

THE NIPPON FOUNDATION-GEBCO

SEABED

2030



**Webinar 1: Where are we now?** Introduction, Goals & Status of Mapping in the Region

Webinar Chair:

Ms. Kathryn Ries, Chair MACHC

Presenters:

Dr. Vicki Ferrini, Head Seabed 2030  
Atlantic/Indian Regional Center

Ms. Jennifer Jencks, Director IHO Data  
Center for Digital Bathymetry

MACHC Seabed 2030 Coordinator:  
Ms. Cecilia Cortina



# Welcome

*MACHC Chair, Ms. Kathryn Ries  
IOCARIBE Secretary, Dr. Cesar Toro*



IHO

International  
Hydrographic  
Organization



United Nations  
Educational, Scientific and  
Cultural Organization



Intergovernmental  
Oceanographic  
Commission



## Today's Agenda

10:00 - 10:15 Logistics & Welcome (MACHC Chair, IOCARIBE Secretary)

10:15 - 11:15 Introduction and Overview (Head of RDACC for the Atlantic and Indian Ocean and Director DCDB)

- Objectives for these webinars
- What we are doing and why
- Why we need to do this together
- How we can help you
- Review of status of mapping in the region

11:15 - 11:45 Discussion

11:45 - 12:00 Conclusions and Homework for Next Session





# Logistics

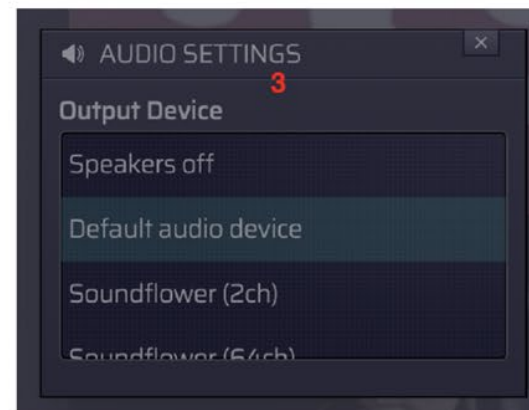
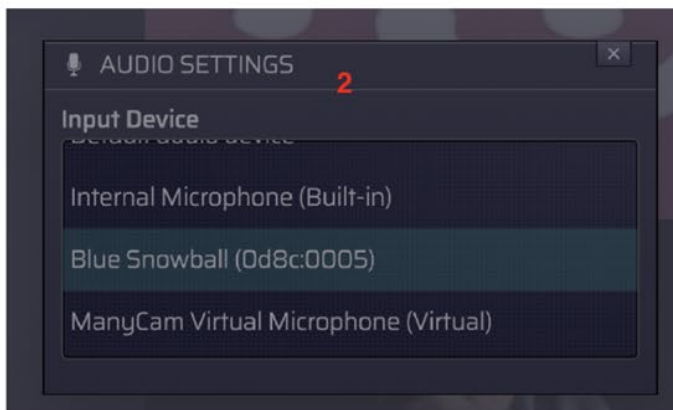
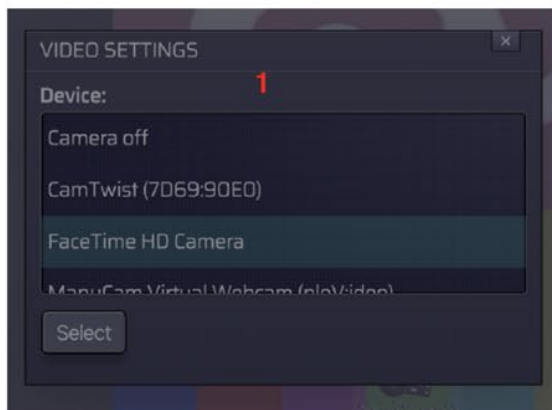
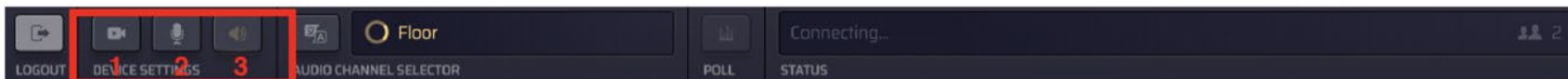




# Logistics

## How to Select Your Microphone and Camera (Top Left of Screen)

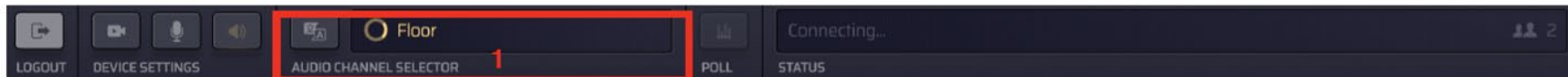
Select your **camera (1)**, **audio input device (2)** (microphone, headset, etc.), **output device (3)** (headphones, speakers, etc.)



# Logistics

## How to Select the Language of Your Audio Channel

Select the **audio channel (1)** (language) you want to listen to.



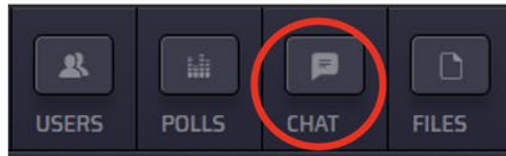
# Logistics

## How to Make a Video Channel Larger

**Click on any video channel/square and it will move to the large viewing area.**

## How to Ask Questions Via Chat

Although we encourage you to speak to the room on video and audio, you may also submit questions via chat. Click on the “CHAT” icon in the upper right and submit a question via text. Percy Pacheco will moderate this chatroom and raise questions to the Chair.



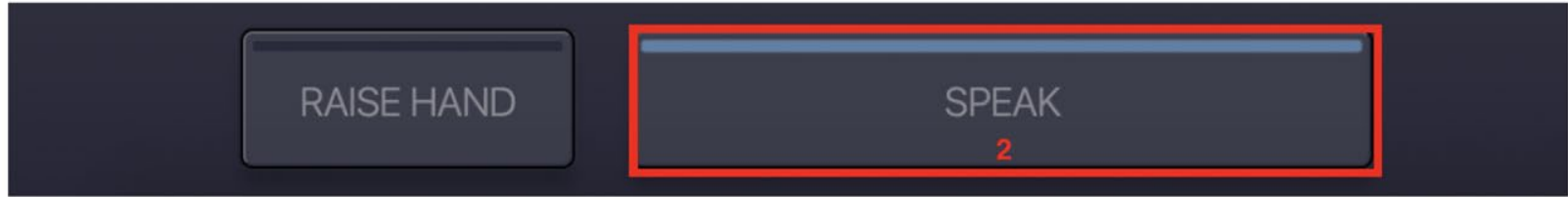
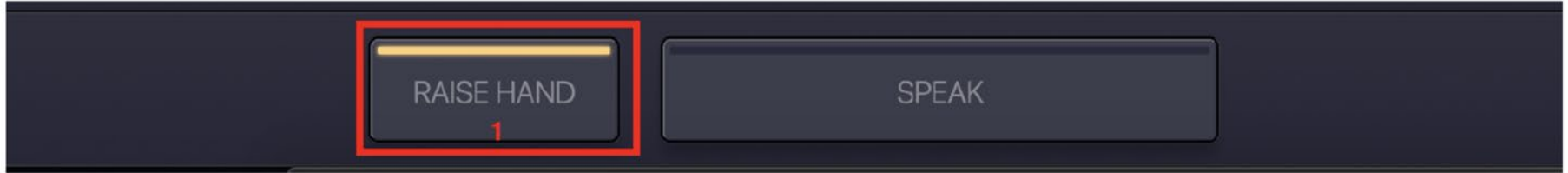


# Logistics

## How to Be Recognized by the Chair

Raise your hand, by pressing the button **Raise Hand (1)** to indicate the wish to speak.

When given the right to speak by the Moderator, Speak button will start glowing blue (2) and the Status line will say "Microphone open" (2).

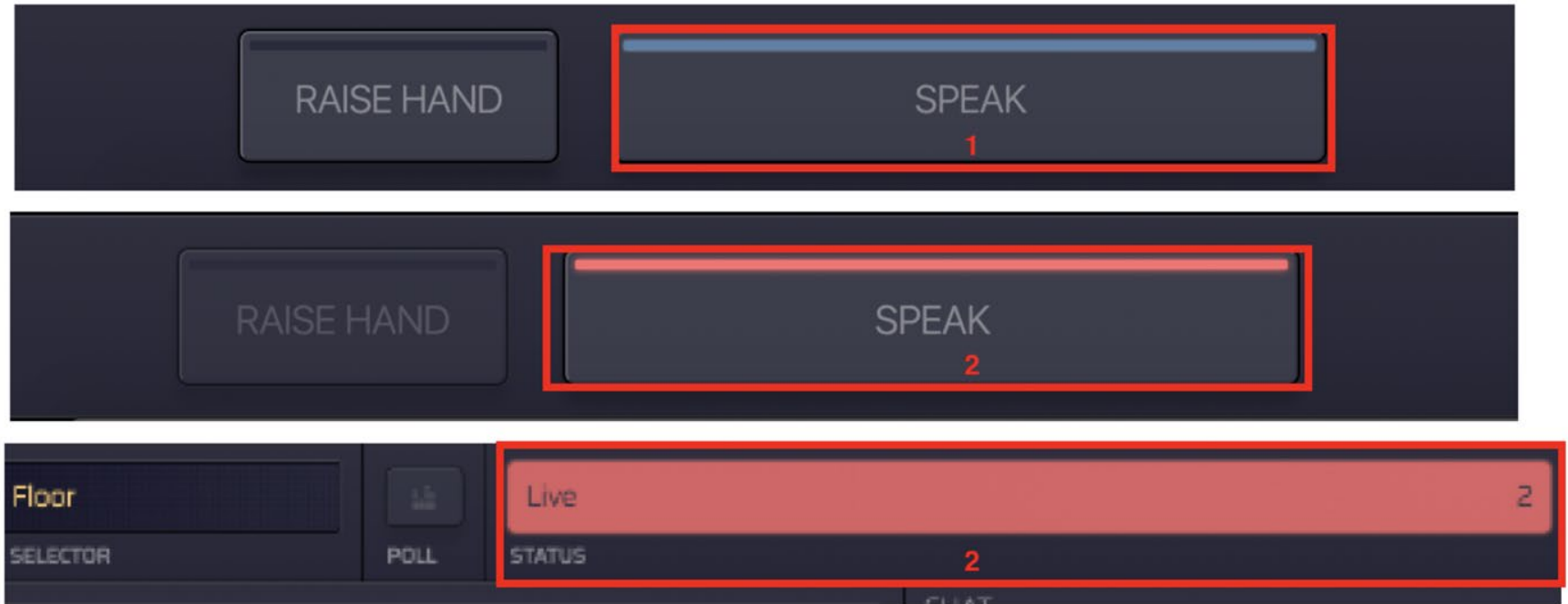


# Logistics

## How to Speak to the Room

Press **Speak (1)**.

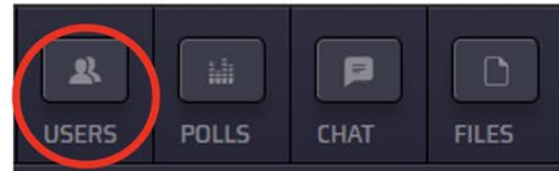
Your speak button should turn red (2), and your Status should say Live (2) - this indicated that you are currently live and streaming.



# Logistics

## How to See Who Else is in Attendance

Click on the “USERS” icon in the upper right to see who else is in attendance.





# Overview of Webinar Series



## Objectives of this Webinar Series

- Overview & Introduction:
  - Objectives, strategy and motivation of the Nippon Foundation - GEBCO Seabed 2030 Project
- Promote collaboration and coordination
- Review current status of ocean mapping for this region
- Demonstrate online tools that are available
- Engage the community of stakeholders
  - Gather information about existing data, planned mapping efforts
  - Input on needs of stakeholders with respect to tools, workflows, regional mapping priorities



## Webinar Schedule

- Webinar 1 - Sept 11: Where are we now? Introduction and Goals including review of current mapping status in the region
- Webinar 2 - Sept. 25: How do we build the map? How can you contribute data
- Webinar 3 - Oct. 9: Increasing Data Coverage: Crowdsourced Bathymetry and Data Coverage Polygons
- Webinar 4 - Oct. 23: Moving Ahead Together: Summary, Next Steps and Wrap up.





## Goals for today

- Introduction to Seabed 2030
- Review status of mapping in the MACHC region
- Introduction to the IHO Data Center for Digital Bathymetry
- Demonstration of Seabed 2030 MACHC Web App
- Discussion
- Homework for next Webinar



THE NIPPON FOUNDATION-GEBCO

# SEABED 2030

## Introduction

Dr. Vicki Ferrini, Head Seabed 2030  
Atlantic/Indian Regional Center



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Educational, Scientific and  
Cultural Organization

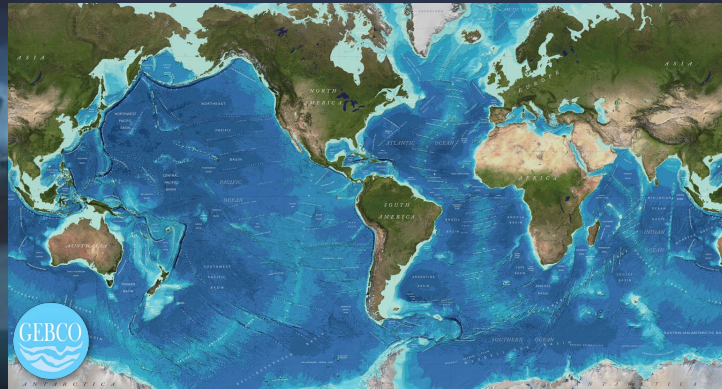


Intergovernmental  
Oceanographic  
Commission

## What is Seabed 2030?

The Nippon Foundation - GEBCO Seabed 2030 Project is a collaborative project to inspire the complete mapping of the world's ocean by 2030, and to compile all bathymetric data into the freely-available GEBCO Ocean Map.

