



Attendee Rules

- Mute yourself
- Turn off your camera

2022 Alaska Coastal & Ocean Mapping Summit

Seascope Alaska Mapping Updates

November 17th, 2022

Agenda – Seascope Alaska Mapping Updates

- ★ **Updates on Seascope Alaska** – Meredith Westington, NOAA, Office of Coast Survey, Integrated Ocean and Coastal Mapping
- ★ **Office of Coast Survey Updates** – LCDR Hadley Owen, Alaska Navigation Manager, NOAA
- ★ **Nunivak Project Update** – Andy Orthmann, TerraSond
- ★ **Seafloor Mapping and the Coming Growth of Seafloor Geodesy in Alaska** – Dr. Peter Haeussler, USGS
- ★ **Aleutians Uncrewed Ocean Exploration** – Colleen Peters, Saildrone
- ★ **NOAA Ocean Exploration and FY23 Call for Input Results** – Sam Candio, NOAA Ocean Exploration
- ★ **Aleutian Trench Biodiversity Studies (AleutBio)** – Dr. Angelika Brandt, Senckenberg & Goethe University; Dr. Anne-Cathrin Wölfl, GEOMAR

Polling Instructions for Panel #1

Go to

www.menti.com

Enter the code

6860 0663



Or use QR code

Go to [menti.com](https://www.menti.com) and use the code: **6860 0663**



2 Icebreaker Questions



1 Mapping Update Question

Results will be
shared before the
break



Updates on Seascape Alaska

Meredith Westington – Integrated Ocean and Coastal Mapping, Office of Coast Survey, NOAA

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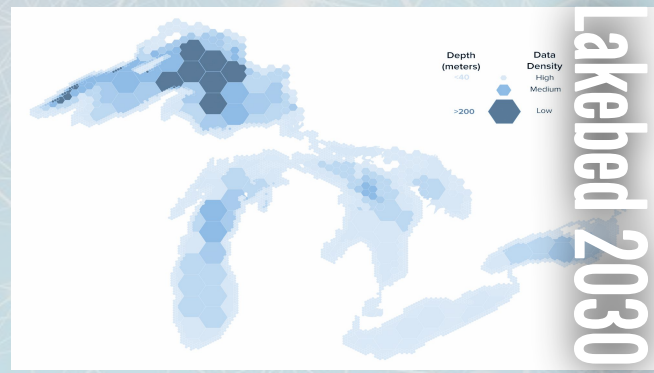
Working together to understand the depths of Alaska's vast seascape

Updates on Seascope Alaska

A Regional Mapping Campaign in Support of the National Strategy for Ocean Mapping, Exploring, and Characterizing the U.S. EEZ

Meredith Westington
NOAA Integrated Ocean and Coastal Mapping

EXPRESS



Why? *"Mapping, exploring, and characterizing the ocean and coastal shoreline advances scientific understanding, safeguards the Nation's economic prosperity, and promotes the health and security of our people. This knowledge is essential to advancing America's understanding of the marine environment and addressing sustainable ocean resource management."*

NOMECE Mission

Completely map the seafloor within the outer boundary of the United States EEZ (deep waters (>40 meters) by 2030, coastal (< 40 meters) by 2040); explore and characterize priority areas; and leverage the expertise and resources of multi-sector partnerships

NOMECE Strategic Goals

1. Align priorities in efforts to map, explore and characterize the U.S. EEZ

2. Coordinate mapping efforts to completely map U.S. waters > 40m by 2030 and waters 0-40m deep by 2040

3. Identify priority areas and coordinate interagency and cross-sectoral efforts to explore and characterize the U.S. EEZ

4. Coordinate efforts to promote and advance new technologies

5. Support cross-sectoral partnerships to ensure MEC goals are completed

Seascope Alaska Portfolio



Accessible, high
quality data and
products



Data and
products follow
best practices



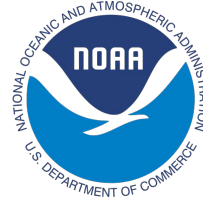
Members work
together to
achieve more



Innovation is
encouraged



Plans and
progress are
shared broadly



Terms of Reference

Meetings to

- Exchange information on mapping activities, accomplishments, and data contributions
- Discuss current and future capabilities
- Comment on ways to coordinate
- Comment on outreach activities

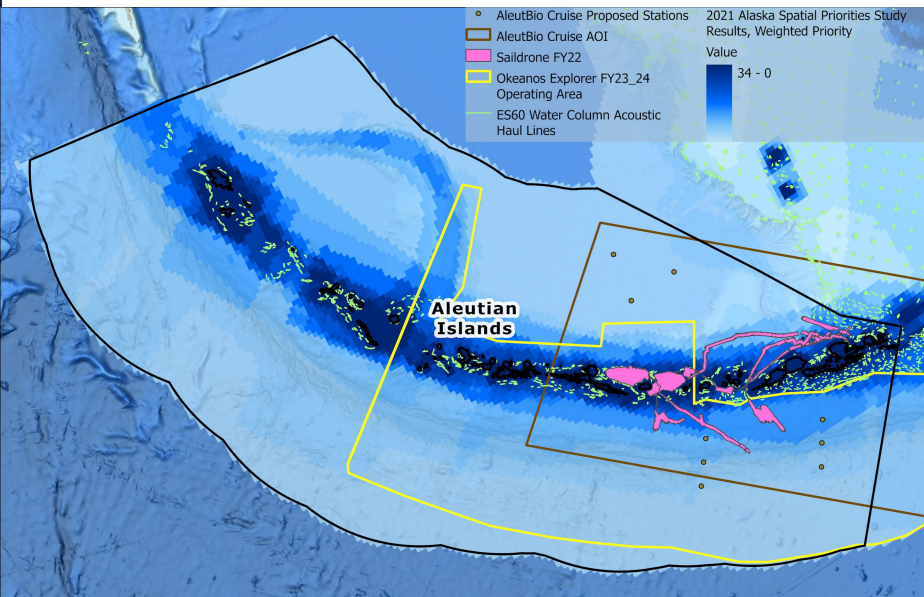
Meeting restrictions

- We do not make group decisions

Governance

- Federal lead, supported by NOAA IOCM





★ **Data Management Technical Team - active**

★ **Planning Teams** | Core Strategy

Aleutians | Mapping - **active**

Southeast Alaska | Transit Ops

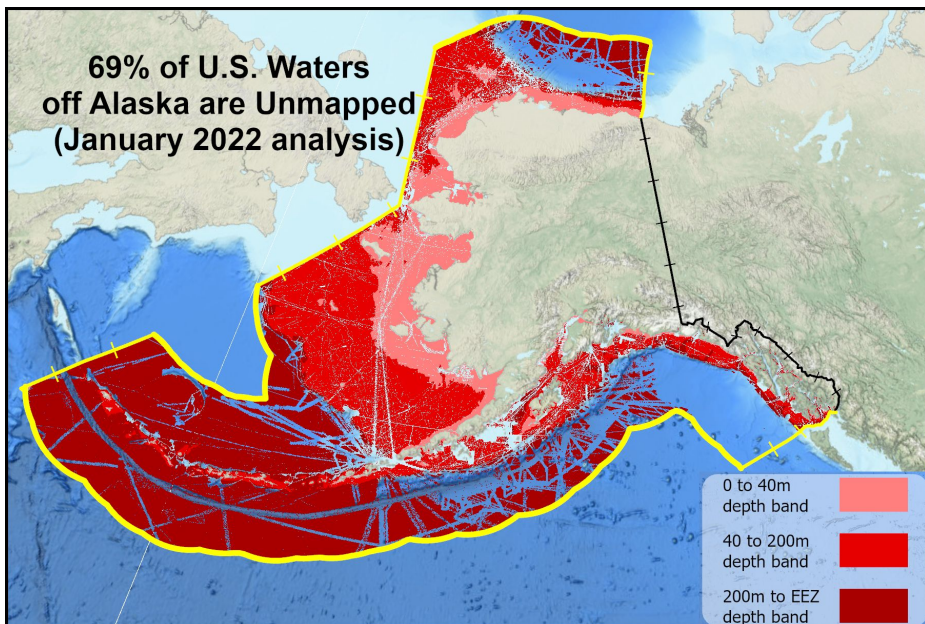
Arctic | Find existing data

★ **Exploration Team - new**



<https://storymaps.arcgis.com/stories/094abb14281e4b2489146a3f3e030961>

69% of U.S. Waters
off Alaska are Unmapped
(January 2022 analysis)



Questions or
would you like to join and
participate?

For more information on
Seascope Alaska, contact
Meredith.Westington@noaa.gov



End of Presentation

Thank you!



Office of Coast Survey Updates

LCDR Hadley Owen – Office of Coast Survey, NOAA

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NOAA
Coast Survey



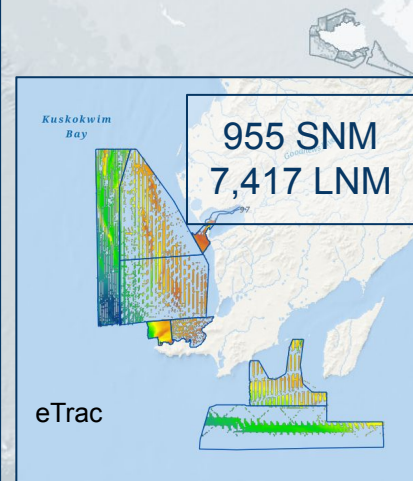
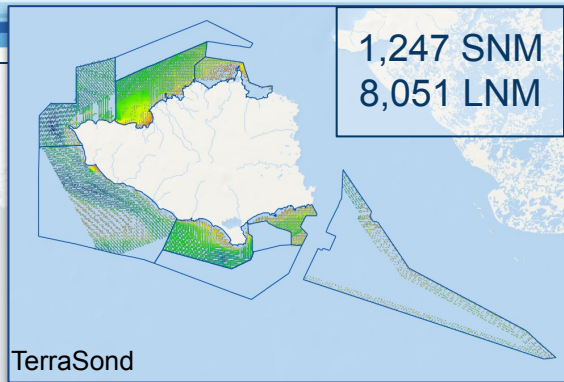
Updates for the Alaska Coastal and Ocean Mapping Summit

November 17, 2022

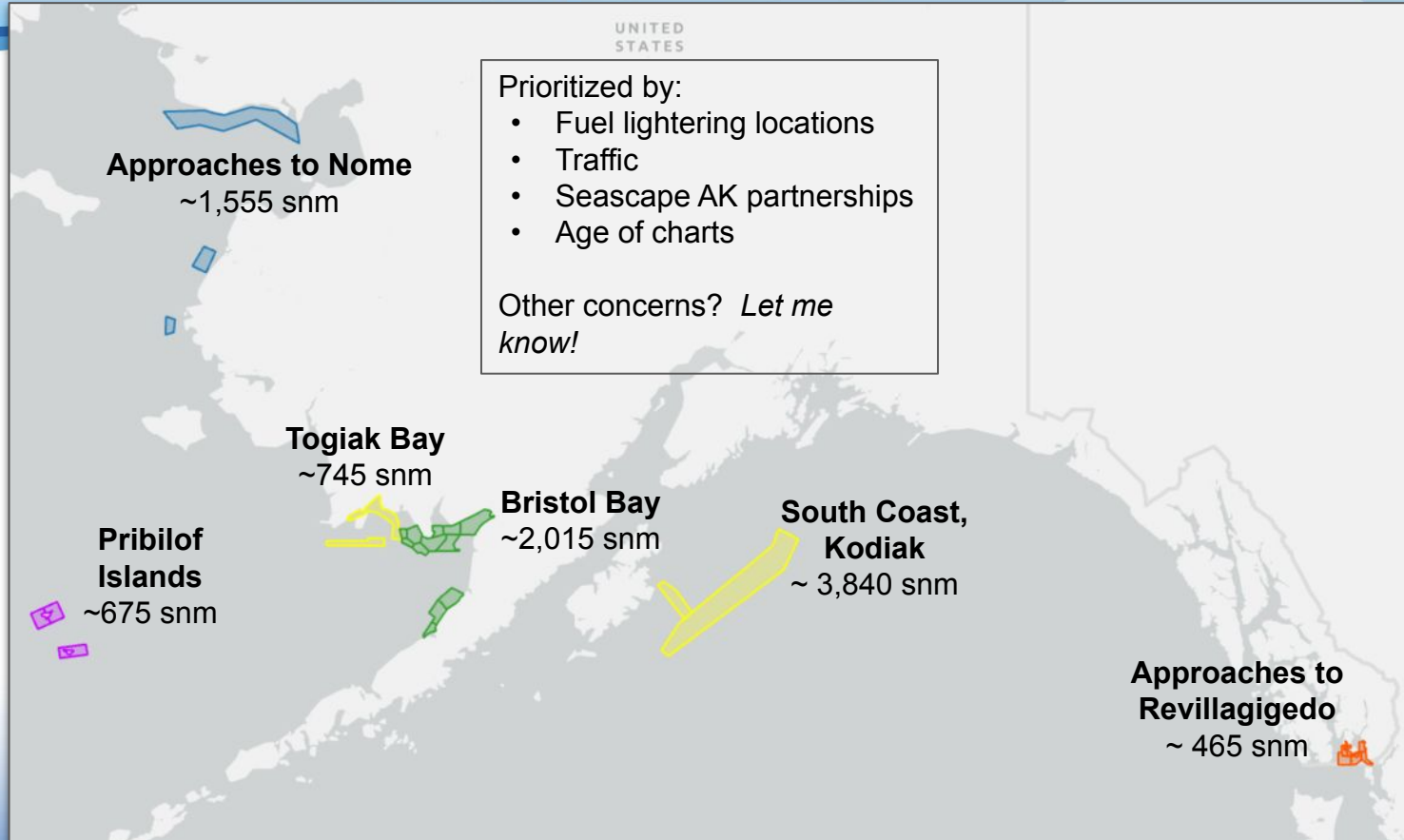
LCDR Hadley Owen
Navigation Manager, Alaska

