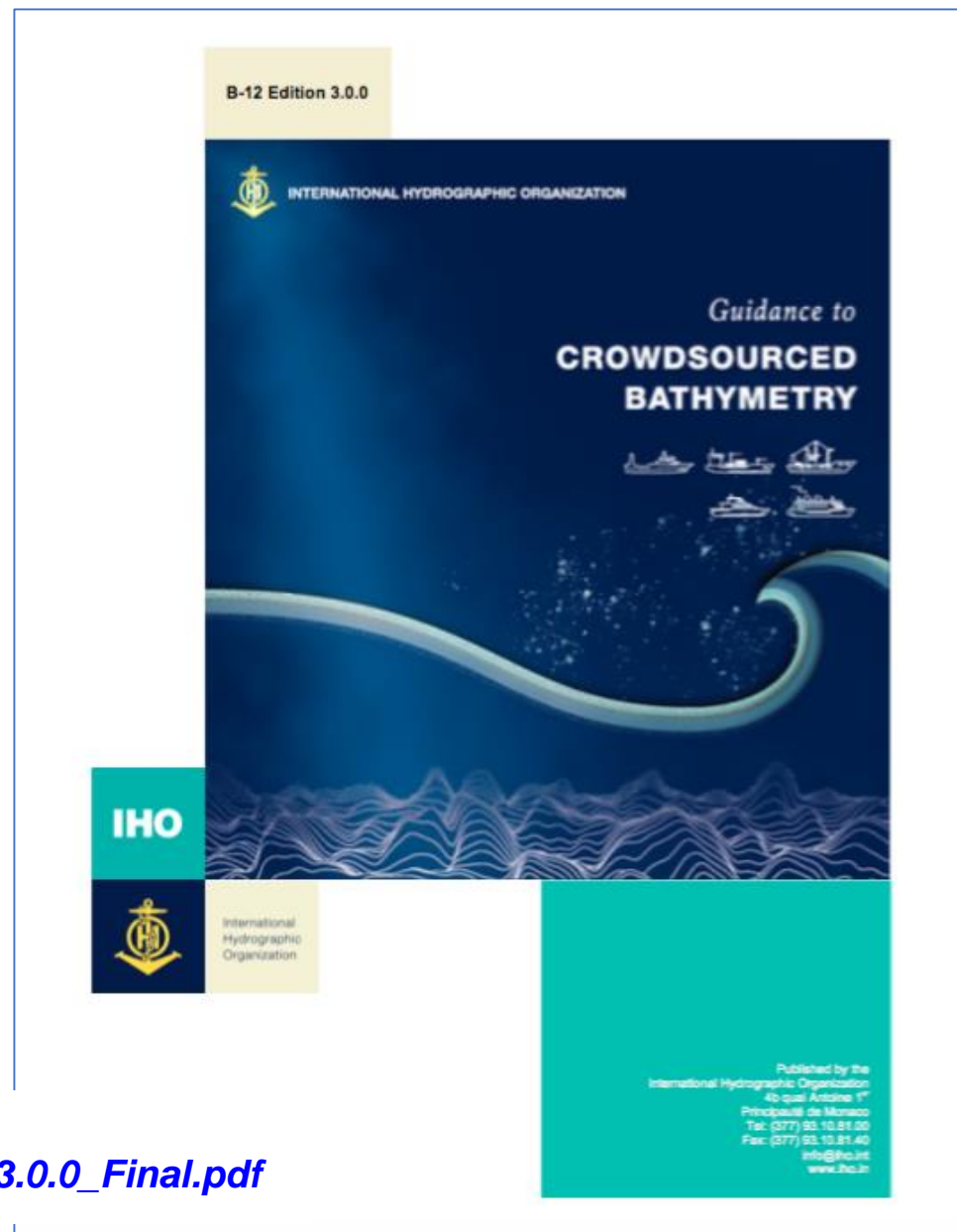


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B-12 IHO Guidance on Crowdsourced Bathymetry

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The CSBWG developed and maintains ***B-12 IHO Guidance on Crowdsourced Bathymetry***, that states the IHO's policy towards, and best practices for, the collection and contribution of CSB.