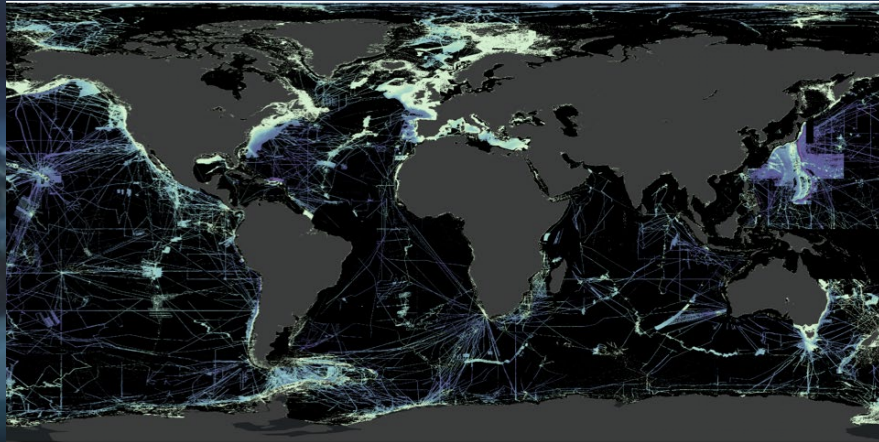
*Seabed 2030 aspires to empower the world to make policy decisions, use the ocean sustainably, and undertake scientific research that is informed by a detailed understanding of the global ocean floor.*





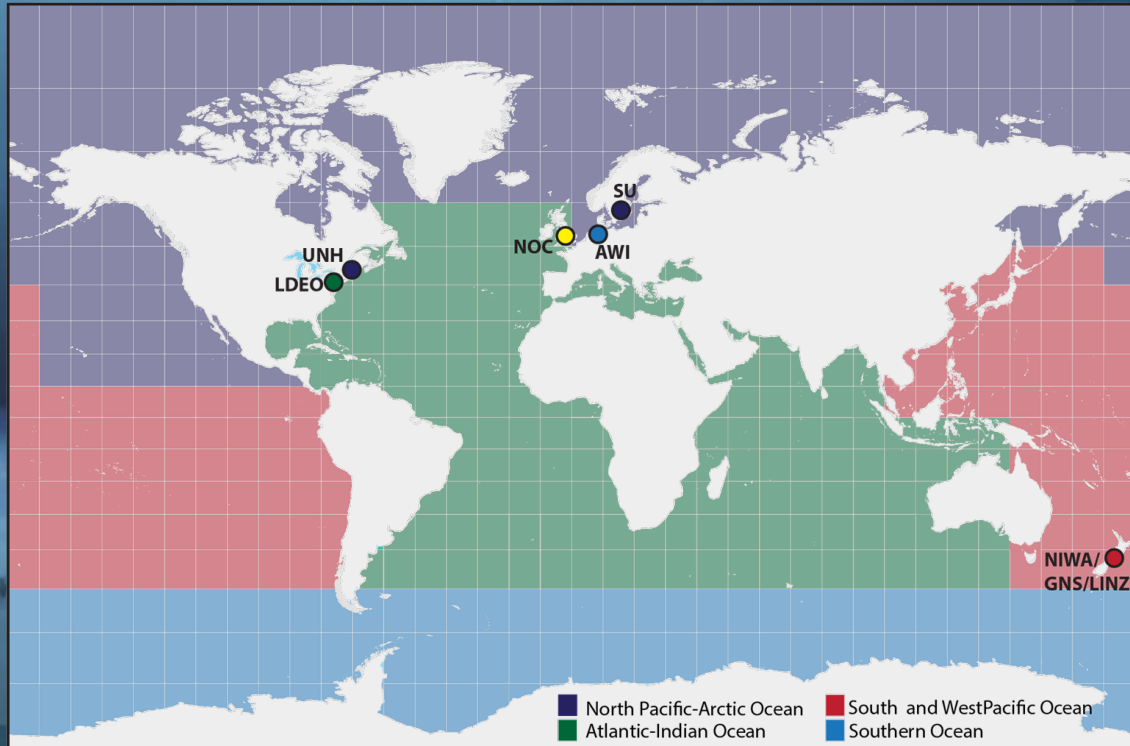
## Why is Seabed 2030 Important?

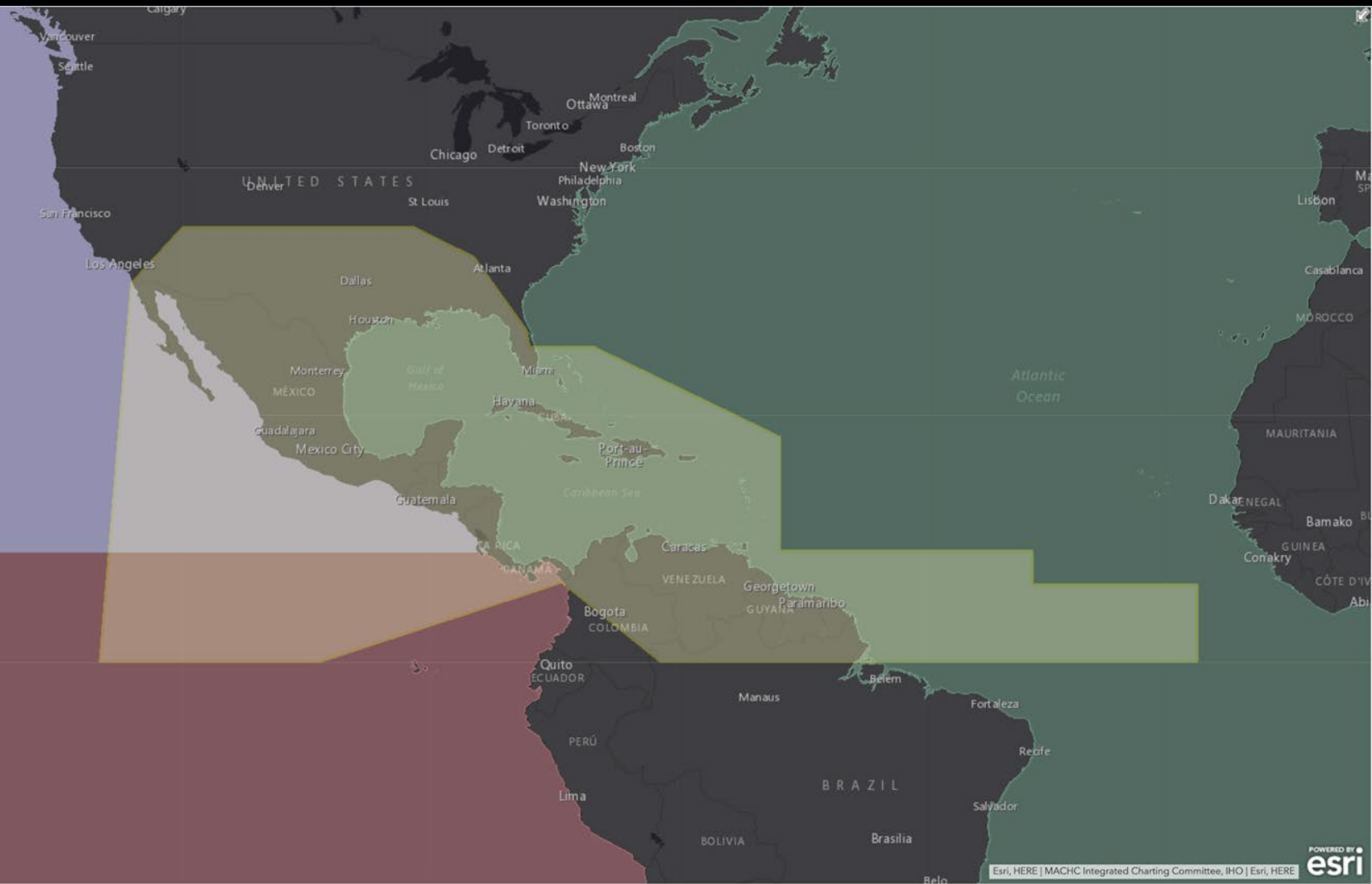
- Bathymetry data is an essential ocean observation
- Seabed mapping data has broad use and value
- Ocean processes extend beyond territorial waters
- Only ~20% of the ocean has been mapped with direct observation
- Mapping the entire ocean is a massive task that can only be achieved through cooperation and coordination



# Seabed 2030: Regional Approach

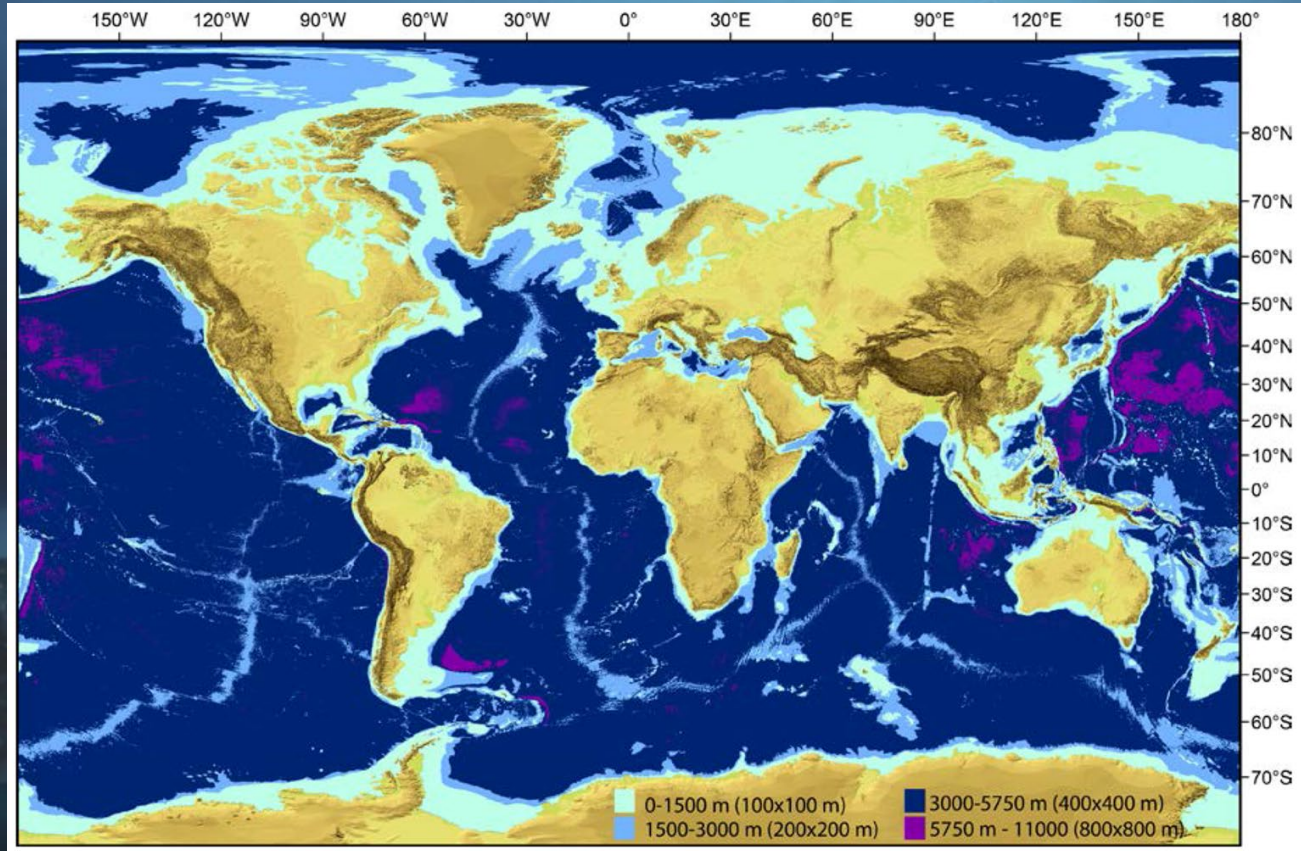
- Regional Centers (RDACCs)
  - Engage with stakeholders
  - Build upon existing efforts
  - Assemble regional products
  - Identify gaps
- Global Center (GDACC)
  - Assemble global products
  - Disseminate global products







# What does 100% mapped mean?



## Why work together?

- Learn from one another
- Leverage efforts to work toward common goals
- Share data, approaches, workflows, tools
- Develop new collaborations and opportunities
- Prioritization and mapping campaigns
- Capacity development
- Power of the crowd
- One ocean, one planet





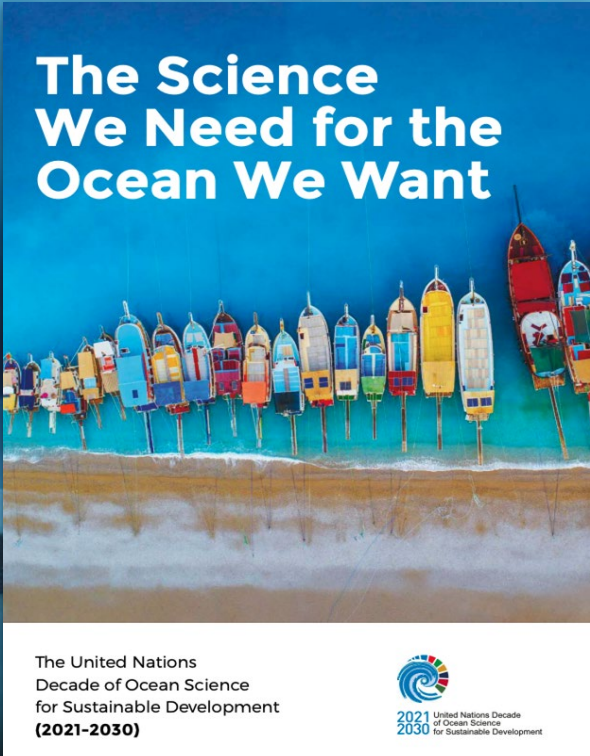
# UN Decade of Ocean Science for Sustainable Development (2021-2030)

- A clean ocean
- A healthy and resilient ocean
- A productive ocean
- A predicted ocean
- A safe ocean
- An accessible ocean
- An inspiring and engaging ocean




**CONSERVE AND SUSTAINABLY USE THE  
OCEANS, SEAS AND MARINE RESOURCES  
FOR SUSTAINABLE DEVELOPMENT**

14 LIFE BELOW WATER

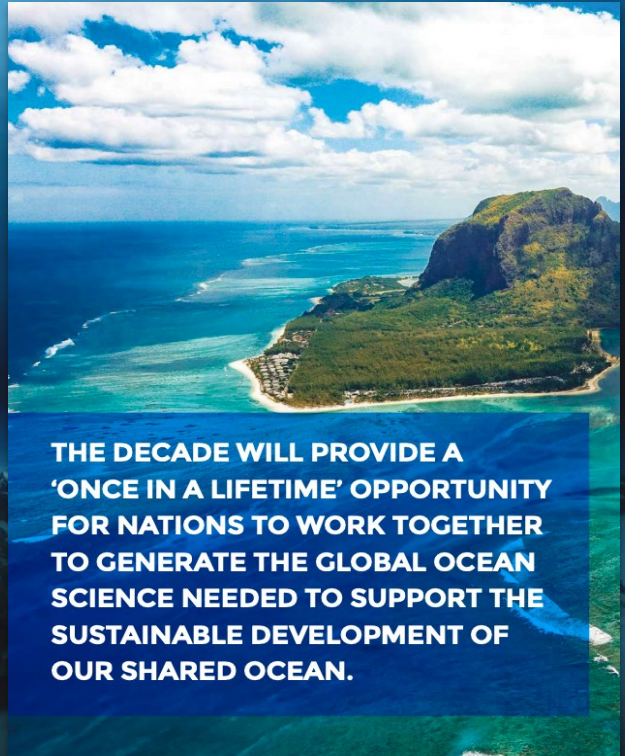


## The Science We Need for the Ocean We Want

The United Nations  
Decade of Ocean Science  
for Sustainable Development  
**(2021-2030)**