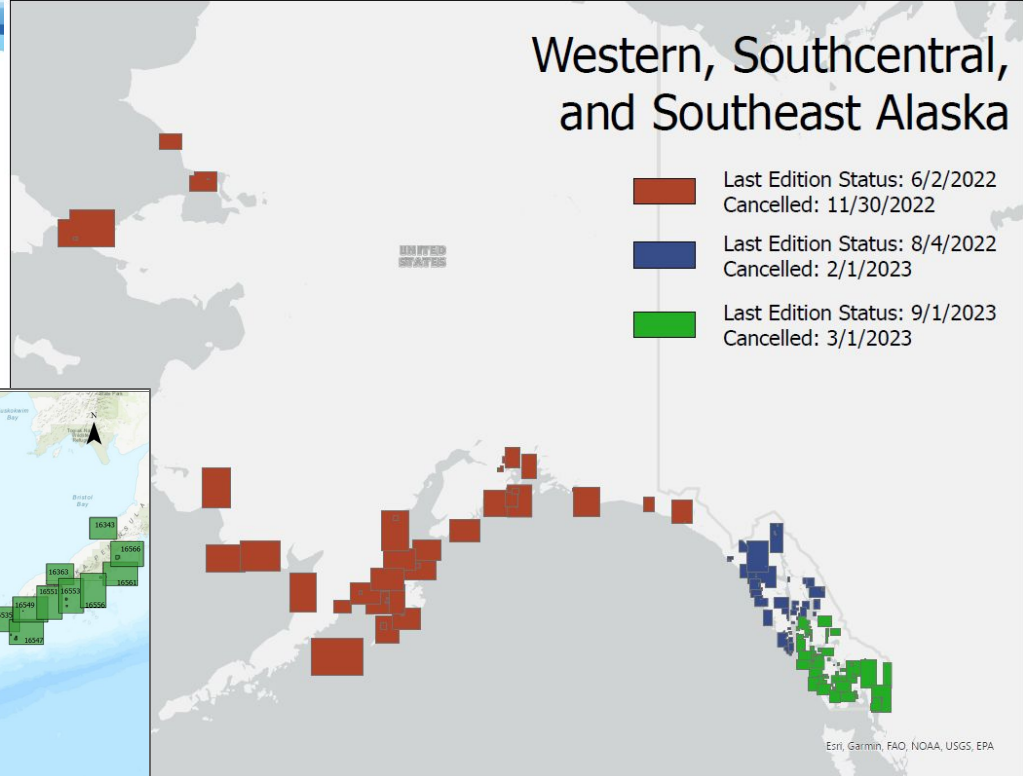
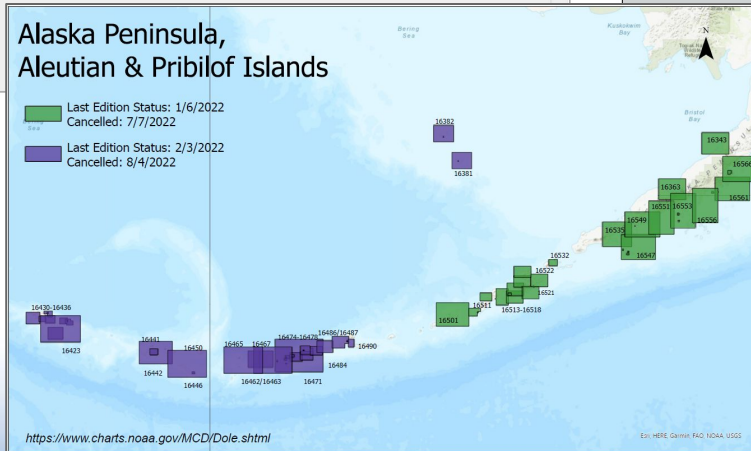
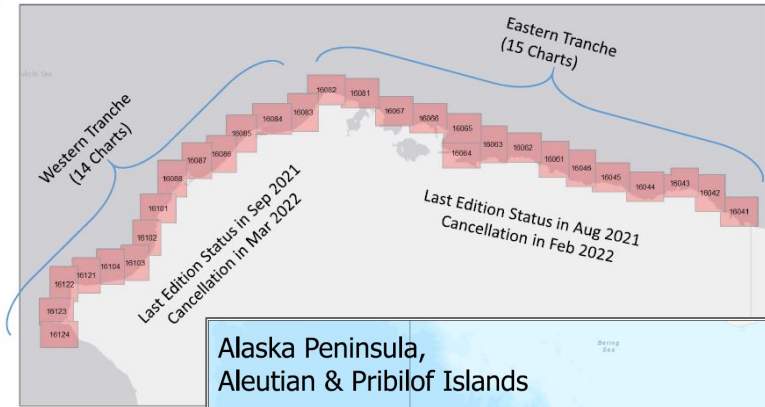


2022 Survey Operations

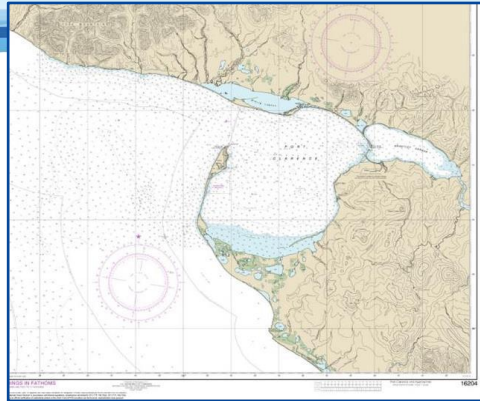


Queen
Charlotte
Sound

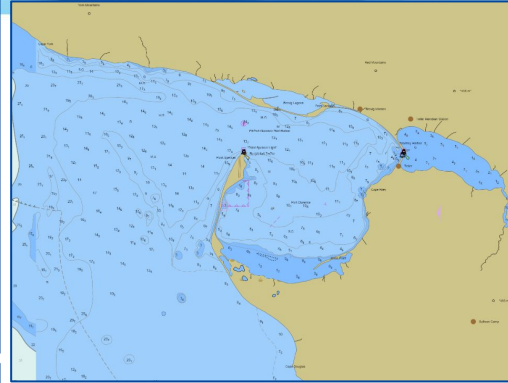




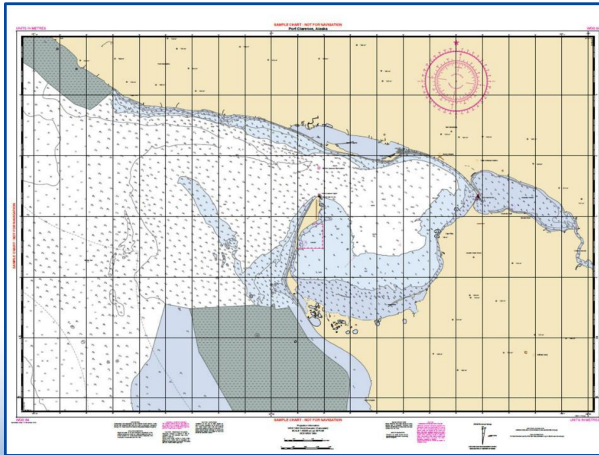
Raster



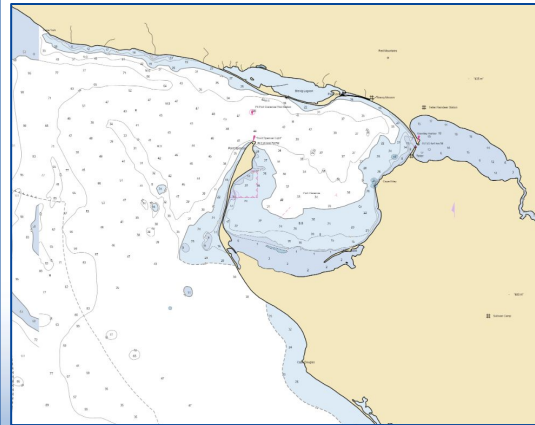
NOAA ENC[®]



“NOAA Custom
Chart”



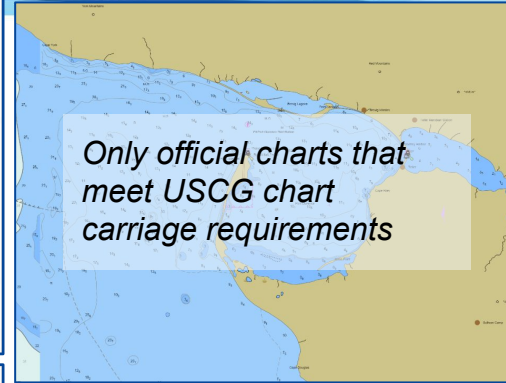
NOAA Chart
Display Service
(*viewer
prototype*) and
WMS





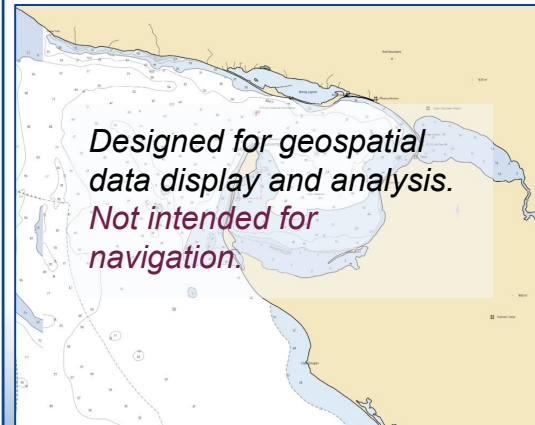
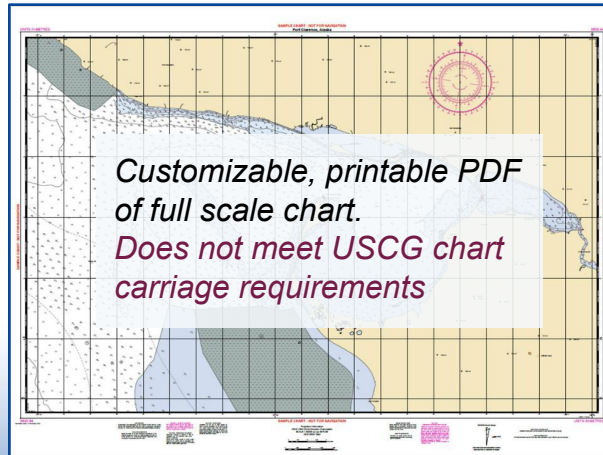
Status Update: NOAA Chart Products

Raster



NOAA ENC[®]

“NOAA Custom Chart”



NOAA Chart Display Service
(viewer prototype) and WMS

- Trackline Survey: A survey by a vessel from point A to B typically of the transit vessel is taking from either port to working ground or between working grounds
- Increase amount of area surveyed
- Increase efficiency
- Often only ship in area
- Update/Confirm data



Example of a Trackline Survey from North Carolina to Miami



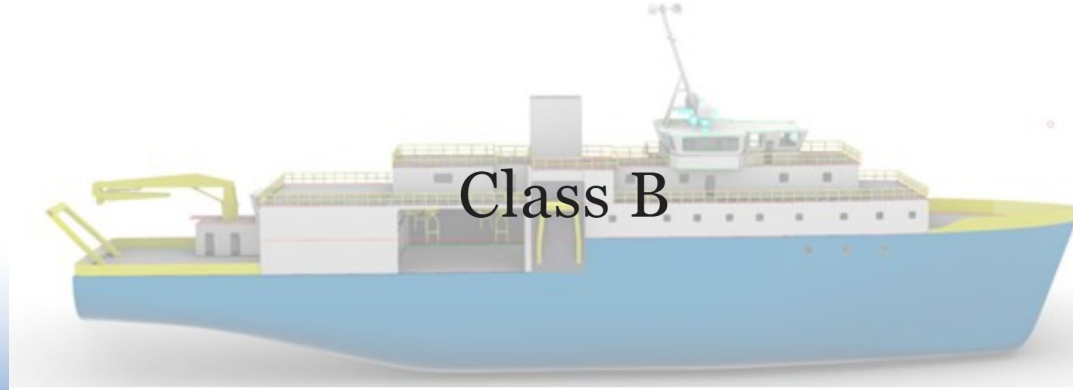
- NOAA Ships *Rainier* and *Fairweather*, launched in 1967 & commissioned in 1968
- Scheduled for decommission by 2030 (at the latest)




Class B

Primary Mission: Charting and surveying. Supporting multiple launches or small craft, including both crewed and uncrewed systems

2 ships planned, with additional 2 ships if funds available.



