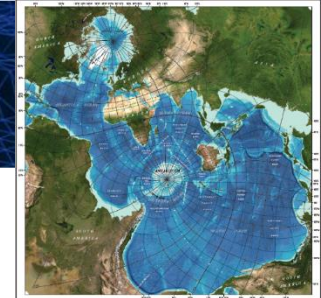


The last great mapping endeavor of our planet

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:

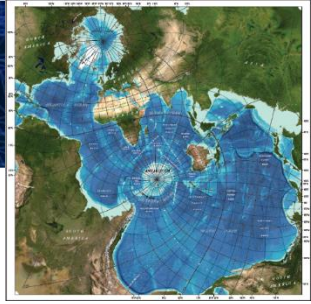
Vision:

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.

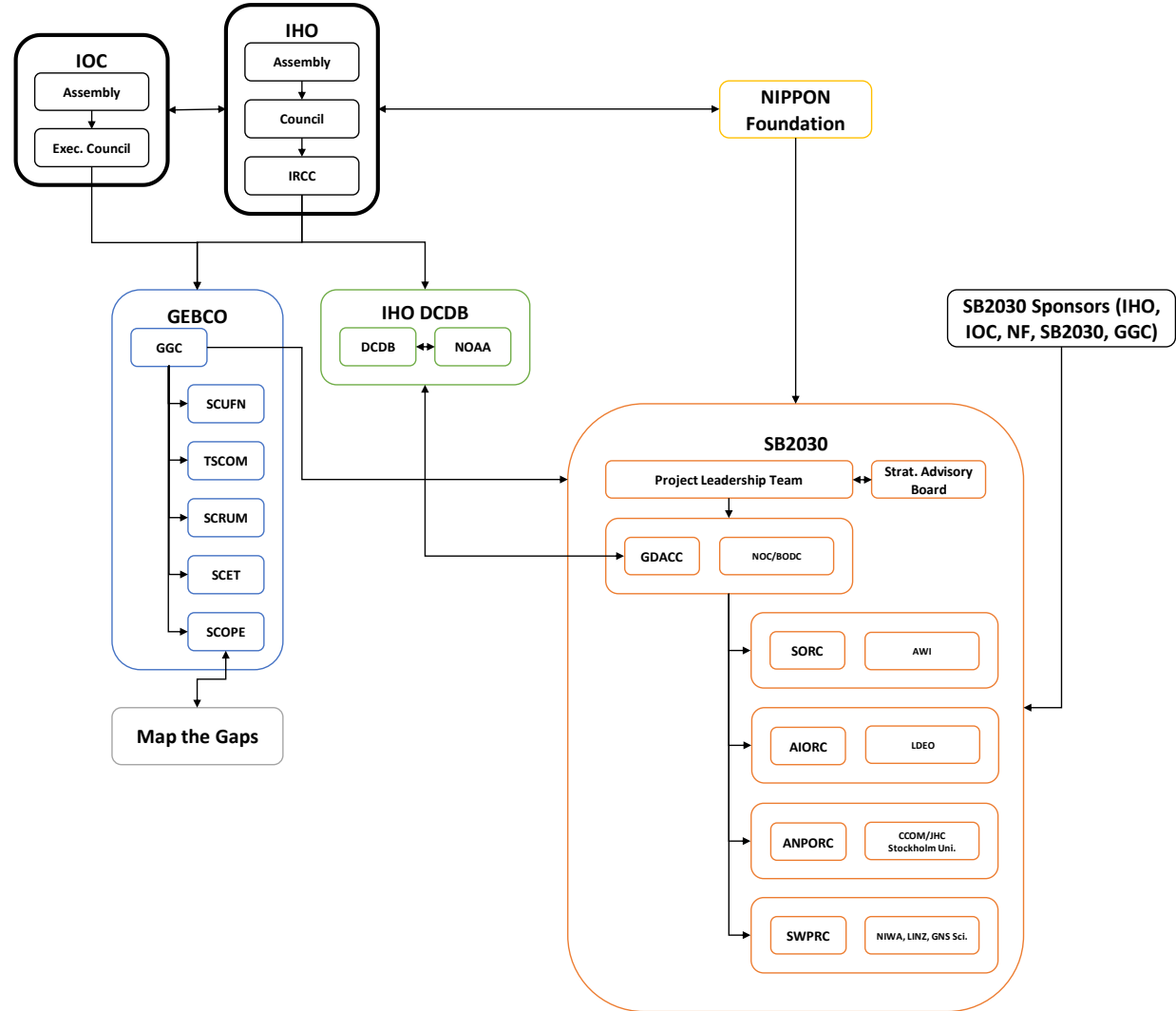
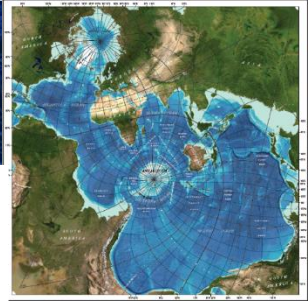
This is achieved by enabling and inspiring seabed mapping efforts through international collaboration, technological innovation, capacity development, and education.



GEBCO status:

2. GEBCO Governance Review

Towards a more future proof organization



A world map showing bathymetry data, with ocean depths indicated by color gradients from light blue (shallow) to dark blue (deep). The map includes labels for major continents and oceans. The text "IHO Data Centre for Digital Bathymetry Activities" is overlaid in white.

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/

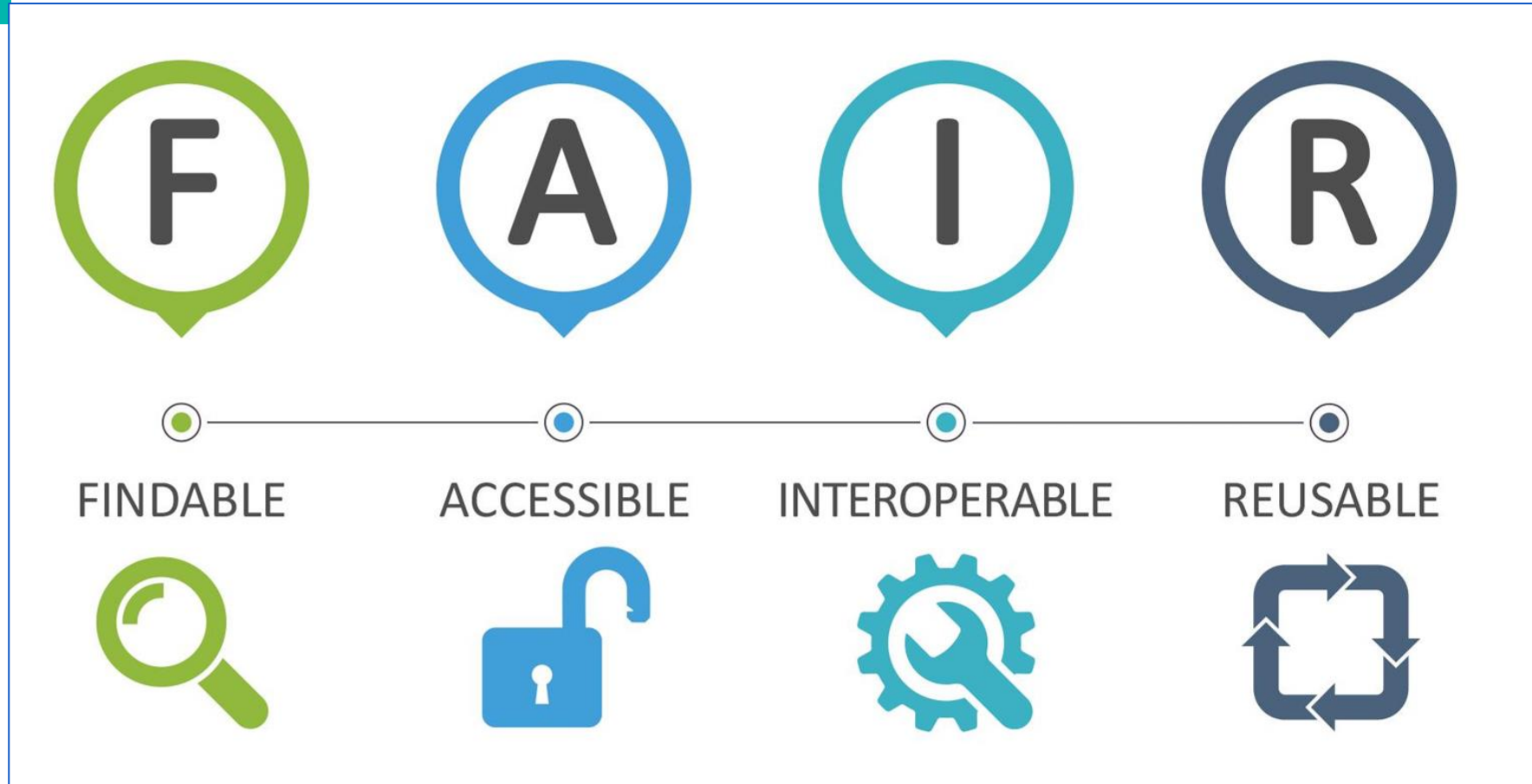
During the IHO Assembly, the signing of the MoU was recognized by Dr. Mathias Jonas and RDML Ben Evans