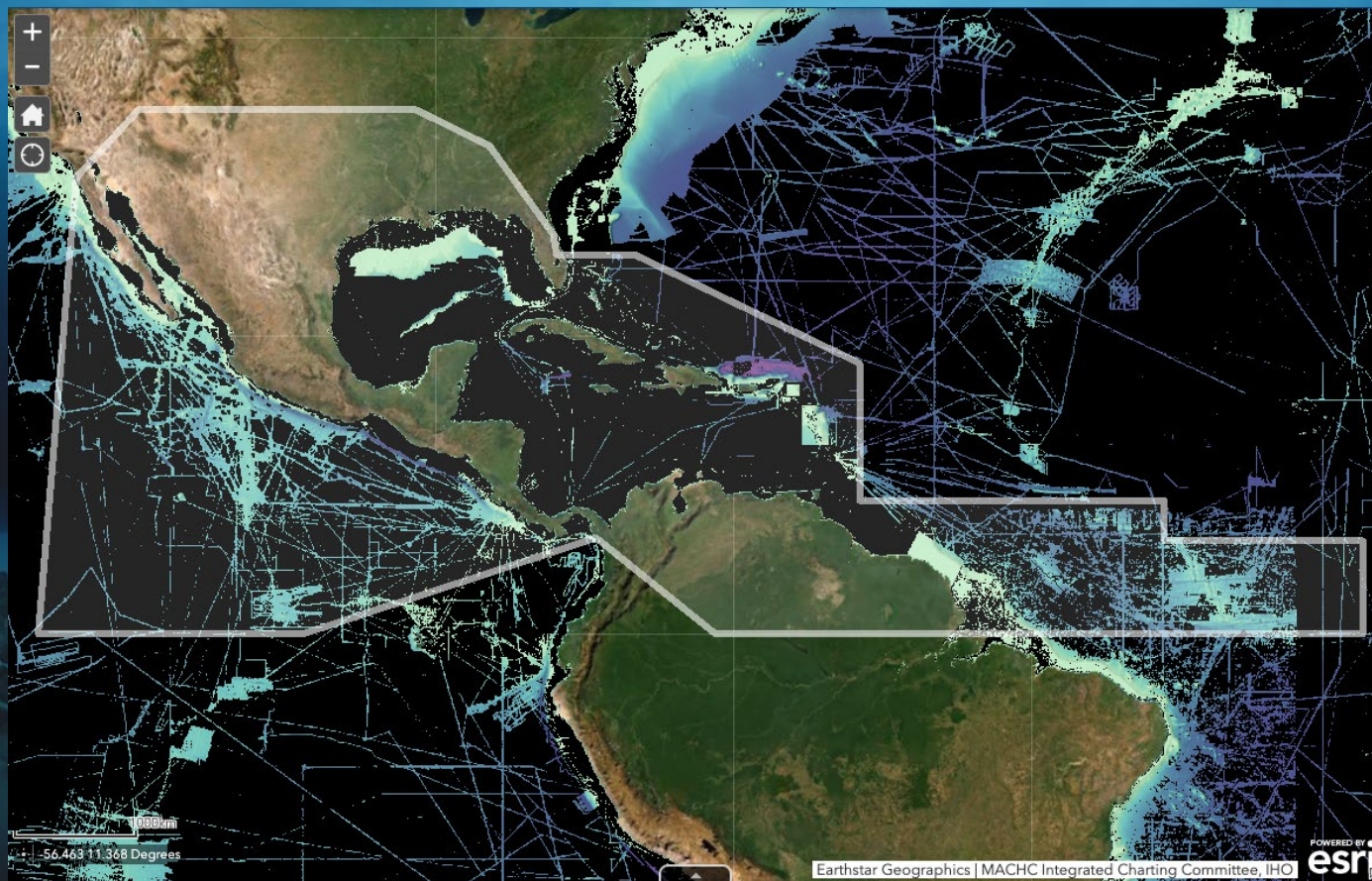


2021 United Nations Decade  
2030 of Ocean Science  
for Sustainable Development



**THE DECADE WILL PROVIDE A  
'ONCE IN A LIFETIME' OPPORTUNITY  
FOR NATIONS TO WORK TOGETHER  
TO GENERATE THE GLOBAL OCEAN  
SCIENCE NEEDED TO SUPPORT THE  
SUSTAINABLE DEVELOPMENT OF  
OUR SHARED OCEAN.**

## Status of Mapping in the Region: GEBCO 2020

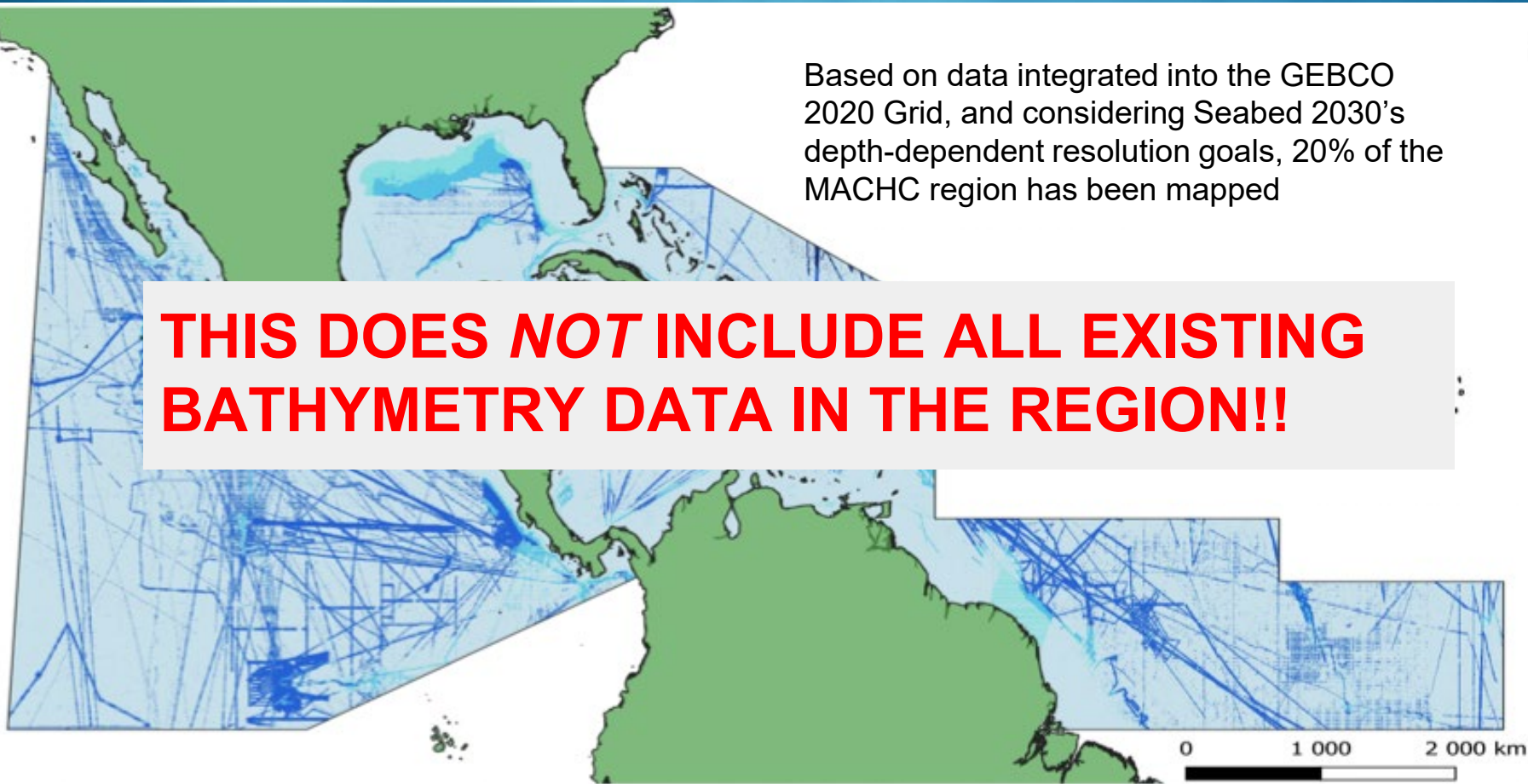




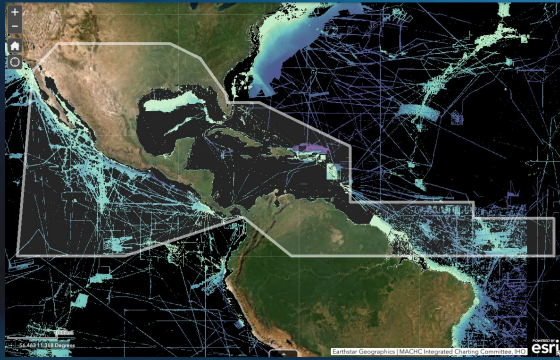
# How much of the MACHC has been “mapped”?

Based on data integrated into the GEBCO 2020 Grid, and considering Seabed 2030's depth-dependent resolution goals, 20% of the MACHC region has been mapped

**THIS DOES NOT INCLUDE ALL EXISTING BATHYMETRY DATA IN THE REGION!!**

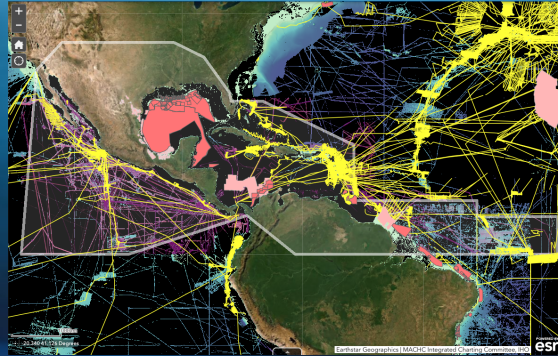


# How much of the MACHC region has been mapped?



**GEBCO 2020  
Data Coverage**

+



**Known existing data  
not yet shared and/or  
not yet integrated**

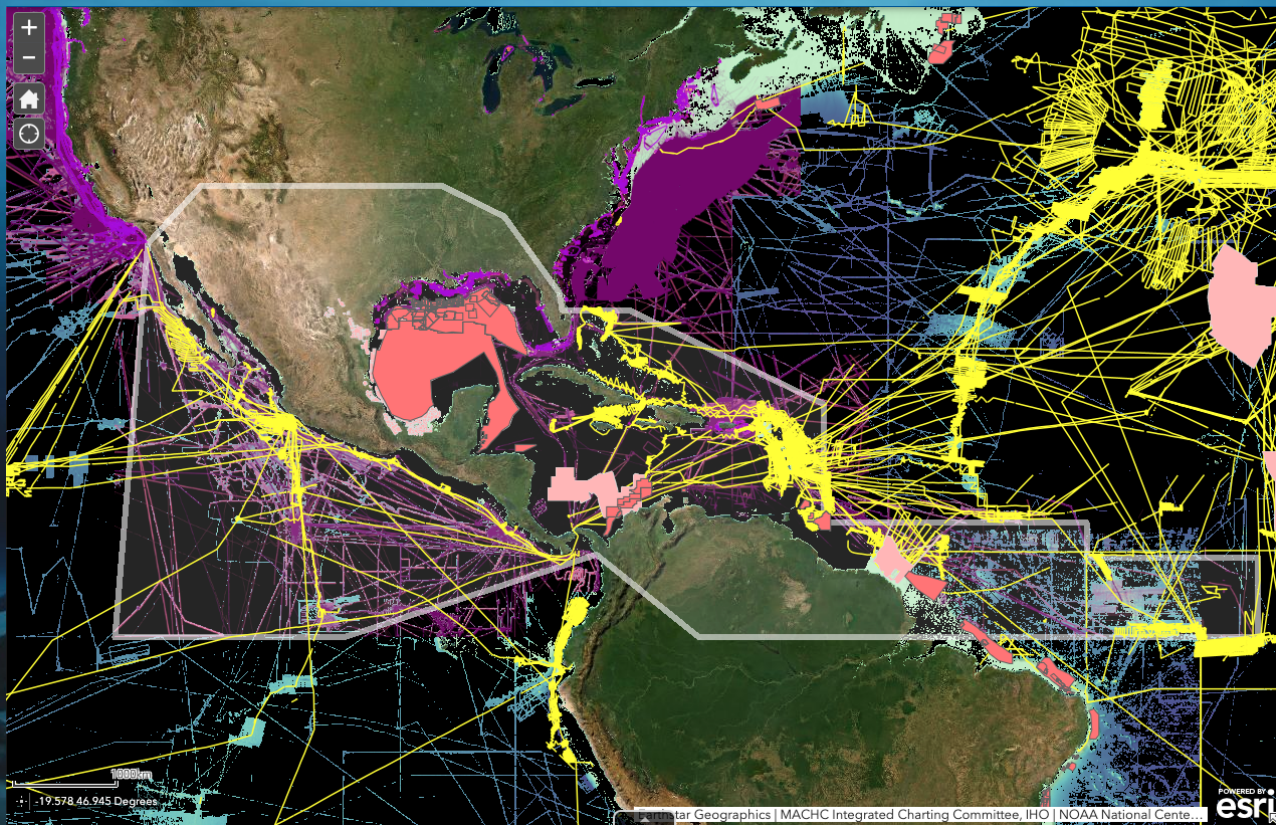
+

?

**Unknown  
existing data  
not yet shared**



# How much of the MACHC region has really been mapped?



*Much more than 20%!!*



Questions?



