



Discoveries in the Arctic:

Overcoming Challenges to Map the Arctic Port Access Route

Alaska Geosummit

LCDR Caroline Wilkinson, NOAA



Office of Coast Survey
National Oceanic and Atmospheric Administration



Oregon State
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UNIVERSITY of
WASHINGTON



Center for Coastal and Ocean Mapping
Joint Hydrographic Center



Office of Coast Survey
National Oceanic and Atmospheric Administration

Products

DATA COLLECTION



PRODUCT DEVELOPMENT



PRODUCT DISTRIBUTION



Services

NAVIGATION RESPONSE



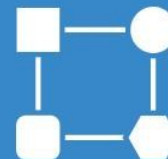
REGIONAL SUPPORT



TECHNOLOGY RESEARCH



MODEL DEVELOPMENT



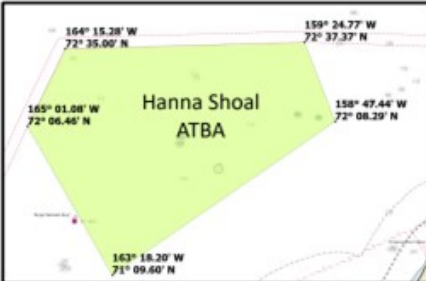
62% of U.S. Waters off Alaska are Unmapped (January 2025 analysis)



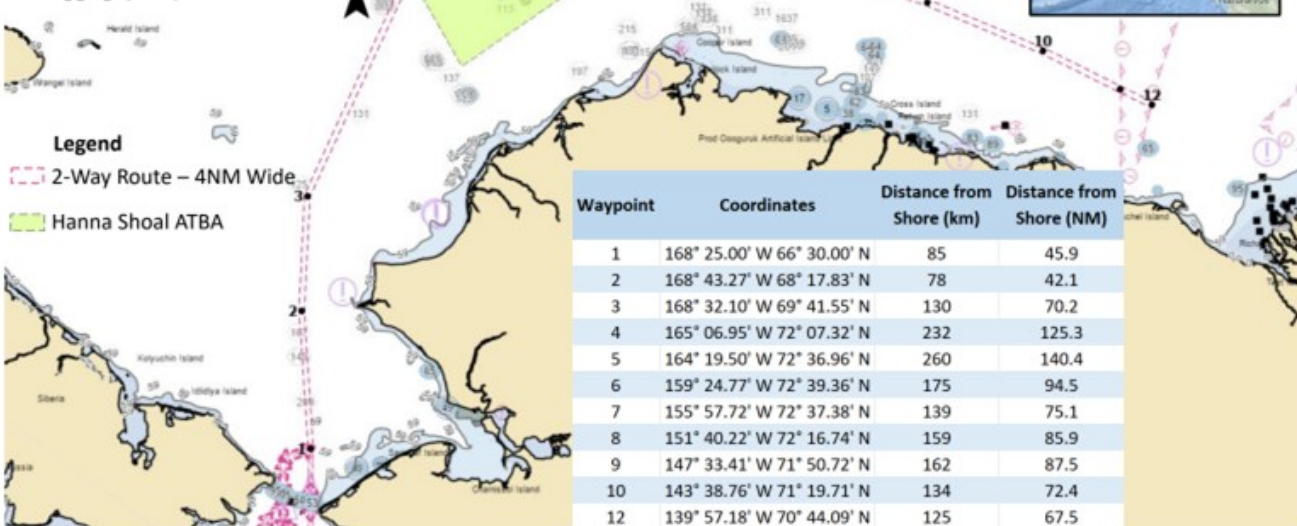
Alaskan Arctic Coast Port Access Route Study (AACPARS)



Alaskan Arctic Coast Port Access Route Study Routing Measure Update



In order to increase maritime safety, protection of the environment, and preservation of cultural resources, all ships 400 gross tonnage and upward should avoid the areas bounded by the lines connecting the following geographical positions



