



Attendee Rules

- Mute yourself
- Turn off your camera

2022 Alaska Coastal & Ocean Mapping Summit

Mapping Vessels of Opportunity

November 17th, 2022

Agenda – Mapping Vessels of Opportunity

- ★ **Support Vessels of Alaska** – Scott Hameister, Support Vessels of Alaska
- ★ **U.S. Coast Guard Crowdsourced Bathymetry Efforts** – Candace Nachman, U.S. Coast Guard
- ★ **Marine Scientific Research & Bathymetry from Foreign-Flagged Vessels** – Allison Reed & Liz Buendia, OES/OPA, Department of State; Jennifer Jencks, NOAA NCEI
- ★ **Overcoming Barriers to Scaling Crowdsourced Bathymetry** – Georgie Zelenak, NOAA NCEI
- ★ **A System Solution for Volunteer Bathymetry Collection** – Dr. Brian Calder, UNH CCOM, NOAA-UNH Joint Hydrographic Commission
- ★ **Crowdsourced Bathymetry in the Great Lakes** – Linden Brinks, GLOS

Polling Instructions for Panel #2

Go to

www.menti.com

Enter the code

2839 3651



Or use QR code

Go to [menti.com](https://www.menti.com) and use the code: **2839 3651**



1 Icebreaker Question



2 Vessels of Opportunity Questions

Results will be
shared before the
break



Support Vessels of Alaska

Scott Hameister – Support Vessels of Alaska

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SUPPORT VESSELS OF ALASKA

AK COASTAL & OCEAN MAPPING SUMMIT

WHO IS SUPPORT VESSELS OF ALASKA?

SVA IS A VETERAN OWNED BUSINESS LOCATED IN HOMER, AK., THAT WAS FOUNDED ON THE IDEA OF PROVIDING SAFE AND EFFICIENT VESSELS AND CREW THAT SUPPORT CRITICAL PROJECTS.

SUPPORT VESSELS OF ALASKA MISSION & VISION



“OUR MISSION IS TO SUPPORT YOUR MISSION, SAFELY.”

*“OUR VISION IS TO REDEFINE THE MARKETS IN WHICH
WE SERVE BY PROVIDING A SUPERIOR PRODUCT AND
POSITIVELY AMAZING CUSTOMER SERVICE.”*



SUPPORT VESSELS
OF ALASKA

CULTURAL VALUES

AT S.V.A., WE ARE COMMITTED TO PROMOTING A CULTURE AND ATTITUDE THAT OUR EMPLOYEES AND CLIENTS ALIKE WILL EMBRACE. OUR CULTURAL VALUES INCLUDE: ALWAYS MAKING HEALTH, SAFETY, AND A CLEAN, COMFORTABLE WORKING ENVIRONMENT FOR OUR CLIENTS AND CREW OUR MAJOR PRIORITIES.

IN ADDITION TO:

- LEAVING THE SMALLEST FOOTPRINT ON THE ENVIRONMENT AS POSSIBLE.
- USING ENERGY, PRODUCTS, AND MATERIALS IN THE MOST EFFICIENT MANNER TO ACCOMPLISH THE TASKS AT HAND.
- LEADING BY EXAMPLE: BOTH INTERNALLY AND TOWARDS OUR CUSTOMERS.



WHO DO WE WORK ALONGSIDE?

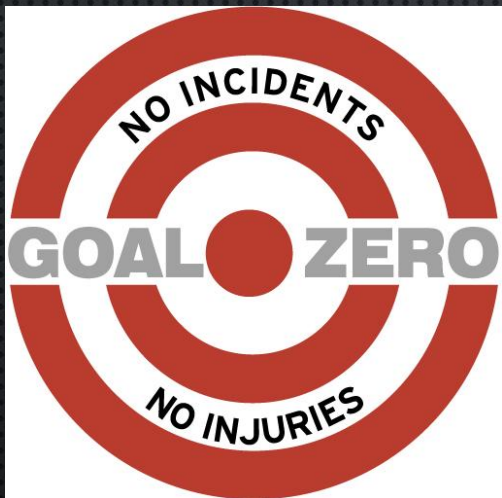
- FEDERAL AGENCIES: NSF, NOAA, USGS, USFWS, ADF&G, BOEM ETC..
- UNIVERSITIES: UAF, UW, OSU, STANFORD, U OF HAWAII, ETC..
- COMMERCIAL COMPANIES: ACTEON, FUGRO, WOOLPERT/ETRAC, POLAR FIELD SERVICES, AECOM, GCI ETC.
- NON-PROFIT COMPANIES: BATTELLE, WHOI
- US MILITARY: ARMY, NAVY, USCG, AIR FORCE

WHAT MAKES SVA
DIFFERENT??



OUR CREW

A
COMMITMENT
TO
SAFETY



An
UNDERSTANDING
AND RESPECT FOR
THE ENVIRONMENT



U.S. Coast Guard
Licensed Mariners



SVA VESSELS



Arctic Seal



Vessel Specifications:

Length – 130'
Beam – 32'
Draft – 4'

Centrally located Moon Pool
Cruising Speed – 10kts
Deck Cargo Capability – 290 tons

Freshwater: 5,400 gallons (1,400/day)
Births: 11 / Heads: 3
Endurance: 45+ Days

Qualifier 105



Vessel Specifications:

Length – 105'
Beam – 30'
Draft – 6'

Forward/Side Scanning Sonar / Hydraulic Multi Beam Arm
6 Ton Deck Crane / Davit/ A-Frame
Cruising Speed – 11kts

Freshwater: 4,000 gallons
Births: 30 / Heads: 4
Endurance: 45 Days

Woldstad



Vessel Specifications:

Length – 121'
Beam – 28'
Draft – 12'

Hydraulic Multi-beam Arm
Cruising Speed – 10kts
12 & 6 ton Deck Cranes / Side-Davit

Freshwater: 4,000 gallons
Births: 19 / Heads: 3
Endurance: 90+ Days

Norseman II



Vessel Specifications:

Length – 115'
Beam – 28'
Draft – 13'

Hydraulic Multi-beam Arm
Cruising Speed – 10kts
5-ton Deck Crane / 8-ton A-Frame

Freshwater: 3,000 gallons
Births: 19 / Heads: 3
Endurance: 90+ Days



QUESTIONS OR MORE INFORMATION

EMAIL: SCOTT@SVABOATS.COM

PHONE: 206-992-3941

SVABOATS.COM



End of Presentation

Thank you!