# Introduction to the IHO Data Center for Digital Bathymetry



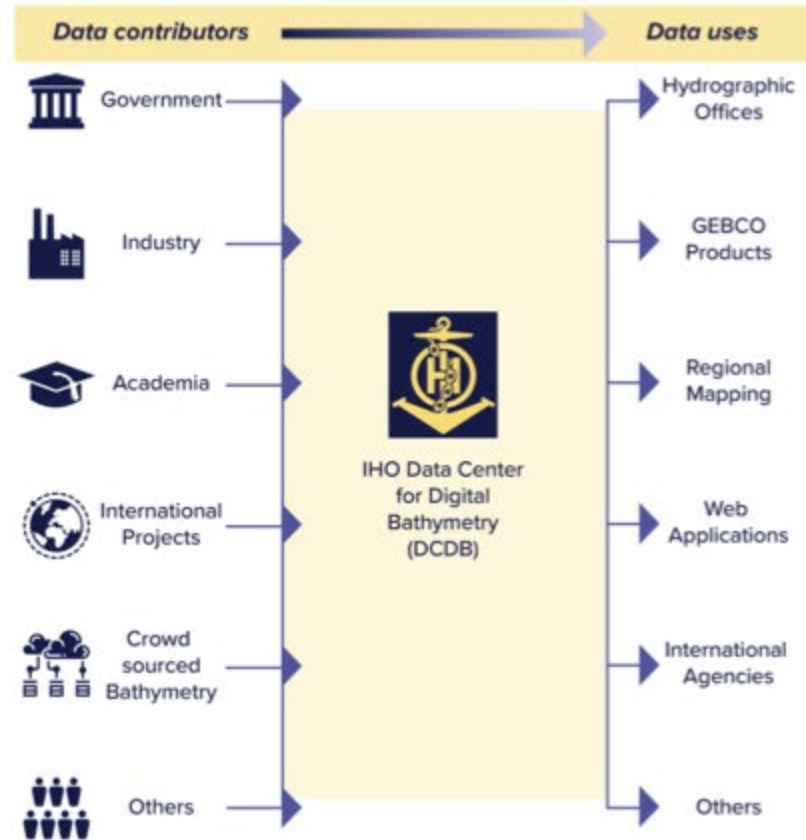


## IHO Data Center for Digital Bathymetry (DCDB)

*The IHO DCDB is the recognized IHO repository for all ocean bathymetric data.*

The DCDB works closely with the Seabed 2030 Project to provide long-term preservation, discovery and access of source bathymetry data.

[www.ngdc.noaa.gov/iho/](http://www.ngdc.noaa.gov/iho/)





## 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](#)



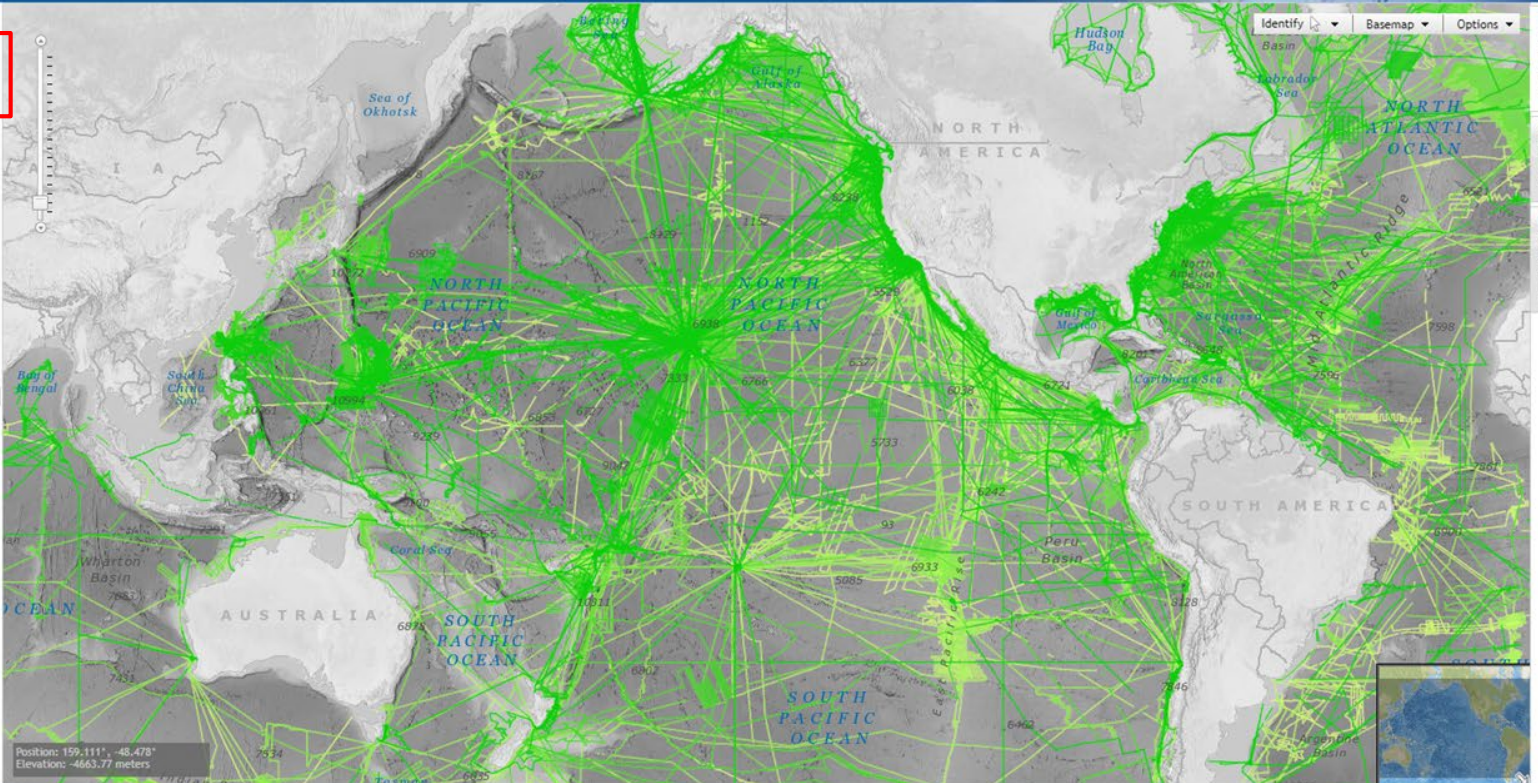


IHO

International Hydrographic Organization

## Layers

- IHO DCDB/NOAA NCEI ?
- Multibeam Surveys ?
- 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
- France
- Netherlands
- Bathymetric Coverage Maps



More Information  
Help

## IHO DCDB = World Reference for Raw Bathymetry



International Hydrographic Organization  
Organisation Hydrographique Internationale

[maps.ngdc.noaa.gov/viewers/iho\\_dcdb/](https://maps.ngdc.noaa.gov/viewers/iho_dcdb/)





IHO

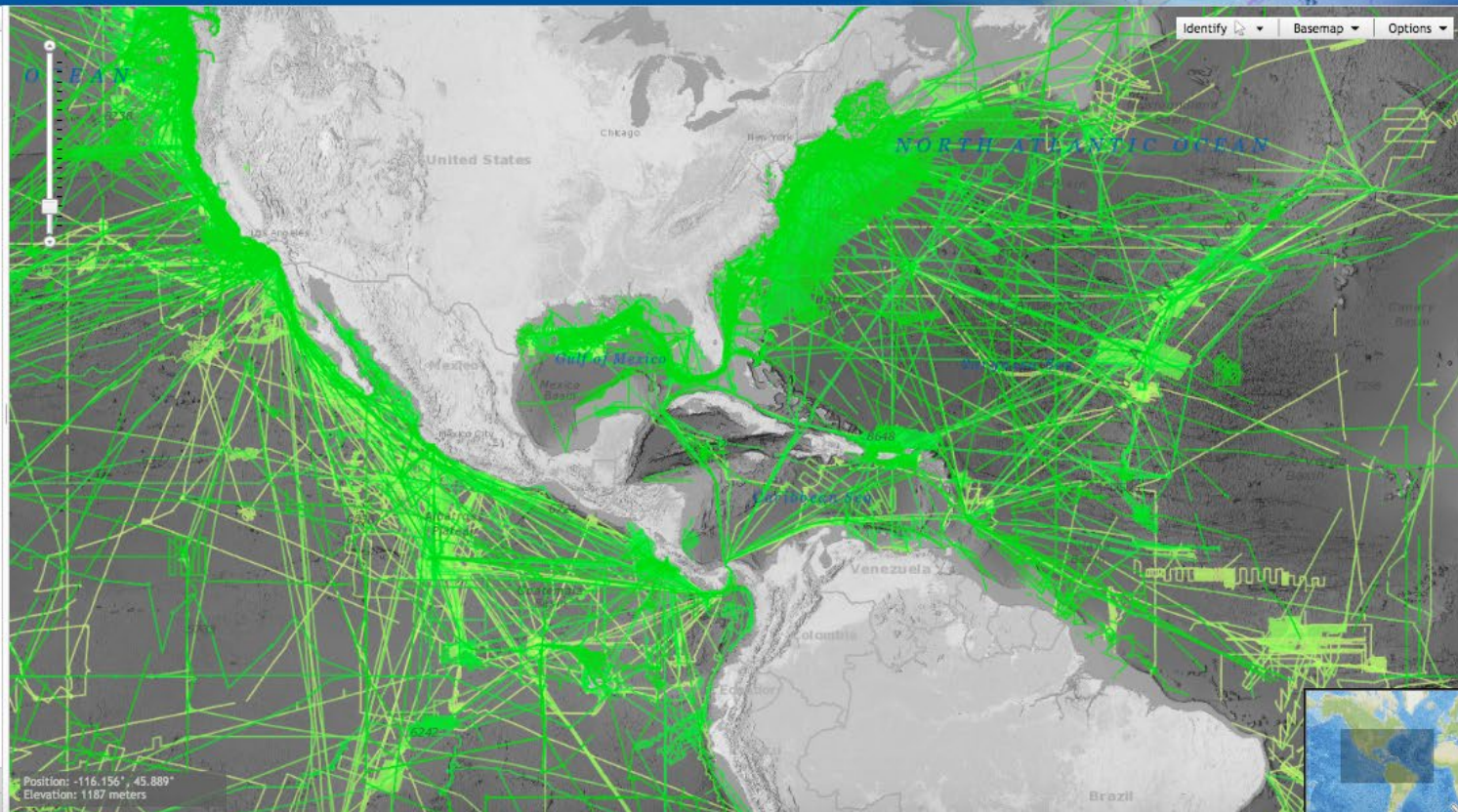
International Hydrographic Organization

## Layers

- IHO DCDB/NOAA NCEI ?
- Multibeam Surveys ?
- 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
- France
- Japan
- Netherlands
- Known Non-Public Data ?
- Bathymetric Coverage Maps

More Information

Help







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## Layers

▶ IHO DCDB/NOAA NCEI ?

▼ EMODnet

EMODnet Multibeam Surveys ?

MAREANO Multibeam Surveys ?

MAREANO Multibeam Shaded Relief ?

EMODnet Single-Beam Surveys ?

MAREANO Single-Beam Surveys ?

EMODnet Digital Terrain Model (DTM) ?

▶ Australia

▶ Canada

▶ France

▶ Japan

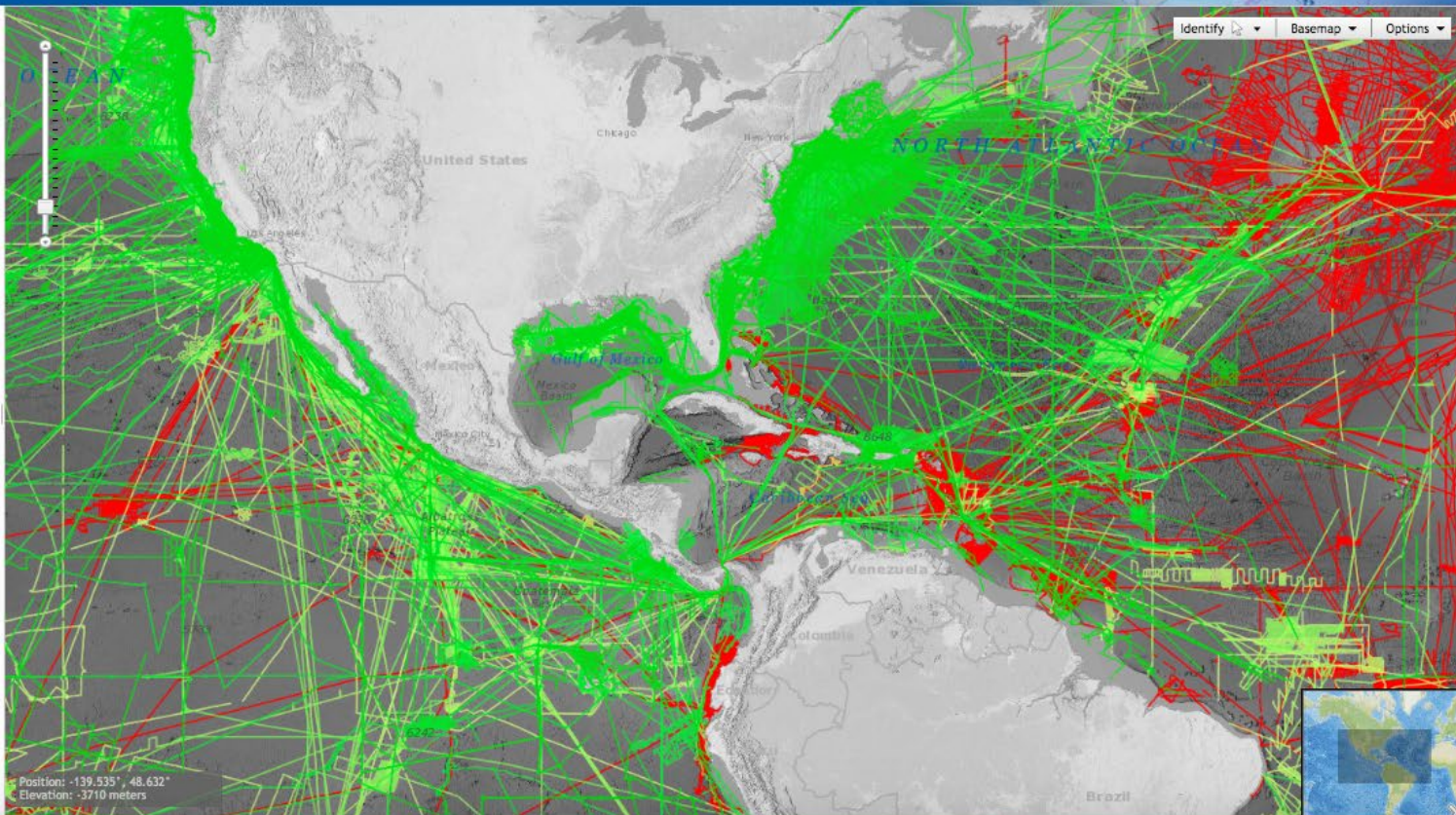
▶ Netherlands

▶ Known Non-Public Data ?