 **Office of Coast Survey**
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

How may we ASSIST you today?

Questions & Comments | Report an Error

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VERIFY EMAIL *

DD POSITION OF DISCREPANCY * 


WHAT TYPE OF USER ARE YOU? *

DESCRIBE YOUR ERROR *

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SELECT PRODUCT TYPE

OBSERVATION DATE (MM/DD/YY)

ATTACH FILE(S) 

LCDR Hadley Owen, NOAA Navigation
Manager, Alaska Region

alaska.navmanager@noaa.gov
(907) 231-7112 (cell)

<https://nauticalcharts.noaa.gov/>



Current Year Survey Plans (*always*)

<https://nauticalcharts.noaa.gov/data/current-year-survey-plans.html>

2022 NOAA Hydrographic Survey Projects

<https://arcg.is/10GeWf>

Web Map: Planned NOAA Hydrographic Survey Projects (2020-2026)

<https://arcg.is/1PmyHT>

ENC Display Services (REST and WMS)

<https://nauticalcharts.noaa.gov/data/gis-data-and-services.html#enc-display-services>



End of Presentation

Thank you!



Nunivak Project Update

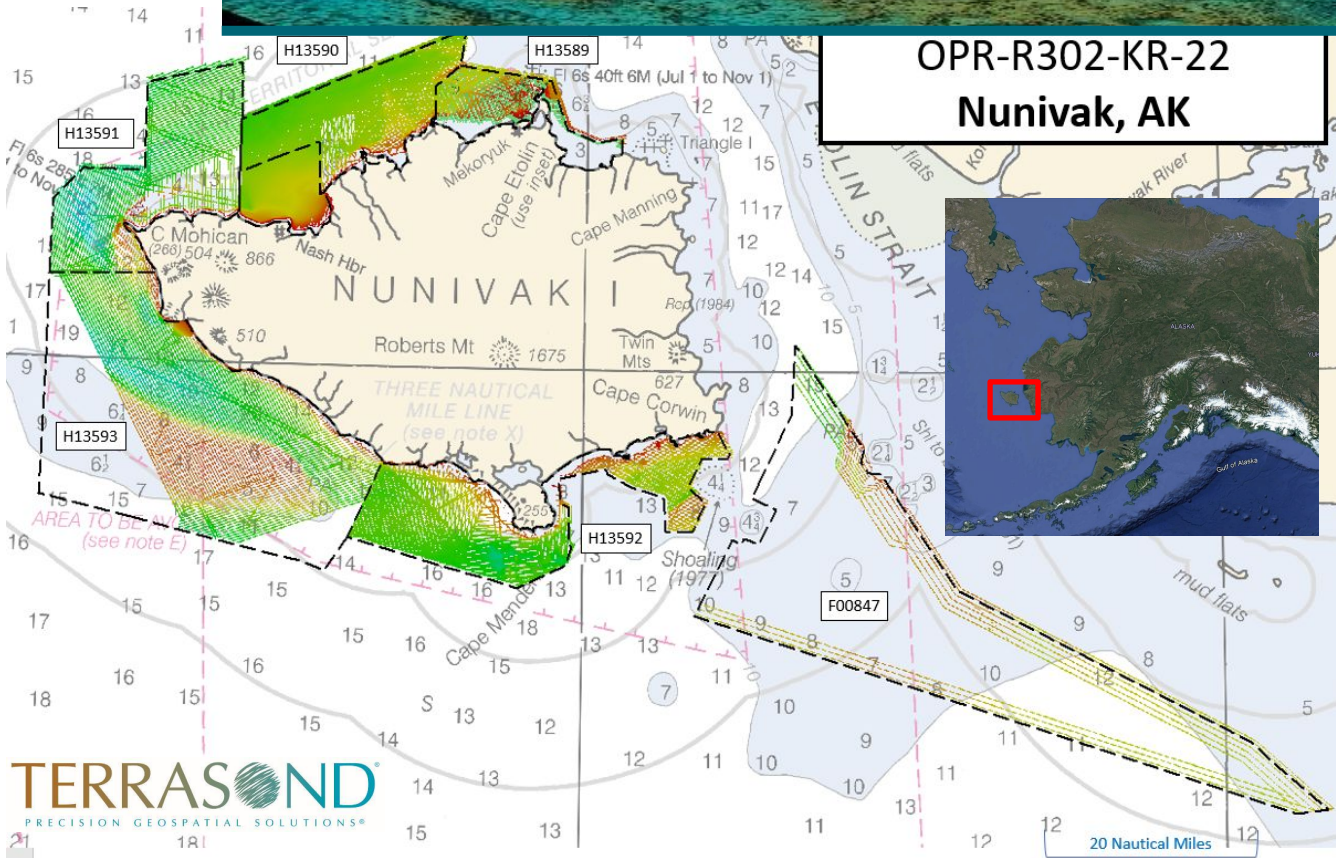
Andy Orthmann – TerraSond

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Nunivak Project Update

OPR-R302-KR-22
Nunivak, AK

- Nautical Charting Project completed by TerraSond for NOAA OCS
- Nunivak Island to Kuskokwim Bay
- Field work June – August, 2022
- MBES collection, bottom sampling, GNSS tide buoys

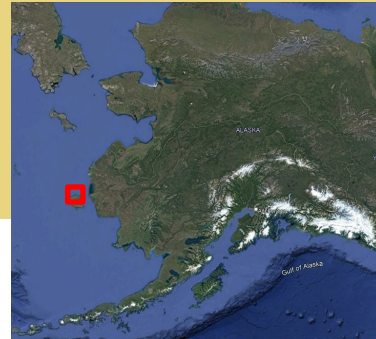


Nunivak Project Update



Existing chart, northern Nunivak

Island



- Navigationally significant area for regional traffic
- Approaches to Mekoryuk
- Sparse, outdated existing soundings (from 1902 and 1953)
- Much of the area uncharted

Nunivak Project Update

Vessels:

RV Qualifier 105 (Q105) (Support Vessels of Alaska)

C-Worker 5 ASV (ASV-CW5) (L3-Harris ASV)



Logistics:

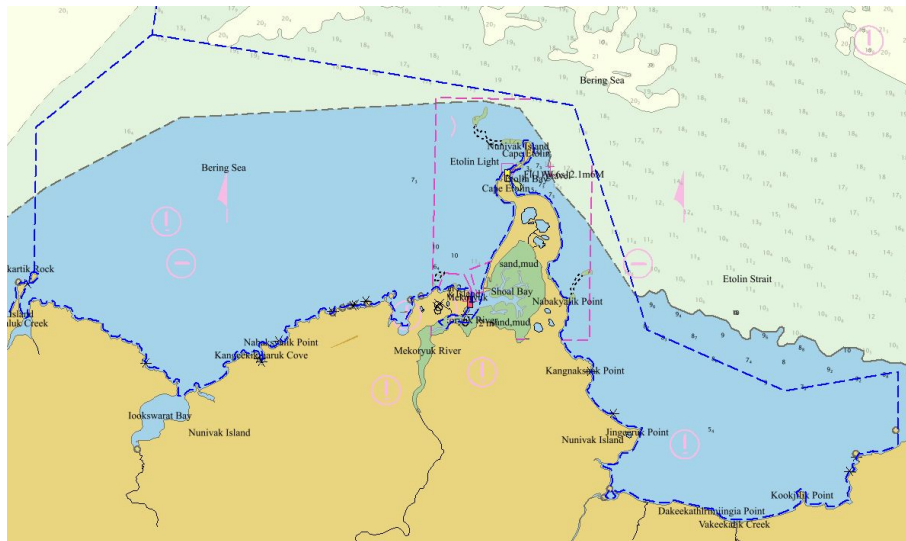
Mob / Demob in Homer

Crew Changes / Resupplies in Bethel

Nunivak Project Update

Coverage Achieved off NE Nunivak

Minimum depths to 1 m, 4.5 m, and 9.5 m



Chart

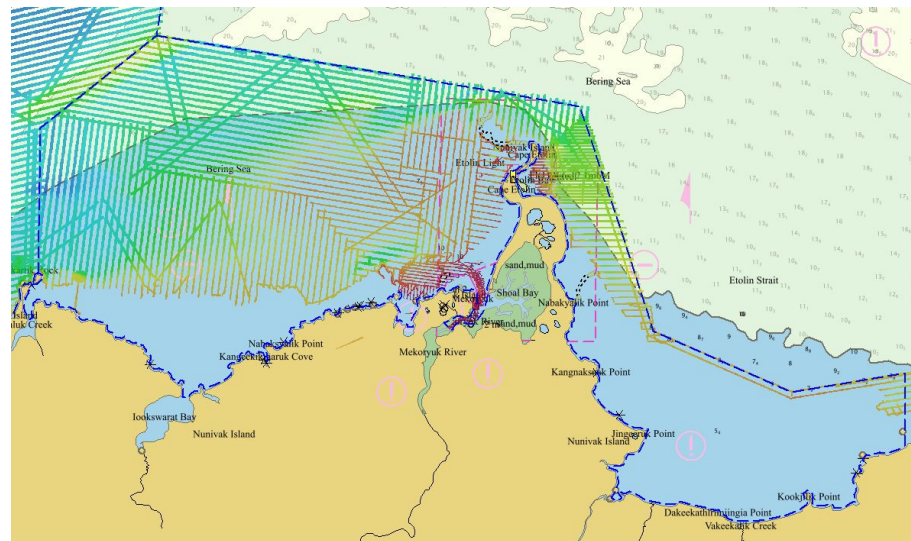


Chart and Survey Data

Nunivak Project Update

Coverage Achieved off Southern Nunivak

Minimum depths to 9.5 m



Chart

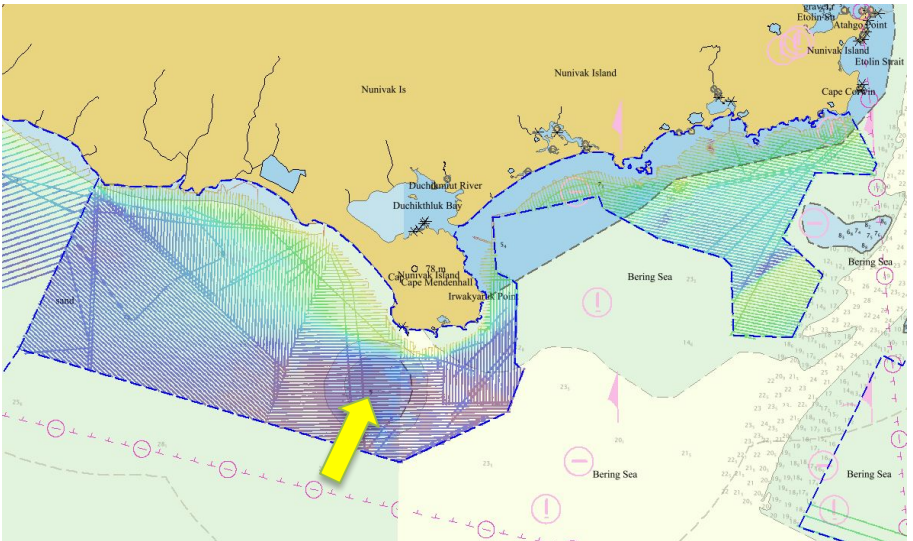
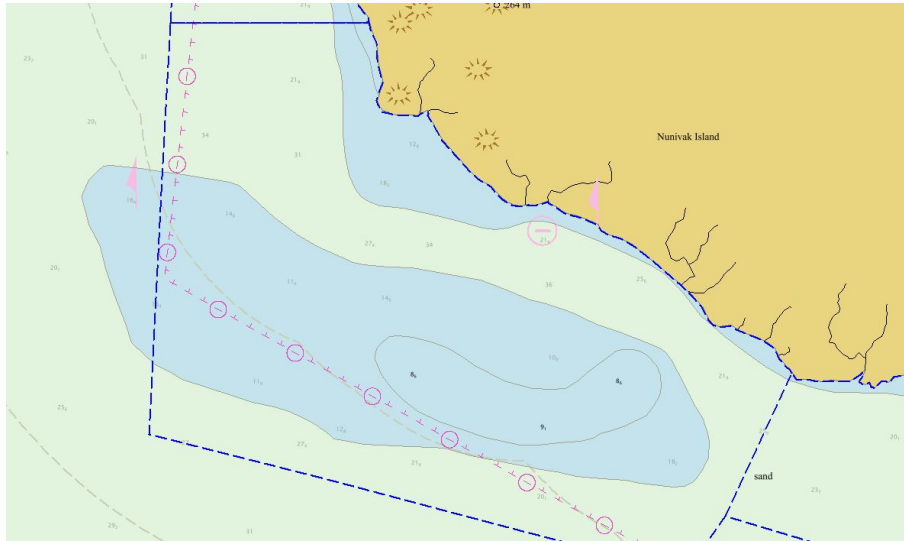


