Crowdsourced Bathymetry Working Group

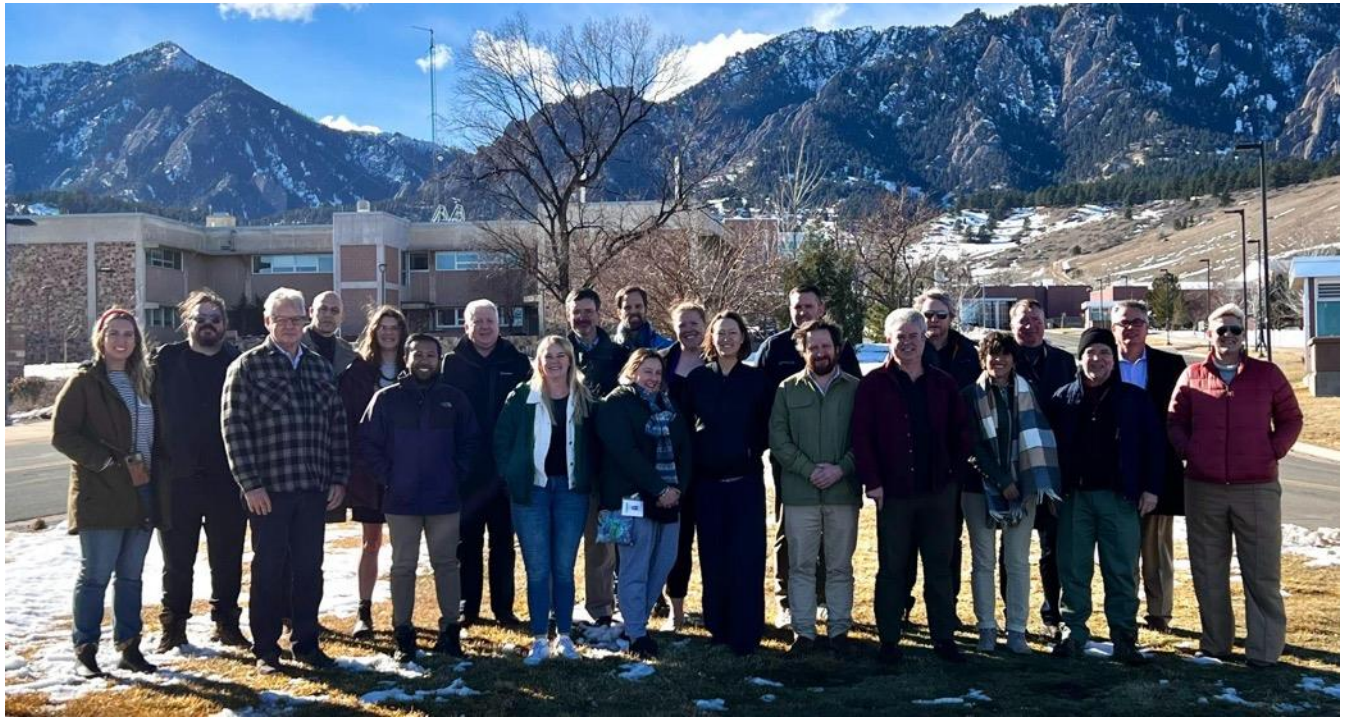
Report to IRCC15

Tokyo, Japan
12 – 14 June 2023

By Jennifer Jencks

Chair, IHO CSBWG

CSB Working Group Meetings



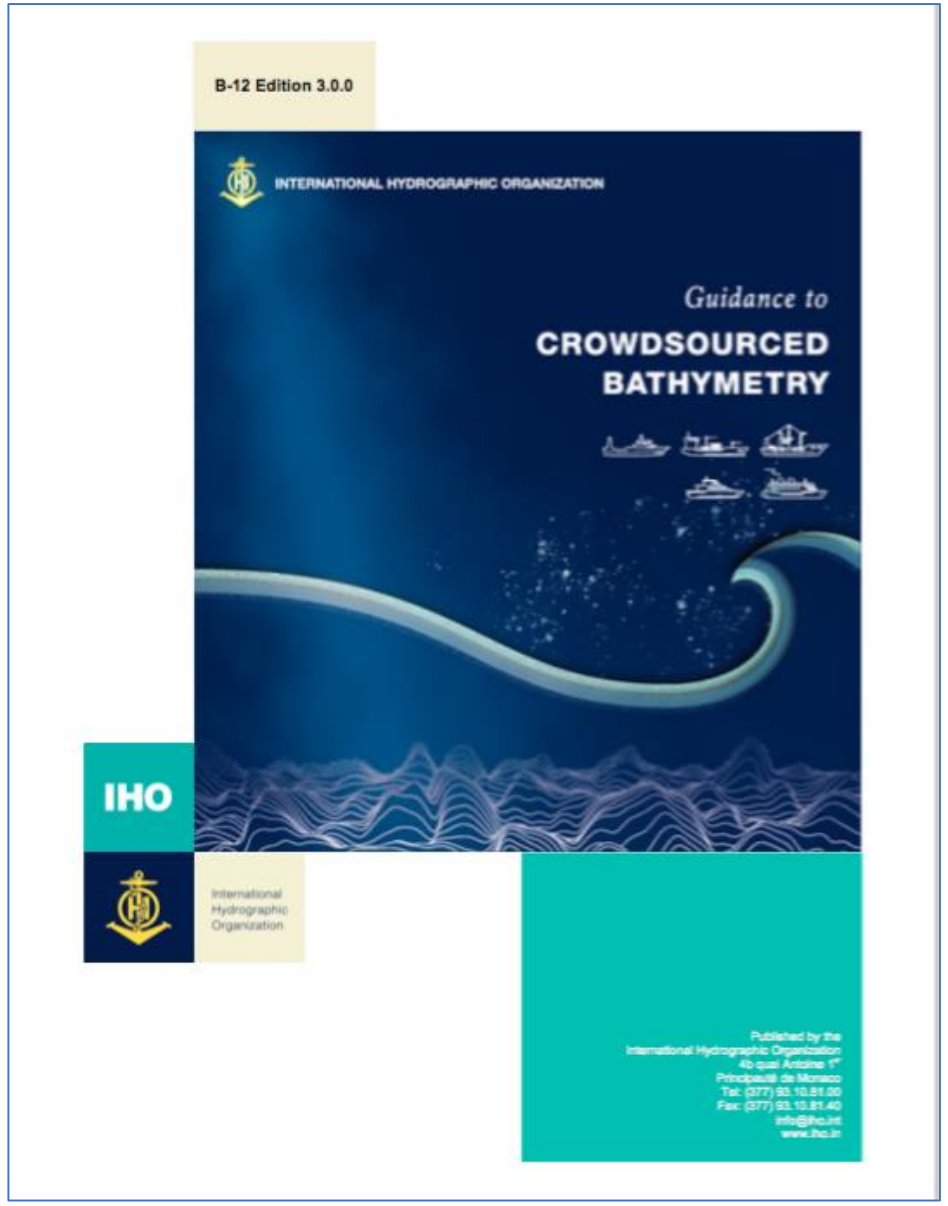
25 in person; ~30 virtual

- **Meetings:** *CSBWG 13*: 10-12 January 2023, hosted by the National Oceanic and Atmospheric Administration in Boulder, Colorado, U.S.A.
- **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 