U.S. Coast Guard Crowdsourced Bathymetry Efforts

Candace Nachman – U.S. Coast Guard

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USCG Crowdsourc Bathymetry Efforts

Ms. Candace Nachman

17 November 2022
AK Coastal & Ocean Mapping
Summit



Personal Introduction

Background

- Senior Ocean Policy and Program Advisor for U.S. Coast Guard Marine Transportation Systems Directorate
- Broad portfolio that includes ocean policy, marine spatial planning, climate change, Arctic and more
- U.S. Coast Guard Principal to the NOMECC Council and other OSTP interagency committees
- Please reach out for collaboration opportunities at Candace.A.Nachman@uscg.mil



Alaska Mapping/Charting Support & White House OSTP Involvement



Overview

- **2008 & 2013: HICKORY & SPAR HYPACK** bathymetric collaborations with NOAA to improve nautical charting in the Kuskokwim River and Bechevin Bay
- **2020: USCG surveyed Districts, Sectors, Units, and Cutters** for NOAA's Hydrographic Survey Prioritization Survey. Over 200 requests submitted
- **2020 – 2021: USCG contributes to WH OSTP goals** towards improving maritime safety, EEZ data collection, nautical charting, and helping NOAA prioritize hydrographic surveying



Alaska Mapping/Charting Support & White House OSTP Involvement



Overview

- Phase 1 (NOV 2020): Single transfer of ECDIS data from CGC FRANK DREW in the Hampton Roads area
- Phase 2 (JUN 2021 - Present): Quarterly ECDIS transfers from CGC's HICKORY & FIR in Alaska. Data sent to NOAA's NCEI for the IHO Crowdsourced Bathymetry Program
- Looking Forward:
 - Request from NOAA to add 60+ Alaska cutters to the data transfer program
 - Internal offices are assessing future fleet-wide participation; need to weigh mission & security concerns





End of Presentation

Thank you!



Marine Scientific Research & Bathymetry from Foreign-Flagged Vessels

Allison Reed & Liz Buendia – OES/OPA, Department of State | Jenn Jencks – NOAA NCEI

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Allison Reed



Liz Buendia

U.S. State Department
Office of Ocean & Polar Affairs



Access to Data from Foreign Scientists Conducting Marine Scientific Research in Waters under U.S. Jurisdiction:

U.S. Consent Process & Data Management

November 17, 2022



Jennifer Jencks



Hernan Garcia

NOAA/NESDIS
Natl. Centers for Env't. Info.





MSR and the Law of the Sea Convention

1982 Law of the Sea Convention

- Article 238: Right to conduct MSR
- Articles 245 & 246: Coastal State jurisdiction over MSR conducted within territorial seas and EEZ
- Article 249: Duty to provide coastal State access to MSR data
- Article 250: Communications concerning MSR projects shall be made through appropriate official channels



MSR in U.S. Waters by Foreign Scientists

U.S. MSR Policy

- Advance consent required for MSR in the U.S. EEZ and on the continental shelf (including the extended continental shelf)
- 30-40 applications from foreign scientists per year

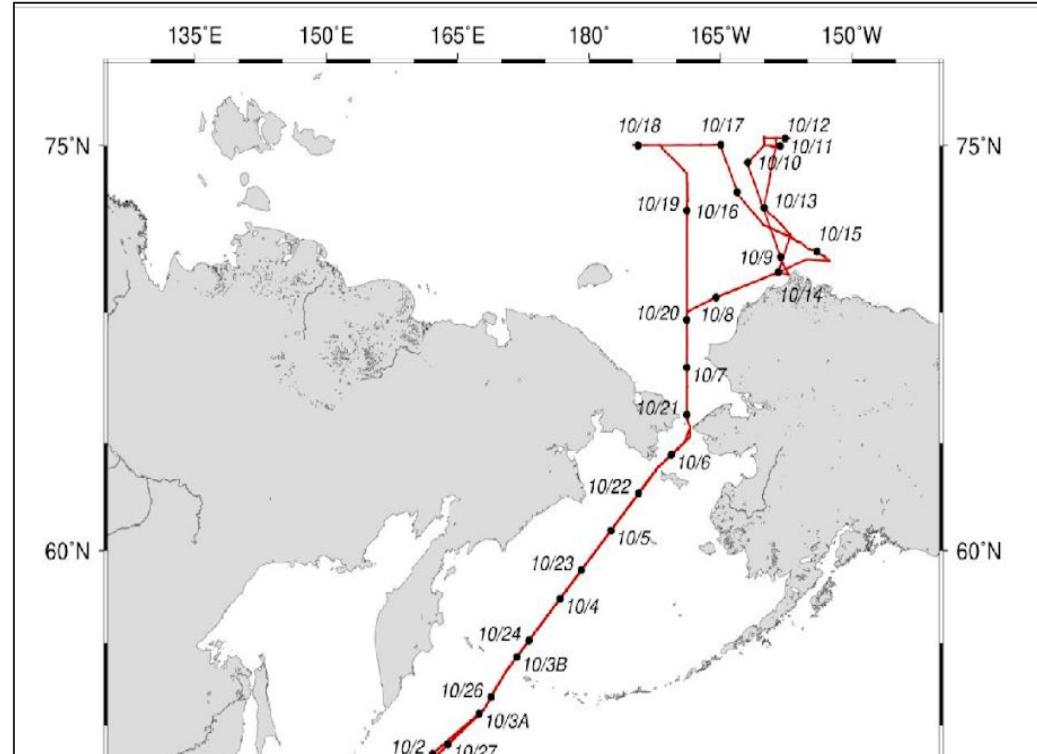
U.S. MSR Consent Letters

- State OPA issues consent letter after 10 USG agencies review
- Letter requires foreign scientists to submit preliminary report, final report, and data (data submitted directly to NOAA NCEI)
- OPA and NCEI reach out to scientists requesting delinquent data and/or incomplete data submissions



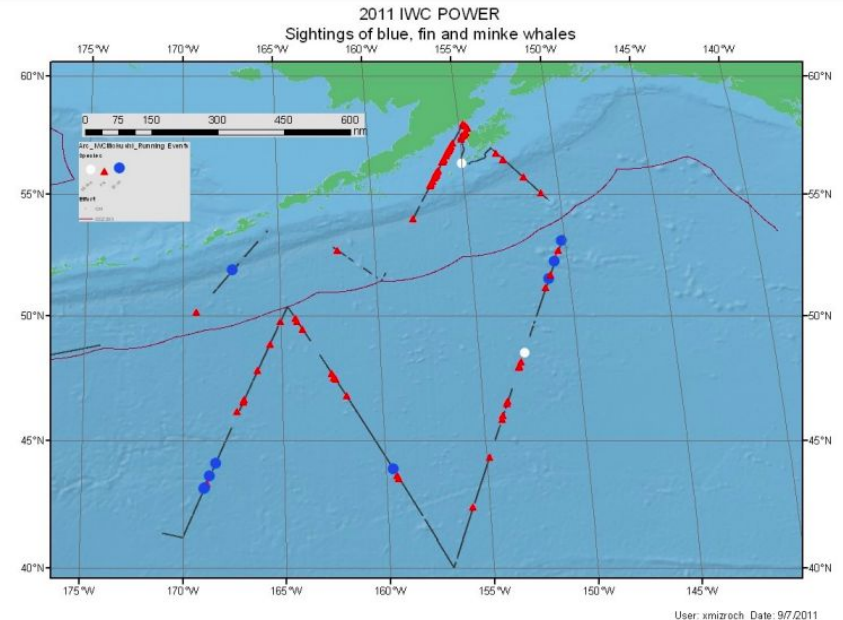
Final Report & Data Example

- Data obtained in cruise U2020-004 (Japan) was submitted to **NCEI** via Send2NCEI (S2N). Please contact Dr. Shigeto Nishino (nishinos@jamstec.go.jp), the scientist in charge of the project for further information.
- R/V MIRAI is equipped with the Multi Beam Echo Sounding system (MBES; SEABEAM 3012). The objective was to collect continuous bathymetric data along the ship track to make a contribution to geological and geophysical studies.