▶ Bathymetric Coverage Maps

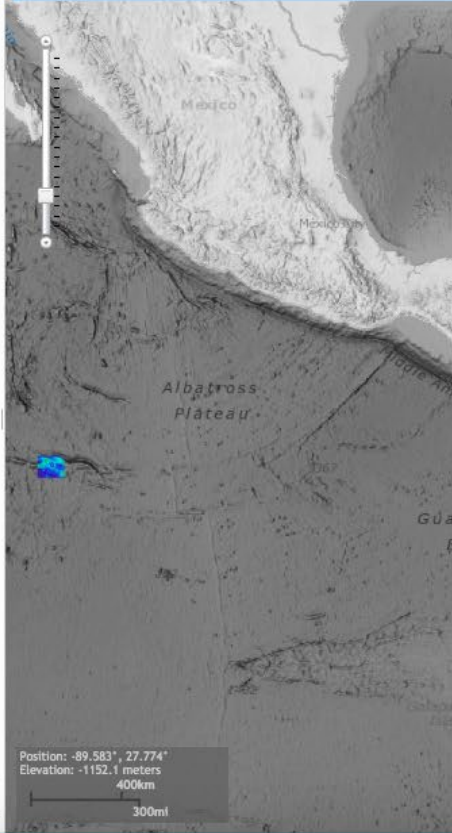
More Information

Help



Layers

- ▶ IHO DCDB/NOAA NCEI [?](#)
- ▶ EMODnet
- ▶ Australia
- ▶ Canada
- ▼ France
  - SHOM Bathymetric Grids [?](#)
- ▶ Japan
- ▼ Netherlands
  - Netherlands Caribbean Grids [?](#)
- ▶ Known Non-Public Data [?](#)
- ▶ Bathymetric Coverage Maps

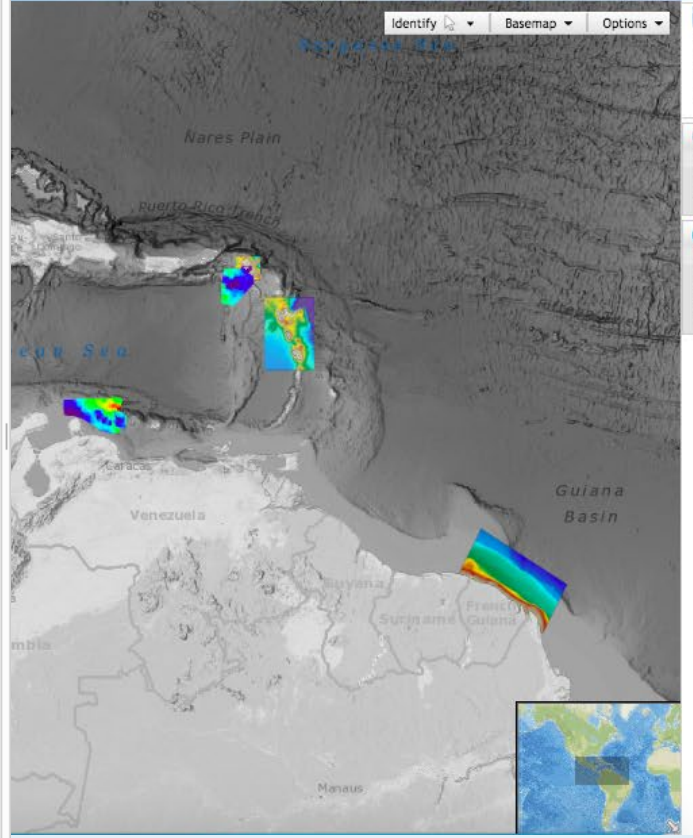


More Information  
Help

- Layers
- ▶ IHO DCDB/NOAA NCEI [?](#)
  - ▶ EMODnet
  - ▶ Australia
  - ▶ Canada
  - ▶ France
  - ▶ Japan
  - ▶ Netherlands
  - ▶ Known Non-Public Data [?](#)
  - ▶ Bathymetric Coverage Maps

More Information  
Help

# Data Centre for Digital Bathymetry Viewer



- Mercator
- Arctic
- Antarctic



Questions?

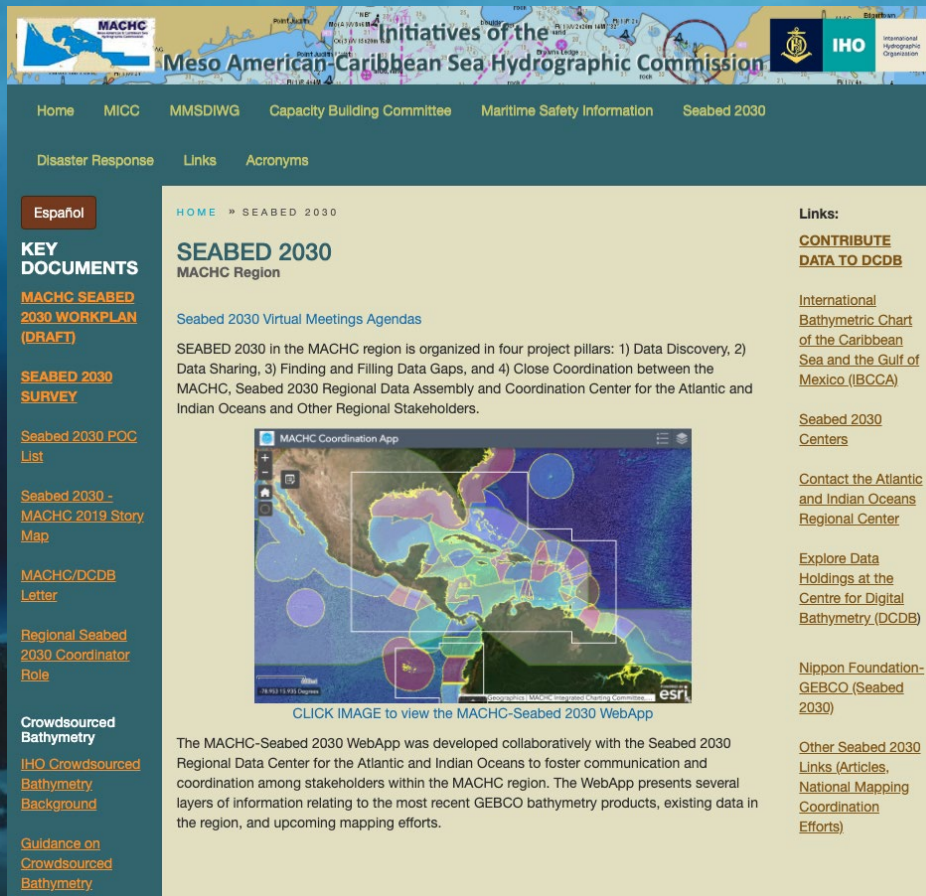




# MACHC-Seabed 2030 Online Resources and Web App



# MACHC - Seabed 2030 Resources



**Initiatives of the Meso American-Caribbean Sea Hydrographic Commission**

Home MICC MMSDIWG Capacity Building Committee Maritime Safety Information Seabed 2030

Disaster Response Links Acronyms

**Español**

**KEY DOCUMENTS**

- [MACHC SEABED 2030 WORKPLAN \(DRAFT\)](#)
- [SEABED 2030 SURVEY](#)
- [Seabed 2030 POC List](#)
- [Seabed 2030 - MACHC 2019 Story Map](#)
- [MACHC/DCDB Letter](#)
- [Regional Seabed 2030 Coordinator Role](#)
- [Crowdsourced Bathymetry](#)
- [IHO Crowdsourced Bathymetry Background](#)
- [Guidance on Crowdsourced Bathymetry](#)

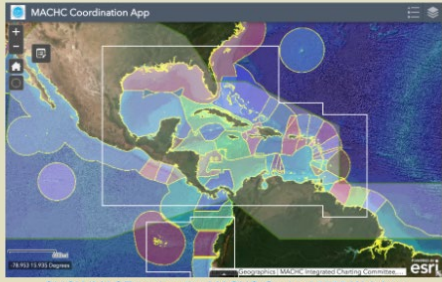
HOME » SEABED 2030

## SEABED 2030

MACHC Region

[Seabed 2030 Virtual Meetings Agendas](#)

SEABED 2030 in the MACHC region is organized in four project pillars: 1) Data Discovery, 2) Data Sharing, 3) Finding and Filling Data Gaps, and 4) Close Coordination between the MACHC, Seabed 2030 Regional Data Assembly and Coordination Center for the Atlantic and Indian Oceans and Other Regional Stakeholders.



CLICK IMAGE to view the MACHC-Seabed 2030 WebApp

The MACHC-Seabed 2030 WebApp was developed collaboratively with the Seabed 2030 Regional Data Center for the Atlantic and Indian Oceans to foster communication and coordination among stakeholders within the MACHC region. The WebApp presents several layers of information relating to the most recent GEBCO bathymetry products, existing data in the region, and upcoming mapping efforts.

**Links:**

- [CONTRIBUTE DATA TO DCDB](#)
- [International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico \(IBCCA\)](#)
- [Seabed 2030 Centers](#)
- [Contact the Atlantic and Indian Oceans Regional Center](#)
- [Explore Data Holdings at the Centre for Digital Bathymetry \(DCDB\)](#)
- [Nippon Foundation-GEBCO \(Seabed 2030\)](#)
- [Other Seabed 2030 Links \(Articles, National Mapping Coordination Efforts\)](#)

<https://www.iho-machc.org/seabed2030.html>



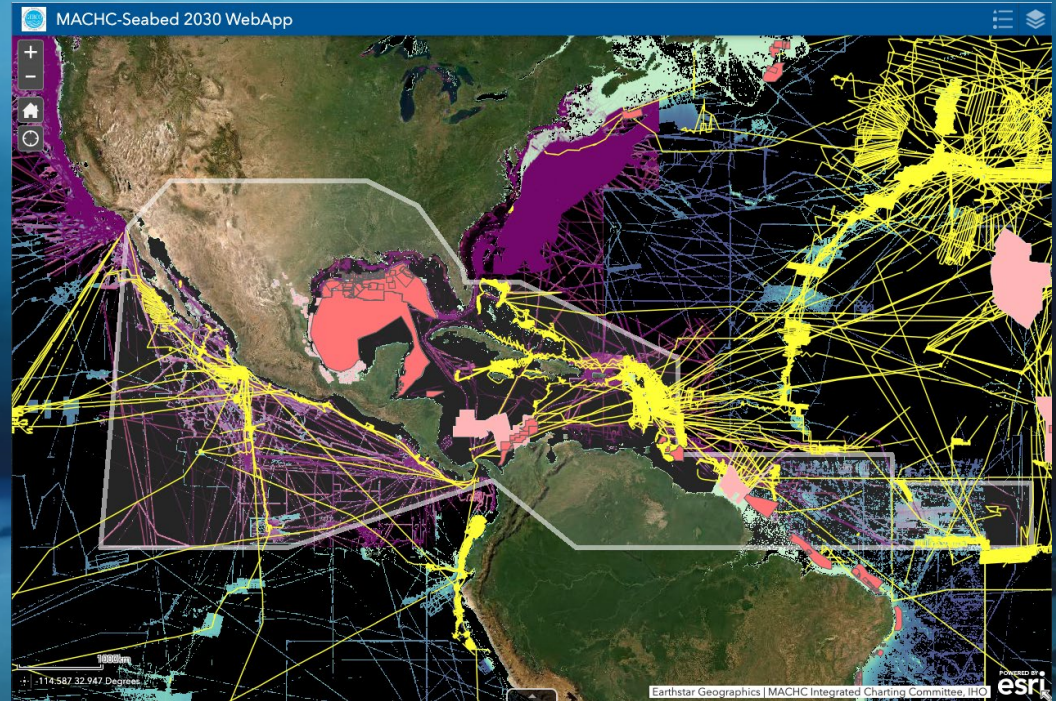
# MACHC-Seabed 2030 Web App

An interactive interface that presents several informational layers to promote collaboration and cooperation toward the goals of Seabed 2030.

Layers are publicly available and managed by many partners. Authoritative layers used whenever available and include:

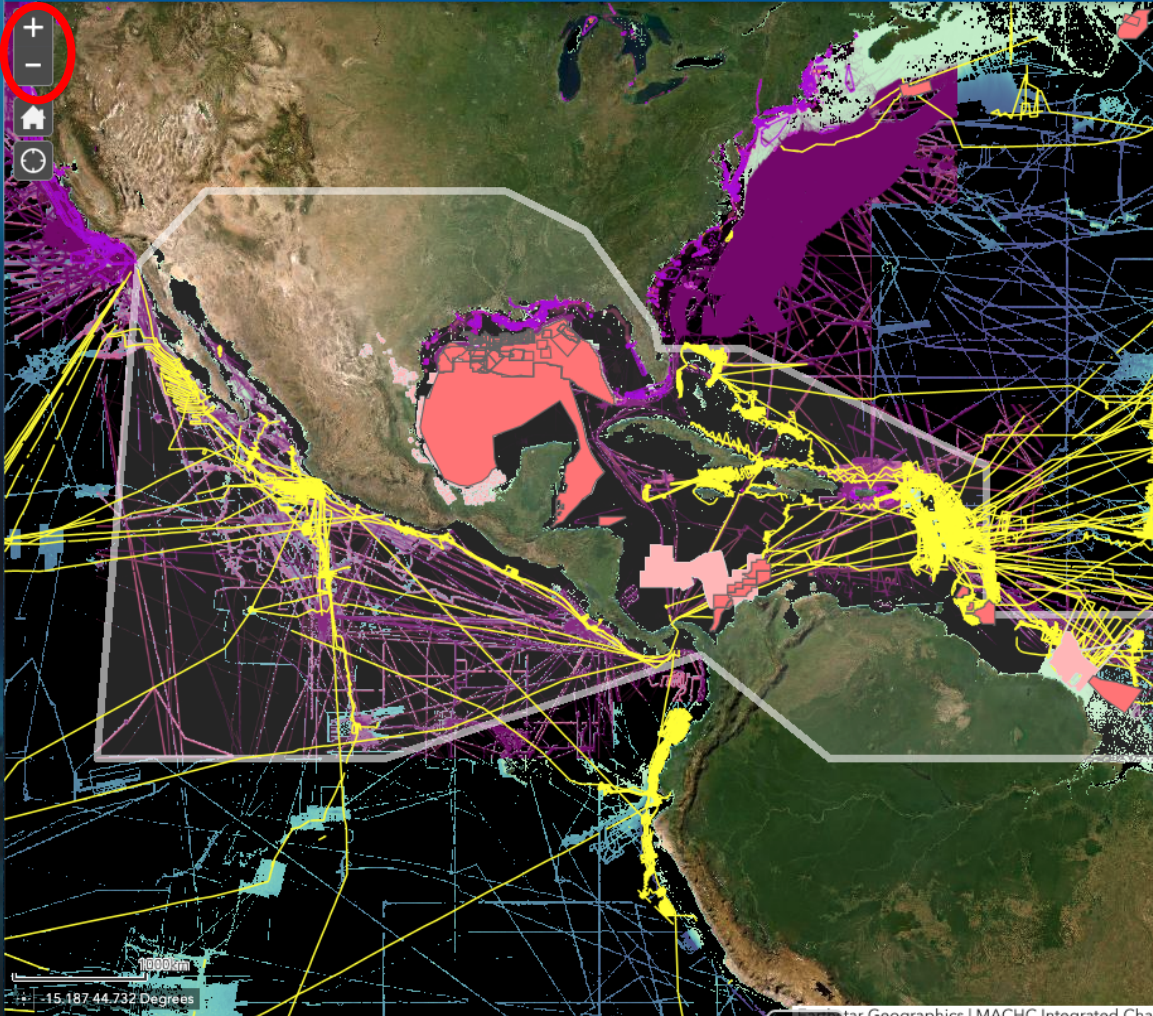
- GEBCO 2020 Map & Coverage
- Known Data Coverage Layers
  - Public Data
  - Embargoed Data
- Planned Surveys