IHO

International
Hydrographic
Organization



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

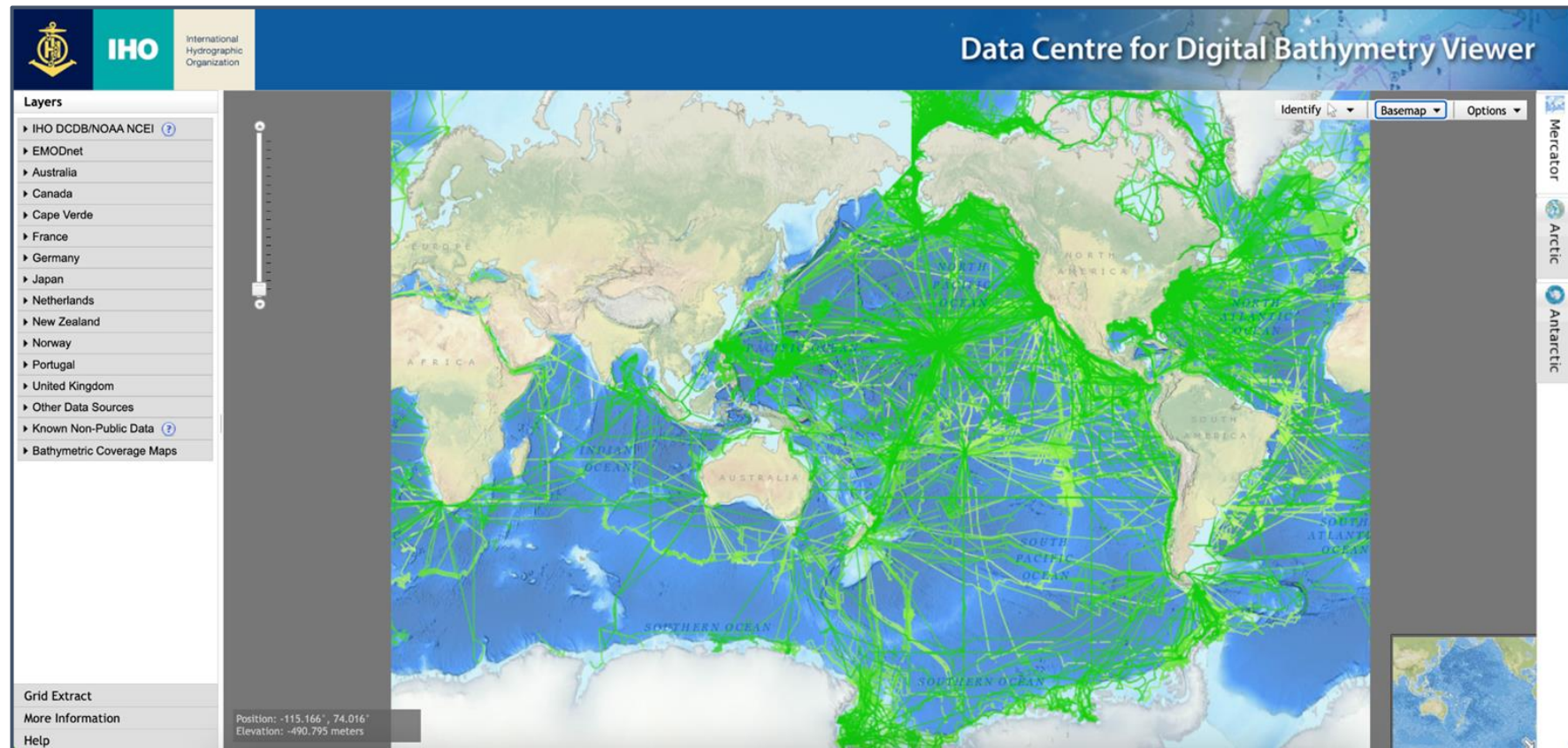


IHO

The World Reference for Raw Bathymetry

International
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/

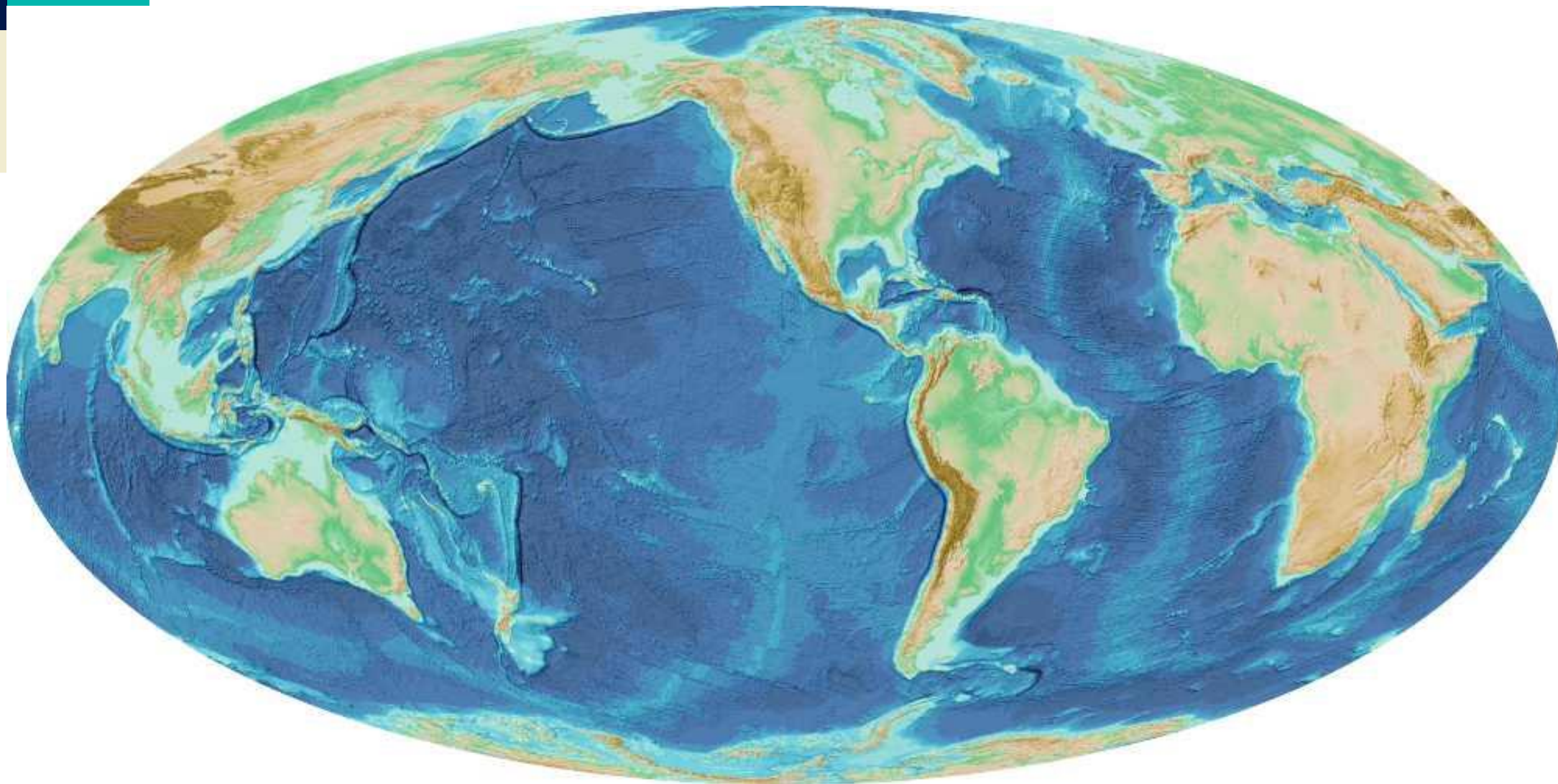




IHO

GEBCO 2023

International
Hydrographic
Organization



GEBCO 2022 grid = 23.5% of seafloor mapped

GEBCO 2023 grid = 24.9% of seafloor mapped



IHO

International
Hydrographic
Organization

DATA HOLDINGS



IHO

DCDB Data Holdings - HCA

ncei.noaa.gov/maps/iho_dcdb/



IHO

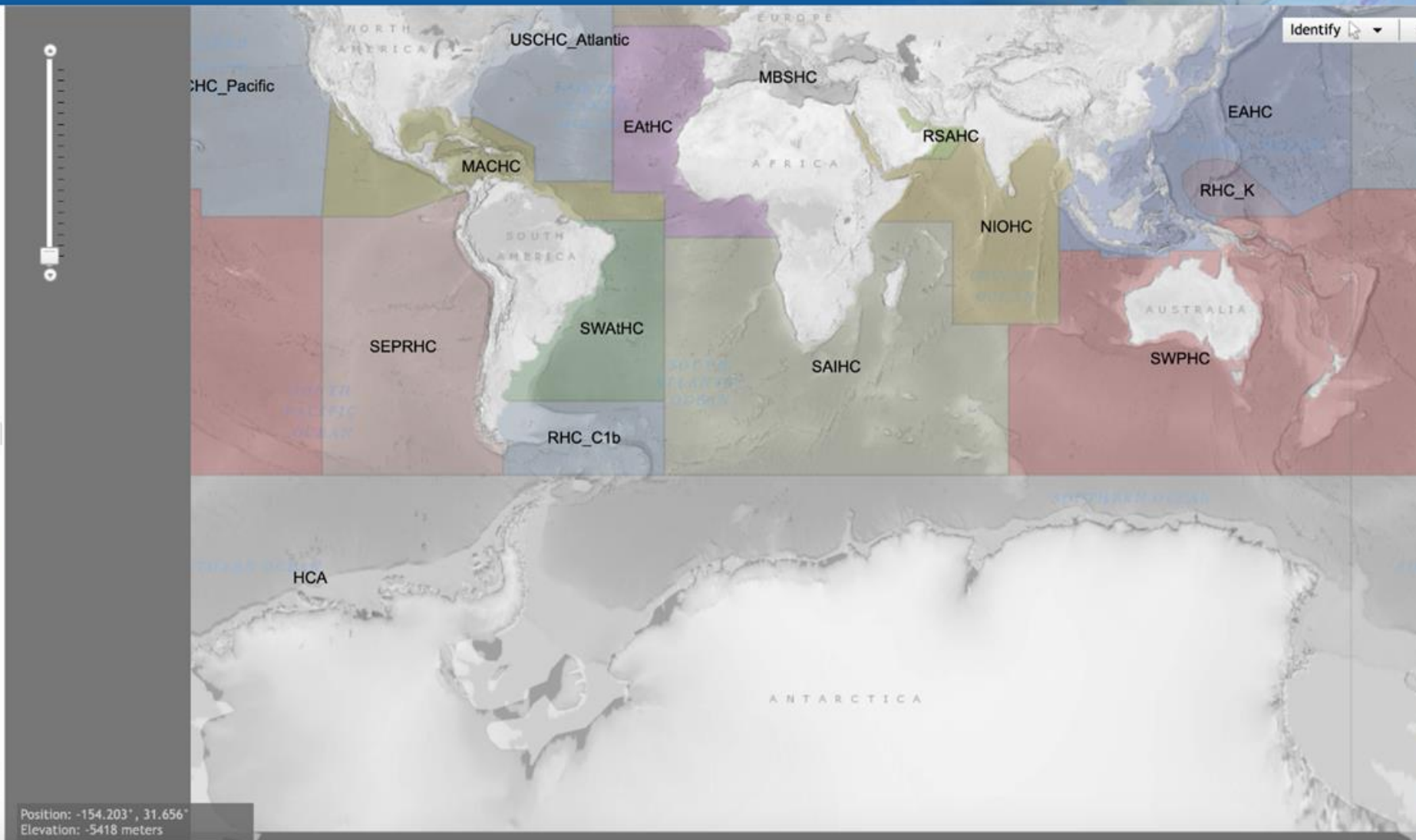
International Hydrographic Organization

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 ?
 -
 -
 - Crowdsourced Bathymetry 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