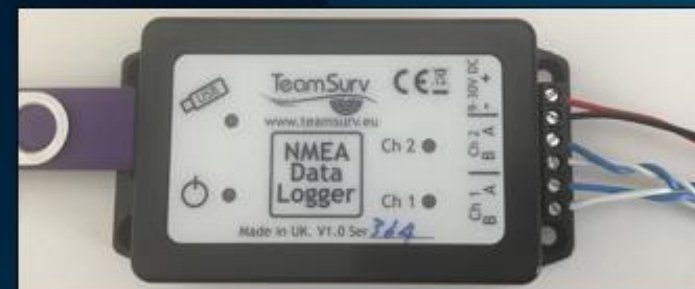
iho.int/uploads/user/pubs/bathy/B_12_CS-B-Guidance_Document-Edition_3.0.0_Final.pdf

Data Loggers provided by Seabed 2030

Free data loggers provided to the community

Installation support

Assistance with data download and delivery to Seabed 2030 & IHO-DCDB





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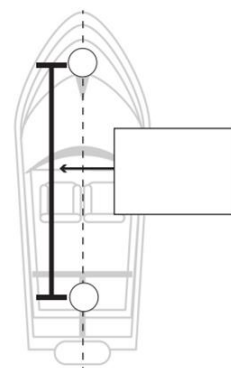
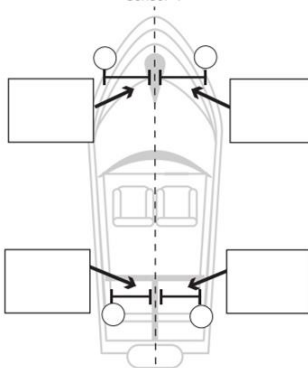
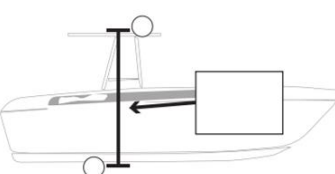
CSB User Tools

International Hydrographic Organization

CROWDSOURCED BATHYMETRY - VESSEL OFFSET MEASUREMENTS

Measurement Units (Circle One): meters (m) inches (in)

○ = Sensors (your GPS Antenna [not console] and Depth Sounder) - - - Vessel's Mid-Line
 ↳ Measurements

<p>Measurement 1 How far apart are the sensors in the fore/aft direction?</p>  <p>GPS Antenna forward of Sonar GPS Antenna aft (behind) Sonar</p> <p style="text-align: center;">← (circle one) →</p>	<p>Measurement 2 How far from the mid-line of the boat is each sensor*?</p>  <p>*Could be zero (0) if sensor is on midline. NOTE: Only 1 side of the center line needs to be filled in per sensor.</p>
<p>Measurement 3 How far apart are the sensors in the vertical direction?</p> 	<p>Participant Information</p> <p>Name: _____</p> <p>Email: _____</p> <p>Vessel: _____</p> <p>Approx. Draft (optional): _____ in or ft?</p> <p>Vessel Length (optional): _____ in or ft?</p>

Send a picture of this form to cms-comit@usf.edu

1 & Innovative Technologies, University of South Florida (2023)



WIBL Install Tutorial

A brief video tutorial of how to install the Wireless Inexpensive Bathymetry Logger (WIBL) developed by UNH CCOM/JHC (Brian Calder et al.). Applicable only to vessels with NMEA 2000 networks – NMEA 0183 tutorial forthcoming.


Vessel Offset Worksheet

A printable version of how to measure vessel offsets when installing a logger aboard a new vessel – or if a vessel has changed its equipment configuration. A picture or scan of the document can be sent to us at cms-comit@usf.edu.

Vessel Offset Online Form

An online option for submitting vessel offset metadata which can be done via a browser window on a laptop or cell phone. [Click here](#) to view a larger picture of the offset schematic.