Highlights Data Gaps



<http://bit.ly/Seabed2030-MACHC>





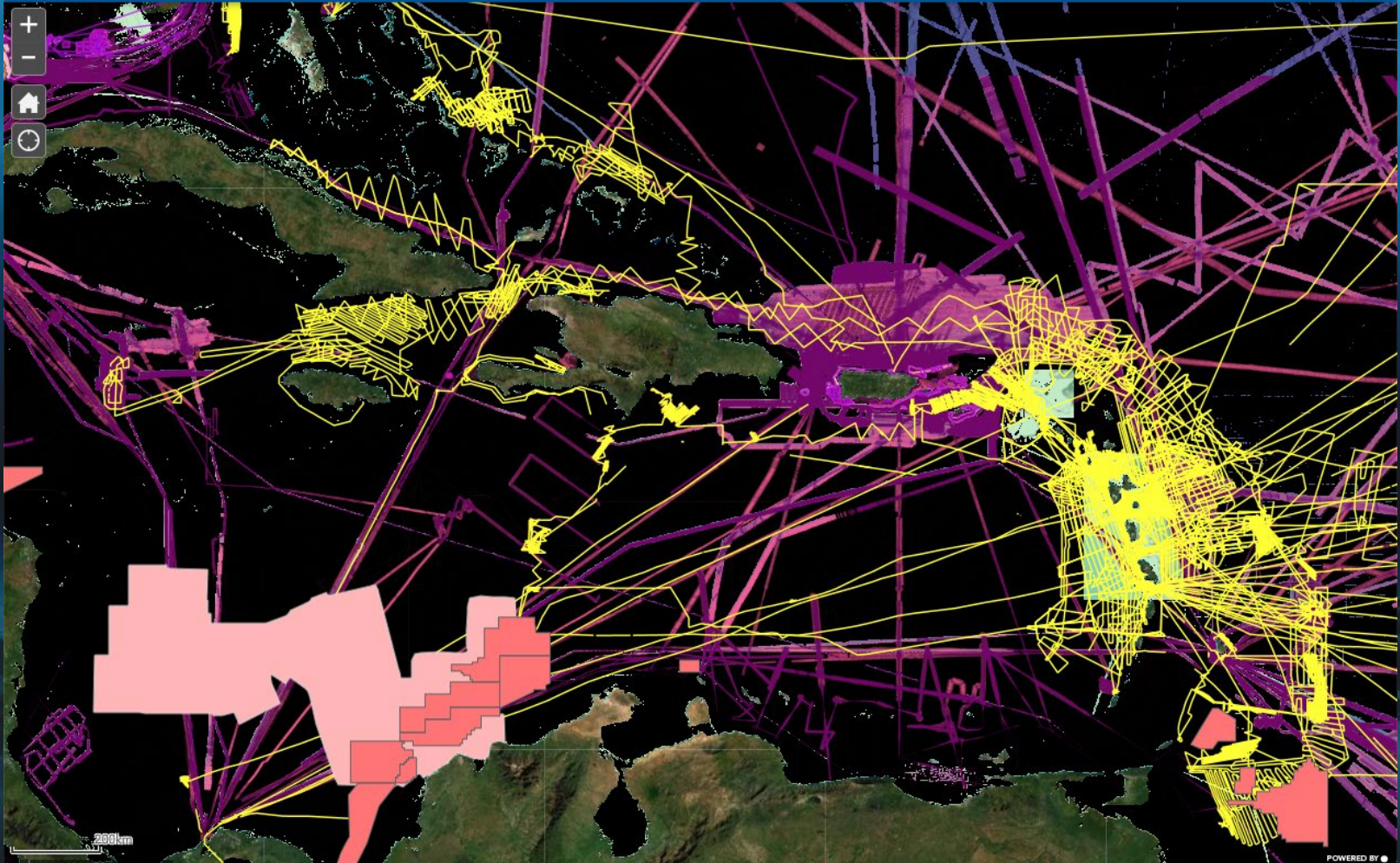
### Layer List

Layers

- Planned MACHC Member State Surveys
- Planned Industry Surveys
- IBCCA Area
- Non-public Existing Industry Data [G] ⋮
- Non-public Existing Industry Data [G] Zoom to
- EU Bathymetry Holdings [G] Transparency
- US NOAA-NOS Existing Data [G] Set visibility range
- Planned Surveys - US
- RHC MACHC Boundaries
- NOAA Bathymetry Gap A [G] Move up
- NOAA Bathymetry Gap A [G] Move down
- Marine Boundaries View in Attribute Table
- IHO DCDB Multibeam Existing Data Show item details
- IHO DCDB Singlebeam Existing Data ⋮
- GEBCO 2014 Un-mapped ⋮
- GEBCO 2019 Un-Mapped ⋮
- GEBCO 2019 Depths ⋮
- GEBCO\_2020\_Un-mapped [G] ⋮

10000m  
-15.187 44.732 Degrees



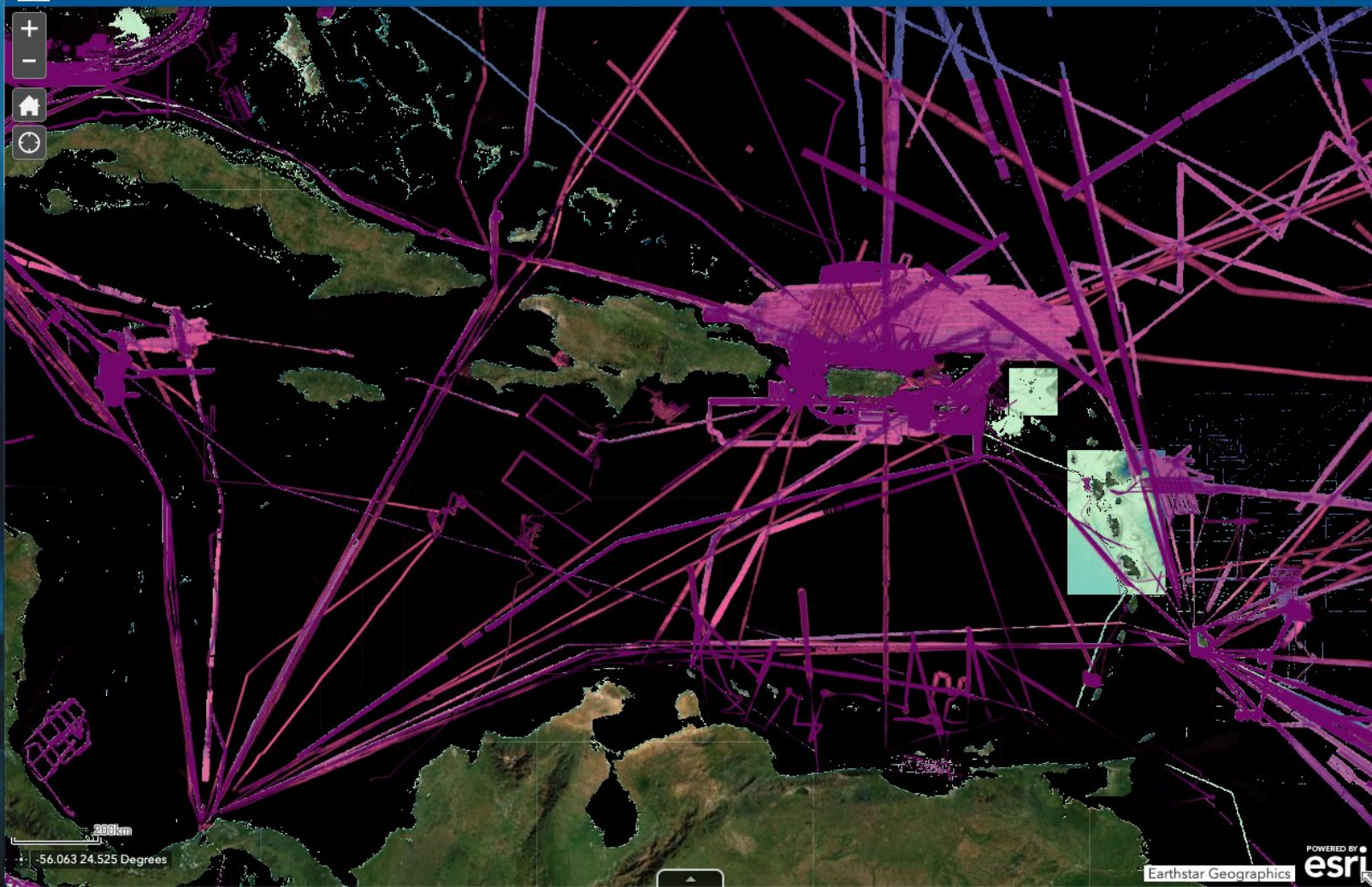


200km

-61.908 19.743 Degrees



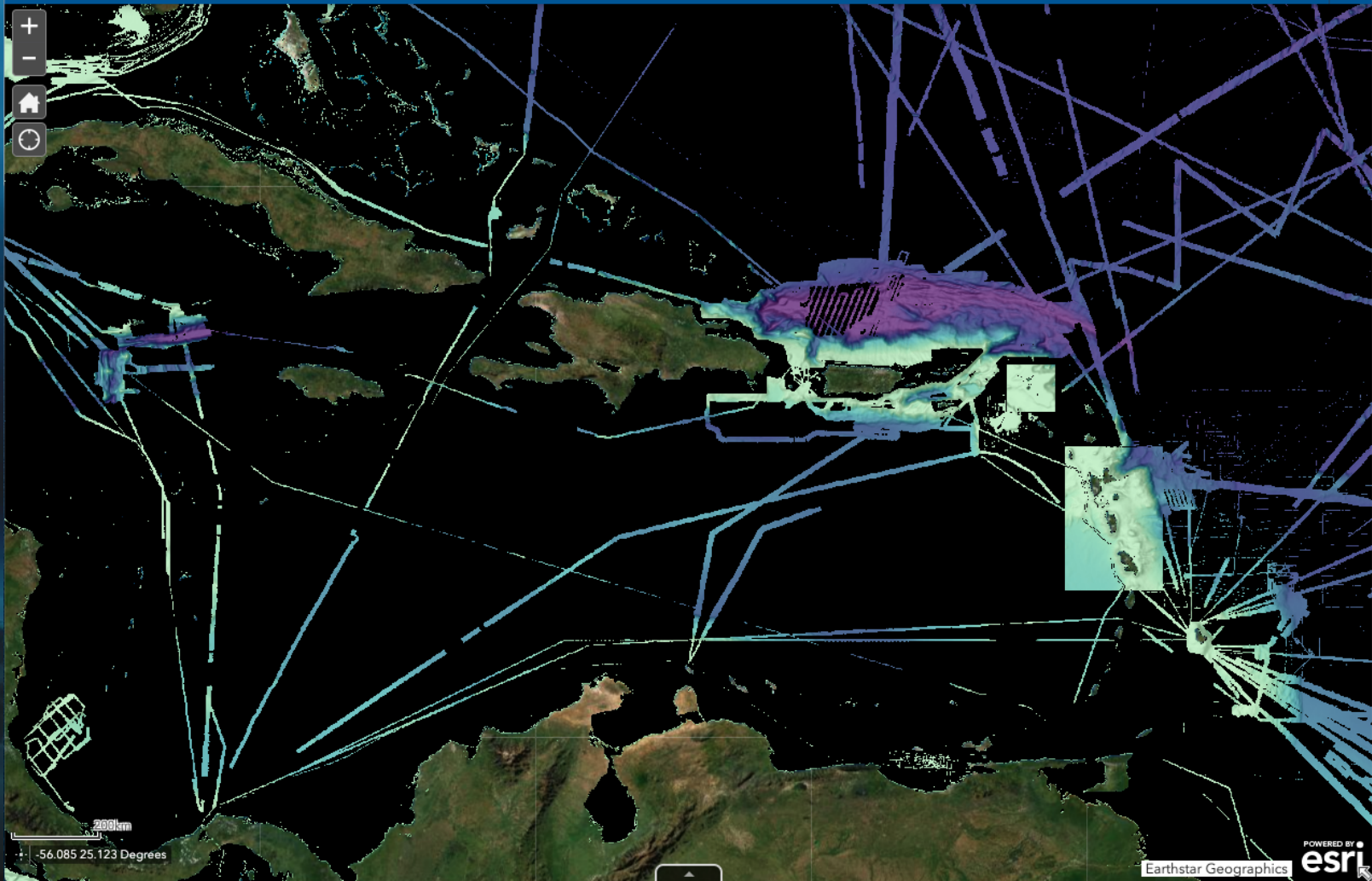




2000m

56.063 24.525 Degrees





200m  
-56.085 25.123 Degrees

Questions about known basic web app functions  
and/or data coverage layers?