Position: -154.203°, 31.656°
Elevation: -5418 meters





IHO

DCDB Data Holdings - Multibeam

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

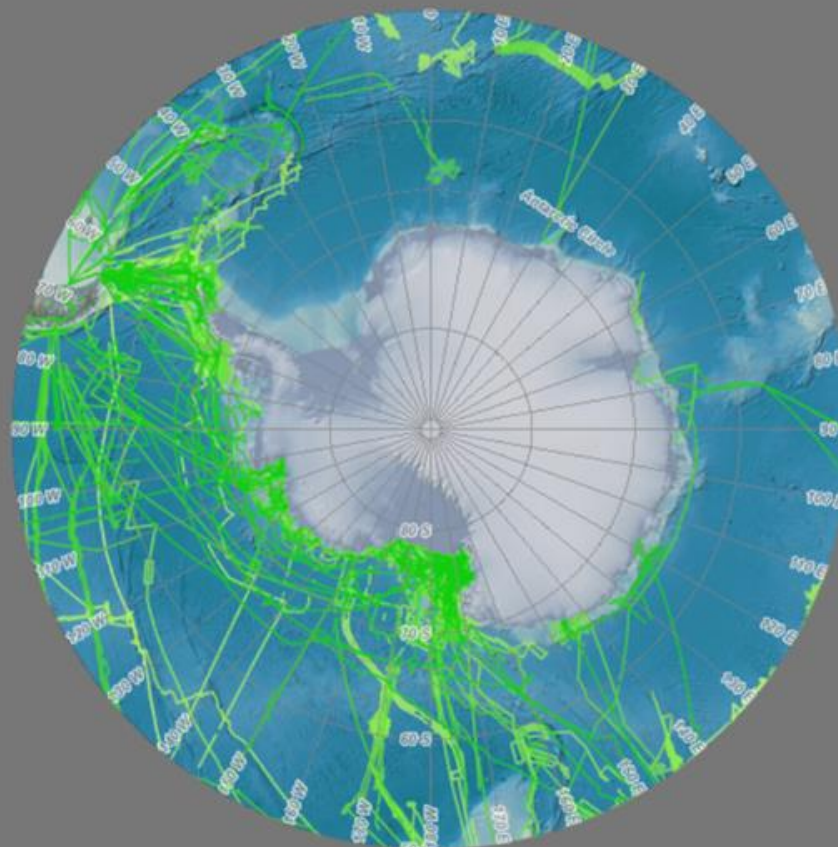
Search CSB Files

- U.S. Bathymetry Coverage and Gap Analysis

- EMODnet
- Australia
- Canada
- Cape Verde
- France
- Germany
- Japan
- Netherlands
- New Zealand
- Norway
- Portugal
- Grid Extract
- More Information
- Help

Identify Basemap Options

- Mercator
- Arctic
- Antarctic



Position: -89.297°, -3.583°
 Elevation: -3513 meters

Note: only IHO DCDB/NOAA NCEI layers are available in the Arctic and Antarctic map views.



IHO

DCDB Data Holdings - Multibeam

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

Reset

- Crowdsourced Bathymetry Files

Search CSB Files Reset

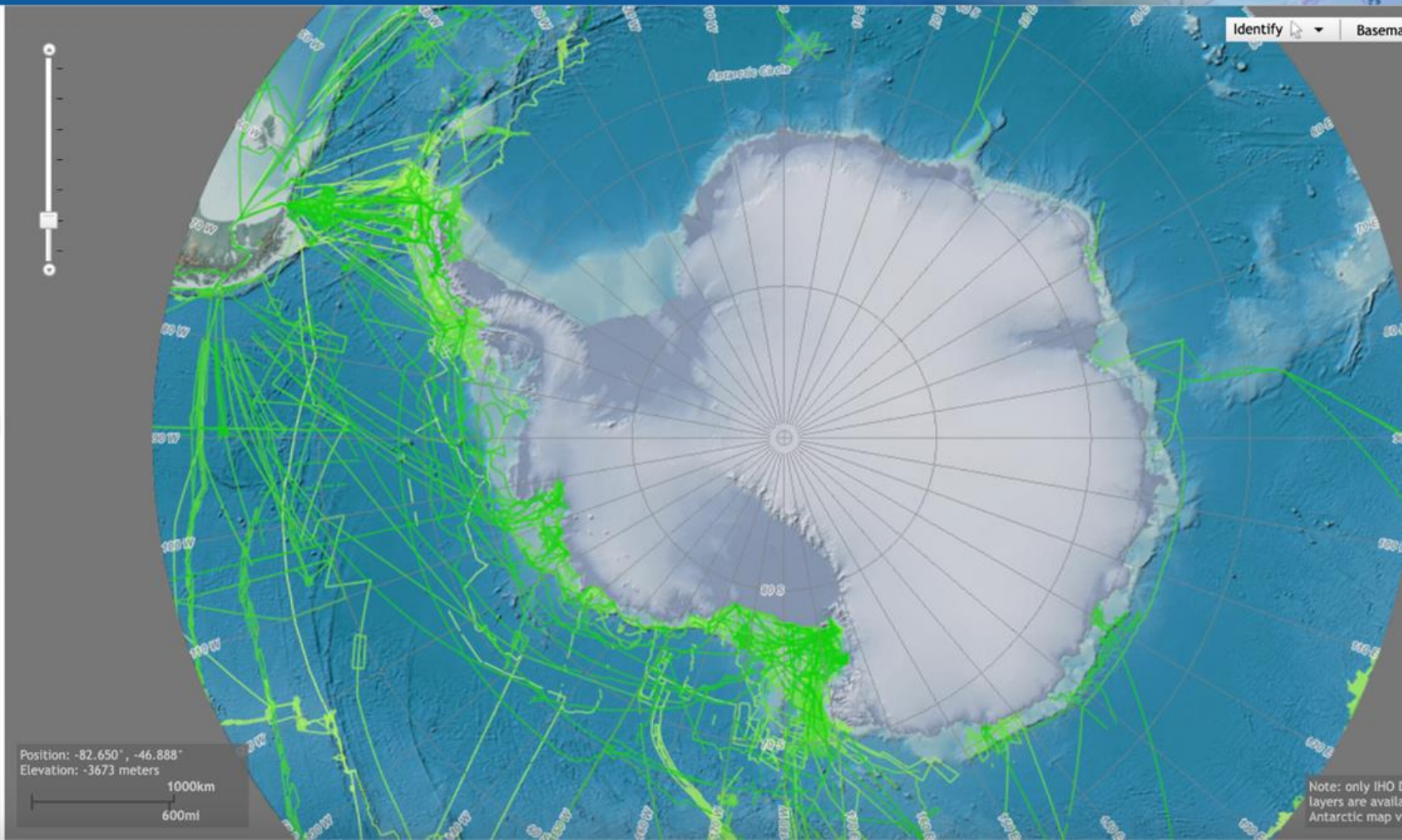
- U.S. Bathymetry Coverage and Gap Analysis

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

Grid Extract

More Information

Help



Identify Basemap Options

- Mercator
- Arctic
- Antarctic

Note: only IHO DCDB/NOAA NCEI layers are available in the Arctic and Antarctic map views.



IHO

DCDB **NEW** Data Holdings - Multibeam

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

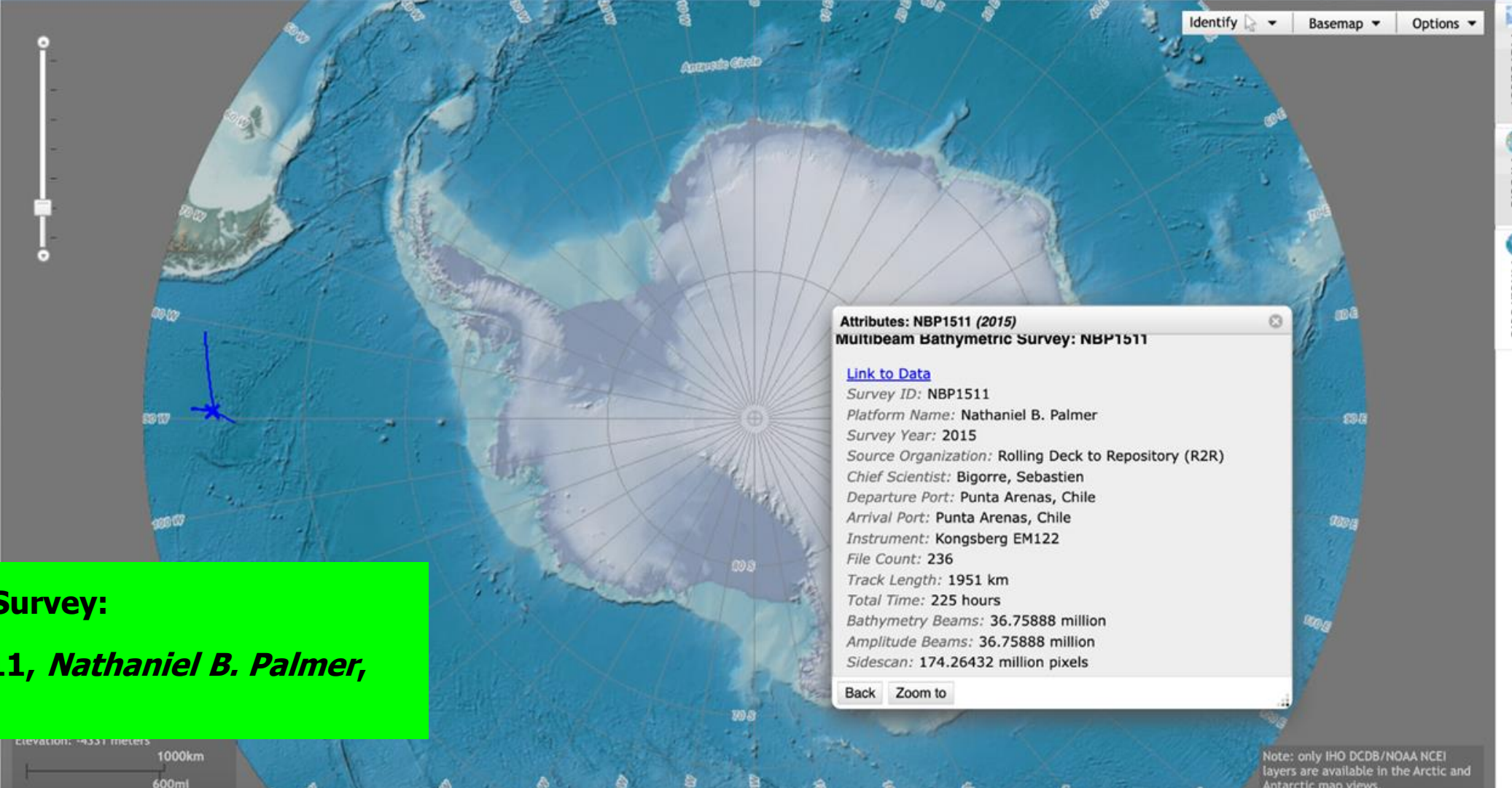
Reset

Current filter:
Date Added: 2023-01-01 to 2024-04-04

- Crowdsourced Bathymetry Files
- Search CSB Files
- Reset
- U.S. Bathymetry Coverage and Gap Analysis

EMODnet

- ▶ Australia
- ▶ Canada
- ▶ Cape Verde
- ▶ France
- ▶ Germany



1 New Survey:
NBP1511, Nathaniel B. Palmer, 2015



Note: only IHO DCDB/NOAA NCEI layers are available in the Arctic and Antarctic map views.