Chart and Survey Data

Nunivak Project Update

Coverage Achieved off Western Nunivak

Minimum depths to 9.5 m



Chart

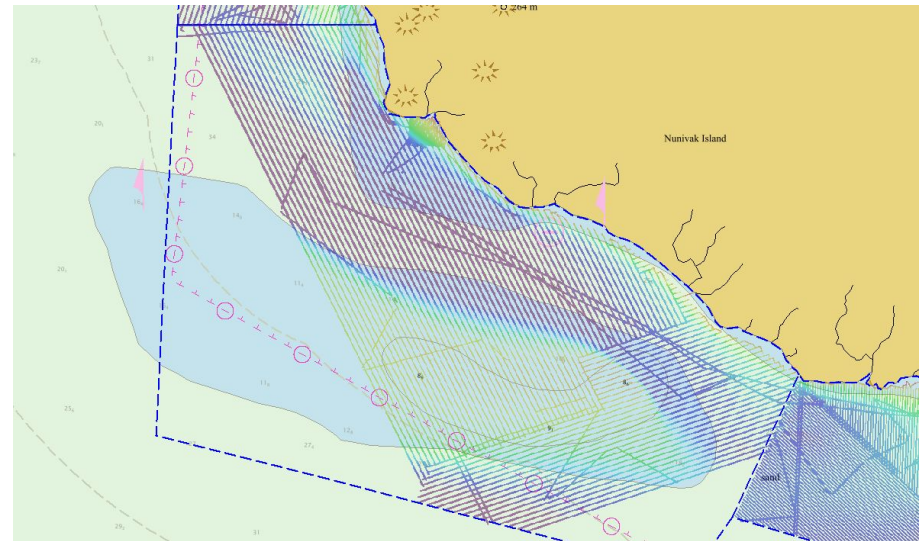


Chart and Survey Data

Nunivak Project Update

Coverage Achieved in Transit Area –Nunivak to Kuskokwim Bay (Etolin Strait to Kuskokwim Navigation Corridor)



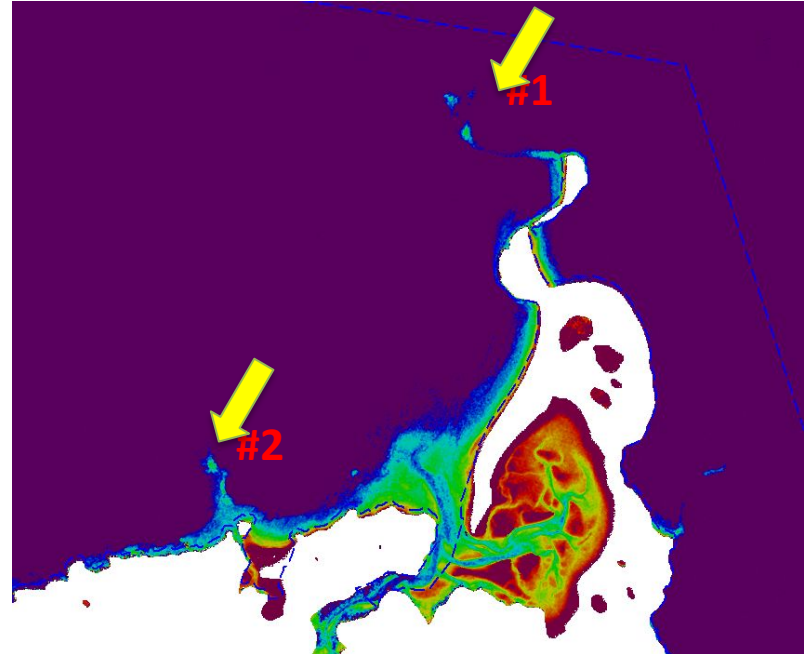
Chart



Chart and Survey Data

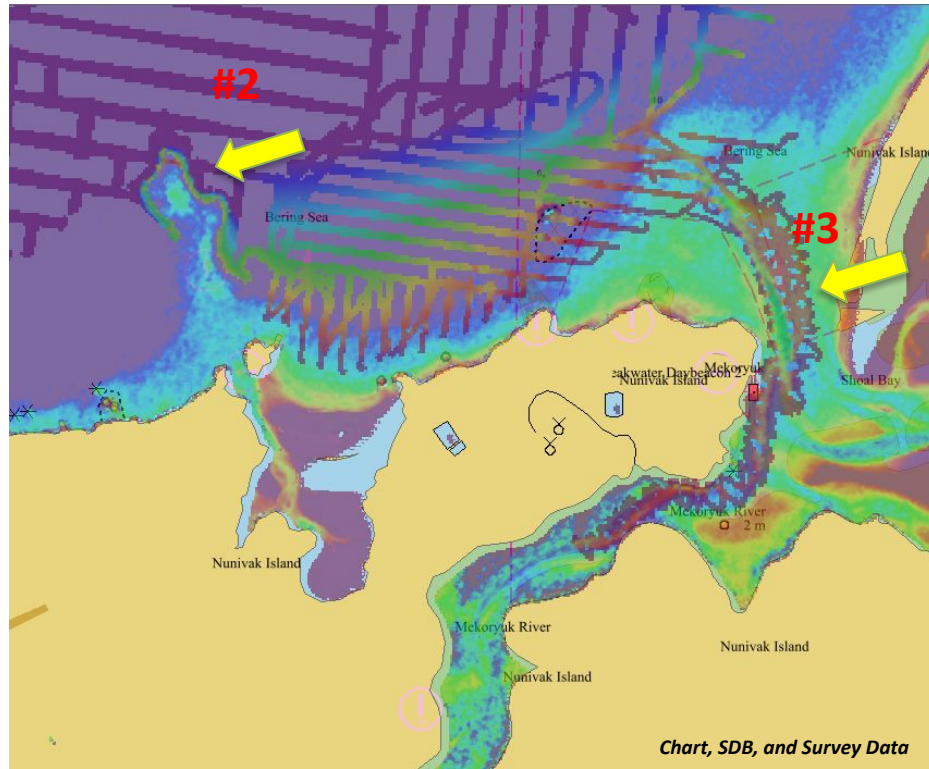
Nunivak Project Update

Satellite Derived Bathymetry (SDB) Utilization for Recon:



Nunivak Project Update

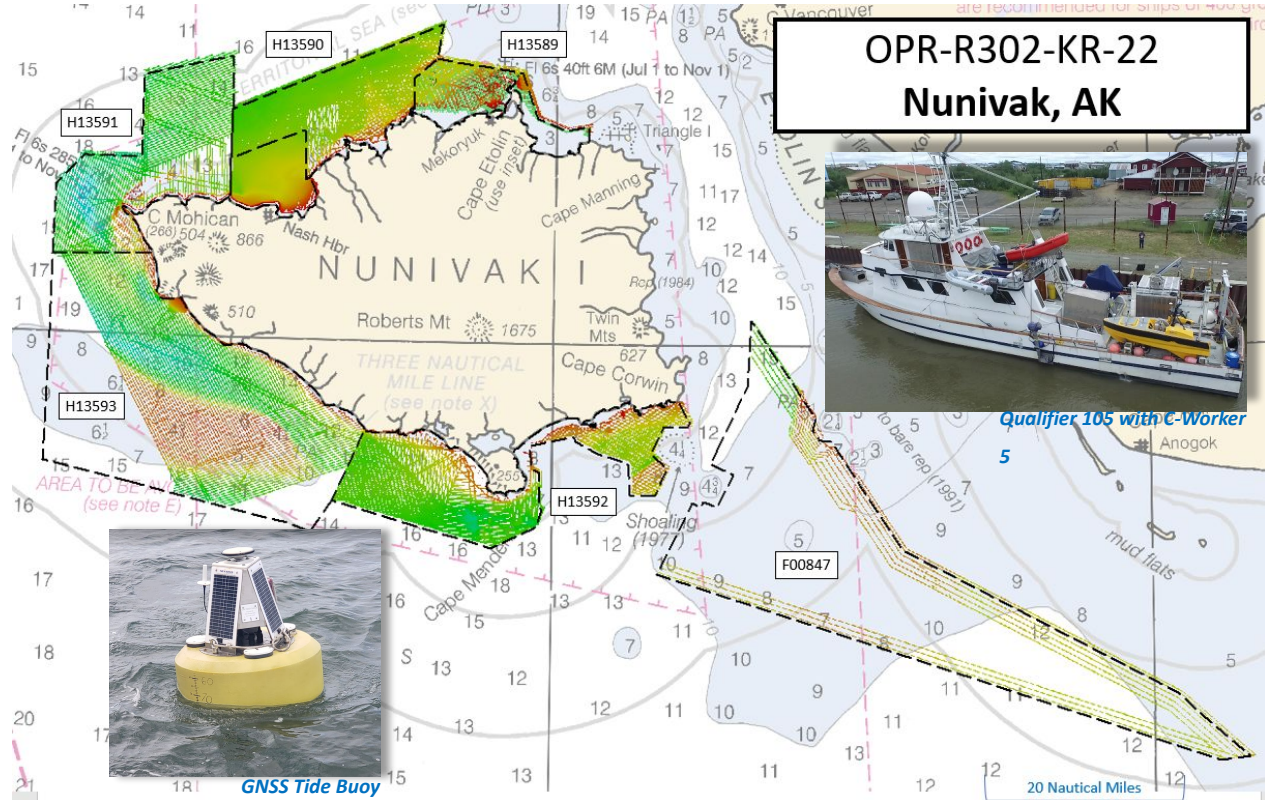
Uncharted Features evident in SDB:



Nunivak Project Update

Project Accomplishments Included:

- 1,250 NM² seafloor surveyed
- Surveyed anchorages and lightering areas
- 90 bottom samples for seafloor characterization
- Improved Etolin Strait to Kuskokwim Bay navigation corridor
- Two GNSS tide buoy deployments off western Nunivak (area of little tide data)
- Surveyed approaches to Mekoryuk
- Tested and utilized SDB data products

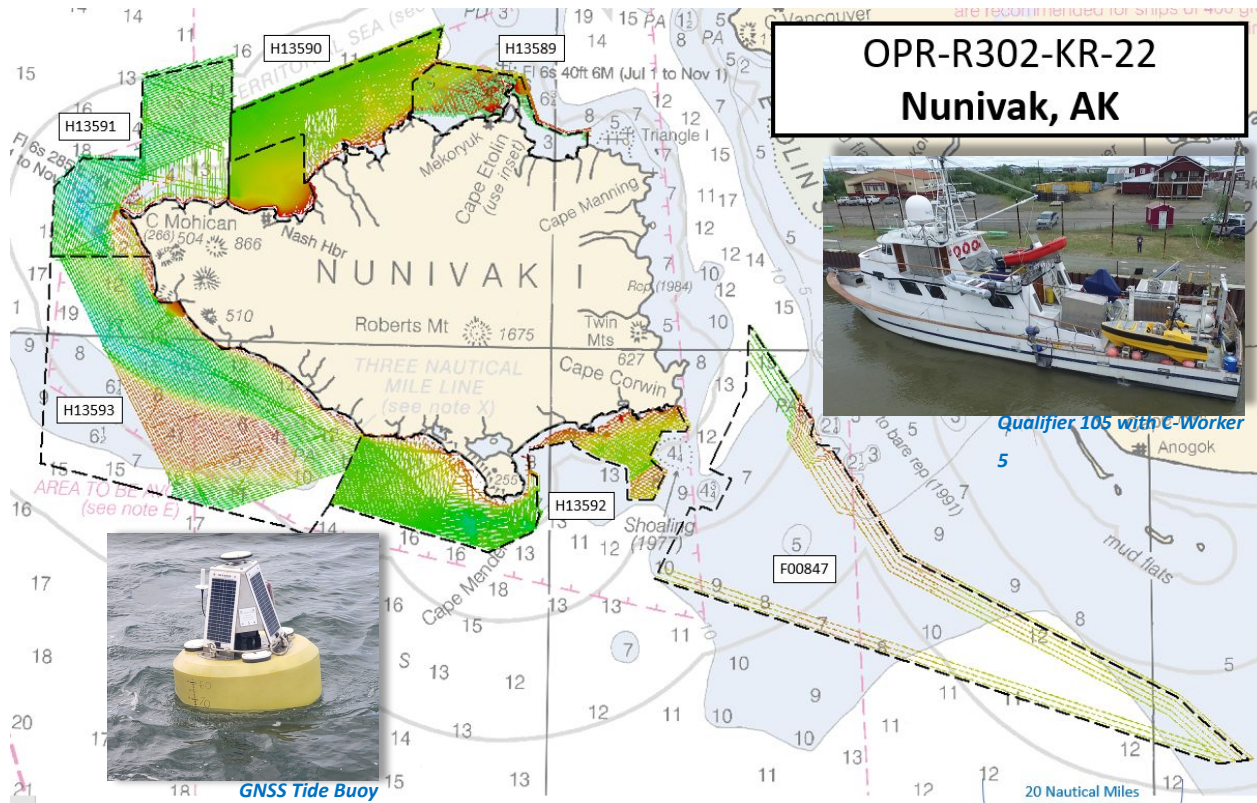


Nunivak Project Update

Special Thanks To:

- NOAA Office of Coast Survey
- Support Vessels of Alaska
- JOA Surveys
- L3 Harris ASV

OPR-R302-KR-22
Nunivak, AK





End of Presentation

Thank you!