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., Olex, OrangeForce Marine, PYA, Seabed 2030, Sea-ID, SevenCs/ChartWorld, Teledyne CARIS, World Maritime University, and World Ocean Council

CSBWG Highlights: Work Programme

Strategic Planning

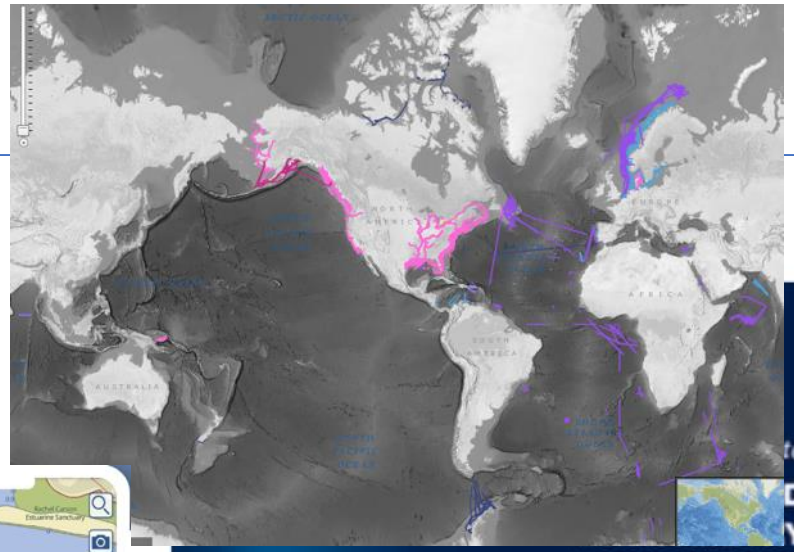
Following the publication of B-12 Ed. 3.0.0 (which has been the major focus of the CSBWG for the last three years), CSBWG13 focused on a critical review of the groups operating mandate, as set out in the **ToRs and RoPs.**