<https://www.marine.usf.edu/comit/csbttools/>



WIBL Install Tutorial
Unlisted

COMIT | Center for Ocean Mapping & Innovative Tech
21 subscribers

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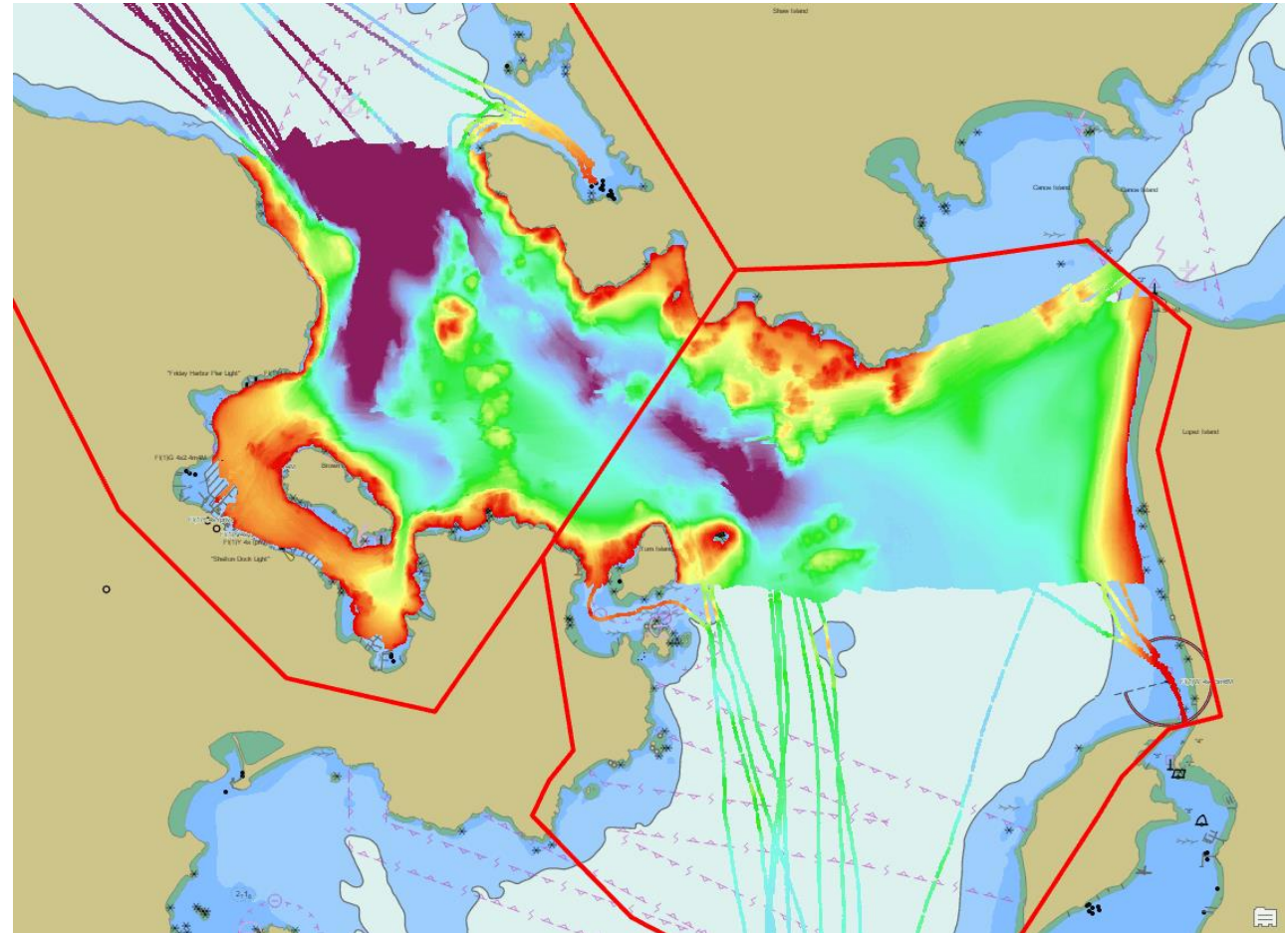


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CSB Processing Tools

NOAA is working to improve a publicly available CSB Processing Tool, including making it compatible with different tide data formats to be used in countries outside the NOAA Tidal Data API network.

- **Filter/Clean data** (i.e. erroneous dates, vessels named “Anonymous,” obvious depth fliers/outliers)
- **Tide correct** using discrete zone tide definitions
- **Derive and apply estimated vertical transducer offset** (transducer draft)
- **Grid/interpolate data**





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Geographic Filter

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The DCDB has developed a **CSB Coastal State Review Application** to automate the approval process of data for coastal states who have provided positive responses but request pre-approval of data before the public distribution from DCDB.

Many thanks to Denmark and France who tested the application last Fall.

Deployment of the application expected this Spring.