Layers showing publicly available data at IHO DCDB





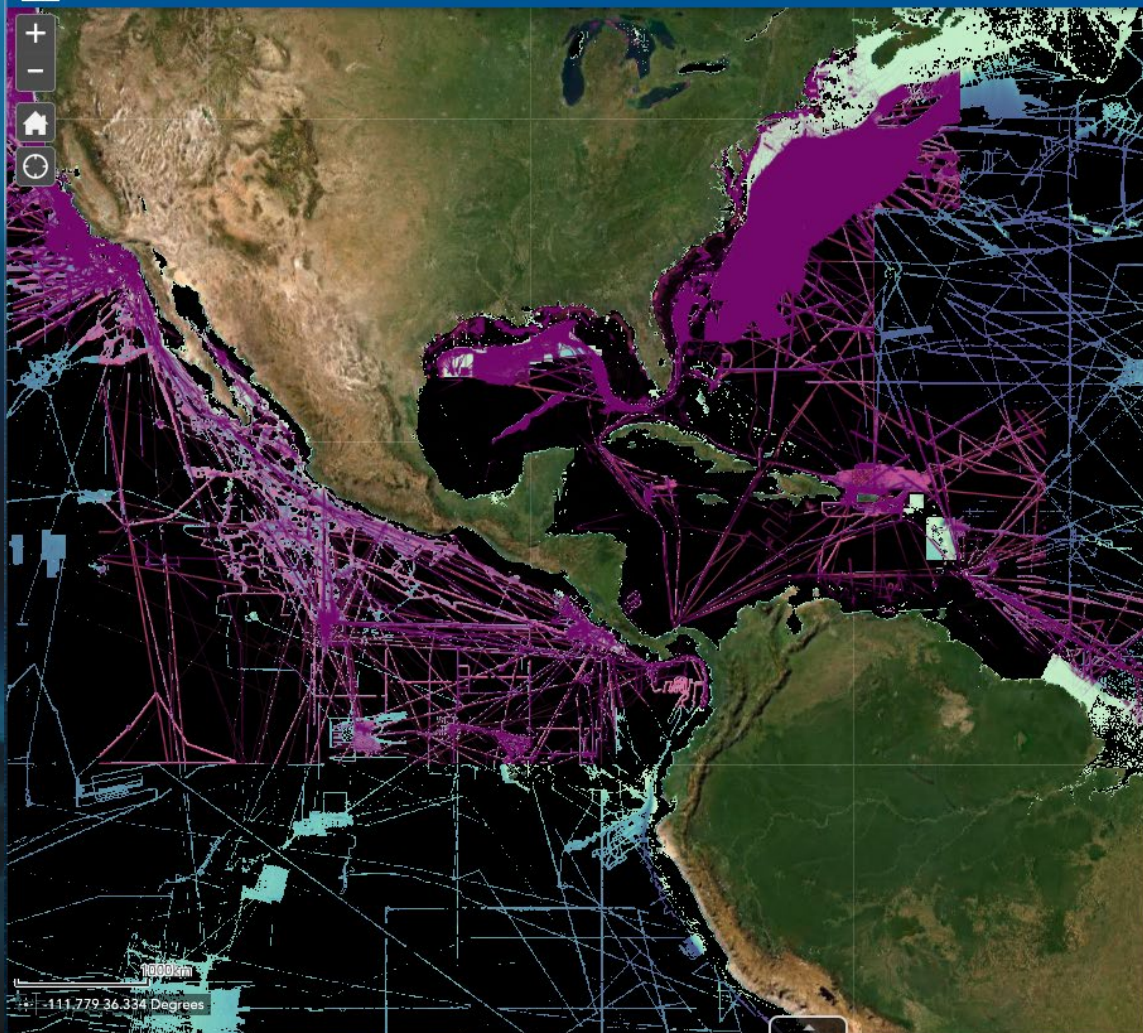


### Layer List

Layers

- Planned MACHC Member State Surveys ...
- Planned Industry Surveys ...
- IBCCA Area ...
- Non-public Existing Industry Data [G] ...
- Non-public Existing UNCLOS Data [G] ...
- EU Bathymetry Holdings (Non-public & public) [G] ...
- US NOAA-NOS Existing Data ...
- Planned Surveys - US ...
- RHC MACHC Boundary ...
- NOAA Bathy Gap Analysis (MACHC, non-US) [G] ...
- NOAA Bathy Gap Analysis (US) [G] ...
- Marine Boundaries ...
- IHO DCDB Multibeam Existing Data ...
- IHO DCDB Singlebeam Existing Data ...
- GEBCO 2014 Un-mapped ...
- GEBCO 2019 Un-Mapped ...
- GEBCO 2019 Depths ...
- GEBCO\_2020\_Un-mapped [G] ...

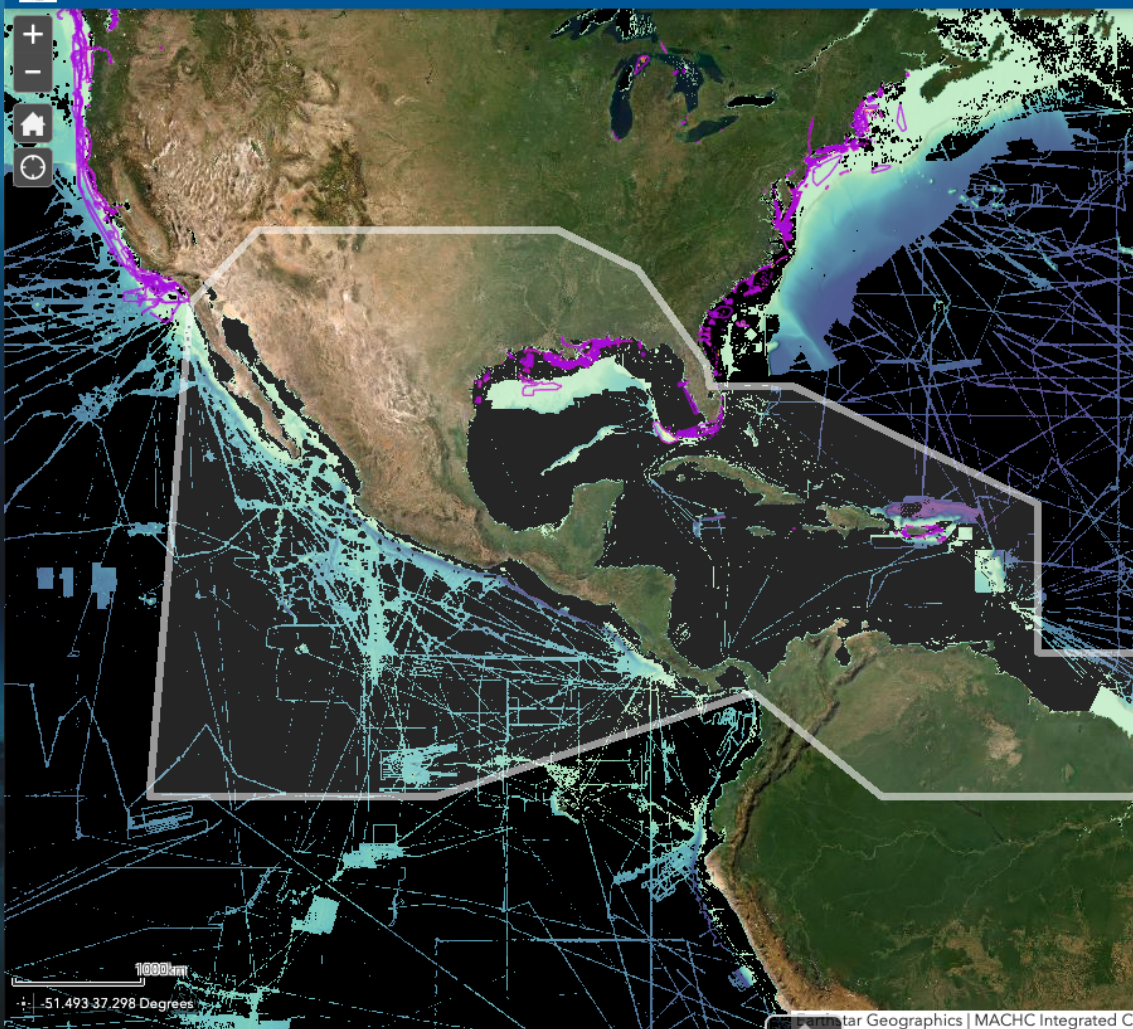




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- GEBCO 2019 Depths ...
- GEBCO\_2020\_Un-mapped [G] ...



### Layer List

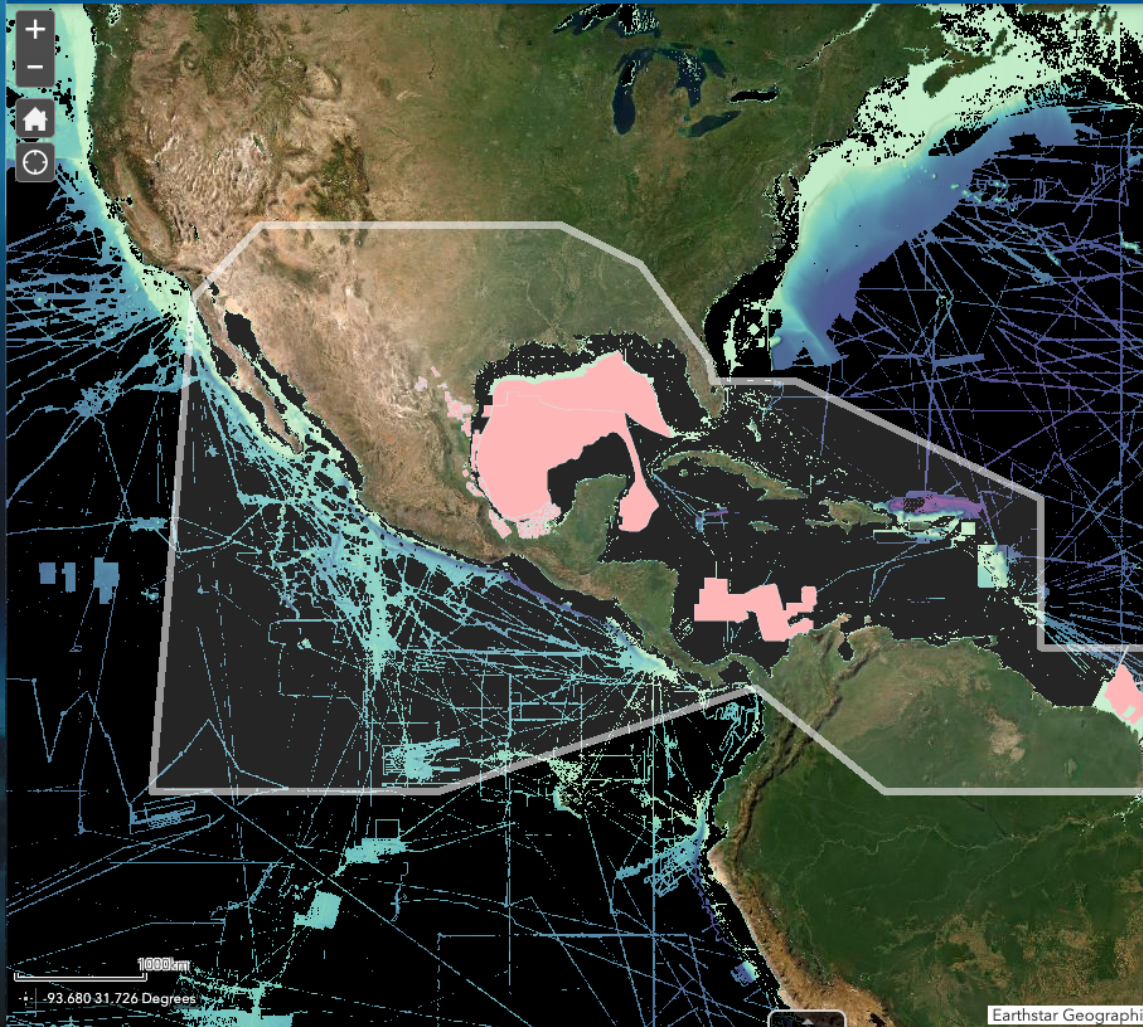
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- GEBCO 2014 Un-mapped ...
- GEBCO 2019 Un-Mapped ...
- GEBCO 2019 Depths ...
- GEBCO\_2020\_Un-mapped [G] ...