USGS Seafloor Mapping, and the Coming Growth of Seafloor Geodesy in Alaska

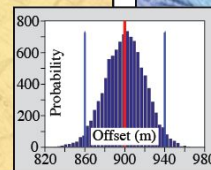
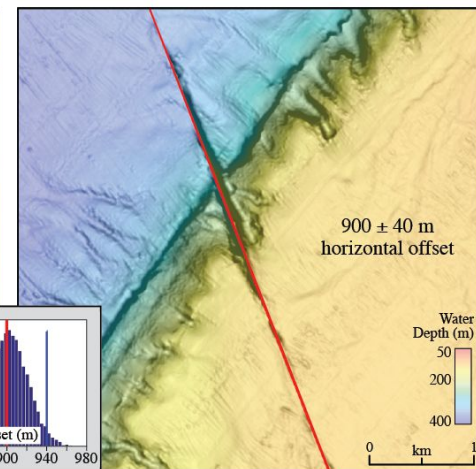
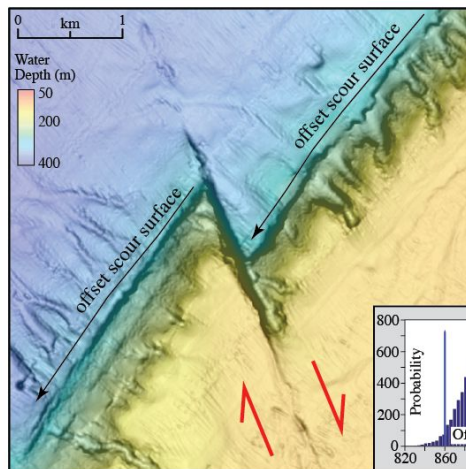
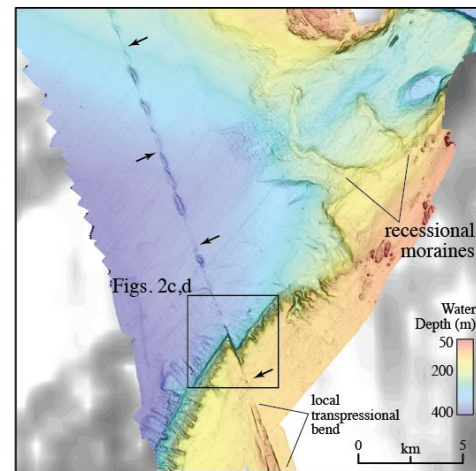
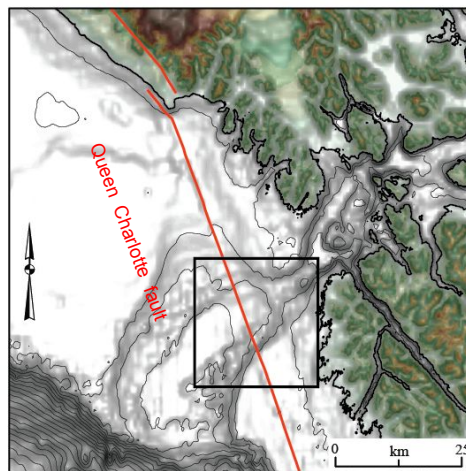
Dr. Peter Haeussler – Earthquake Hazards Program, U.S. Geological Survey

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USGS Seafloor mapping, and the coming growth of seafloor geodesy in Alaska

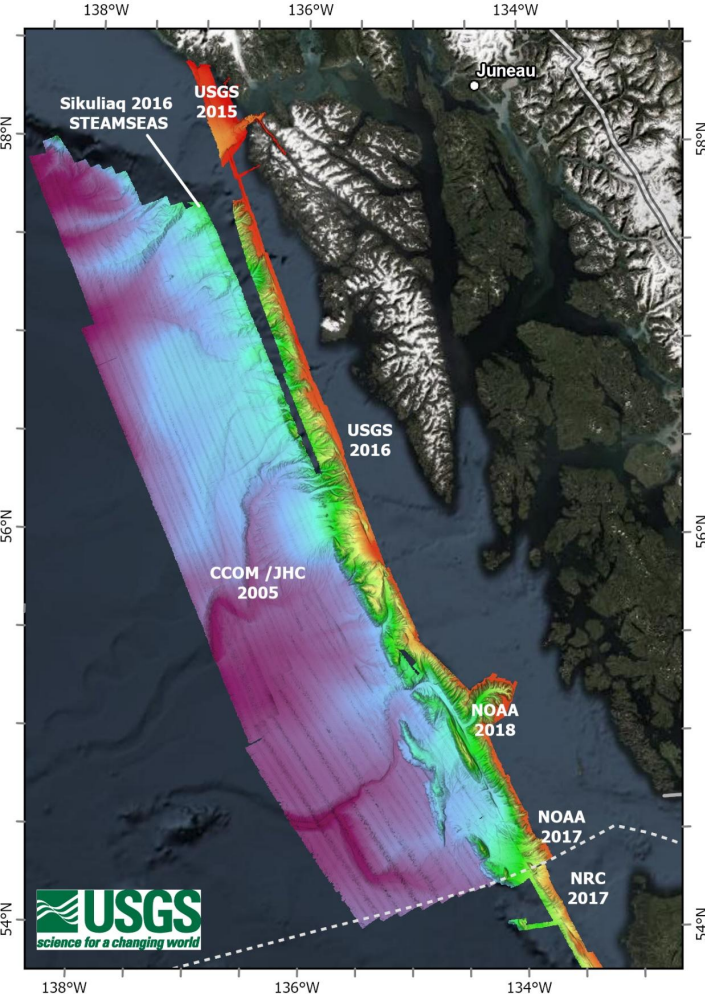
Peter Haeussler
USGS-Anchorage
pheuslr@usgs.gov

Newly available bathymetry data along the Queen Charlotte fault, southeastern Alaska



Queen Charlotte fault mapping

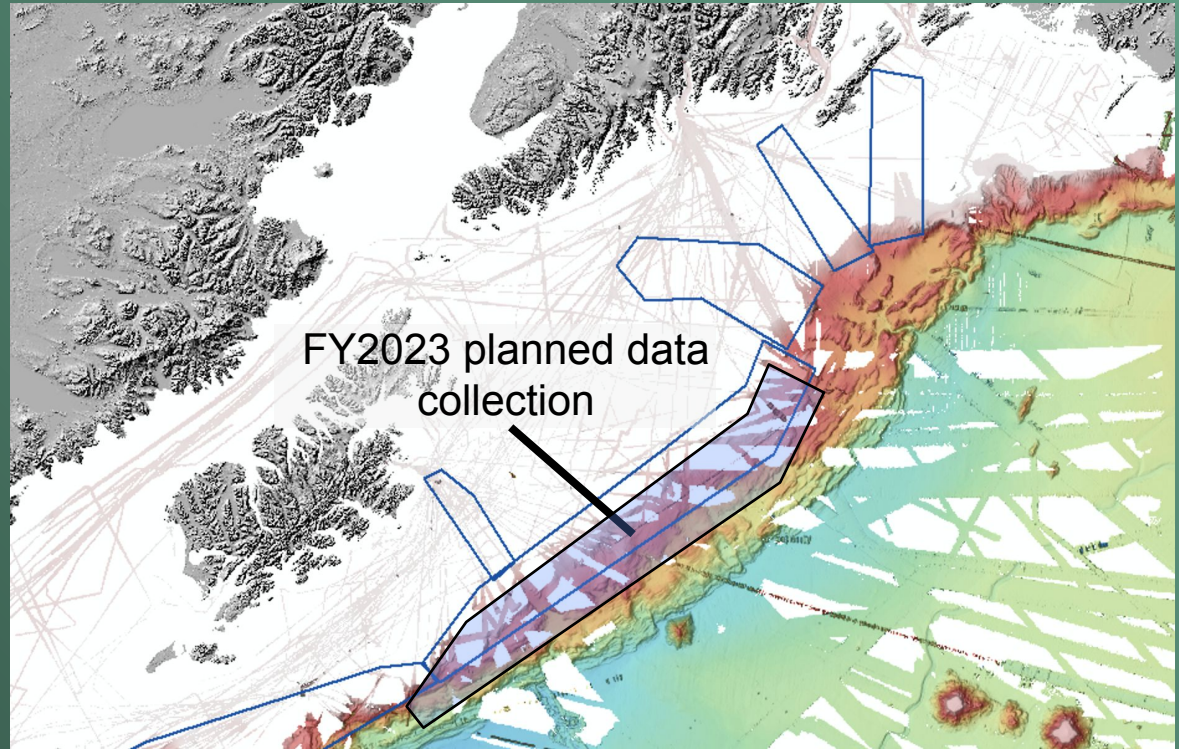
- Data collection: 2015-2018
- Data are now available from USGS
- Data have been used for scientific publications
- Data are being used for an ongoing update to the seismic hazard map of Alaska
- Data show what complete shoreline to deep sea mapping look like! We need more transit lines!



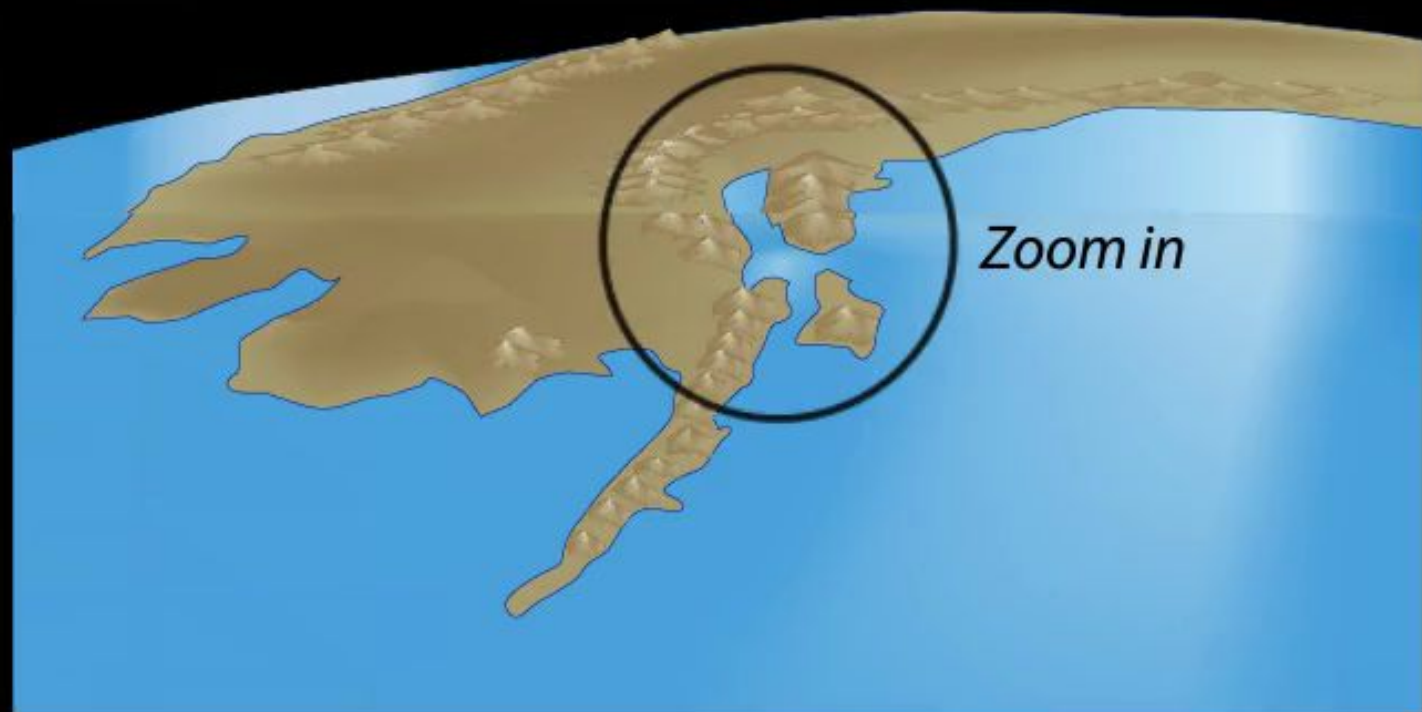
USGS Open-File Report 2022-1085

Future Alaskan margin mapping

- Future mapping priorities – upper slope and troughs
- Planned acquisition of one area in FY2023 utilizing NOAA vessel Fairweather