IHO

DCDB Data Holdings - Singlebeam

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

Reset

- Crowdsourced Bathymetry Files

Search CSB Files

Reset

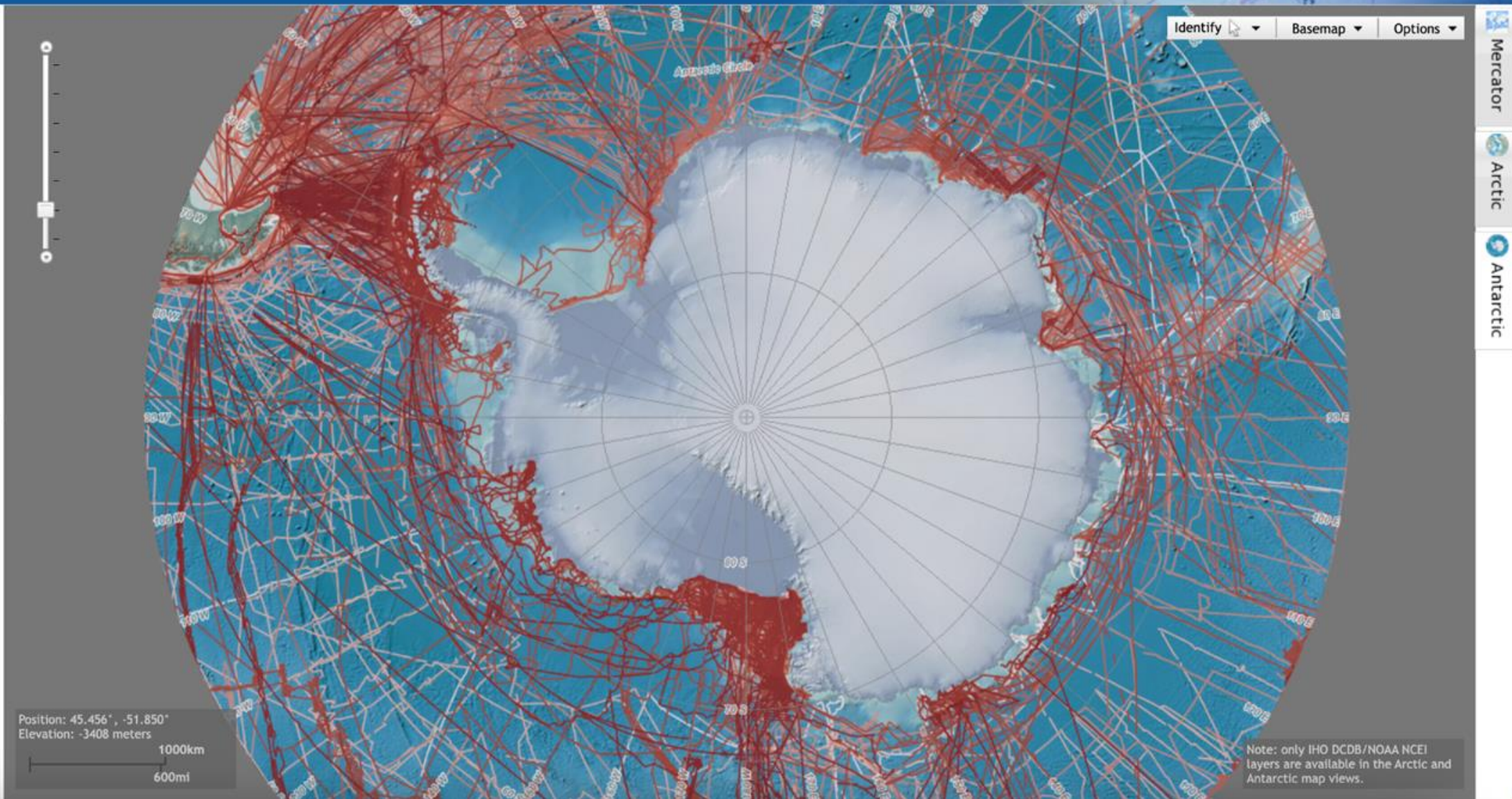
- U.S. Bathymetry Coverage and Gap Analysis

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

Grid Extract

More Information

Help





IHO

DCDB **NEW** Data Holdings - Singlebeam



IHO

International Hydrographic Organization

Data Centre for D

21 Newly ADDED Surveys, all collected on the *Nathaniel B. Palmer*.

- NBP0007A, 2000
- NBP0105, 2001
- NBP0202, 2002
- NBP0305, 2003
- NBP0404, 2004
- NBP0409, 2004
- NBP0703, 2007
- NBP0710, 2007
- NBP0802, 2008
- NBP0803, 2008
- NBP0901, 2009
- NBP1005, 2010
- NBP1105, 2011
- NBP1107, 2011
- NBP1303, 2013
- NBP1304, 2013
- NBP1403, 2014
- NBP1410, 2014
- NBP1601, 2016
- NBP1603, 2016
- NBP1701, 2016

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

Current filter:
Date Added: 2023-01-01 to 2024-04-04

- Crowdsourced Bathymetry Files

Search CSB Files Reset

- U.S. Bathymetry Coverage and Gap Analysis

EMODnet

Australia

Canada

Cape Verde

France

Germany

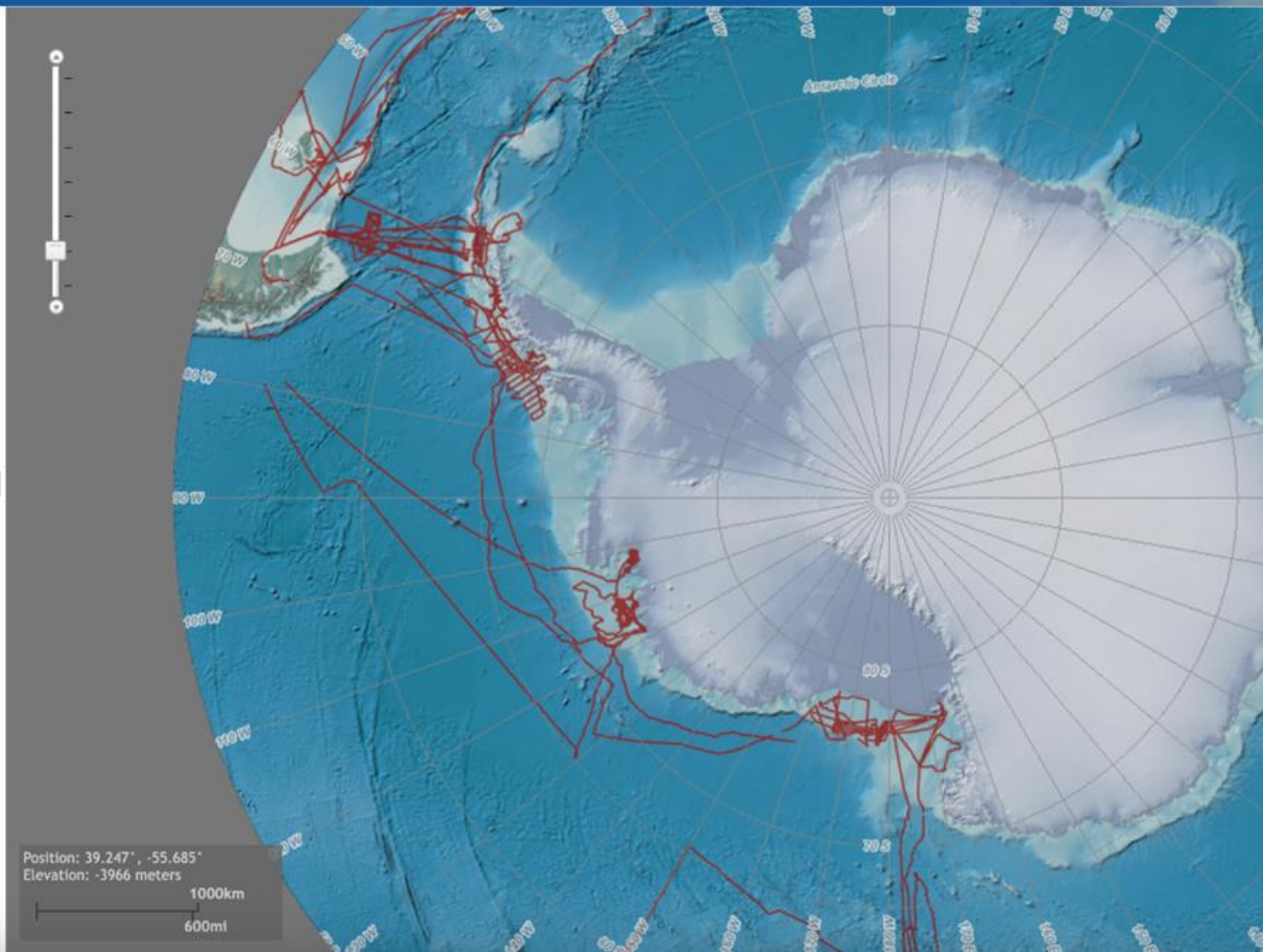
Japan

Netherlands

Grid Extract

More Information

Help





IHO

DCDB Data Holdings - Crowdsourced Bathymetry

Data Contributions: 2019

International
Hydrographic
Organization



- Rosepoint Navigation Systems

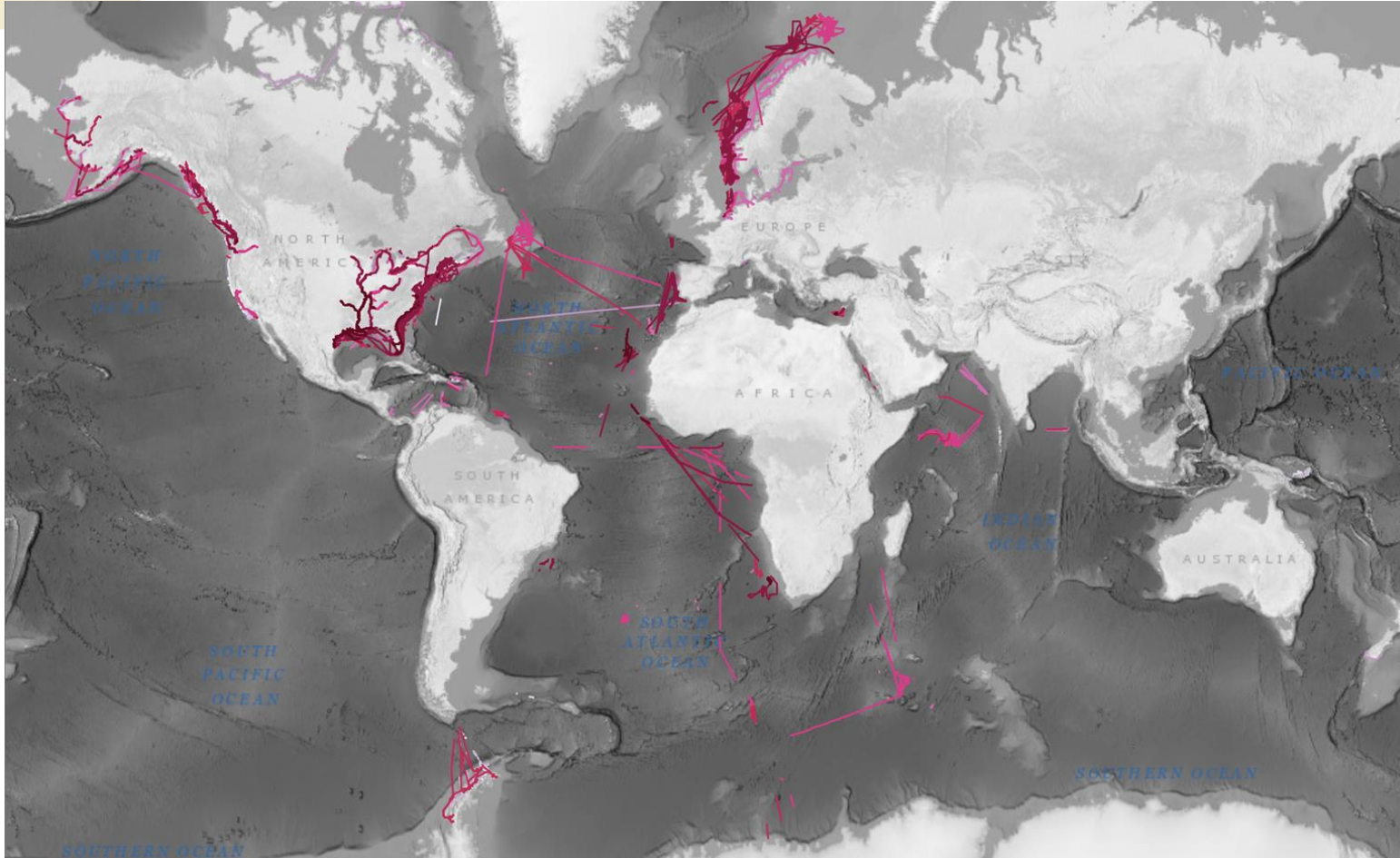


IHO

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.