Long term archival of MSR datasets

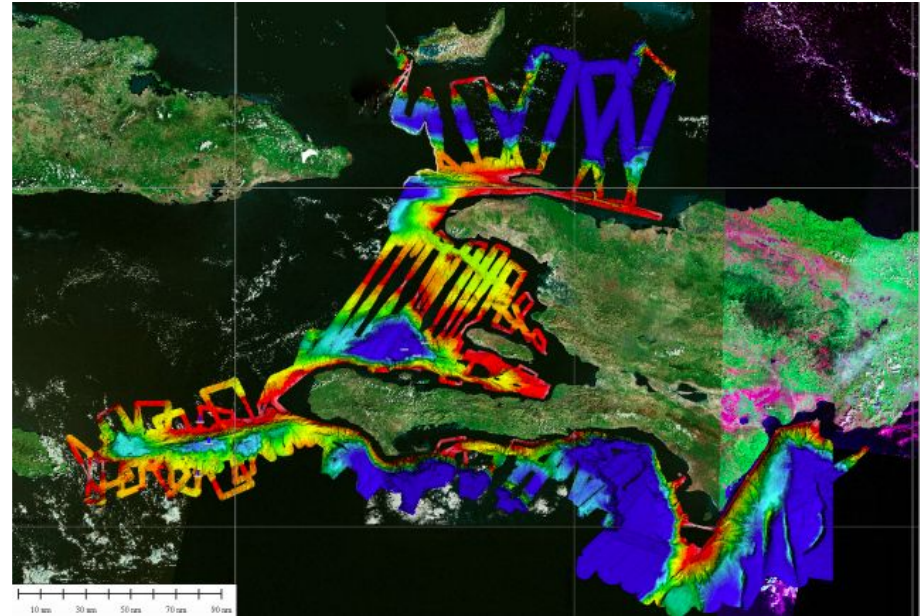
- MSR data collected by foreign scientists must be submitted to NOAA's National Centers for Environmental Information (NCEI)
- Total requests tracked by NCEI = 351
 - Detailed tracking began in 2010
- Discovery and access now available for **77 MSR Datasets** from 9 countries:
 - Australia, China, France, Germany, Japan, Mexico, Republic of S. Korea, Spain, United Kingdom



MSR U2011-005 Final Report (Japan): Positions of blue (blue circle), fin (red diamond) and common minke (white circle) observed in the research area. doi.org/10.25921/kv1x-1k70

Example Data Types Received (to date)

- Oceanographic measurements (eg: water temperature, salinity, currents)
- Chemical measurements (eg: oxygen, dissolved inorganic carbon, total alkalinity, pH)
- Visual observations of fish, whales, invertebrates, abundance, etc
- Bathymetric Data
- Magnetic Data



MSR U2012-030 Final Report (France): Bathymetric map of all the Haiti-SIS cruise (onboard R/V L'Atalante) Leg 1 & 2
doi.org/10.25921/xtzv-gd88

Marine Scientific Research Data

The U.S. Department of State (DOS) [Marine Scientific Research data \(MSR\) program](#) provides permission for research cruises from international partners to collect oceanographic, meteorological, and marine geophysical data in waters subject to U.S. jurisdiction in exchange for sharing data with U.S. parties.

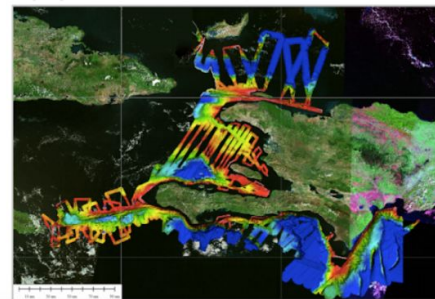
For questions or additional information, please contact MarineScience@state.gov or NCEI.Coastal@noaa.gov.

MSR data collected by international partners must be submitted to NCEI. These data must be accompanied by observation/processing notes and relevant interpretive reports. See the [data submission instructions](#) for more information.

Data Access

MSR Survey Data

Available datasets include oceanographic measurements, visual observations of marine wildlife, chemical measurements, and marine geophysical data. These data types are used by government and public scientists to understand the U.S. Exclusive Economic Zone environmental and ecological resources.



MSR Survey Data

Available datasets include oceanographic measurements, visual observations of marine wildlife, chemical measurements, and marine geophysical data. These data types are used by government and public scientists to understand the U.S. Exclusive Economic Zone environmental and ecological resources.

| *PRC=People's Republic of China *ROK=Republic of Korea *UK=United Kingdom | | |
|-------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------|
| MSR Survey ID | Contributing Country | DOI (Data Access) |
| U2019-010 | Japan | doi.org/10.25921/ce99-x721 |
| U2019-012 | China | doi.org/10.25921/8js5-5y83 |
| U2019-014 | Japan | doi.org/10.25921/81ck-8z38 |
| U2019-016 | France | doi.org/10.25921/bej8-4h26 |
| U2019-020 | China | doi.org/10.25921/6qke-ks71 |
| U2019-026 | Japan | doi.org/10.25921/7py2-hp21 |
| U2019-028 | Mexico | doi.org/10.25921/7py2-hp21 |

MSR Survey Table



Various atmospheric and oceanic parameters collected from the Japanese research vessel Mirai in the North Pacific Ocean, Bering Sea, and Arctic Ocean from 2019-09-28 to 2019-11-10 (NCEI Accession 0246410)



Preview graphic

Among others, this dataset contains water temperature and salinity taken by CTD, ADCP currents, underway thermosalinograph data, and bathymetry. Meteorological and oceanographic observations were made in the North Pacific Ocean, Bering Sea, and Arctic Ocean on board the research vessel Mirai from 28 September 2019 to 10 November 2019 as part of the Arctic Challenge for Sustainability (ArCS) project. This dataset is U.S. State Department MSR **RATS U2019-014** as part of the World Data Service for or Geophysics and Oceanography. Data are in text, CSV, XLSX, image (PNG,JPG), and movie (MP4,MOV) formats. Data description files are in PDF.

Dataset Citation

Dataset Identifiers

ISO 19115-2 Metadata

Access [Time & Location](#) [Documentation](#) [Description](#) [Credit](#) [Keywords](#) [Constraints](#) [Lineage](#)

Download Data

[HTTPS](#) *(download)*

Navigate directly to the URL for data access and direct download.

[FTP](#) *(download)*

These data are available through the File Transfer Protocol (FTP). FTP is no longer supported by most internet browsers. You may copy and paste the FTP link to the data into an FTP client (e.g., FileZilla or WinSCP).

