Crowdsourced Bathymetry

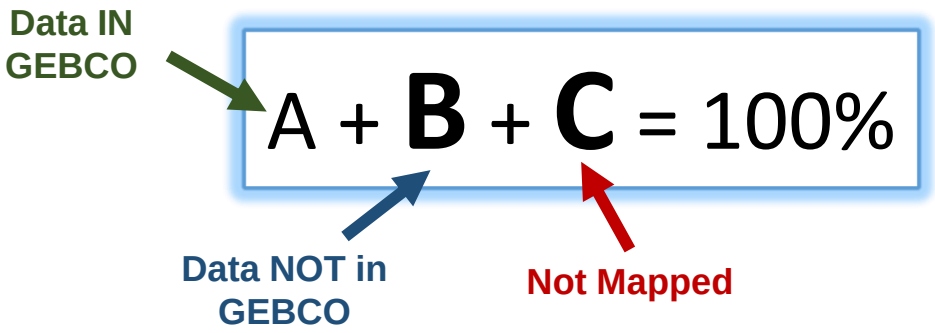
Batimetría Colaborativa

Belen Jimenez

IHO

International Hydrographic Organization

How can you get involved?



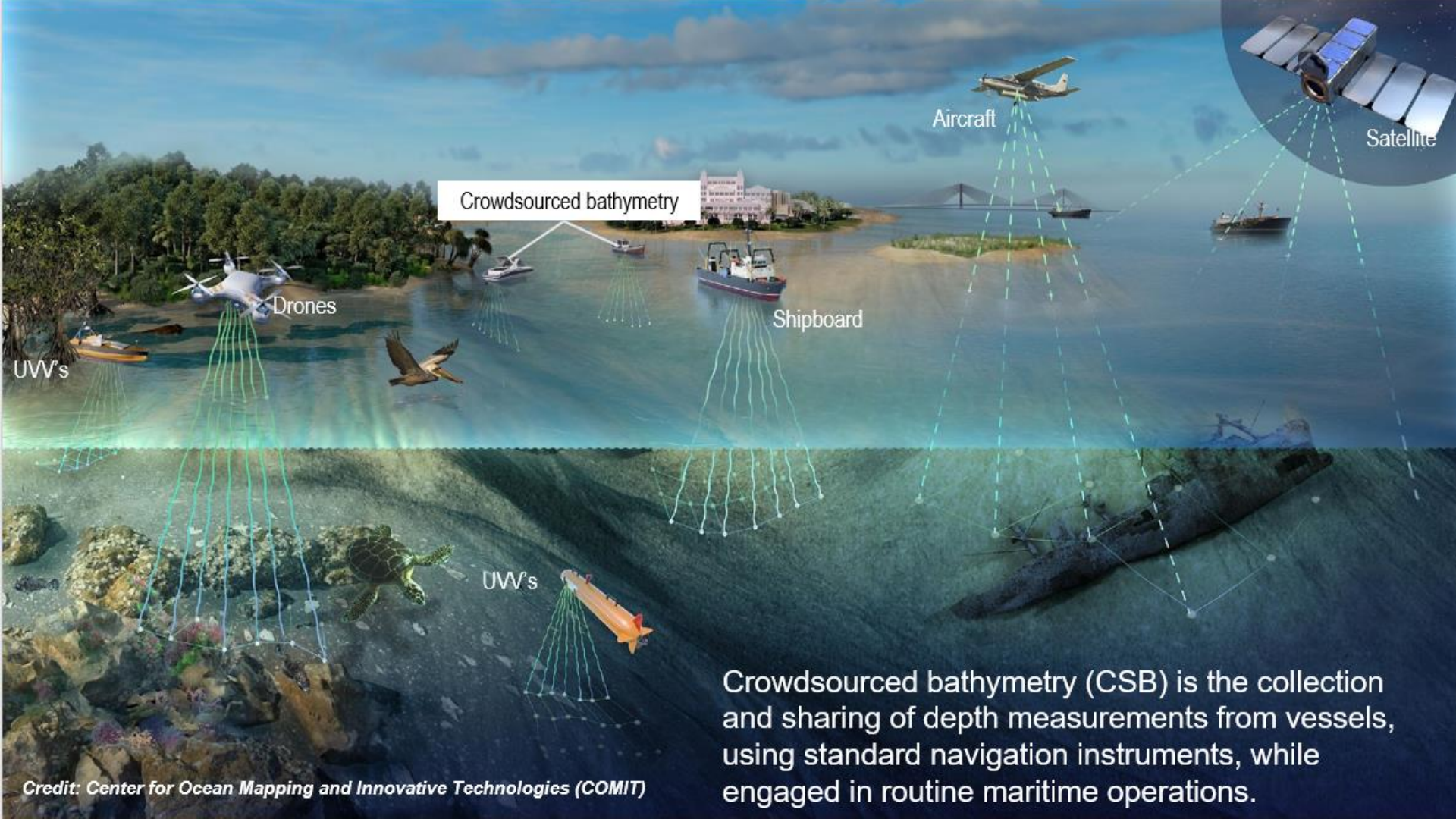
Contribute Data

Collect Data in Transit

Talk about Seabed 2030

Crowdsourced Bathymetry

Fill in the Gaps



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

Credit: Center for Ocean Mapping and Innovative Technologies (COMIT)

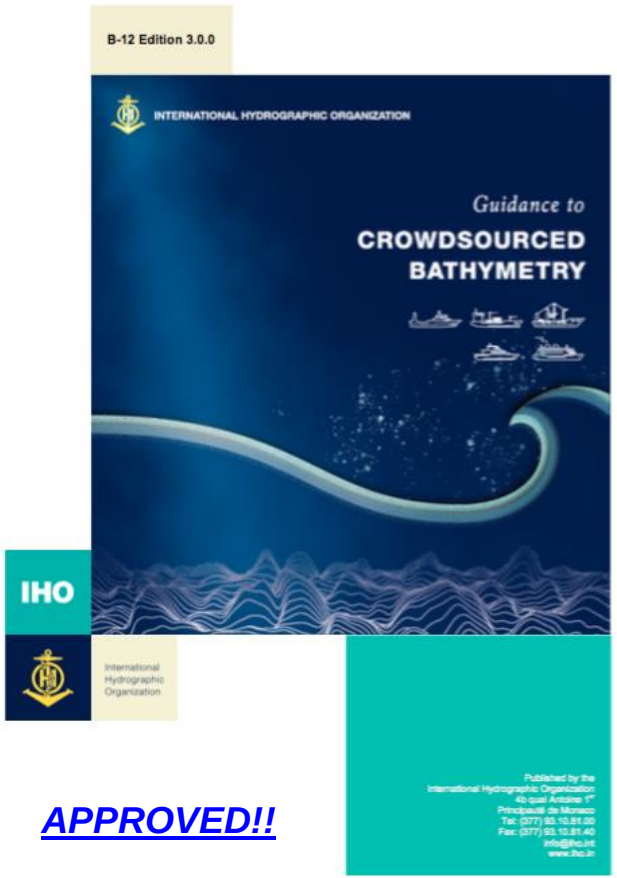
The IHO Crowdsourced Bathymetry Initiative

Updates include:

Incorporating feedback from operational use and experience, making the document more "equipment agnostic", simplifying the document and making it more accessible to ALL readers (data collectors, providers and users).

Higher participation of HOs resulted in guidance document that better represents the interests of Member States.

iho.int/uploads/user/pubs/bathy/B_12_CSB-Guidance_Document-Edition_3.0.0_Final.pdf



APPROVED!!

SEABED 2030

How to Collect & Contribute CSB Data
IHO – DCDB

- Network of "**Trusted Nodes**"
  - Data liaisons between mariners (data collectors) and the DCDB.
  - May supply data logging equipment, technical support, data download support and data transfer to the DCDB.
- CSB data minimum required information (XYZ, timestamp).