IHO

DCDB Data Holdings - Crowdsourced Bathymetry



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

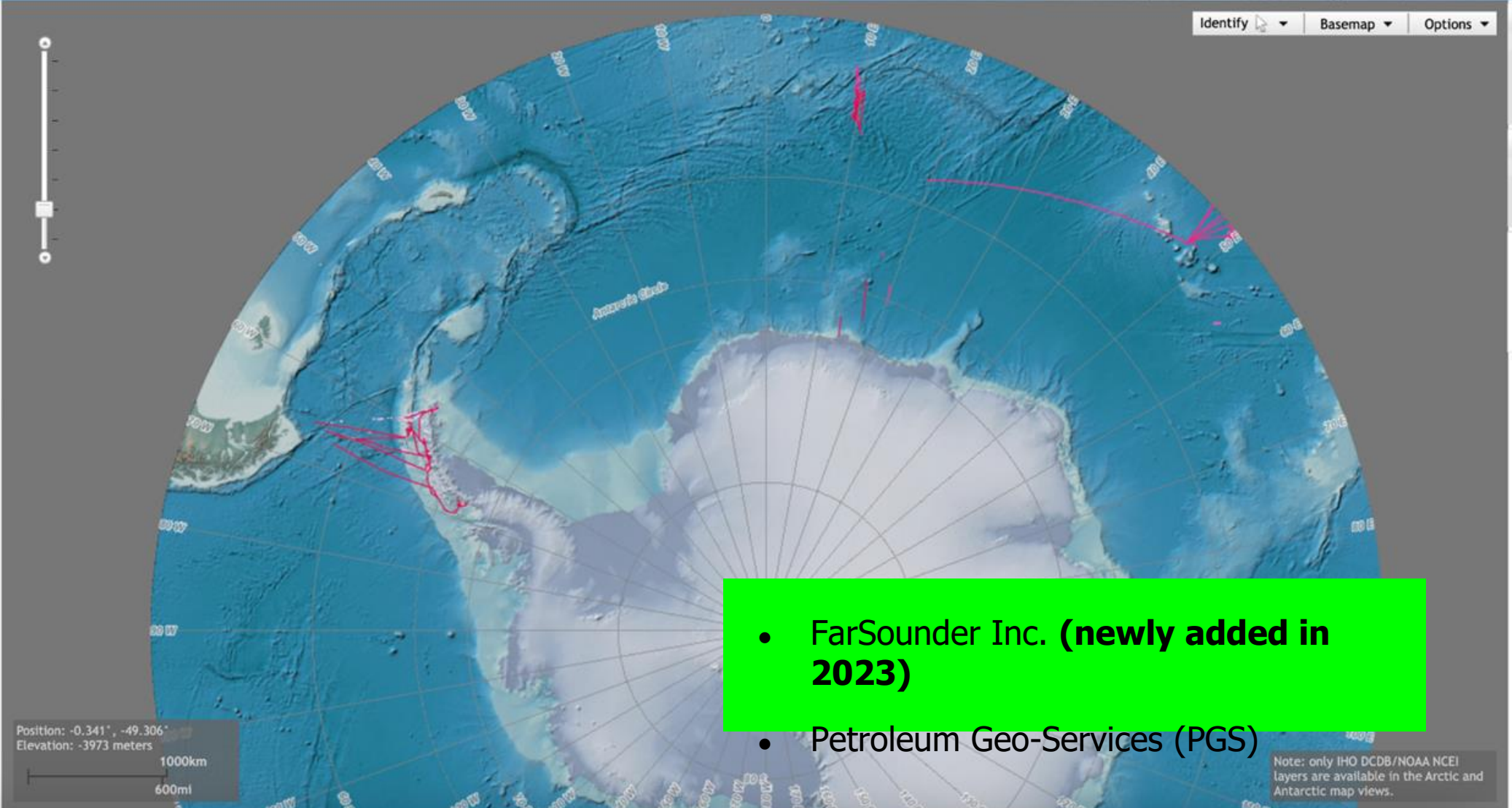
- Crowdsourced Bathymetry Files

Search CSB Files Reset

- U.S. Bathymetry Coverage and Gap Analysis

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

- Grid Extract
- More Information
- Help



Identify Basemap Options

- Mercator
- Arctic
- Antarctic

- FarSounder Inc. (newly added in 2023)
- Petroleum Geo-Services (PGS)

Note: only IHO DCDB/NOAA NCEI layers are available in the Arctic and Antarctic map views.



IHO

DCDB Web Services - EMODnet



IHO

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.





IHO

DCDB Web Services - Australia



IHO

International Hydrographic Organization

Data Centre for Digital Bathymetry Viewer

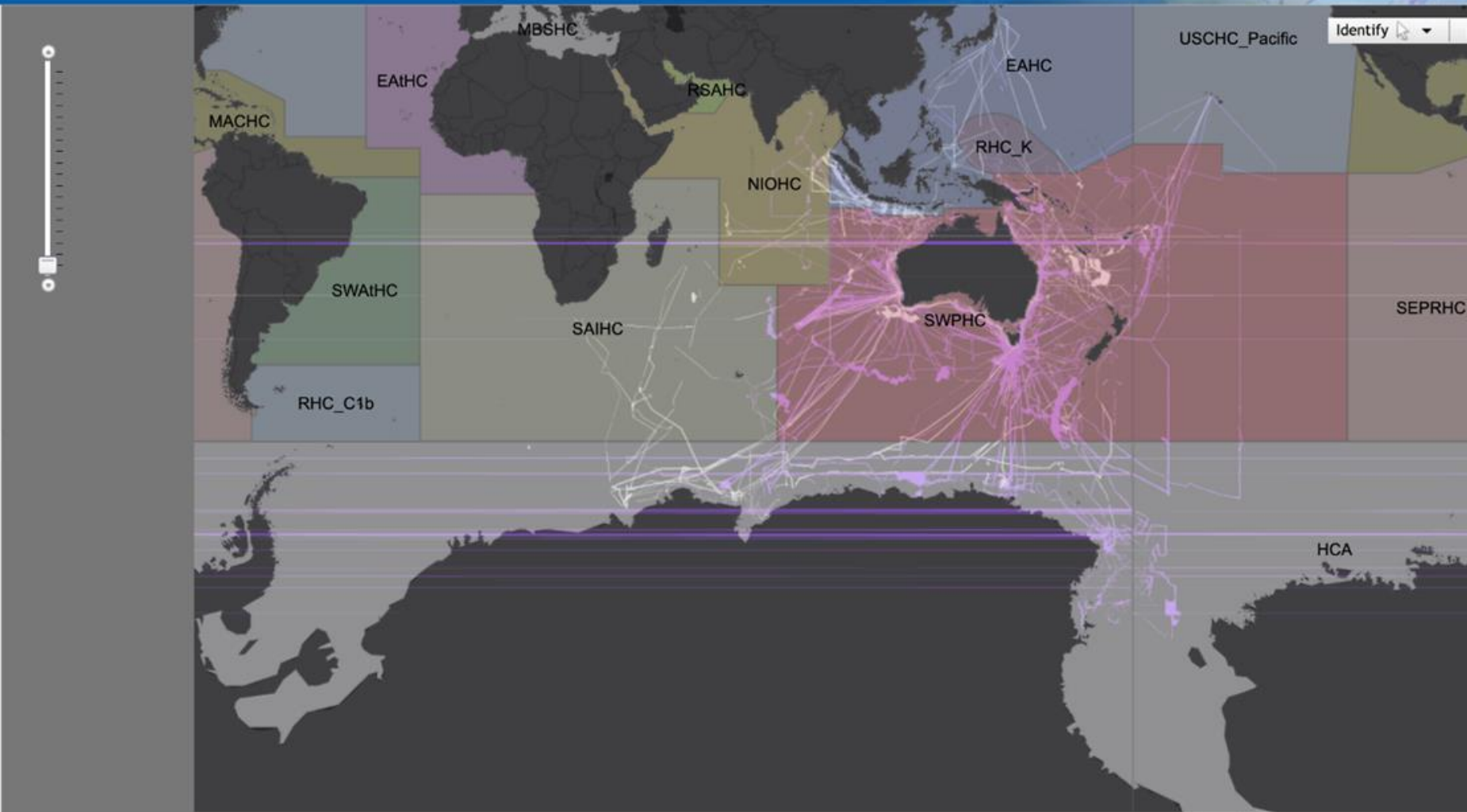
Layers

- ▶ IHO DCDB/NOAA NCEI [?](#)
- ▶ EMODnet
- ▼ Australia
 - AusSeabed Bathymetry Acquisitions Coverage [?](#)
 - AusSeabed Bathymetry Compilations Coverage [?](#)
- ▶ Canada
- ▶ Cape Verde
- ▶ France
- ▶ Germany
- ▶ Japan
- ▶ Netherlands
- ▶ New Zealand
- ▶ Norway
- ▶ Portugal
- ▶ United Kingdom
- ▶ Other Data Sources
- ▶ Known Non-Public Data [?](#)
- ▶ Bathymetric Coverage Maps