Distribution Formats

- Originator data format

Index of /archive/arc0197/0246410/1.1/data/0-data

| <u>Name</u> | <u>Last modified</u> | <u>Size</u> | <u>Description</u> |
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|  Parent Directory | | - | |
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|  BOTTLE/ | 2022-03-05 17:35 | - | |
|  Bathymetry/ | 2022-01-28 22:15 | - | |
|  CEILOMETER/ | 2022-01-28 22:15 | - | |
|  CPS/ | 2022-01-28 22:15 | - | |
|  CTD/ | 2022-01-28 22:15 | - | |
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|  DRADAR/ | 2019-11-09 03:30 | - | |
|  Gravity/ | 2022-01-28 22:15 | - | |
|  ICERADAR/ | 2022-01-28 22:16 | - | |
|  IR/ | 2022-01-28 22:15 | - | |
|  LADCP/ | 2022-01-28 22:15 | - | |
|  Navigation/ | 2022-01-28 22:15 | - | |
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|  RADIOSONDE/ | 2022-01-28 22:15 | - | |
|  RINKO/ | 2022-01-28 22:15 | - | |
|  SMET/ | 2022-01-28 22:15 | - | |
|  SOAR/ | 2022-01-28 22:15 | - | |
|  STCM/ | 2022-01-28 22:15 | - | |
|  SVP/ | 2022-01-28 22:15 | - | |
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|  TMAP/ | 2022-01-28 22:15 | - | |

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| -180.000000 | 59.430202 | 3274.656 |
| 179.996400 | 59.429302 | 3276.305 |
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| 179.994600 | 59.428402 | 3269.138 |
| 179.997300 | 59.428402 | 3276.280 |
| 179.999100 | 59.428402 | 3279.229 |
| -180.000000 | 59.428402 | 3277.643 |
| 179.993700 | 59.427502 | 3266.611 |
| 179.995500 | 59.427502 | 3266.784 |
| 179.996400 | 59.427502 | 3273.950 |
| 179.997300 | 59.427502 | 3275.494 |
| 179.991900 | 59.426602 | 3279.881 |
| 179.992800 | 59.426602 | 3271.804 |
| 179.993700 | 59.426602 | 3271.860 |
| 179.996400 | 59.426602 | 3267.328 |
| 179.999100 | 59.426602 | 3278.446 |
| 179.991000 | 59.425702 | 3279.482 |
| 179.991900 | 59.425702 | 3277.614 |
| 179.993700 | 59.425702 | 3277.104 |
| 179.994600 | 59.425702 | 3280.638 |
| 179.995500 | 59.425702 | 3275.916 |
| 179.996400 | 59.425702 | 3277.155 |
| 179.998200 | 59.425702 | 3269.330 |
| 179.999100 | 59.425702 | 3269.616 |
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| 179.989200 | 59.424802 | 3274.283 |
| 179.991000 | 59.424802 | 3273.718 |
| 179.993700 | 59.424802 | 3277.697 |
| 179.995500 | 59.424802 | 3282.417 |
| 179.997300 | 59.424802 | 3281.969 |
| 179.998200 | 59.424802 | 3282.108 |
| 179.987400 | 59.423902 | 3267.965 |
| 179.990100 | 59.423902 | 3273.827 |
| 179.991900 | 59.423902 | 3275.235 |
| 179.994600 | 59.423902 | 3281.108 |
| 179.995500 | 59.423902 | 3283.340 |
| 179.998200 | 59.423902 | 3279.904 |
| 179.999100 | 59.423902 | 3282.962 |
| 179.985600 | 59.423002 | 3282.842 |
| 179.990100 | 59.423002 | 3271.361 |

Challenges

- Observations and/or measurements may be captured only in tables (eg: not data files)
- No data may be included at all
- Some data/data reports submitted in foreign requestors native language
- Reports received years after request was completed by requestor

| | | |
|-------------|-----------|----------|
| 179.997300 | 59.430202 | 3276.041 |
| -180.000000 | 59.430202 | 3274.656 |
| 179.996400 | 59.429302 | 3276.305 |
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Takeaways

- USG now has a system in place to accept, archive, discover and access MSR-collected data.
- These multiple data types can be used by many government and public scientist towards better understanding US EEZ environmental and ecological resources.
- The USG continues to discuss and implement solutions for improvement.



Allison Reed



Liz Buendia

Questions?

MSR: MarineScience@state.gov

NOAA NCEI: NCEI.Coastal@noaa.gov

U.S. State Department

Office of Ocean & Polar Affairs



Jennifer Jencks



Hernan Garcia

NOAA/NESDIS

Natl. Centers for Env't. Info.





End of Presentation

Thank you!



Overcoming Barriers to Scaling Crowdsourced Bathymetry

Georgie Zelenak – NOAA NCEI

11.17.2022 | Alaska Coastal & Ocean Mapping Summit

Overcoming Barriers to Scaling Crowdsourced Bathymetry

Georgie Zelenak
Bathymetry Data Manager

CU Boulder/CIRES in support of
NOAA's National Centers for Environmental Information

Member of the International Hydrographic Organization
Crowdsourced Bathymetry Working Group

georgianna.zelenak@noaa.gov

2022 Alaska Coastal & Ocean Mapping Summit





IHO

The IHO Crowdsourced Bathymetry Initiative

International
Hydrographic
Organization

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





IHO

IHO Data Centre for Digital Bathymetry (DCDB)



International Hydrographic Organization
Organisation Hydrographique Internationale



ngdc.noaa.gov/iho/

[IHO DCDB Home](#)

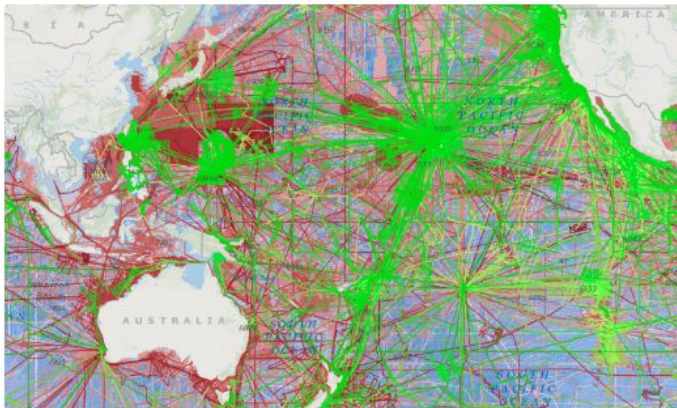
[Contribute Data](#)

[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.