CSBWG Highlights: 2016-Present

A Recap

- B-12 Ed. 3.0.0 (and a growing number of ancillary supporting documentation)
- 13 CSBWG meetings, 1 Industry Forum
- A robust IHO DCDB-hosted CSB data infrastructure
- An ever-growing interest from industry and academia to participate
- CSB/Seabed 2030 Coordinators from ***most*** RHCs
- Informational flyers encouraging participation from the greater community
- 10 Trusted Nodes (aka: data providers) and growing

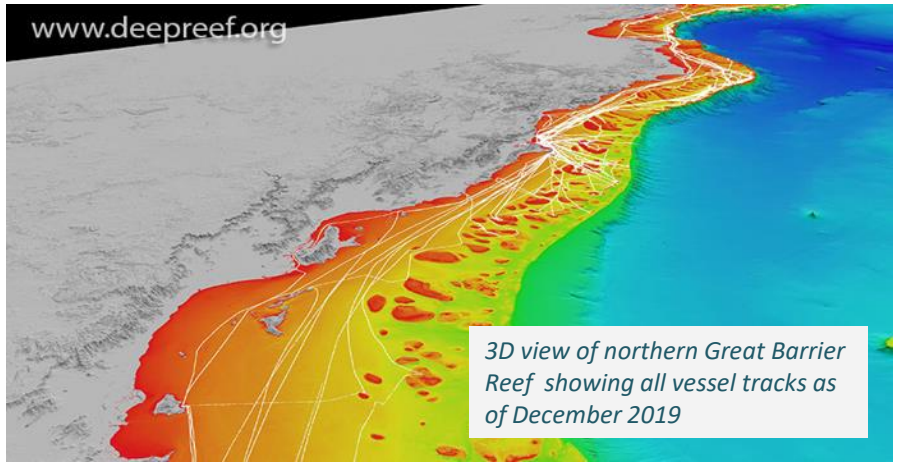


CSBWG Highlights: Today

- The amount of effort given by CSBWG members has been incredible
- The initiative has reached a level of maturity and is picking up momentum rapidly
- In recent years, we have started to see a change in the way many MS view CSB, with France and Australia as the most recent supporters
- We also know that anecdotally, other nations are currently on the complicated journey of getting approval through their legislative processes

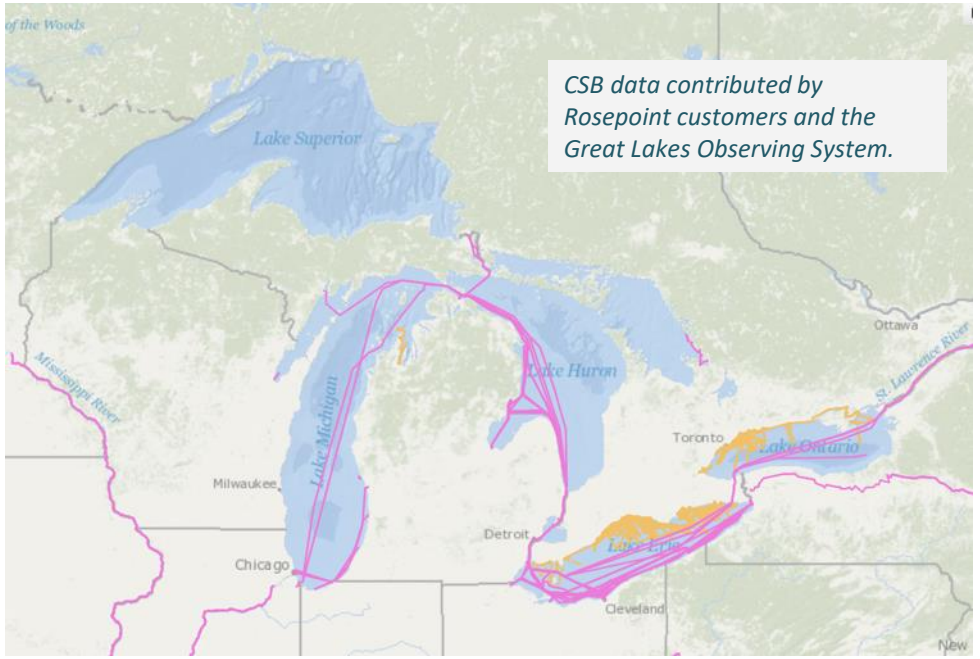
To date, 33 coastal States (green) have replied positively to IHO CL 01/2020 & IRCC CL 21/2020