Grid Extract

More Information

Help



Identify Basemap Options

Position: 55.666°, -81.501°
Elevation: 3752 meters

- Mercator
- Arctic
- Antarctic





IHO

DCDB Web Services - France

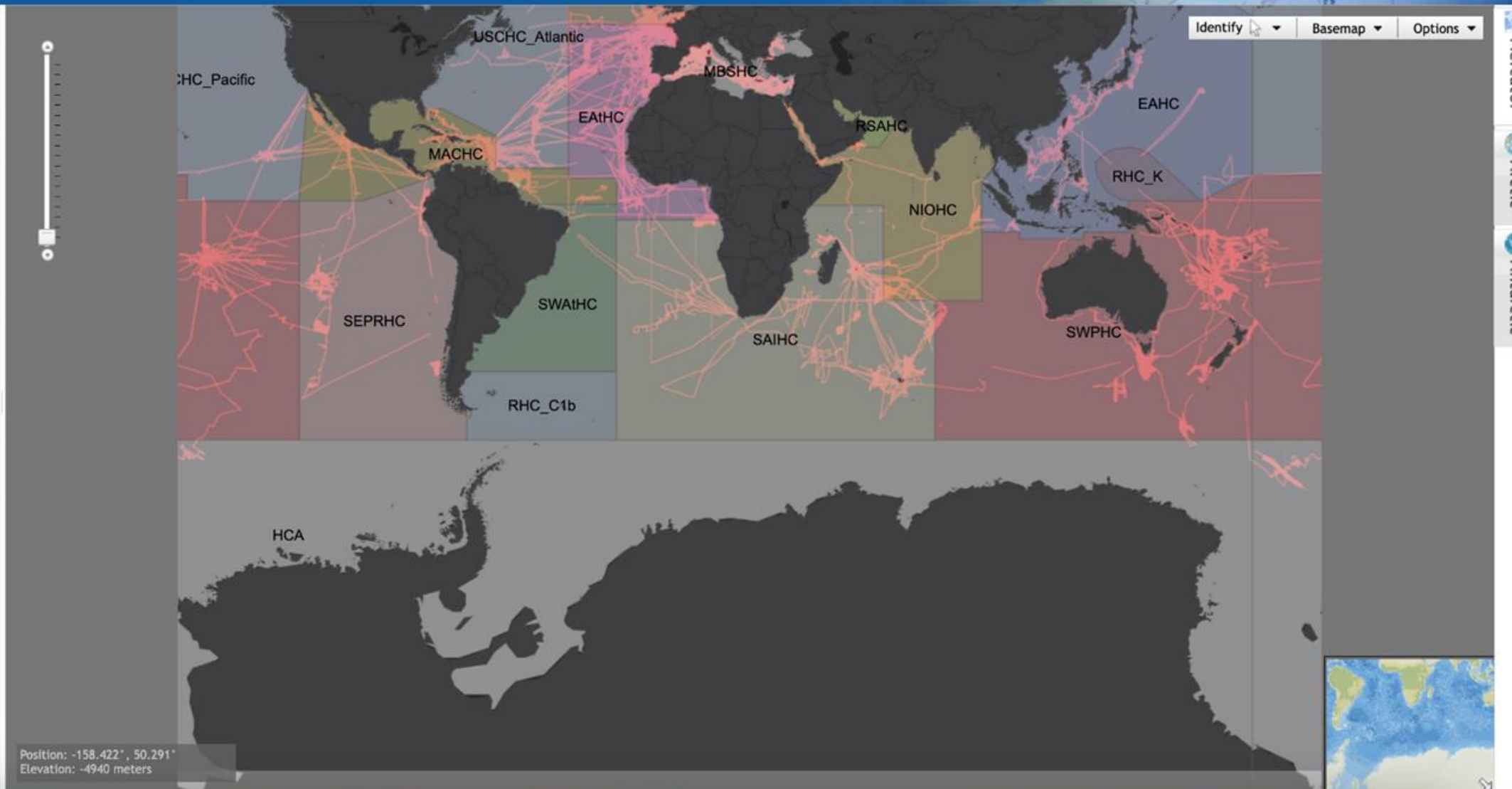


IHO

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



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: 110.875°, 41.773°
Elevation: 1492.12 meters



Identify Basemap Options

Mercator Arctic Antarctic





IHO

DCDB Web Services - New Zealand



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
 - LINZ Bathymetric Data Index [?](#)
 - LINZ Bathymetric Surface Model Index [?](#)
- ▶ 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



Position: -167.563°, 33.434°
Elevation: -5556 meters



IHO

International
Hydrographic
Organization

Thank you for your web services!

ncei.noaa.gov/maps/iho_dcdb/

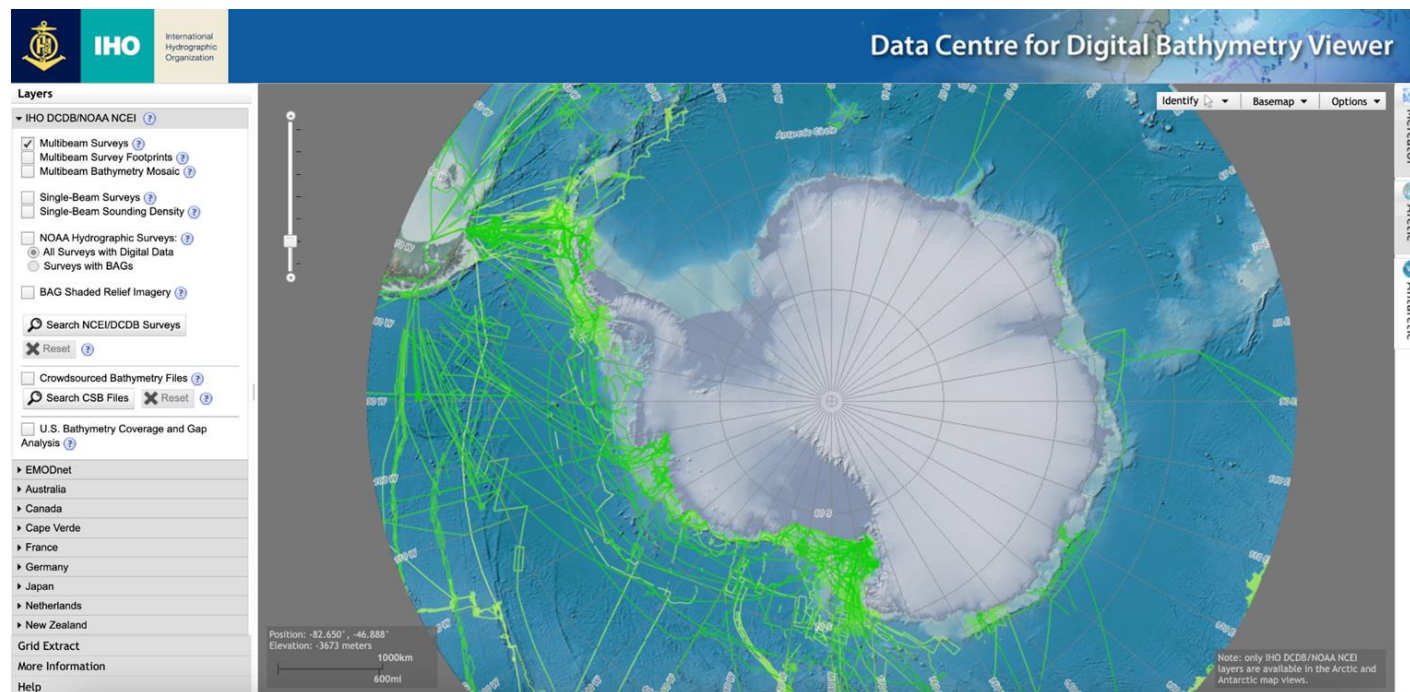


IHO

HCA Members are reminded to:

International
Hydrographic
Organization

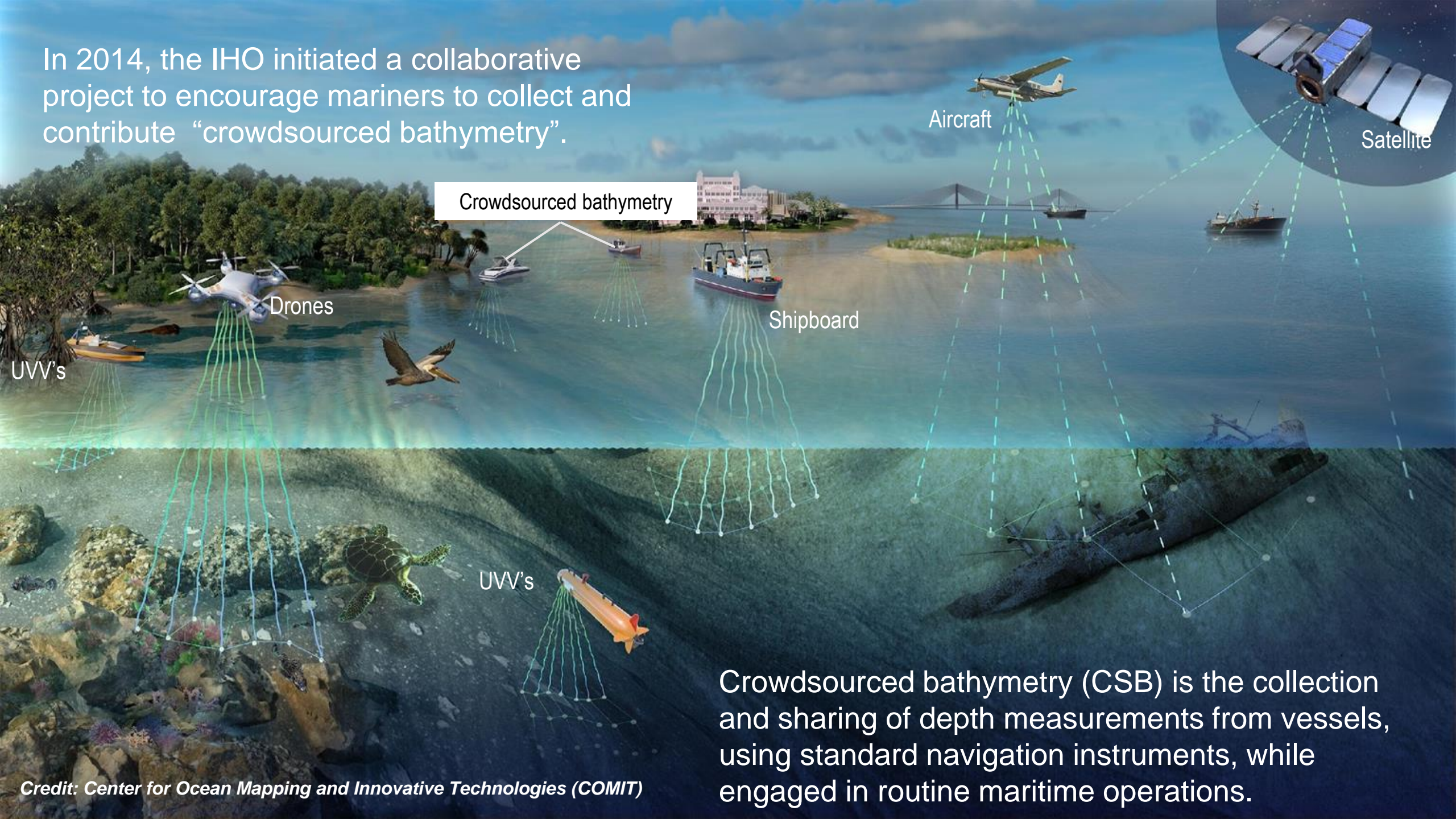
- Contact the DCDB if issues arise when attempting to discover or access data
- Consider contributing data to the DCDB
- Consider building and/or including your web services in the DCDB viewer



ncei.noaa.gov/maps/iho_dcdb/

jennifer.jencks@noaa.gov

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.