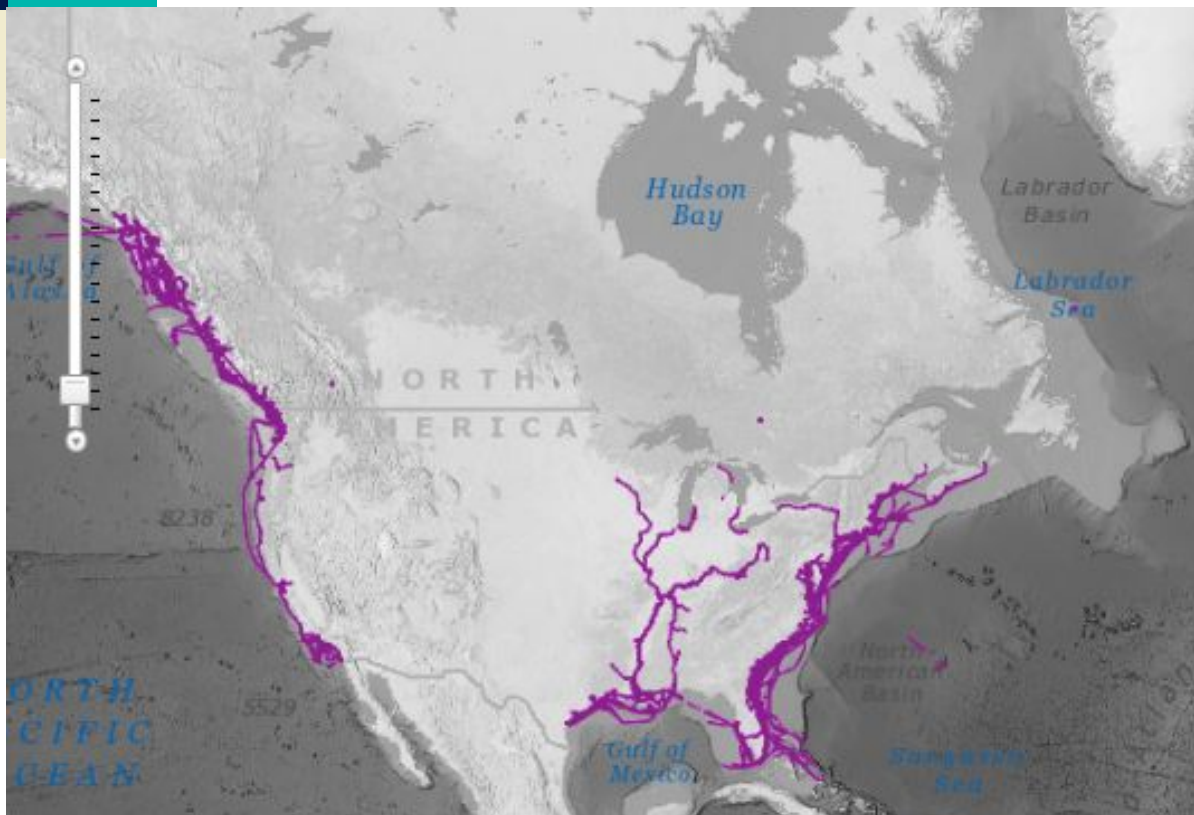
[Access Data](#)



IHO

Data Contributions: 2019

International
Hydrographic
Organization

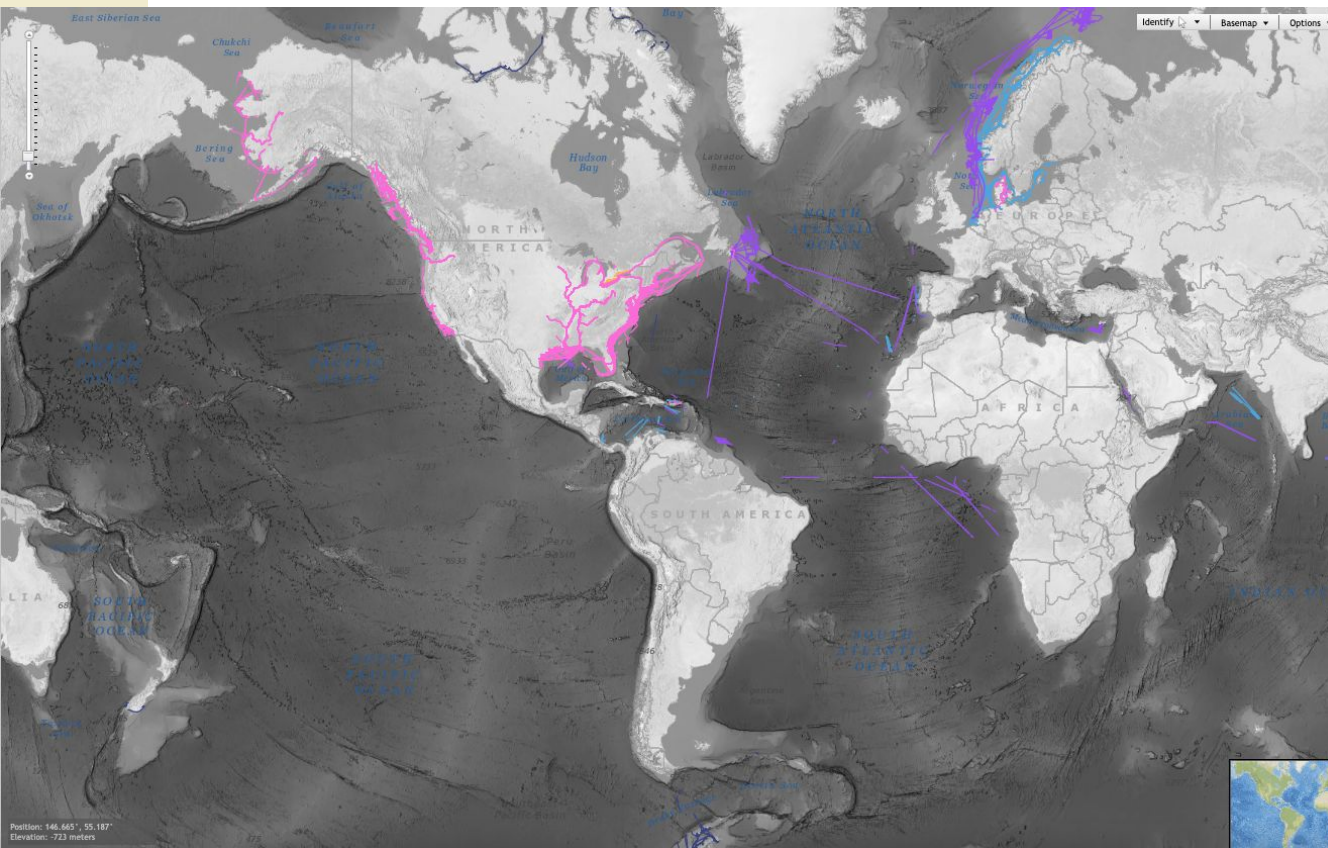


- Rosepoint Navigation Systems



IHO

Data Contributions: Today



- Rosepoint Navigation Systems
- FarSounder Inc.
- MacGregor Germany/Carnival Cruise Line
- Petroleum Geo-Services (PGS)
- M2Ocean
- Great Lakes Observing System (GLOS)
- Orange Force Marine (OFM)



Technical Barriers to Scaling:

1. Data collecting & contribution
2. Data access & data usage



IHO

1. Overcoming Barriers - Data Collection

What's the
minimum-cost,
minimal-functionality,
data collection **SYSTEM** for CSB?

Brian R. Calder (brc@ccom.unh.edu)

Center for Coastal and Ocean Mapping & NOAA-UNH Joint Hydrographic Center



IHO

1. Overcoming Barriers - Data Contribution

ngdc.noaa.gov/iho/

International
Hydrographic
Organization



IHO

International
Hydrographic
Organization

International Hydrographic Organization
Organisation Hydrographique Internationale

IHO DCDB Home

Contribute Data

Crowdsourced Bathymetry

CSB Mapping Projects



Contributing CSB Data to the DCDB

The DCDB accepts CSB contributions through a network of "Trusted Nodes," which may be organizations, companies or universities serving as data liaisons between mariners (data collectors) and the DCDB. Trusted Nodes may supply data logging equipment, provide technical support to vessels, download data from data loggers, and be responsible for data transfer directly to the DCDB.