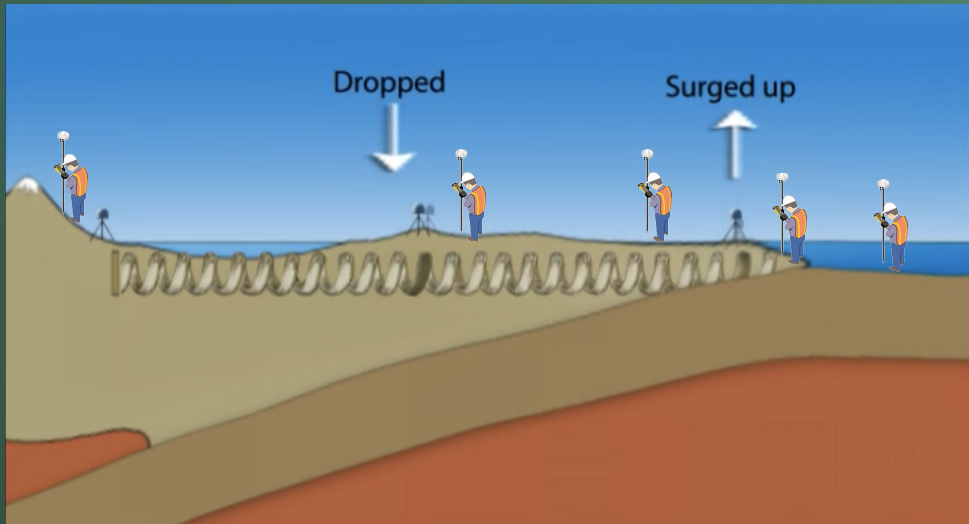


2. 90-degree cross section—Plate interaction



Need to understand how megathrust behaves offshore

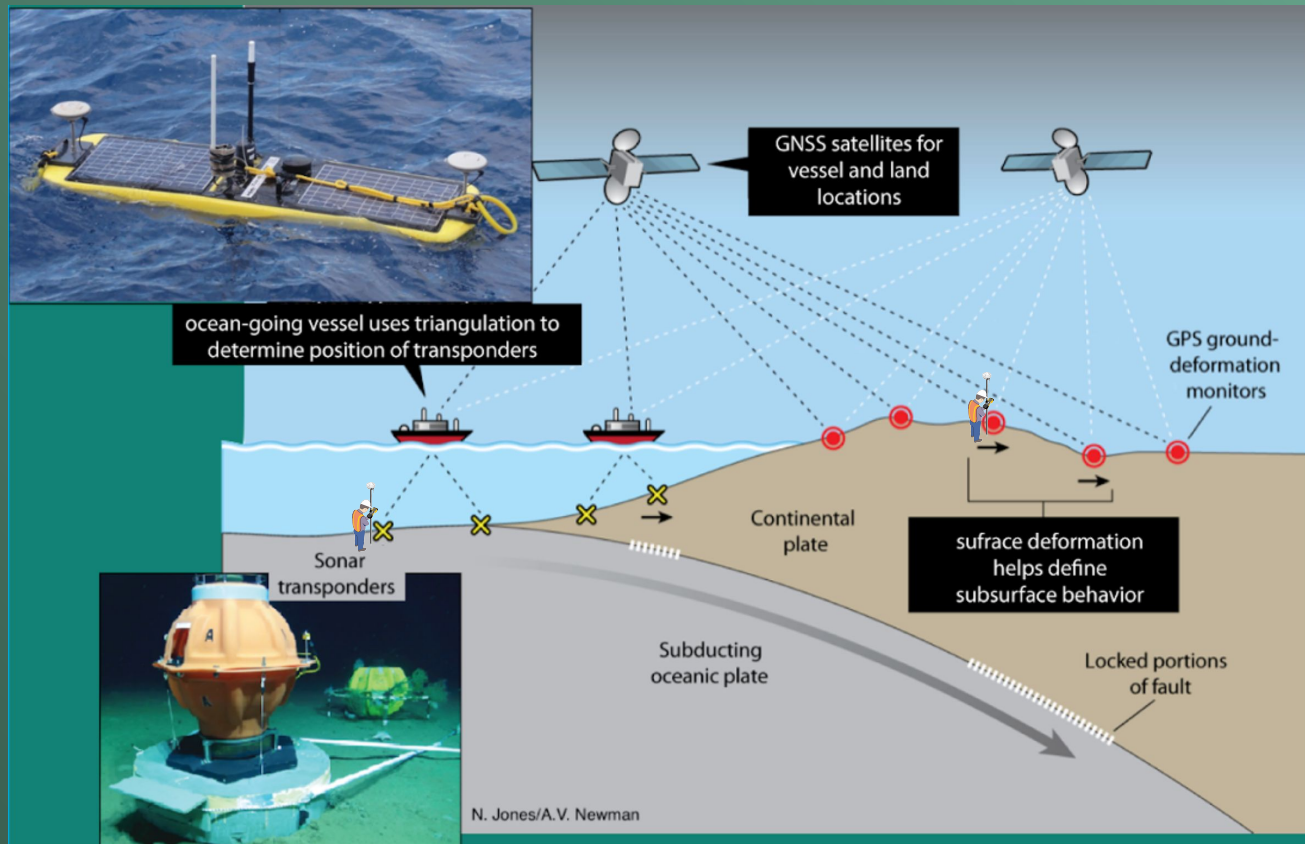
- Onland sites are insensitive to far offshore deformation, which drives the hazard
- Adding 100s of onland GNSS stations or monuments would not change our understanding of crustal deformation as much as a single offshore benchmark
- Need offshore sites along (and ideally across) the megathrust offshore and underwater



It's actually hard to survey underwater!

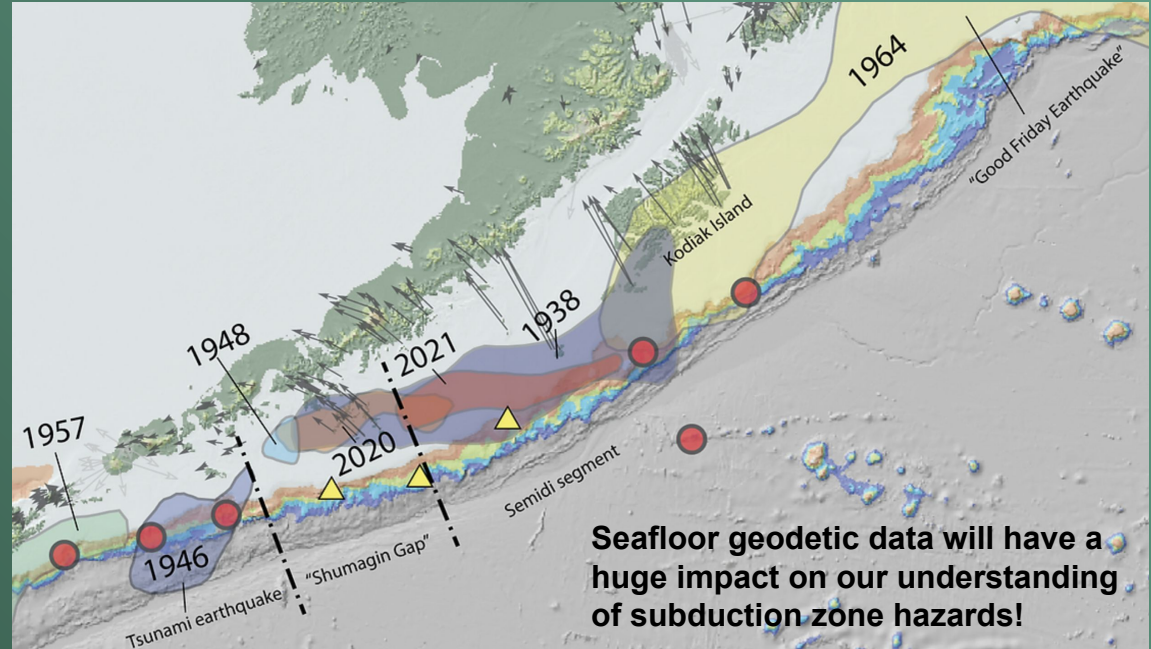
Surveying the seafloor

- Horizontal deformations perhaps best measured by GNSS-A technique
 - Horizontal resolution ~ 5mm
 - Vertical resolution ~10 cm
- Each site: ~\$500K
- 3000m depth limit
- 10 year battery life
- Installation via ship
- Reoccupation with wave gliders



Past, present, and future of seafloor geodesy in Alaska

- All sites funded by NSF
- 3 sites installed in 2018
- Using USGS wavegliders, we captured data on 3 M7.6+ earthquakes
- NSF-funded seafloor geodetic community experiment
- 6 sites to be installed in 2023



Alaska seafloor geodesy community experiment implementation plan
Yellow Triangles – sites installed in 2018
Red Dots – sites to be installed in 2023



End of Presentation

Thank you!