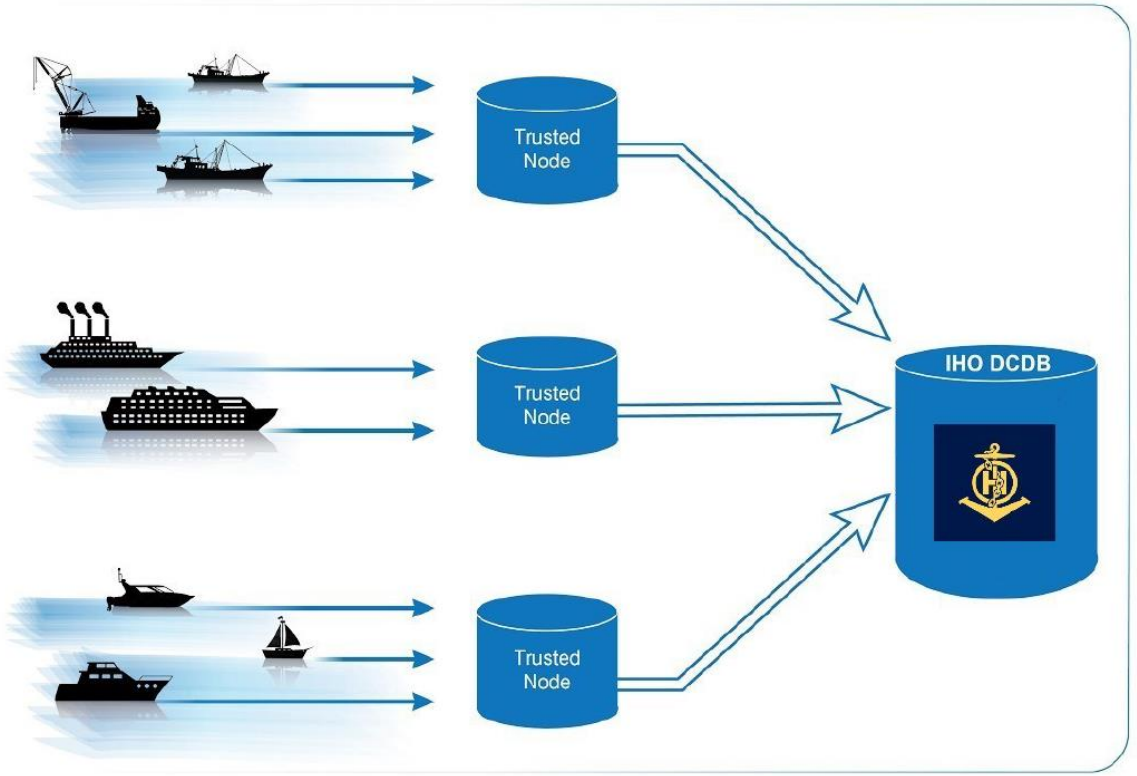


Figure 2. Data flow from vessels, through Trusted Nodes, to the IHO DCDB.

IHO CSB Working Group

International Hydrographic Organization

- **Meetings:** 13 meetings, 1 industry workshop
- **Chair:** Jennifer Jencks, USA; **Vice Chair**: Peter Wills, Canada
- **Representatives from 18 Member States:** Canada, China, Denmark**,** **France**, Germany, India, Italy, Lebanon, Mexico, Netherlands, **New Zealand**, Norway, Portugal, South Africa, Sweden, **UK**, Uruguay, **USA**
- **IHO Secretariat:** IHO Assistant Director Sam Harper, IHO Director Luigi Sinapi

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

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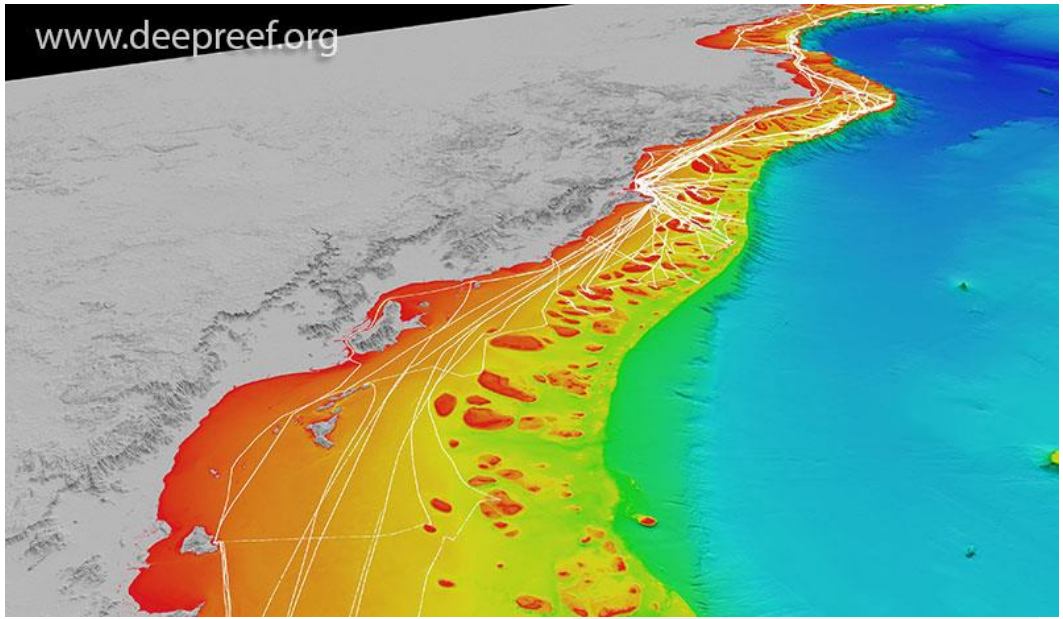
CSBWG14 Meeting: August 2023, Stavanger, Norway