CSBWG Highlights: Today



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

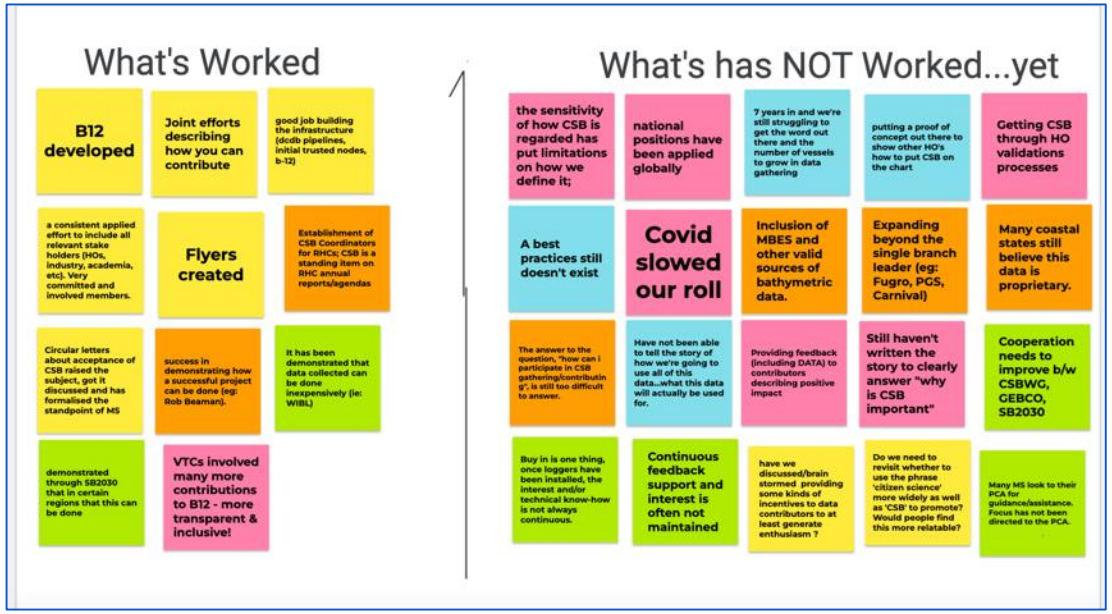
- Are we ready? Can we cope with the ever-increasing number of parties saying they want to get involved?
- How do respond to demand? How do we manage expectations?
- This is a GREAT problem to have, but we need to be careful.
- We do not have the personal capacity and are not organized in a way to scale and support and grow.