Aleutians Uncrewed Ocean Exploration

Colleen Peters – Saildrone

11.17.2022 | Alaska Coastal & Ocean Mapping Summit



Colleen Peters

Bathymetry Data Manager

ALEUTIANS UNCREWED OCEAN EXPLORATION

AK Coastal & Ocean Mapping Summit November 2022

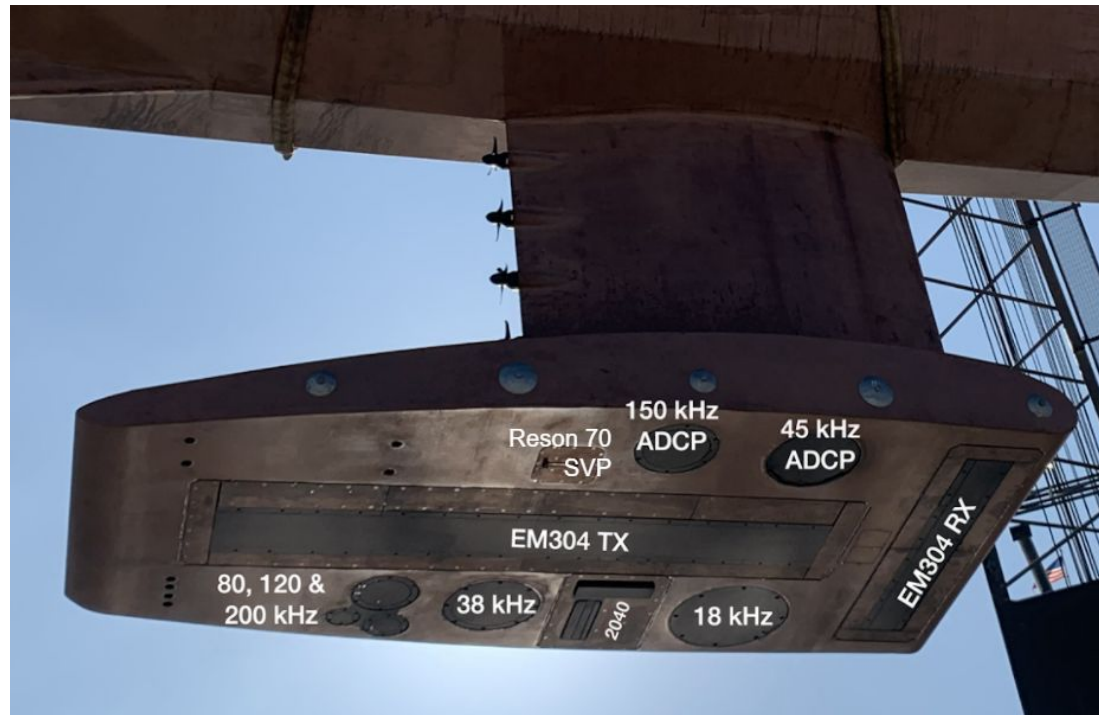
PROJECT PARTNERS

INTER-AGENCY AGREEMENT



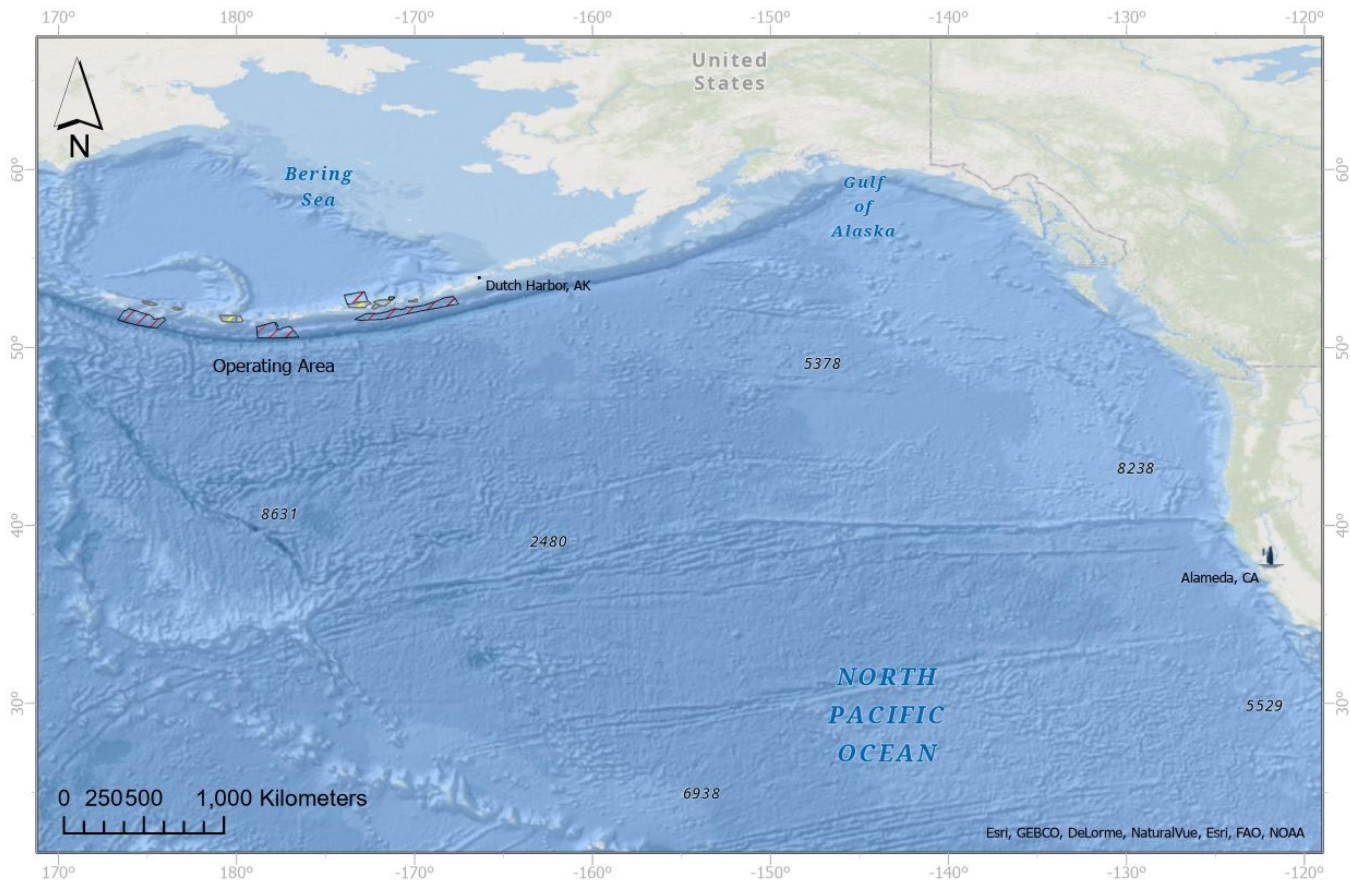
SAILDRONE SURVEYOR

EM304 and EM2040 MULTIBEAM SONARS



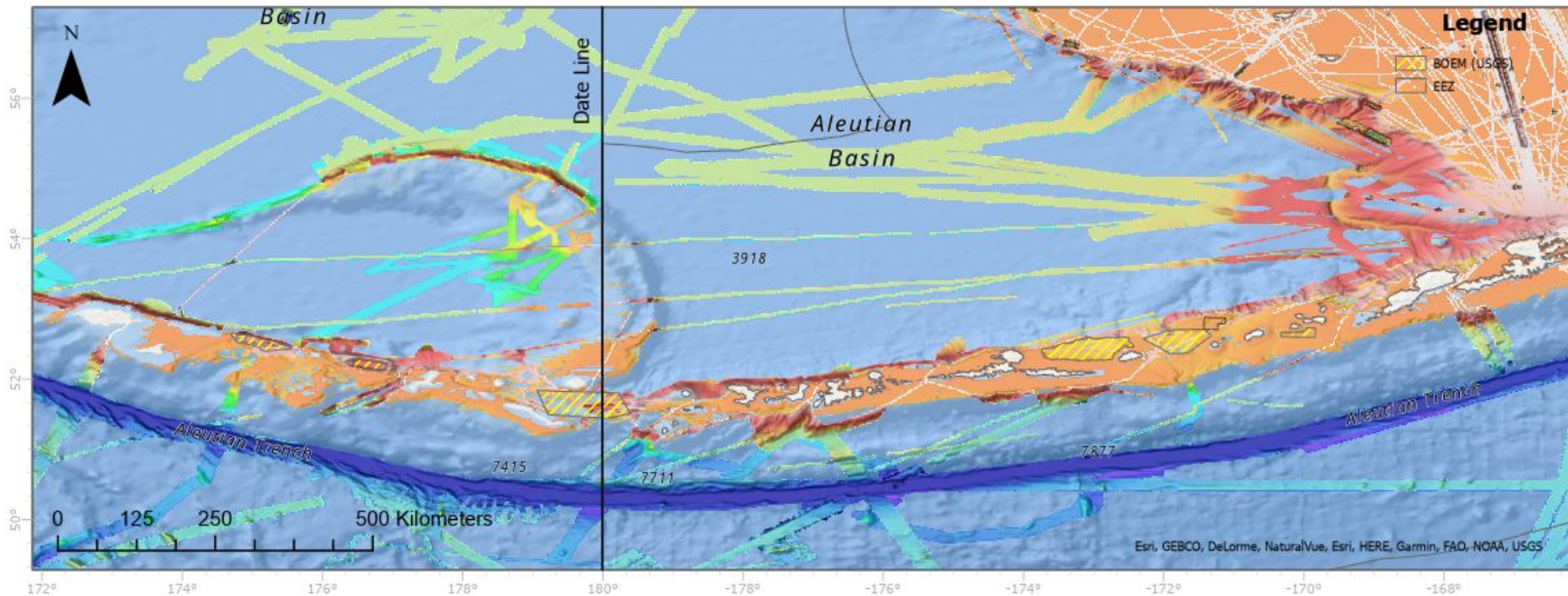
OVERVIEW

FROM ALAMEDA, CA TO ALEUTIAN ISLANDS, AK



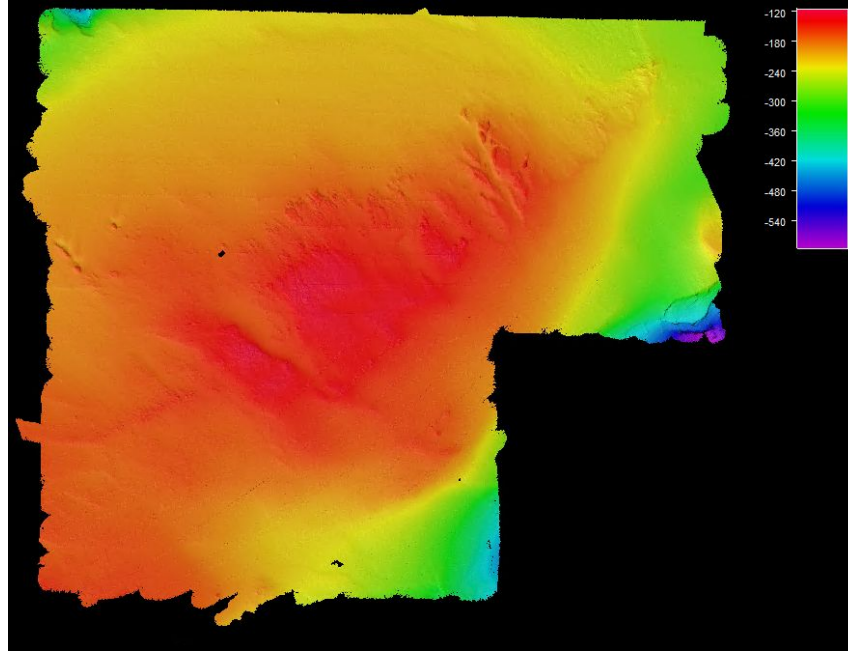
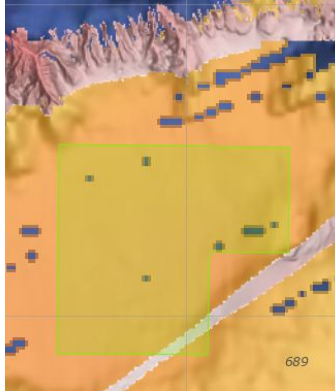
BOEM PRIORITY AREAS

SELECTED BY USGS, NOAA DSCRTP AND NOAA OCS



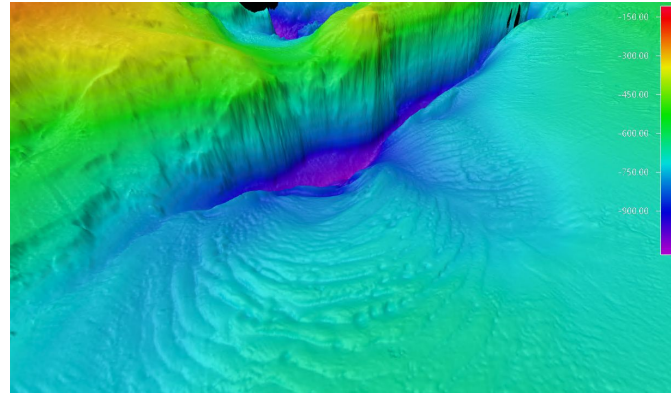
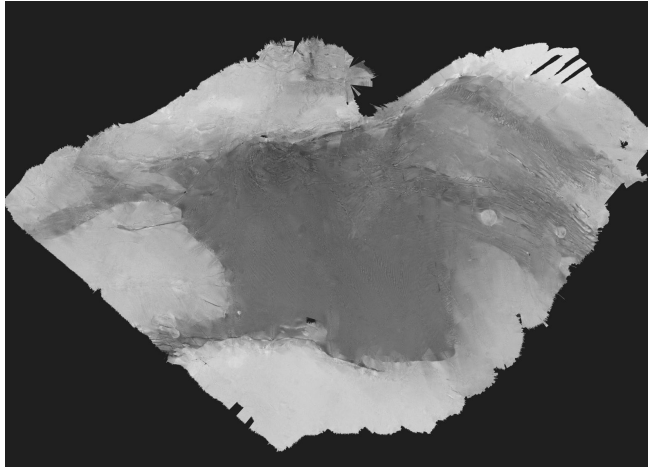
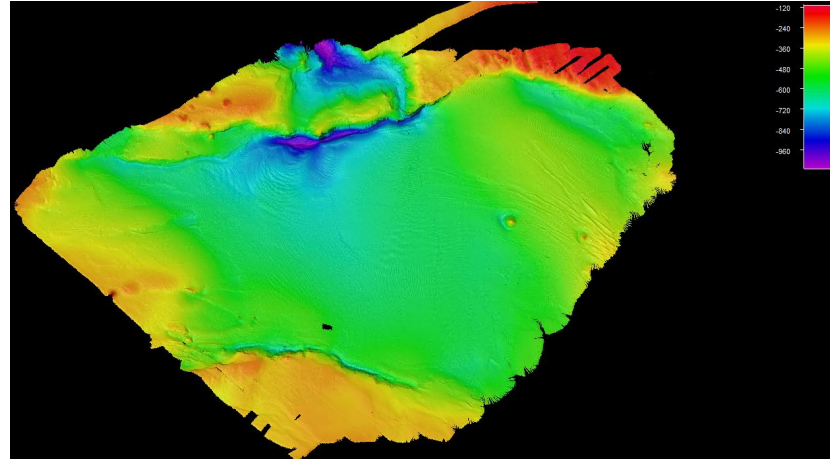
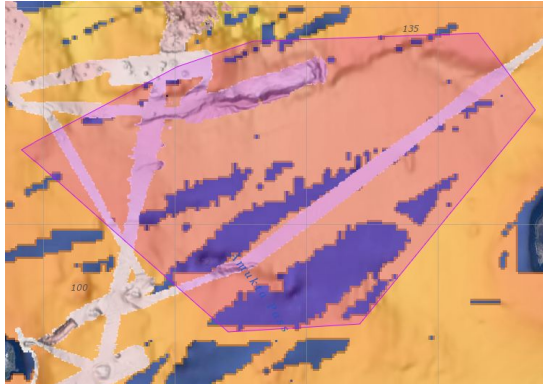
NOAA DEEP SEA CORAL RESEARCH AND TECHNOLOGY PROGRAM (DSCRTP)