The Value of CSB Data

International Hydrographic Organization

- Data with scientific, commercial & research value at no cost to the public sector
- Fill gaps where data is scarce (eg: Arctic, SIDS)
- Identify uncharted features
- Assist in verifying charted information
- Confirm whether charts are appropriate for the latest traffic patterns.



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

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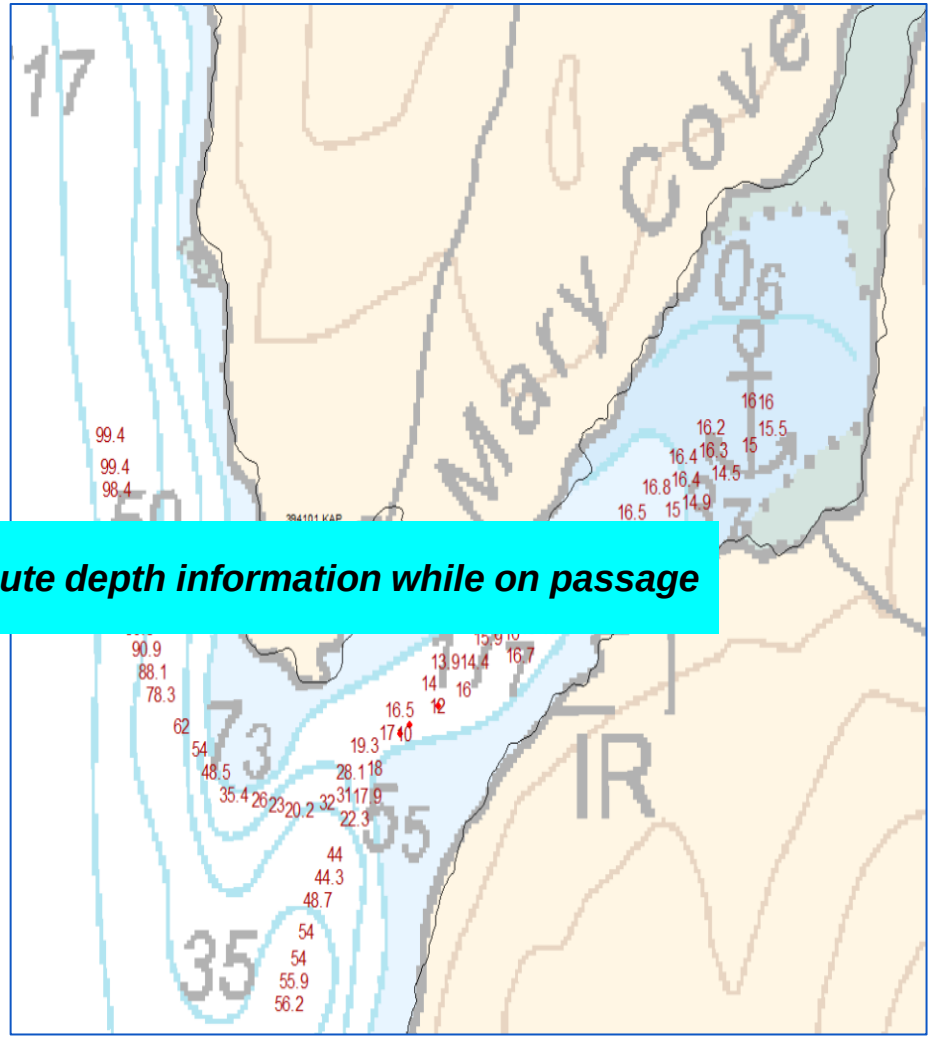
The Value of CSB Data