Layers showing the extent of non-public data



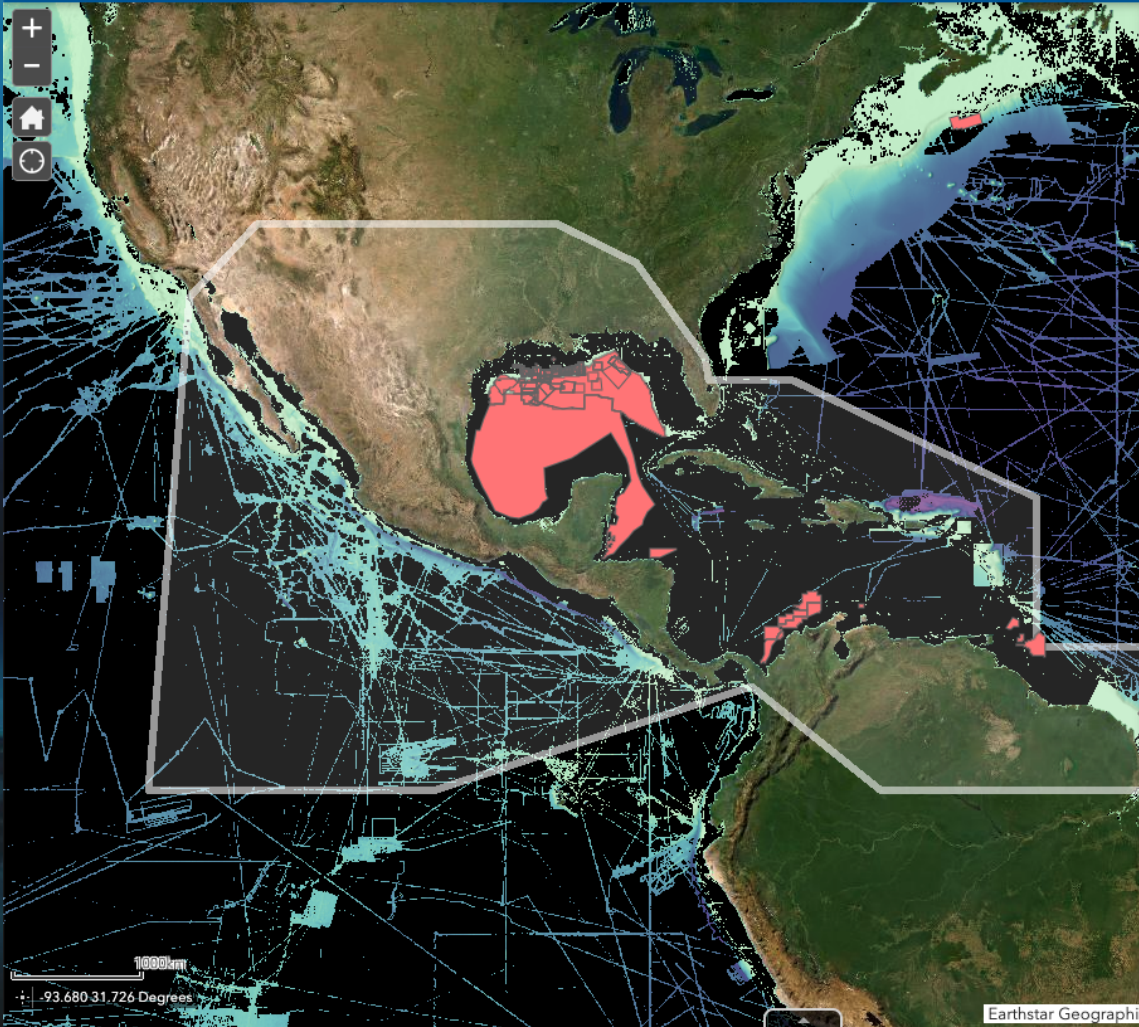


### Layer List

Layers

- Planned MACHC Member State Surveys ...
- Planned Industry Surveys ...
- IBCCA Area ...
- Non-public Existing Industry Data [G] ...
- Non-public Existing UNCLOS Data [G] ...
- EU Bathymetry Holdings (Non-public & public) [G] ...
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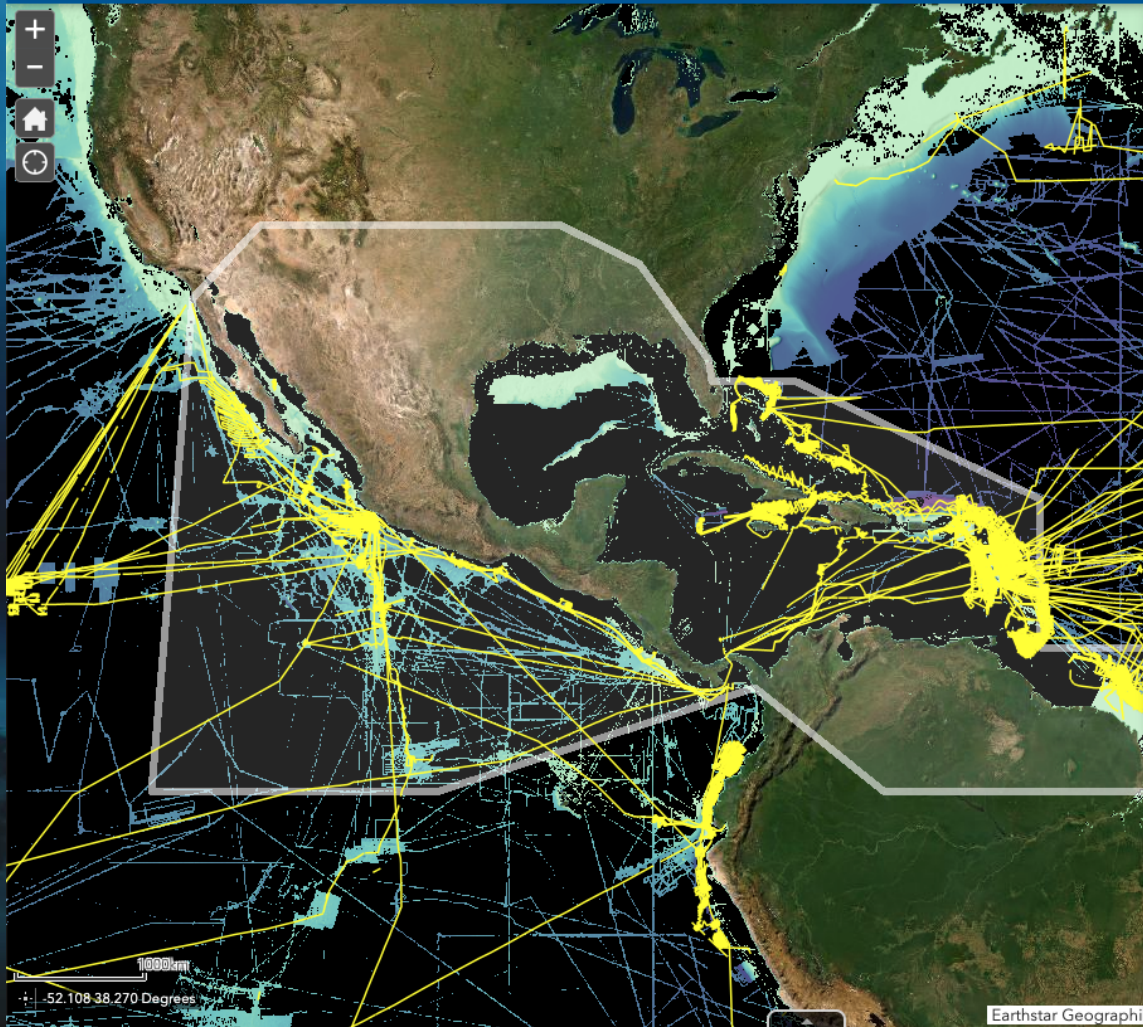


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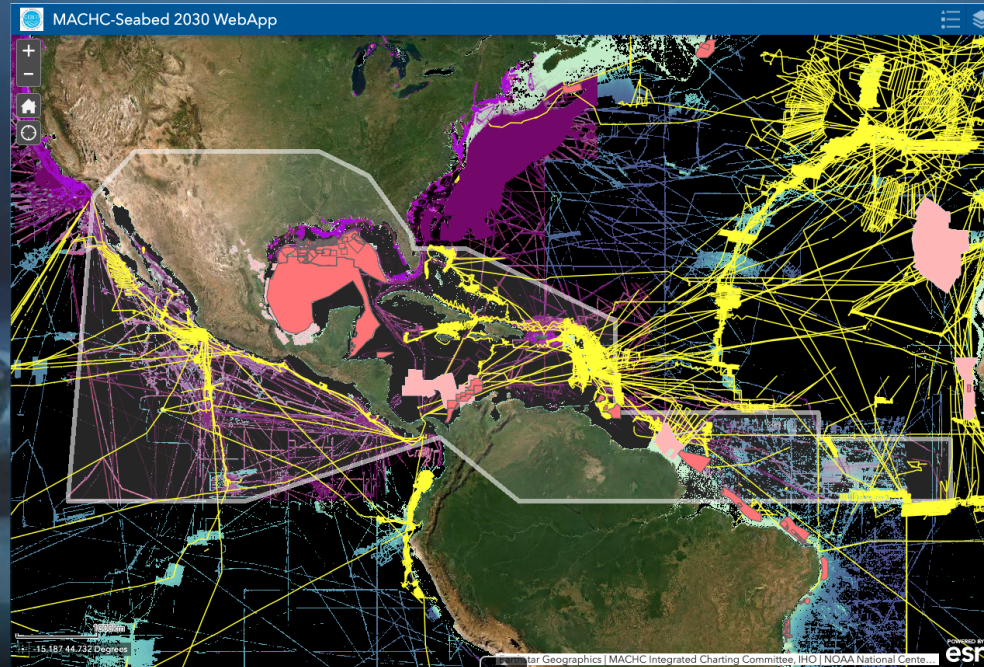
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# MACHC Region: Summary of known existing data

- Publicly Available Data - actively being integrated into Seabed 2030 regional data products
  - US NOS data
  - Multibeam data at IHO DCDB
- Non-public Data - Strategy needed to gain access to data for GEBCO/Seabed 2030
  - Industry
  - UNCLOS
  - EU Data
- Other??

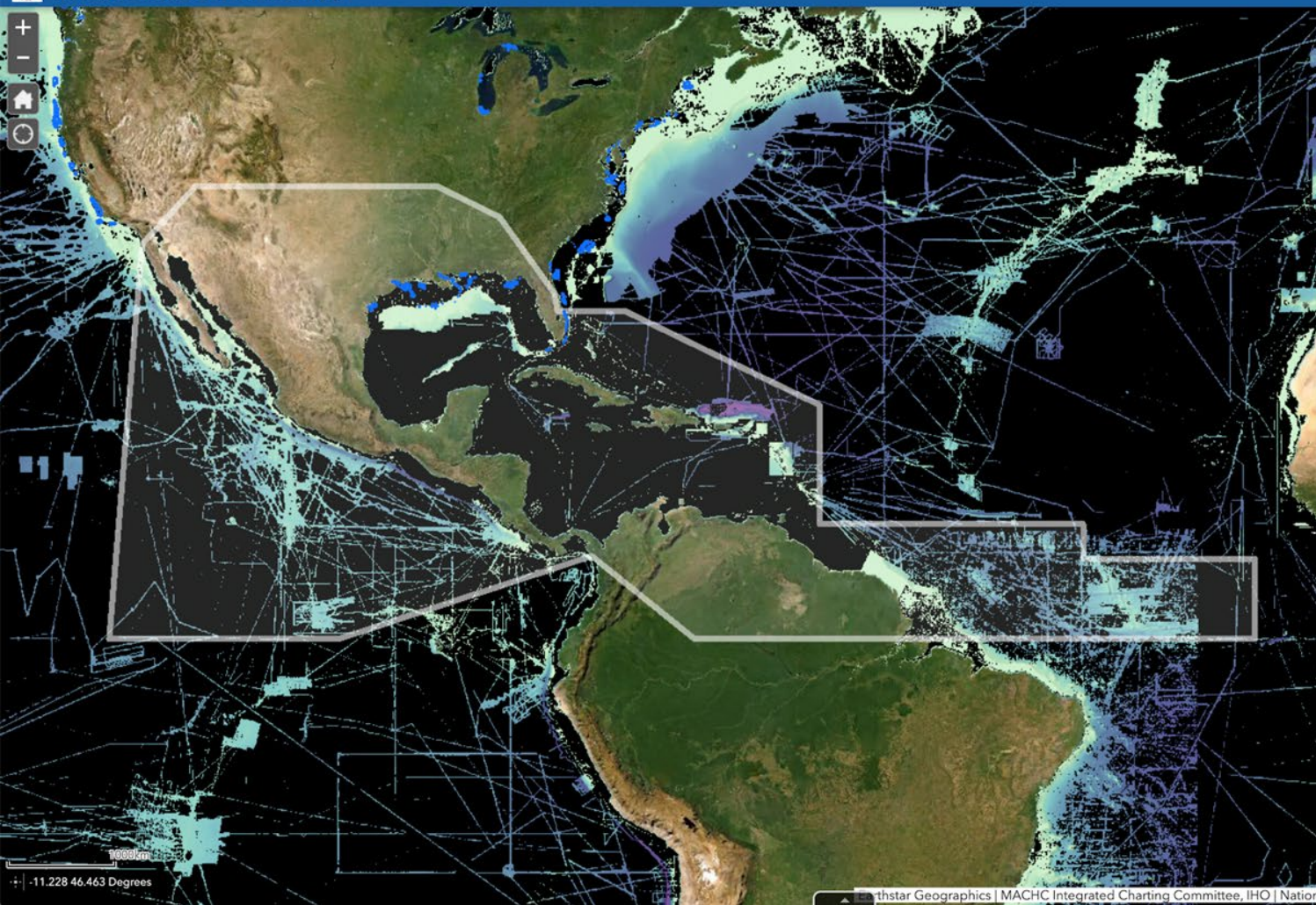




# Layers showing planned surveys







### Layer List

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Layer List

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Earthstar Geographic





### Layer List

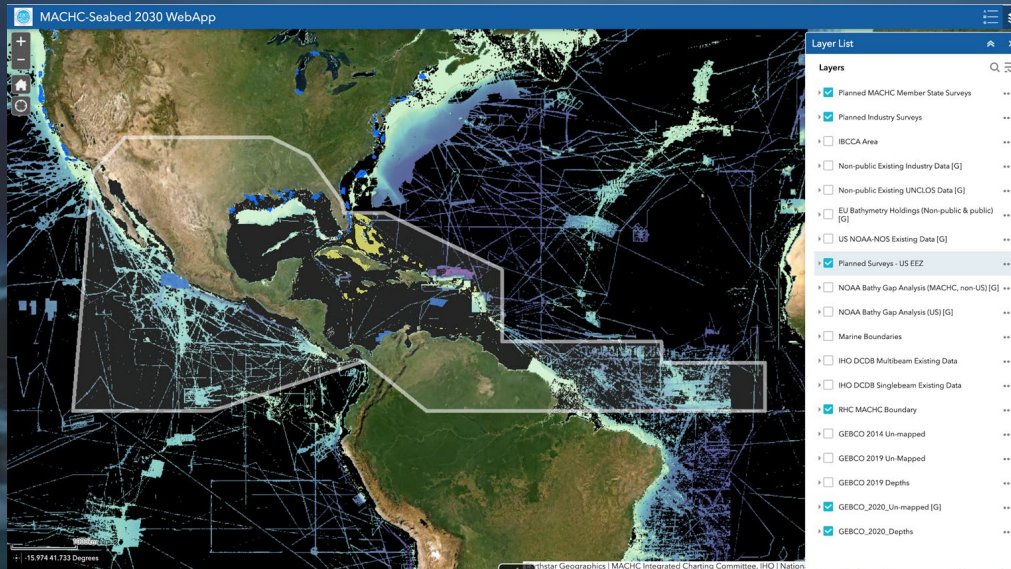
Layers

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- GEBCO\_2020\_Depths



# Review of Planned Survey Layers

- US Mapping Plans (within US EEZ)
- Planned Industry Surveys
- Planned MACHC Member State Surveys



# Questions and Discussion





# Webinar 1: Summary & Conclusions

- Introduction to Seabed 2030
- Review status of mapping in the MACHC region
- Introduction to the IHO Data Center for Digital Bathymetry
- Demonstration of Seabed 2030 MACHC Web App



## Next Webinars in this Series

- Webinar 2 - Sept. 25: How do we build the map? How can you contribute data?
- Webinar 3 - Oct. 9: Increasing Data Coverage: Crowdsourced Bathymetry and Data Coverage Polygons
- Webinar 4 - Oct. 23: Moving Ahead Together: Summary, Next Steps and Wrap up.





# Homework

- Please explore the MACHC - Seabed 2030 Web App  
<http://bit.ly/Seabed2030-MACHC>
- Identify and assemble information about existing datasets that are not represented in the Seabed 2030 - MACHC Web App. (e.g. web services, polygons, etc)
- Assemble information about technical challenges that we might be able to help you address.
- Input on strategies for gaining access to non-public data?
- Send questions and correspondence to: [cecilia.cortina@gmail.com](mailto:cecilia.cortina@gmail.com),  
cc: [percy.pacheco@noaa.gov](mailto:percy.pacheco@noaa.gov)



# Thank you!

Please join us for Webinar 2 on Sept. 25:  
*How do we build the map? How can you contribute data?*