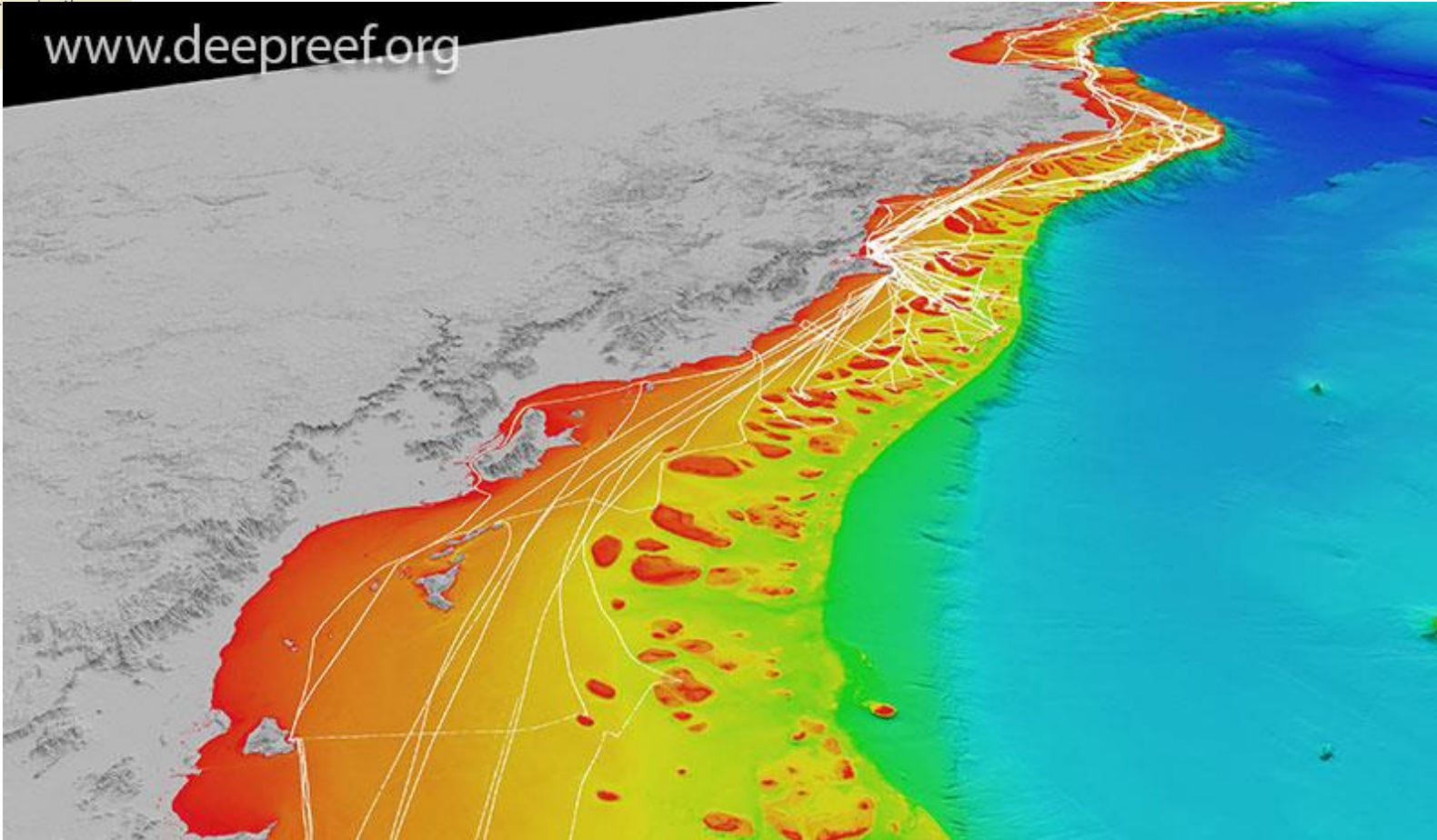


IHO

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

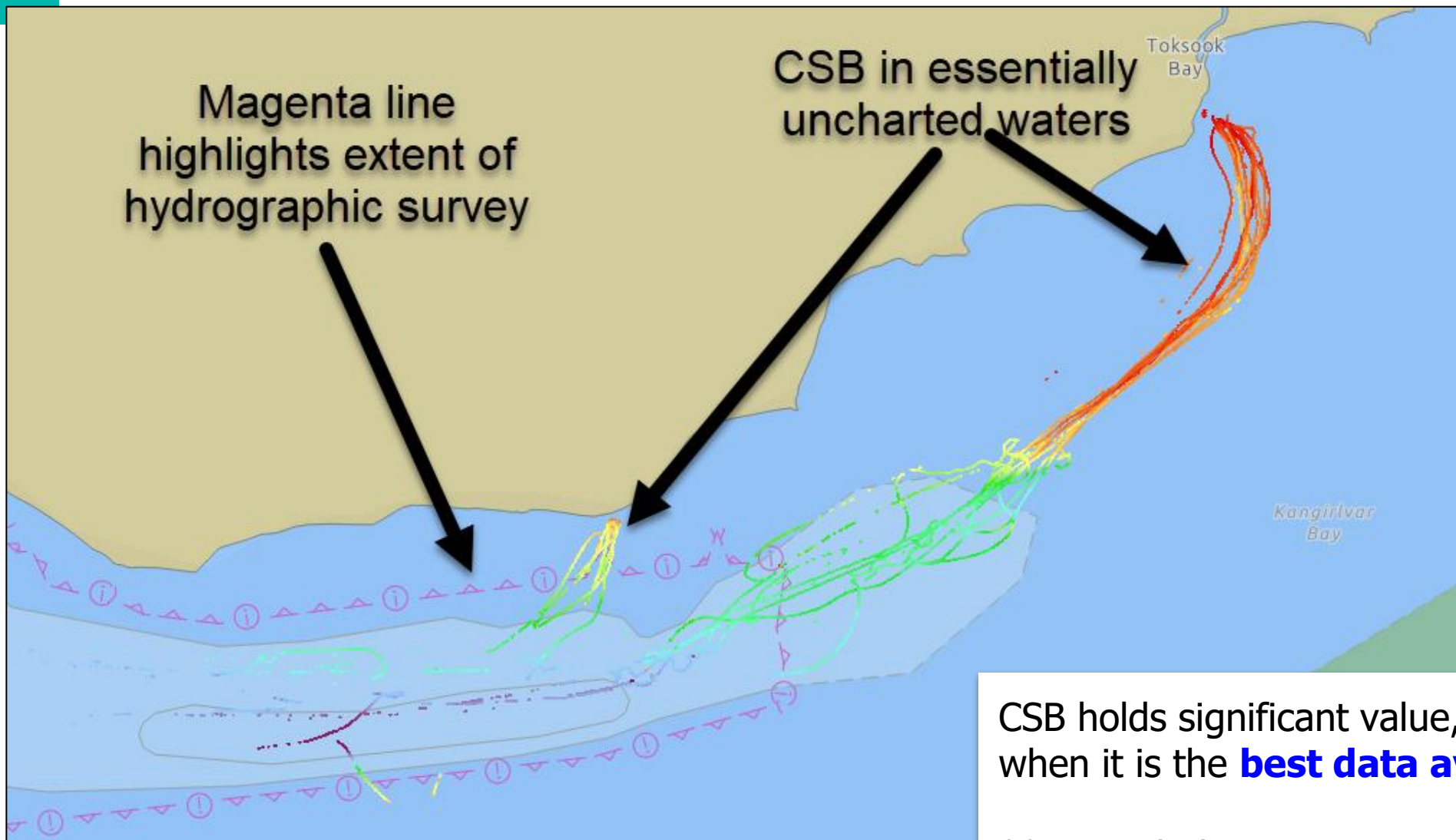
3D view of northern Great Barrier Reef showing all vessel tracks as of December 2019.

Credit: Robin Beaman



IHO

Example Use: CSB collected in Uncharted Areas



CSB holds significant value, especially when it is the **best data available**.
Particularly in remote areas

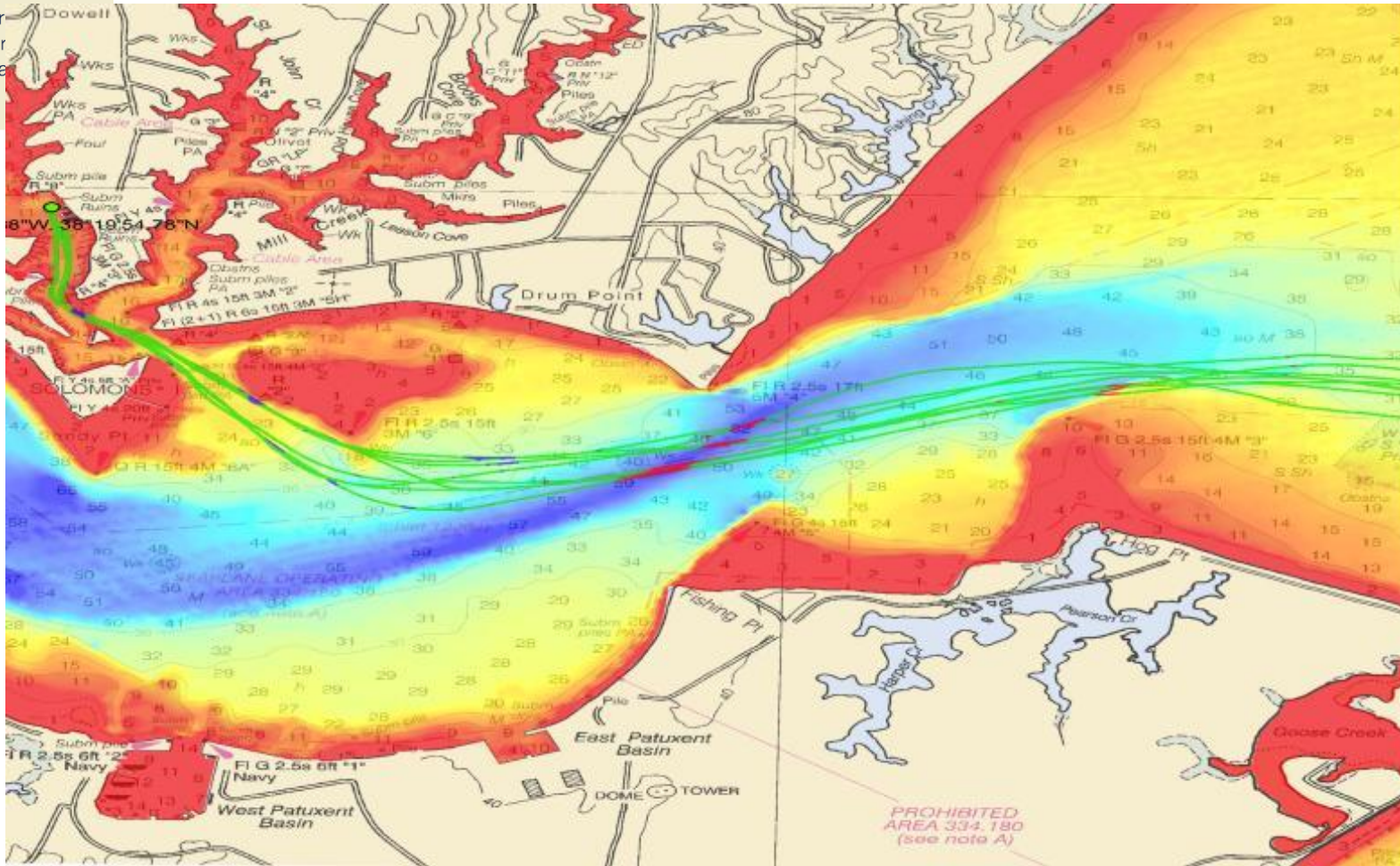
CSB tracks collected through and past the extent of a NOAA hydrographic survey in Toksook Bay, Alaska. Image courtesy of NOAA.