- The Canadian Hydrographic Service has used CSB to update several Inside Passage charts along coastal routes.
- A systematic comparison of charted depths < 10 m yielded improved charted channel depths, data density and improved chart compilation in areas that were surveyed with sin
- CSB helped prioritize survey areas for the following survey season
- CSB has initiated the publication of Notices to Mariners.

...but only if vessels collect and contribute depth information while on passage



IHO CL 01/2020 & IRCC CL 21/2020

International Hydrographic Organization

The IHO encourages coastal states to review the circular letters and, if possible, offer a positive response to the IHO Secretariat.

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

- All coastal States are requested to indicate their position on the ***provision of CSB data*** from ships within waters subject to their jurisdiction into the public domain
- To date, 33 coastal States (green) have replied positively*

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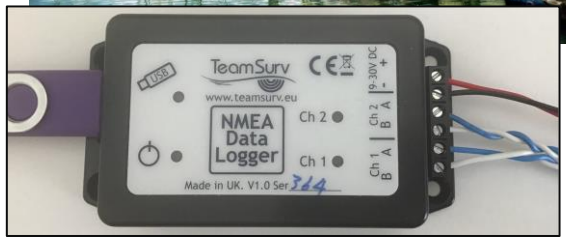
SEABED 2030 PROJECT

Data Loggers provided by Seabed 2030



1. Free data loggers provided to the community
2. Installation included
3. *Assistance with data download and delivery to Seabded 2030 & IHO-DCDB*

pacific@seabed2030.org

www.seabed2030.org

Support includes provision of data loggers (NMEA0183 and NMEA2000) and installation support (where needed).

SEABED 2030

Seabed 2030 South and West Pacific Center

International Hydrographic Organization

Seabed 2030 funded CSB data loggers

- Inkfish
- NIWA Workboats
- Department of Conversation NZ
- Otago University NZ
- Kiribati MICT
- Palau

SEABED 2030

PALAU CSB DATA LOGGER PROJECT

International Hydrographic Organization

How did it all start?

- Palau expressed interest at 2020 SWPHC
- Seabed 2030 project provided 100 loggers
- NGA assisted with installation

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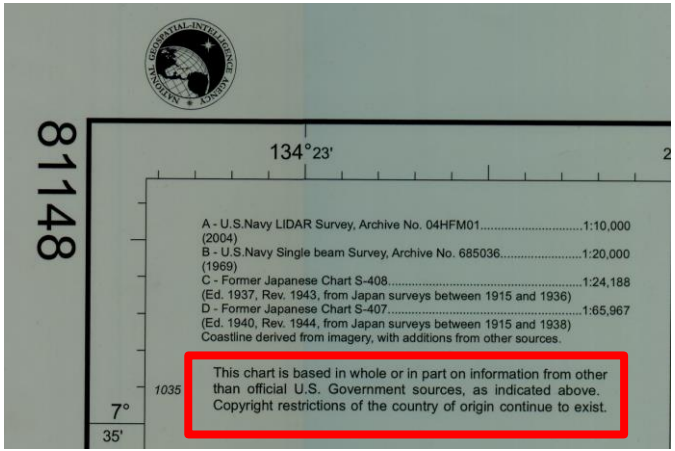
PALAU CSB DATA LOGGER PROJECT

International Hydrographic Organization

BENEFITS OF CSB DATA LOGGERS

- Improved charts and products
- Update bathymetrical data for all of Palau
- Collect data for southwest islands
- Contribute to the global effort to map the world's oceans by 2030



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PALAU CSB DATA LOGGER PROJECT

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Lessons Learned

- Lack of capacity and know how in installation
- Depends on vessel's equipment
- Need standards in place to guide processes
- Need for multiple vessels running the same route
- Importance of regular data download

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THE NIPPON FOUNDATION-GEBCO SEABED 2030