The following documents clarify some aspects on CSB related to the submission of data to IHO DCDB:

- [IHO CSB Trusted Node Agreement Form Template](#)
- [Guidance for Submitting CSB Data to the IHO DCDB](#)
- [Sample CSB File Formats](#)

Those interested in contributing data or becoming a Trusted Node should contact the DCDB at bathydata@iho.int.



IHO

1. Overcoming Barriers - Data Contribution

LON, LAT, DEPTH, TIME

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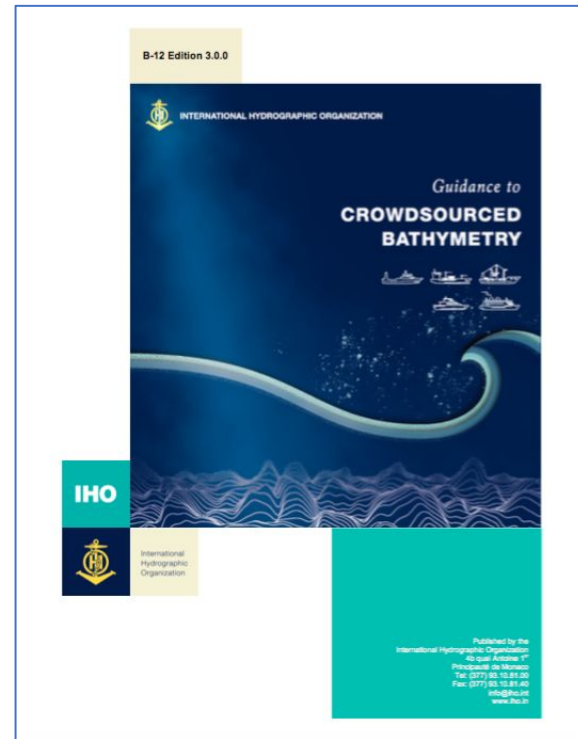
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68.499151, 15.832738, 59.3, 2020-02-25T01:08:07Z
68.498965, 15.832905, 61.3, 2020-02-25T01:08:11Z
68.498965, 15.832905, 61.3, 2020-02-25T01:08:11Z
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iho.int/uploads/user/pubs/bathy/B_12_CSB-Guidance_Document-Edition_3.0.0_Final.pdf



IHO

2. Overcoming Barriers - Data Access and Data Usage

International Hydrograph Organization

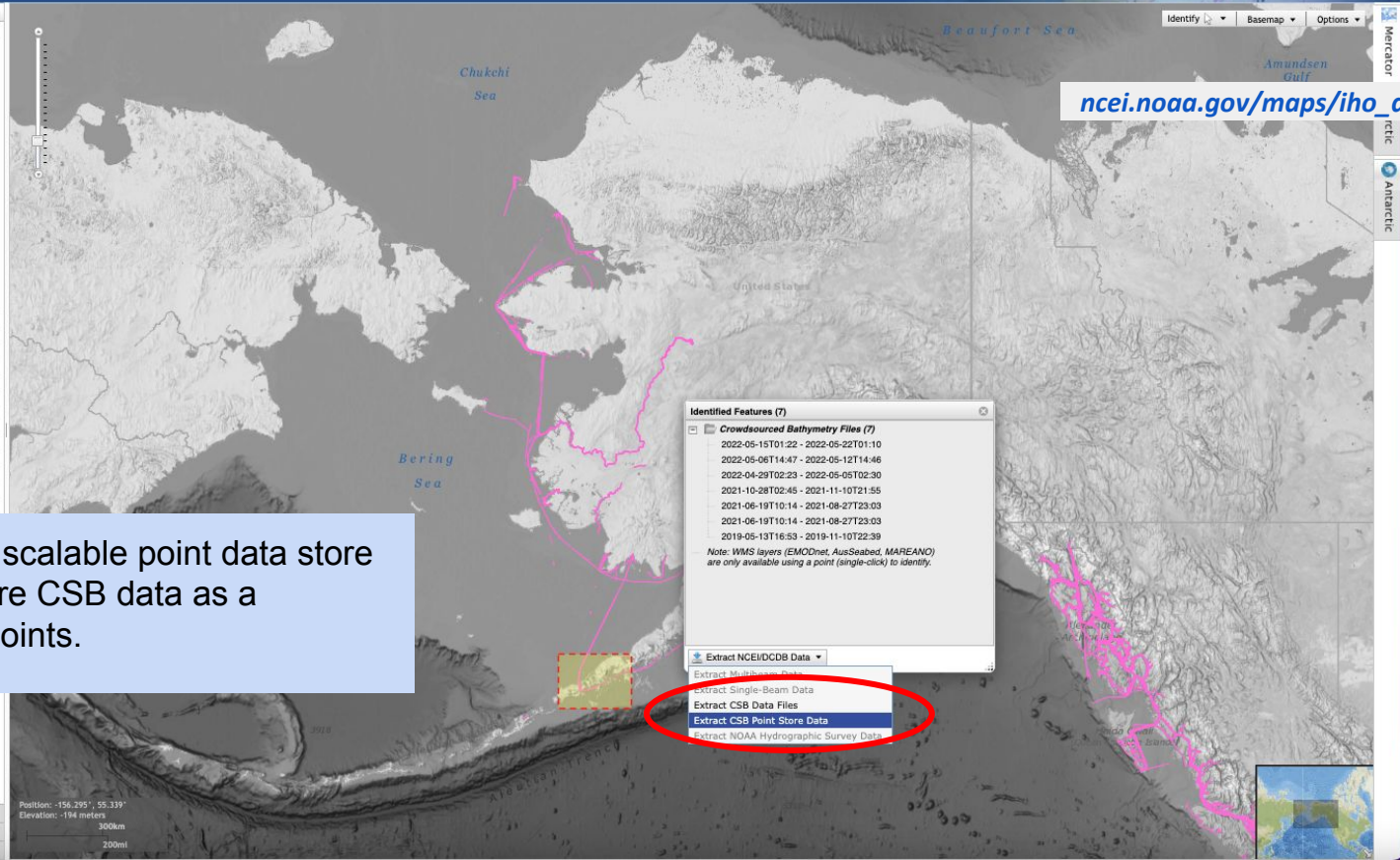


Data Centre for Digital Bathymetry Viewer

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
- France
- Germany
- Japan
- Netherlands
- New Zealand
- Portugal
- United Kingdom
- Other Data Sources
- Known Non-Public Data



ncei.noaa.gov/maps/iho_dcdb/

Created a cloud-hosted scalable point data store to better handle and store CSB data as a seamless collection of points.