Home Manage Username: Chris Slater Log Out

Search Areas [Search CSB Data](#)

Search

[Search](#) [Clear](#)

Layer Chooser Show

French Exclusive Economic Zone

ID	296
GEONAME	French Exclusive Economic Zone
TERRITORY1	France
ISO_TER1	FRA
SOVEREIGN1	France
TERRITORY2	
ISO_TER2	
SOVEREIGN2	
TERRITORY3	
ISO_TER3	
SOVEREIGN3	
ISO_SOV1	FRA
ISO_SOV2	
ISO_SOV3	
EXCLUDE	manual
DATA_SET	EEZ

Trace Id	Publish	External Id	Provider	Platform	Instrument	Start Time	End Time	File Name	File Size	Last Updated
000033e4-759c-4591-af98-04c29f6b967b	true Change	MACGR-9221566-AIDAAURA-oyHjp011	MacGregor	Anonymous		2020-03-28T03:08:33Z	2020-03-28T03:10:16Z	20220322085844674039_9221566-AIDAAURA-oyHjp011.tar.gz	965	2022-03-28T21:17:48.738516Z
000042ca-d435-4d84-ae4-ec04163d4dc2	true Change	MACGR-9221566-AIDAAURA-oyHjp011	MacGregor	Anonymous		2020-04-29T03:00:32Z	2020-04-29T03:02:36Z	20220322083434750180_9221566-AIDAAURA-oyHjp011.tar.gz	798	2022-03-28T15:16:03.354039Z



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YOUR RHC CSB/Seabed 2030 Coordinator

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Suggested Coordinator Activities:

- Ensure that SB2030 & CSB are part of the RHC agenda.
- Liaise with appropriate GEBCO SB2030 Regional Data Centres
- Serve as a member of the IHO CSBWG & as the point of contact to the relevant Seabed 2030 Regional Centers. Attend both meetings.
- Provide updated SB2030 and CSB statistics and information to RHC (presentation and report) to be included in annual IRCC report.
- **Encourage positive responses to IHO CL 21/2020 and IRCC CL 01/2020**





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CSB Working Group

Representatives from 18 Member States: Canada, China, Denmark, France, Germany, India, Iran, Italy, Lebanon, Mexico, Netherlands, New Zealand, Norway, Portugal, South Africa, Sweden, UK, Uruguay, USA

Observers and expert contributors: CCOM-JHC, CIDCO, CIRES, Da Gama Maritime Ltd, Dongseo U, Dock Tech, ECC AS, ESRI, FarSounder, FLIR Systems AB, Fugro, GMATEK, Inc., Great Lakes Observing System (GLOS), H2i, James Cook U, JAMSTEC, Navico/C-Map, ONE Data Tech Co., Orange Force Marine, PYA, Seabed 2030, Sea-ID, SevenCs/ChartWorld, Teledyne CARIS, World Maritime University, and World Ocean Council



CSBWG14 - Stavanger, Norway, August 2023

The CSBWG is a great way to learn about CSB!

There is active participation from representatives of hardware and software companies along with scientists and hydrographers eager to collect and use these data.

If you want to learn more about the technology, the progress of ongoing projects, and new projects or if you or your Hydrographic Offices have questions or concerns about CSB data collection or sharing, consider joining or just attending the CSBWG.

OR...reach out to you CSB Coordinator!

CSBWG15 - 23-25 April 2024, Monaco



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CSBWG New Work Items

- A. Maintain and update IHO CSB Guidance Document (B-12)
- B. Submit IHO CSB initiative as a UN Decade Action
- C. Gather, prioritize and respond to HO-specific issues/opportunities regarding national policy/regulations related to CSB
- D. Gather and prioritize HO-specific issues relating to CSB data, including but not limited to Nautical Cartography
- E. Support CSB/SB2030 Coordinators in their RHC engagement
- F. Discuss and propose potential software tool support for HOs
- G. Clarify support identified by current Trusted Nodes needed for current and future Trusted Nodes.
- H. Clarify all aspects of the CSB data cycle and capture known issues, requirements and suggested enhancements.
- I. Develop a communication plan in coordination and collaboration with related efforts (SB2030, GEBCO, etc)
- J. Develop a recognition & incentive strategy plan



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IRCC WORKSHOP ON CROWDSOURCED BATHYMETRY

26 April 2024 - Virtual

The workshop will present an overview of CSB activities, legal considerations and experiences from the hydrographic community on CSB as a collaborative approach to gather and share depth data.

National Hydrographers, or their Deputies, are strongly encouraged to participate & attend.

IHO CIRCULAR LETTER 14/2024

https://iho.int/uploads/user/circular_letters/eng_2024/CL14_2024_EN_v1.pdf



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A CHALLENGE TO THE NSHC:

Investigate how CSB can be used as a validation tool for a resurvey scheme.

Take ownership of these data and their potential uses!