1. **Can you see benefits in installing Data Loggers in your country?**
2. **Do you have any questions about CSB & Data Loggers?**
3. **Did you know there is an IHO document on CSB Guidance?**
4. **Have you heard about the IHO CL on CSB?**

IHO CSBWG Communication material – Targeted to different stakeholders

IHO CL on CSB – Accepting CSB in your area can have huge benefits when survey capability is limited

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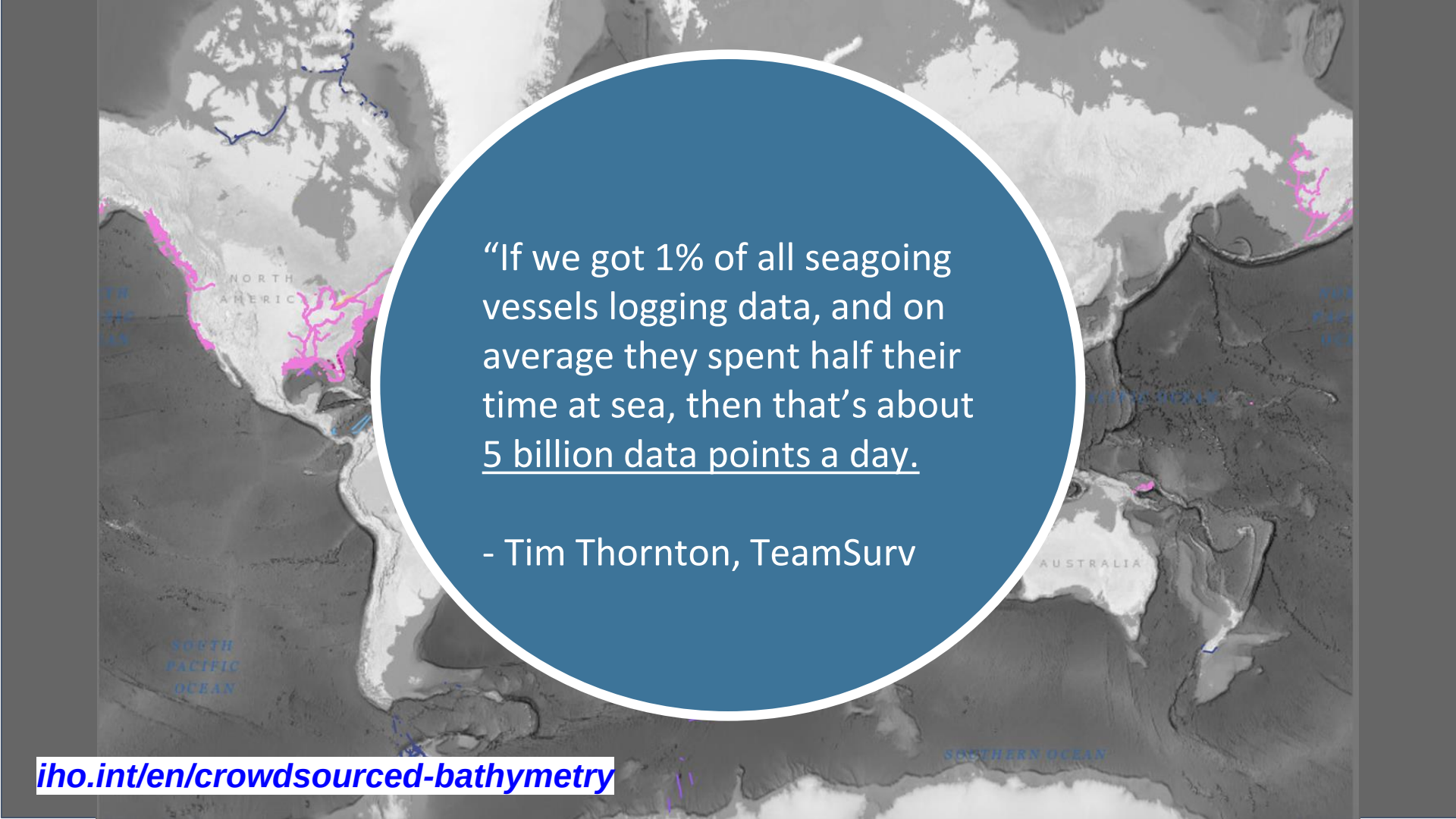
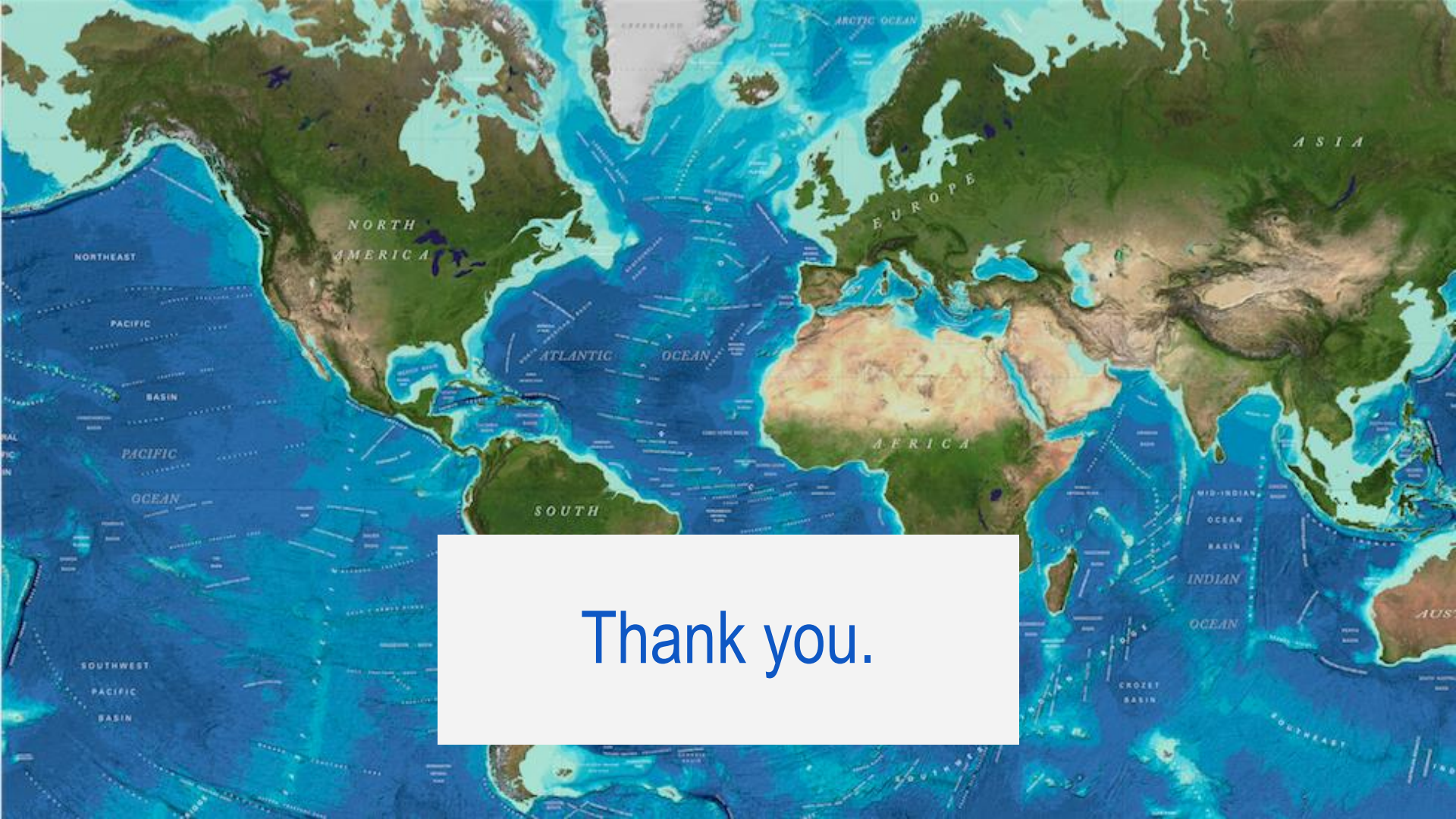


"If we got 1% of all seagoing vessels logging data, and on average they spent half their time at sea, then that's about 5 billion data points a day.

- Tim Thornton, TeamSurv

iho.int/en/crowdsourced-bathymetry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SOUTH
MID-INDIAN
OCEAN
BASIN
INDIAN
OCEAN
SOUTHWEST
PACIFIC
BASIN
CROZET
BASIN

Thank you.