Grid Extract
More Information
Help

Position: -156.295°, 55.339°
Elevation: -194 meters
300km
200mi



IHO

2. Overcoming Barriers - Data Access and Data Usage

International
Hydrographic
Organization

The screenshot displays the 'Data Centre for Digital Bathymetry Viewer' interface. On the left, a 'Layers' panel lists various data sources, including 'Crowdsourced Bathymetry Files' and 'Search CSB Files'. The main map area shows a bathymetric view of the Arctic region, with a pink survey track overlaid. A dialog box titled 'Request Data from CSB Point Store' is open, prompting the user to enter an email address and specify an 'Area of Interest' (coordinates: -164.645, 54.224, -160.470, 56.008) and a 'Grid Cell Size (m)' of 75. The dialog also includes a 'Grid Format' dropdown set to 'NetCDF' and a warning: 'This is an experimental feature and may change or be removed in the future.' Below the dialog, a 'List of Features (7)' panel shows a list of 'Crowdsourced Bathymetry Files' with their respective dates and times. The interface also includes a 'Grid Extract' panel at the bottom left and a 'Position' panel at the bottom center showing coordinates (174.262, 68.178) and elevation (721,862 meters).

Generate bathymetric grids of a given area using user-specified resolution.

“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



End of Presentation

Thank you!



A System Solution for Volunteer Bathymetry Collection

Dr. Brian Calder – Center for Coastal & Ocean Mapping, NOAA-UNH Joint Hydrographic Center

11.17.2022 | Alaska Coastal & Ocean Mapping Summit

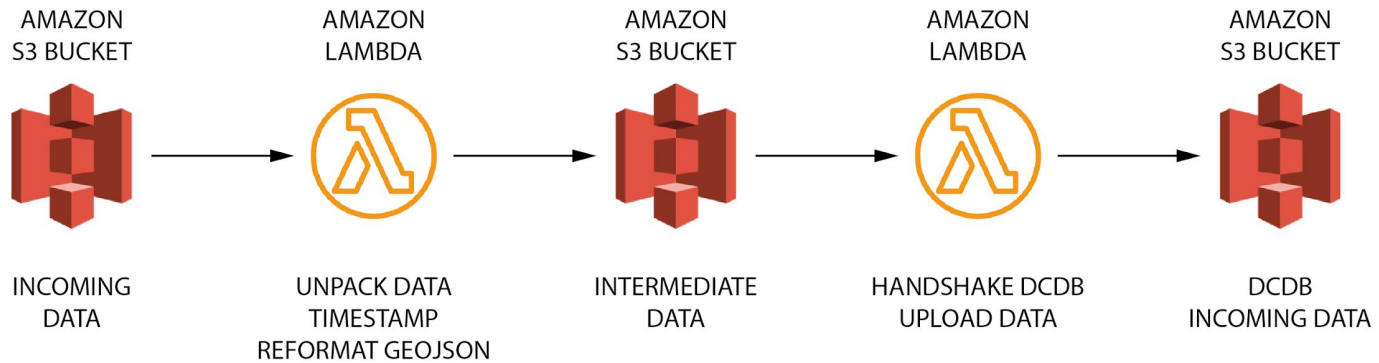
A System Solution for Volunteer Bathymetry Collection

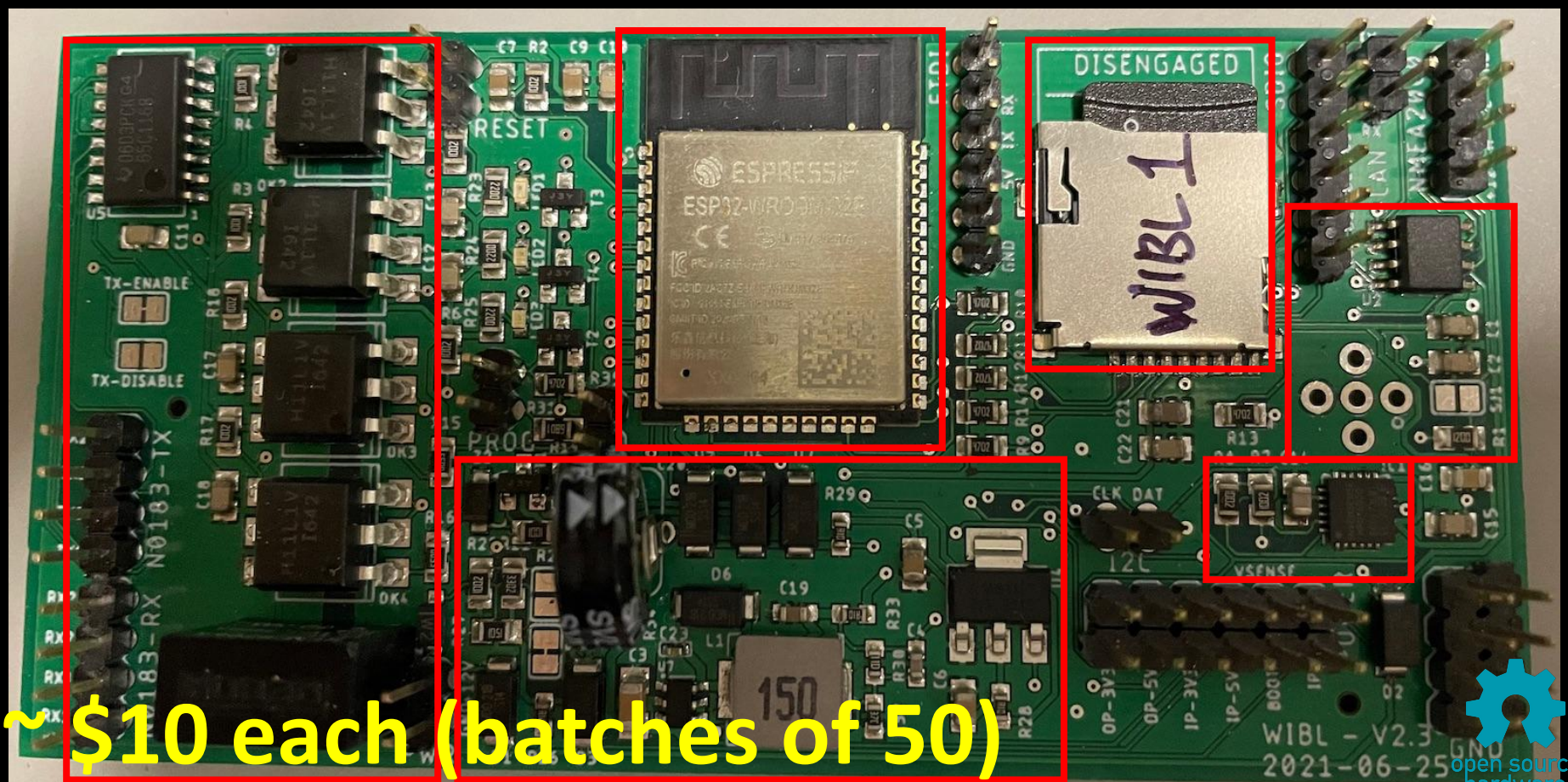
Brian R. Calder
Center for Coastal and Ocean Mapping & NOAA-UNH Joint Hydrographic Center
University of New Hampshire, Durham, NH 03824, USA