IHO

Example Use: CSB as Input to Resurvey Schemes

Inter
Hydr
Orga



- 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.

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.



IHO

International
Hydrographic
Organization

CSB-BASED RESOURCES

CURRENT & UNDER DEVELOPMENT



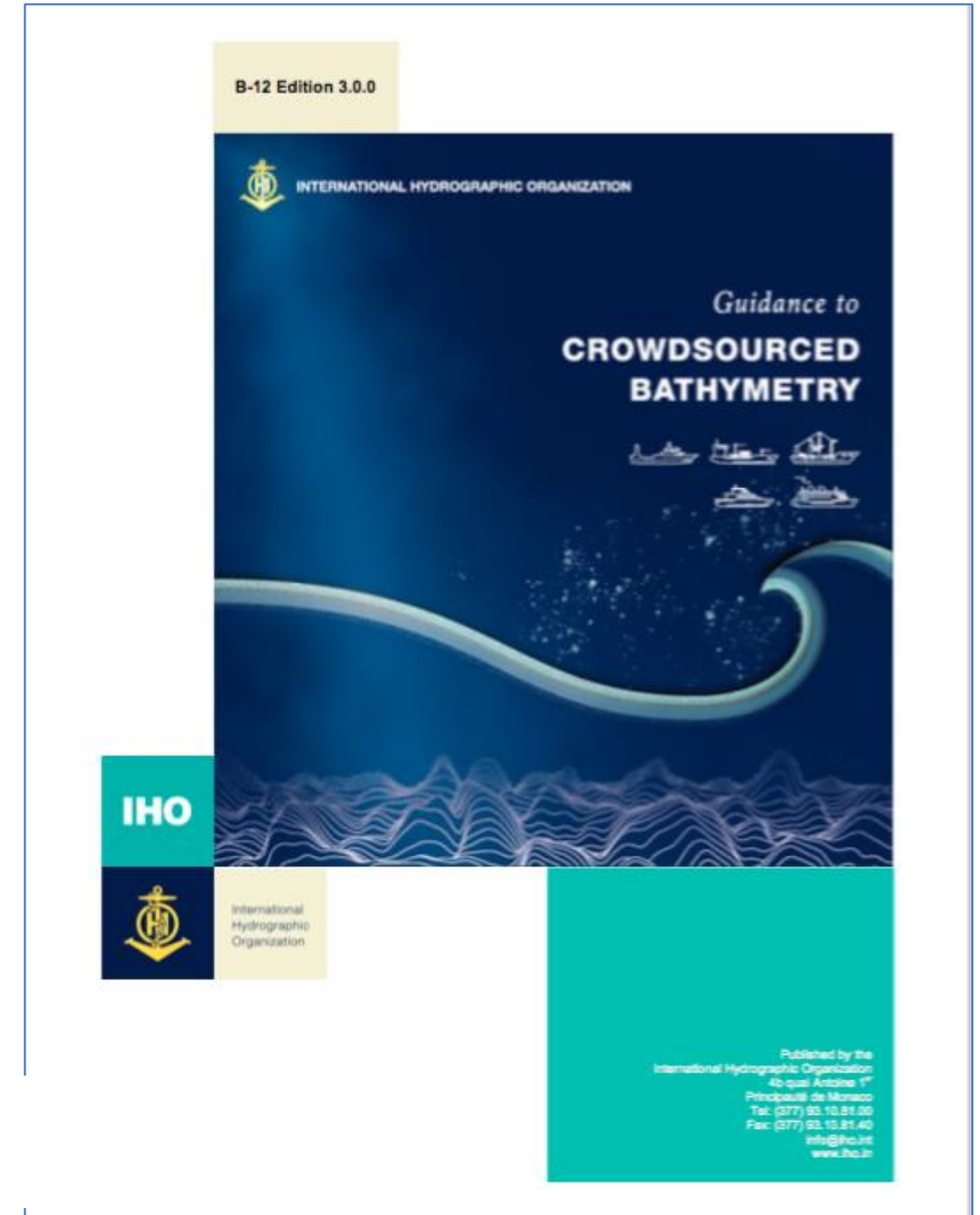
IHO

B-12 IHO Guidance on Crowdsourced Bathymetry

International
Hydrographic
Organization

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-BGuidance_Document-Edition_3.0.0_Final.pdf

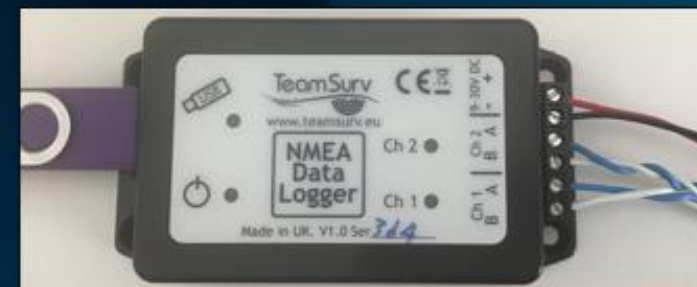


Data Loggers provided by Seabed 2030

Free data loggers provided to the community

Installation support

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





IHO

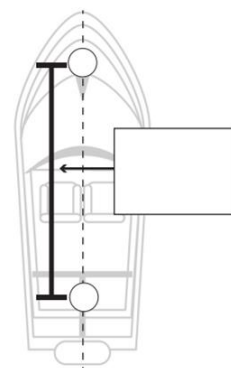
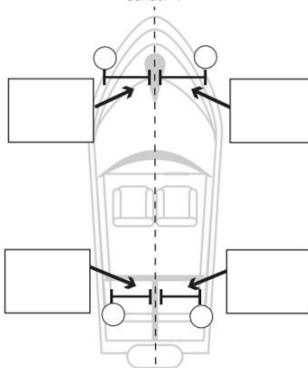
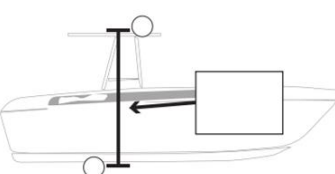
CSB User Tools

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/csb/tools/>



WIBL Install Tutorial
Unlisted

COMIT | Center for Ocean Mapping & Innovative Tech
21 subscribers

Like Comment Share Download Clip Save ...

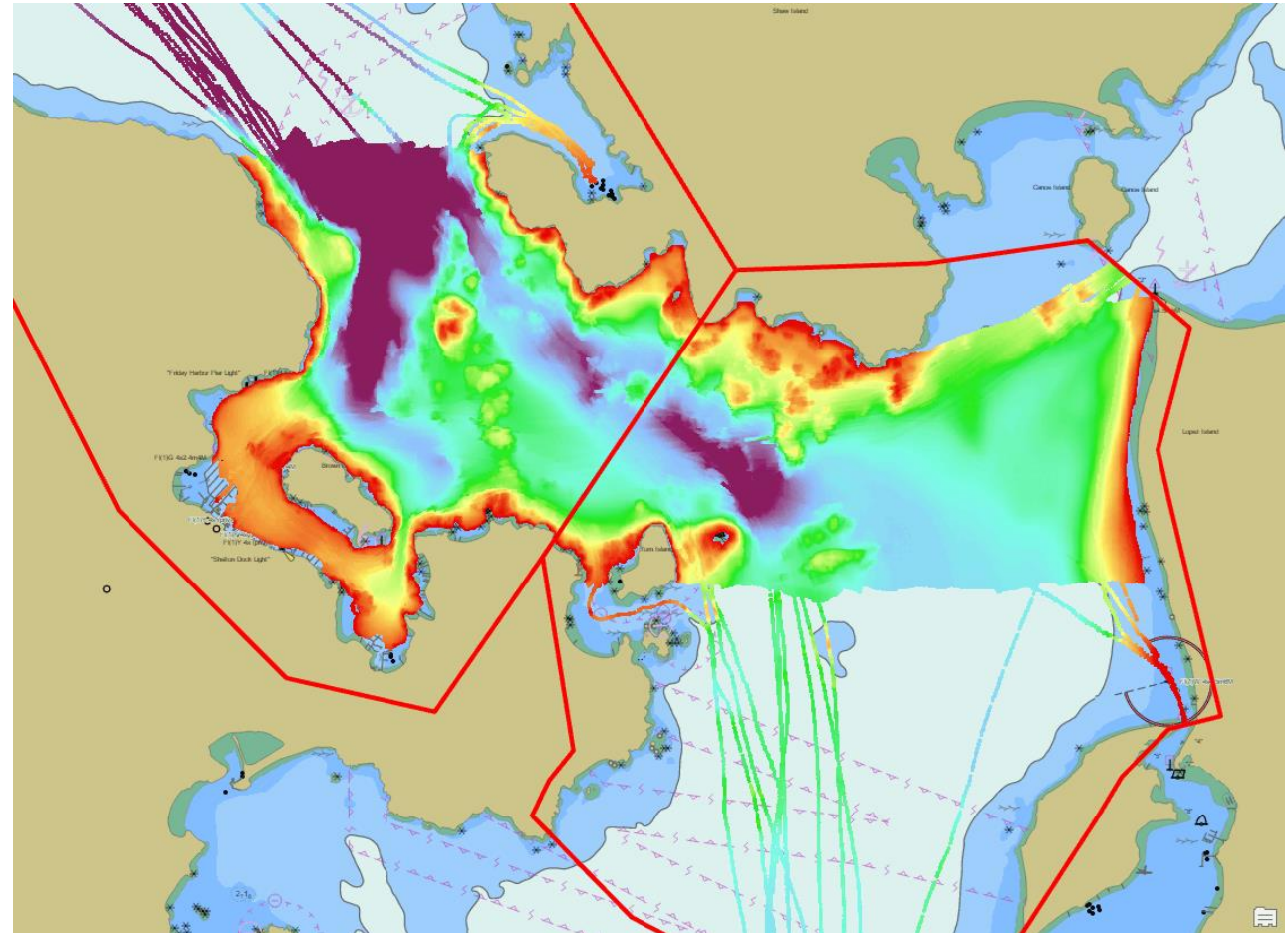


IHO

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**





IHO

Geographic Filter

International
H
C

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-aea4-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



IHO

YOUR RHC CSB/Seabed 2030 Coordinator

International
Hydrographic
Organization

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**





IHO

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



IHO

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



IHO

International
Hydrographic
Organization

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



IHO

International
Hydrographic
Organization

A CHALLENGE TO THE NSHC:

Investigate how CSB can be used to support HOs in the NS

- *As input to resurvey schemes.*
- *As a data source for lower prioritised areas*

Take ownership of these data and their potential uses!