EM2040 – BEFORE & AFTER

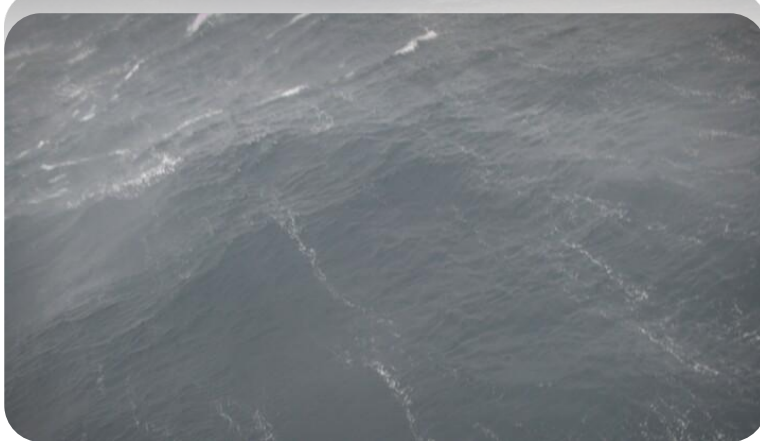


BOEM AND USGS – AMUTKA PASS

EM304 - BEFORE & AFTER



THANK YOU
VIEW FROM SURVEYOR





End of Presentation

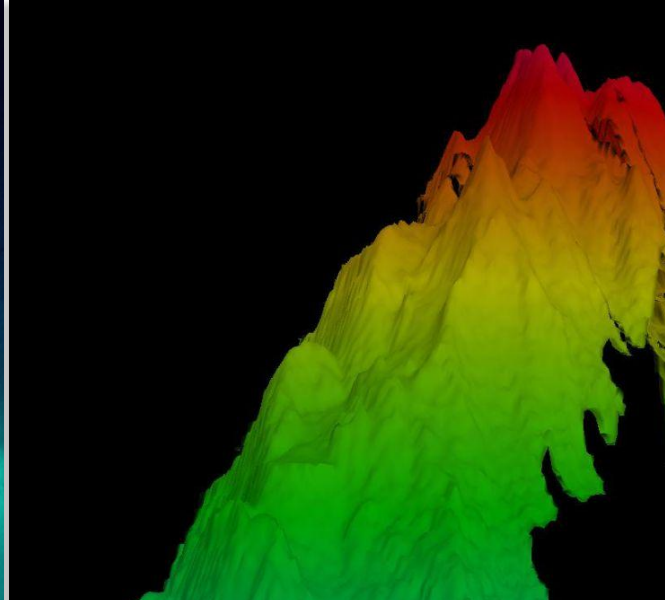
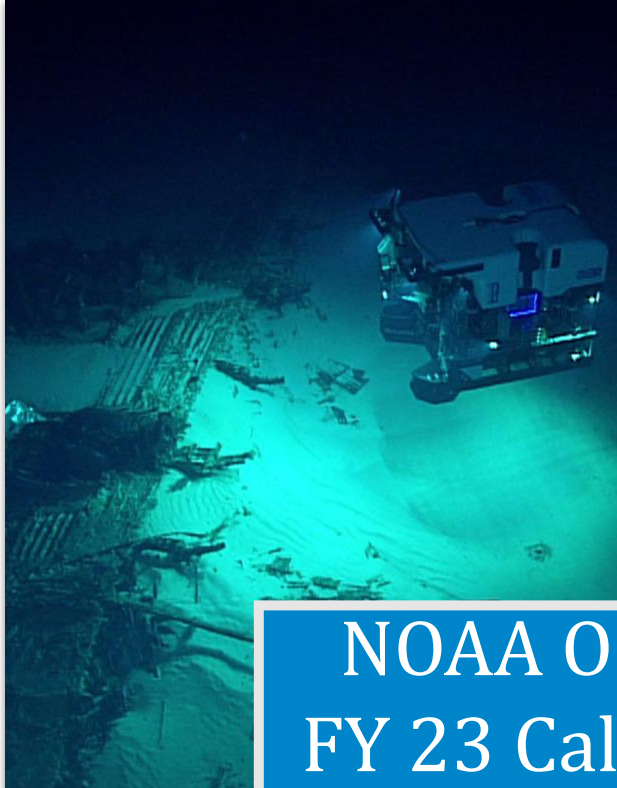
Thank you!



NOAA Ocean Exploration FY23 Call for Input Results

Sam Candio – Office of Ocean Exploration and Research, NOAA

11.17.2022 | Alaska Coastal & Ocean Mapping Summit



NOAA Ocean Exploration FY 23 Call for Input Results

Sam Candio, NOAA

Alaska Coastal and Ocean Mapping Summit

November 17, 2022



**OCEAN
EXPLORATION**

Principles of Exploration



Explore to meet community needs



Always collect useful and quality data



Systematically expand exploration footprint



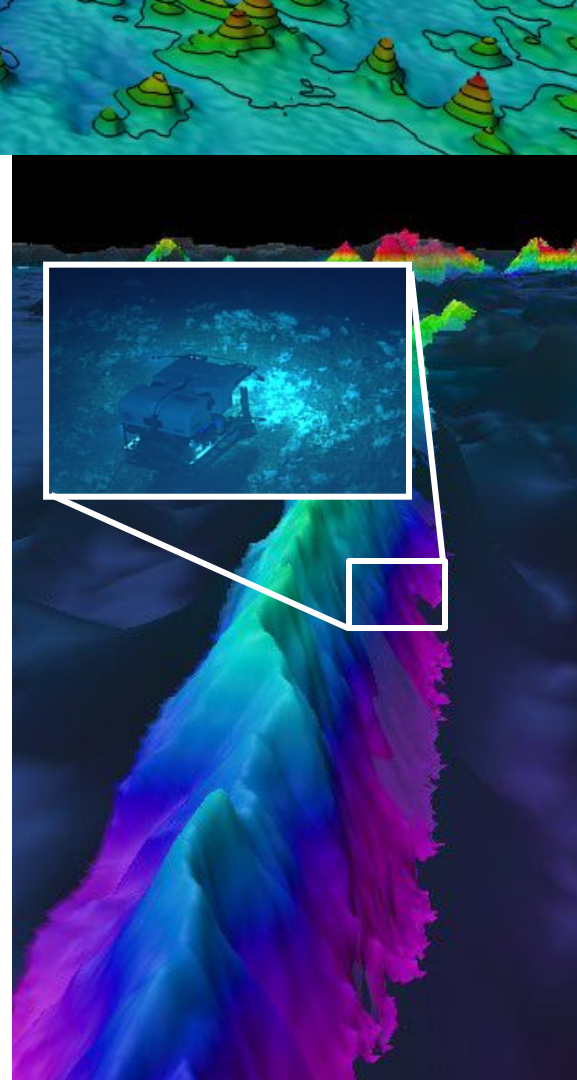
Share discoveries to engage the public



Produce open access data with necessary metadata



Release data in a timely manner

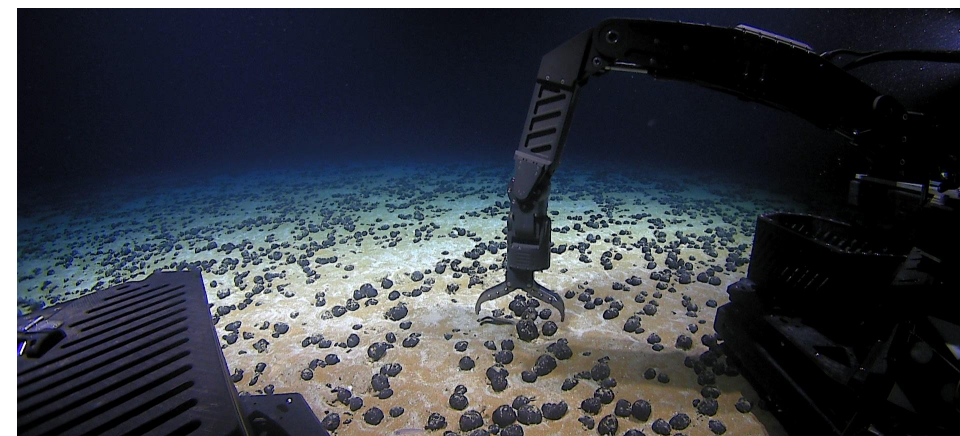




NOAA Ship *Okeanos Explorer*



ROV *Deep Discoverer*



NOAA Ocean Exploration - Alaska Priorities

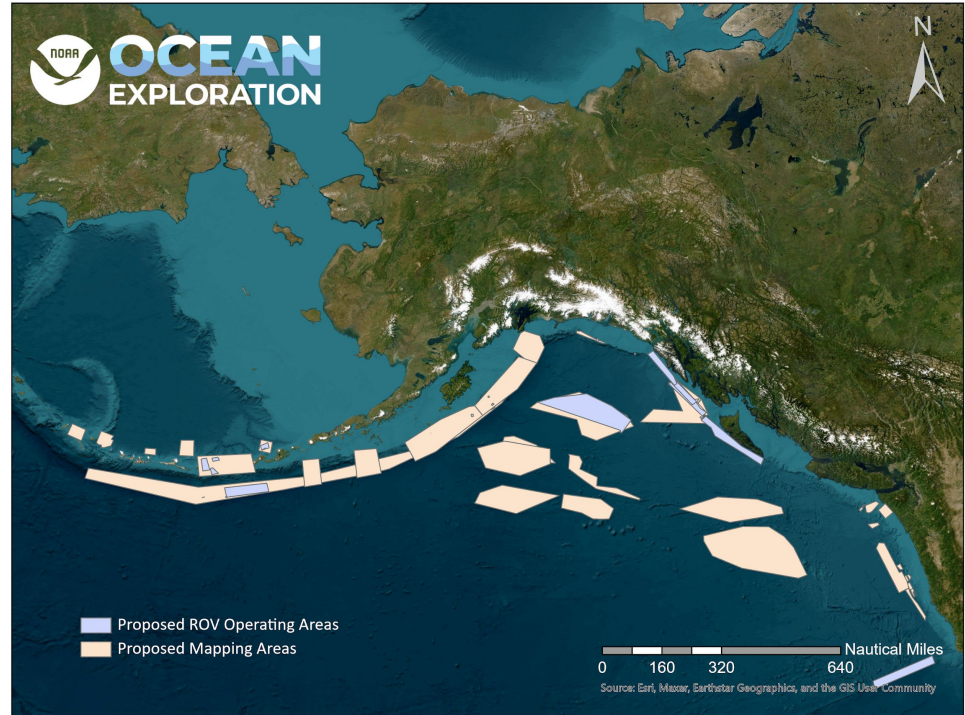
- NOAA Ocean Exploration mission space is waters deeper than 200 meters
- Goal 1: Increase deepwater mapping coverage in Alaska EEZ
 - Saildrone Surveyor Aleutians mapping mission in 2022
 - Okeanos Explorer expeditions in 2023 (Aleutians & Gulf of Alaska)
- Goal 2: Explore priority areas with ROV and other tools
 - Okeanos Explorer expeditions in 2023 (Aleutians, Gulf of Alaska)
 - Additional partnership projects anticipated

All work will be planned in coordination with Seascope Alaska and NOAA Alaska Deep-Sea Coral and Sponge Initiative.

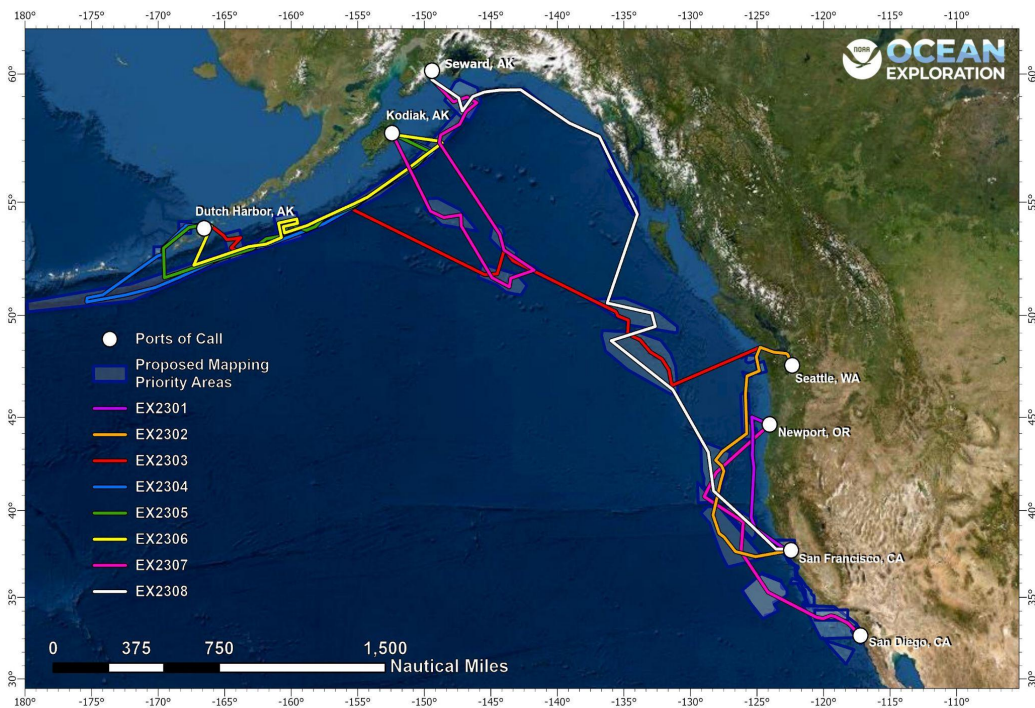


Call for Input Results

- NOAA Ocean Exploration distributed a call for input in Spring of 2022 to gather community priorities in Alaska and along the US west coast.
 - Federal Partners
 - International
 - Industry
 - Academia
- Will continue to refine these areas as the schedule solidifies



Okeanos Explorer 2023 Schedule



- Winter dockside repair period in Newport, OR followed by drydock stern thruster replacement (TBD location)
- Shakedown period and west coast ROV work after drydock (March-April)
- Seascope Alaska: Aleutians Exploration – 3 mapping expeditions; 1 ROV expedition (May - August)
- Seascope Alaska: Gulf of AK Exploration – 1 ROV expedition (August - September)
- Transit to San Francisco for FY24 West Coast work (September - October)

Questions?

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oceanexplorer.noaa.gov



OCEAN
EXPLORATION



End of Presentation

Thank you!



Aleutian Trench Biodiversity Studies (AleutBio)

Dr. Angelika Brandt – Senckenberg & Goethe University | Dr. Anne-Cathrin Wöfl – GEOMAR

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VIDEO

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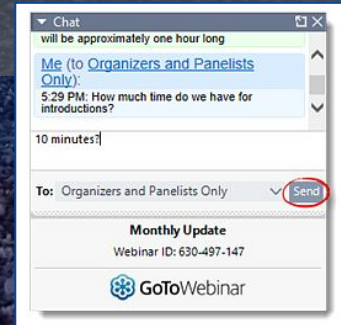


End of Presentation

Thank you!

Questions for Presenters?

- Send your questions to “Organizers and Panelists Only” in the **GoTo Webinar chat box**.
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Poll Results

BREAK TIME

Back at 11:05am AKST



2022 Alaska Coastal & Ocean Mapping Summit

November 17th, 2022