How do we make it

as easy as possible

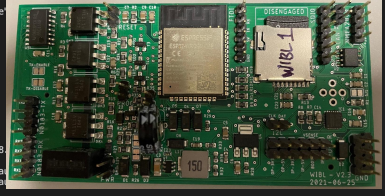
**to collect & contribute volunteer
bathymetric information?**



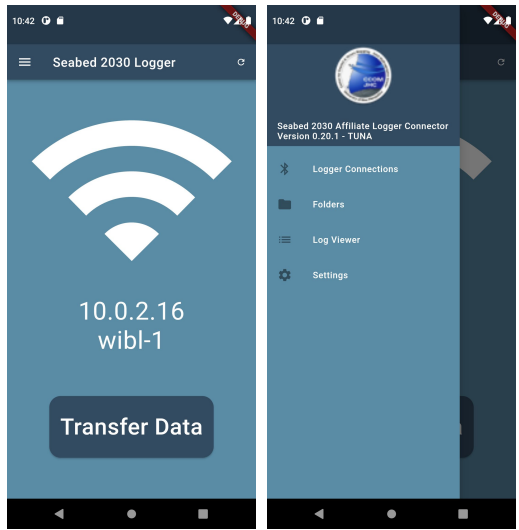


~\$10 each (batches of 50)

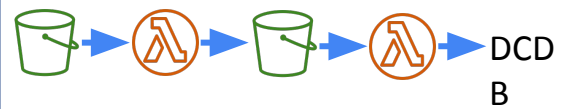
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
help[syntax
uniqueid [logger-name]
invert i12
led normal|error|initialising|full
ota
metadata [platform-specific]
password [wifi-password]
radio b1e|wifi
restart
sizes
speed [i2] baud-rate
ssid [wifi-ssid]
steplog
stop
transfer file-number
verbose on|off
version
wireless on|off|accesspoint|station
configure
Found console commands: "configure
Configuration Parameters:
NMEA0183 Logger: on
NMEA2000 Logger: off
TMU Loggers: off
Power Monitor: off
SDIO-MMC Interface: off
Boot Radios: wifi
Bridge UDP: off
Module ID String: USCGC-Healy
BLE Advertising String: wibl1
WiFi SSID String: wibl-1
WiFi Password String: wiblpass
WiFi IP Address String: 192.168
WiFi Mode String: AP
Serial Channel 1 Speed: 4800 ba
Serial Channel 2 Speed: 4800 ba
Bridge UDP Port: 40181
```



FIRMWARE



MOBILE APP



AWS CLOUD



UTILITIES

Outstanding Questions/Deployment Models

- Purchase or make hardware?
- Deploy or lease software?
- We're working with Industrial Partners to provide managed services
- How do balance managed services with Open-source principles?

Brian R. Calder (brc@com.unh.edu, +1-603-862-0526)

Research Professor & Associate Director

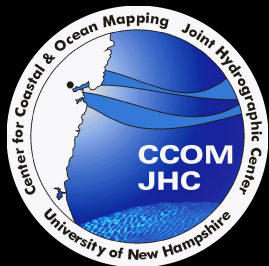
Center for Coastal and Ocean Mapping & NOAA-UNH Joint Hydrographic Center

Chase Ocean Engineering Lab, University of New Hampshire

24 Colovos Road

Durham, NH 03824

USA



Sponsored by NOAA Grants NA15NOS4000200 & NA20NOS4000196 "Continuation of the Joint Hydrographic Center"



End of Presentation

Thank you!



Crowdsourced Bathymetry in the Great Lakes

Linden Brinks – Great Lakes Observing System

11.17.2022 | Alaska Coastal & Ocean Mapping Summit

Crowdsourced Bathymetry in the Great Lakes

Alaska Coastal and Ocean Mapping Summit | September 28 - 30 2022

Linden Brinks

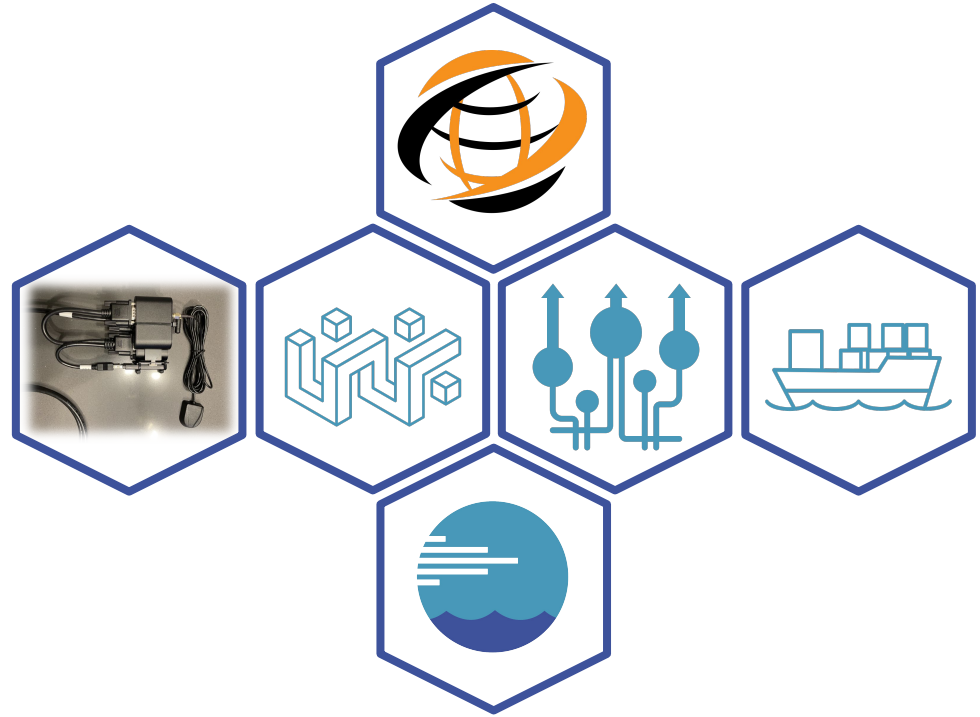




Why did we do it?

Great Lakes Observing System
partnered with Orange Force
Marine to

**Gather volunteers, to
Collect data, and that
serve to the IHO DCDB, for for
consumption**







Build bathymetry
Seagull



Expand CSB



Educate the
public



Gather
Resources



Advance the
goals of
Lakebed 2030

Thank you



great lakes
observing system

underwater@glos.org



End of Presentation

Thank you!

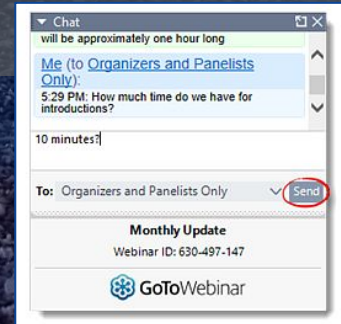
Questions for Presenters?

- Send your questions to “Organizers and Panelists Only” in the **GoTo Webinar chat box**.
- If you would like to speak, use “Send Question to Staff” option.

Need to answer polls?

Go to www.menti.com and use the code:

2 8 3 9 3 6 5 1





Poll Results

LUNCH BREAK

Back at 12:30pm AKST



2022 Alaska Coastal & Ocean Mapping Summit

November 17th, 2022