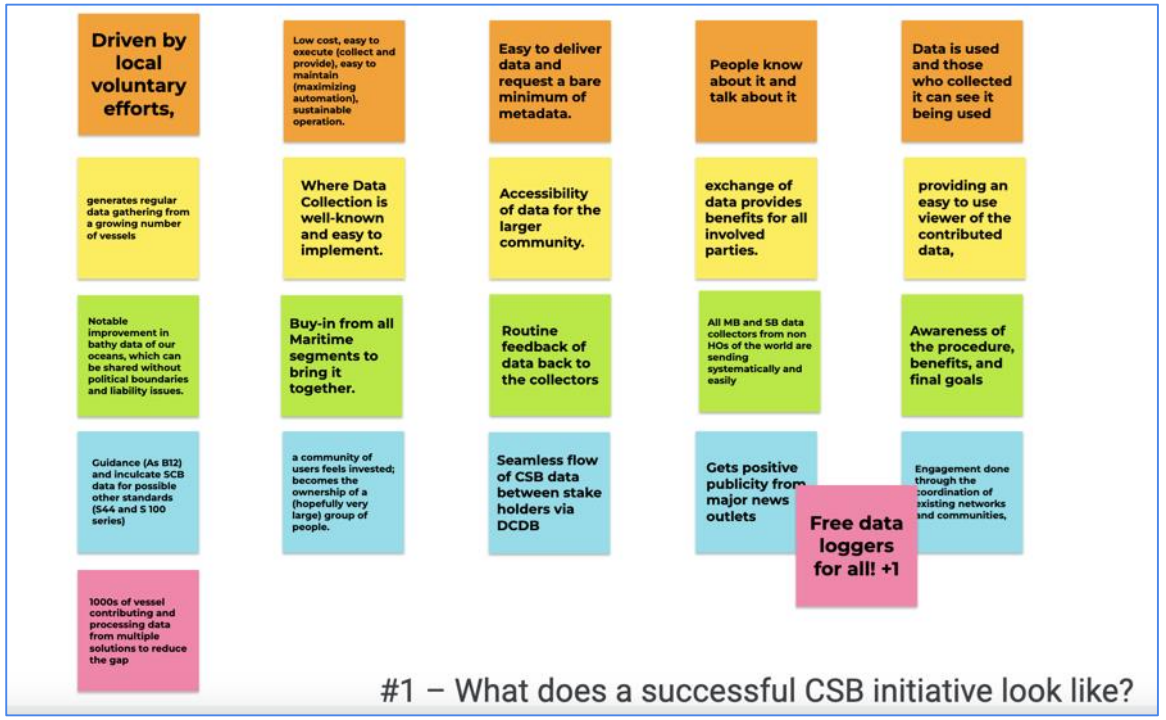


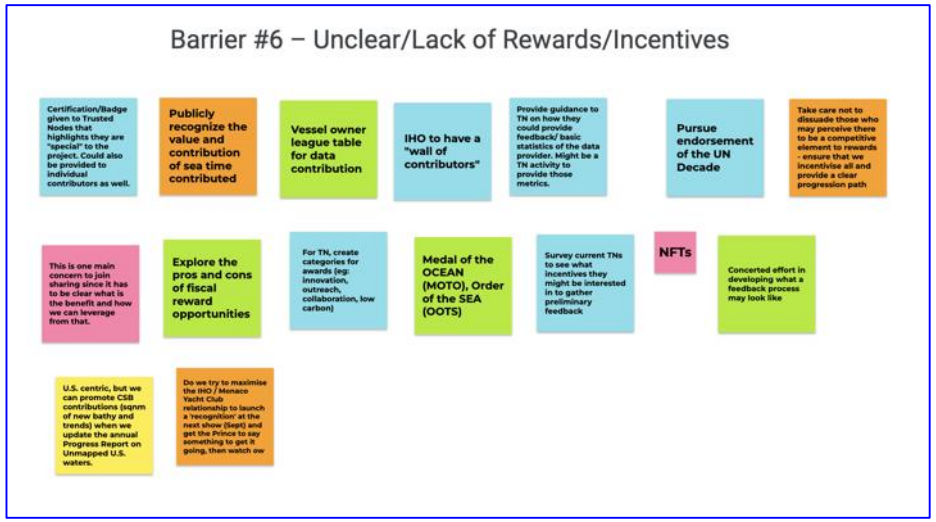
CSB data contributed by Rosepoint customers and the Great Lakes Observing System.

CSBWG Highlights: Strategic Planning

- Purpose of CSBWG13: Design a work plan and determine our direction forward.
- **FOUR DAYS**, ~50 attendees, reviewing the evidence, workshopping a strategy and agreeing with the outcome







CSBWG Highlights: Current ToRs

A. Maintain the IHO publication B-12 through periodic reviews and updates identified by Member States;

B. Monitor Member State and Regional progress regarding development of best practices and CSB initiatives and incorporate into B-12 as appropriate;

C. Investigate and [highlight / promote] ways to increase data contributions and incentives on how and why mariners should become involved.

D. Define potential uses of CSB for Hydrographic offices (HOs) with examples and useful land equivalents;

E. Provide guidance on data quality and standards for CSB in liaison with appropriate IHO Working Groups;

F. Liaise with other relevant IHO subordinate bodies involved with CSB data to promote its use and development; and

G. Liaise closely with the IHO Data Centre for Digital Bathymetry (DCDB) as it continues to develop technology to collect and distribute CSB to the public.

CSBWG Highlights: Proposed Changes to ToRs

A. Maintain the IHO publication B-12 through periodic reviews and updates identified by Member States;

B. Engage with HOs and IHO Member States on matters relating to CSB uses, including but not limited to Nautical Cartography;

C. Monitor Member State and Regional Hydrographic Commission progress regarding development of best practices and CSB initiatives and incorporate into B-12 as appropriate;

D. Investigate ways to foster and facilitate data providers (i.e.: Trusted Nodes), increase data contributions and identify incentives on how and why mariners should become involved;

E. Investigate and promote greater end use of CSB data in and outside the hydrographic community;

CSBWG Highlights: Proposed Changes to ToRs

G. Provide guidance on data quality and standards for CSB in liaison with appropriate IHO Working Groups;

H. Liaise with other relevant IHO and allied bodies involved with CSB data to improve coordination and promote its use and development;

I. Liaise closely with the IHO Data Centre for Digital Bathymetry (DCDB) as it continues to develop technology to collect, display and distribute CSB data to the public;

J. Encourage and support all aspects of the CSB data life cycle from acquisition through archival to discovery and distribution, emphasizing automation and efficiency whenever possible; and

K. Encourage and expand scholarly discourse regarding the benefits of CSB to support U.N. Decade on Ocean Science and GEBCO objectives by encouraging contributions to scientific, legal, and policy literature.

CSBWG Highlights: New Work Items

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

Progress on IRCC Action Items

<u>IRCC 13 Action 4</u>: CSBWG, IRCC Chair and IHO Secretariat to consider ways to streamline the updates of B12 after the next CSBWG meeting.

Update: As B12 3.0.0 was such a significant re-write, the expectation is that future changes will be possible by revisions or corrections rather than new editions. These updates will have a dedicated team and work item in the new work plan (Annex B).

IHO

International Hydrographic Organization

Problems Encountered

While industry and NGO participation in the CSBWG continue to grow, IHO Member State participation has not.

At the same time, as noted earlier, more MS are signing on in support of CSB and new work items have been established to focus solely on HO needs, issues and concerns.

Participation by coastal States would provide an opportunity to participate, learn, ask questions, and express concerns about CSB, allowing for the meeting attendees to share this information within their HOs.

Conclusions and Recommended Actions

As the latest edition of IHO CSB Guidance Document (B-12) Edition 3.0.0 has been successfully completed and endorsed, the CSBWG would like to refocus some of its efforts. These new and updated efforts are captured in our proposed new Terms of Reference and associated work plan. ***IRCC are requested to review and approve these ToR.***

It is challenging to understand coastal State concerns regarding CSB if they do not participate in the CSBWG. ***IRCC are requested to encourage more participation*** so coastal States can learn about CSB activities and provide representation of their viewpoints.

Other Items of Note

The CSBWG intends to hold in-person (hybrid if able to) meetings every 8 months.

The justification for the higher frequency is that CSB technology and participation are rapidly evolving.

CSB data also plays a significant role in the GEBCO-NF Seabed 2030 Project that has a quickly approaching deadline of 2030.

Actions Requested of IRCC

a) Note the contents of this report;

b) **Approve new Terms of Reference** (Annex A)

c) **Encourage more CSBWG participation by coastal States**

d) **Acknowledge the CSBWG meeting regime of every 8 months**

e) Encourage all Member States to review IHO CL 21/2020 and, if possible, offer a positive response, even if qualified, to enable provision of CSB data into the public domain collected from ships within waters subject to their national jurisdiction.

f) Encourage all coastal states to review IRCC CL 1/2020 and, if possible, offer a positive response, even if qualified, to enable provision of CSB data into the public domain collected from ships within waters subject to their national jurisdiction.

g) Encourage Member States to release datasets or subsets into the public domain via the IHO DCDB;

h) Encourage Member States to support the CSB initiative with positive actions, such as requiring all research vessels to collect bathymetric data for late uploading, when on passage or when it does not interfere with other research activities;

i) Take what other action is deemed necessary.