Legend

--- 2-Way Route - 4NM Wide

■ Hanna Shoal ATBA

Waypoint	Coordinates	Distance from Shore (km)	Distance from Shore (NM)
1	168° 25.00' W 66° 30.00' N	85	45.9
2	168° 43.27' W 68° 17.83' N	78	42.1
3	168° 32.10' W 69° 41.55' N	130	70.2
4	165° 06.95' W 72° 07.32' N	232	125.3
5	164° 19.50' W 72° 36.96' N	260	140.4
6	159° 24.77' W 72° 39.36' N	175	94.5
7	155° 57.72' W 72° 37.38' N	139	75.1
8	151° 40.22' W 72° 16.74' N	159	85.9
9	147° 33.41' W 71° 50.72' N	162	87.5
10	143° 38.76' W 71° 19.71' N	134	72.4
12	139° 57.18' W 70° 44.09' N	125	67.5



Coast Survey



Office of Coast Survey
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Photo credit: CAPT Megan McGovern



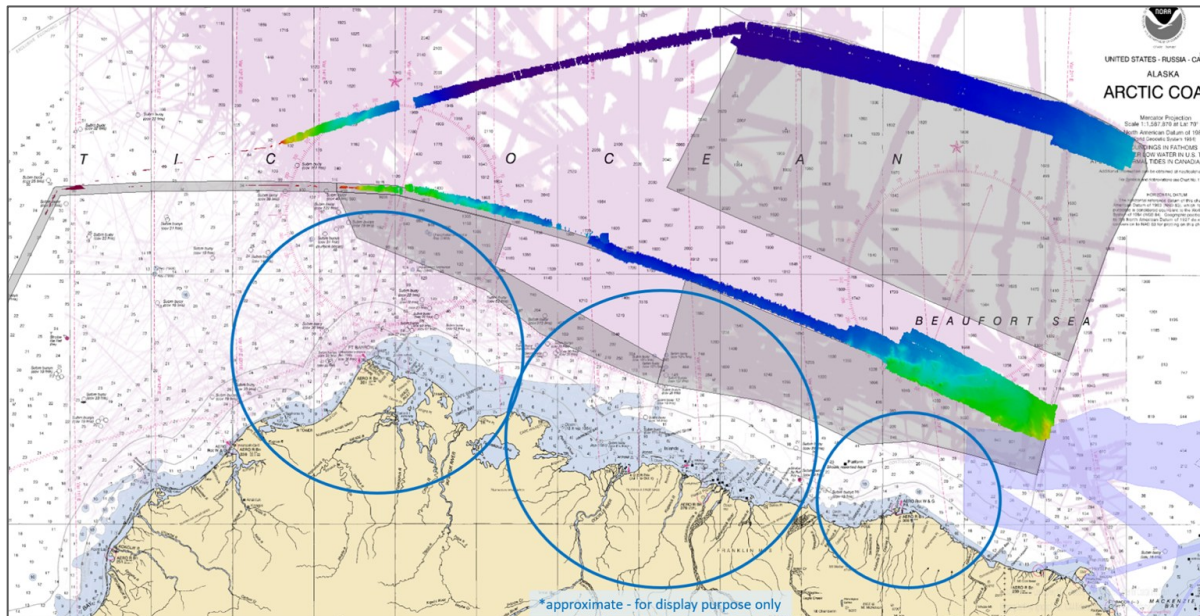
Photo credit: CAPT Megan McGovern



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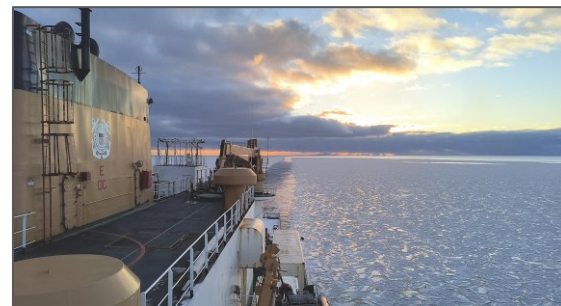


HLY2402 PARS = 2794 LNM

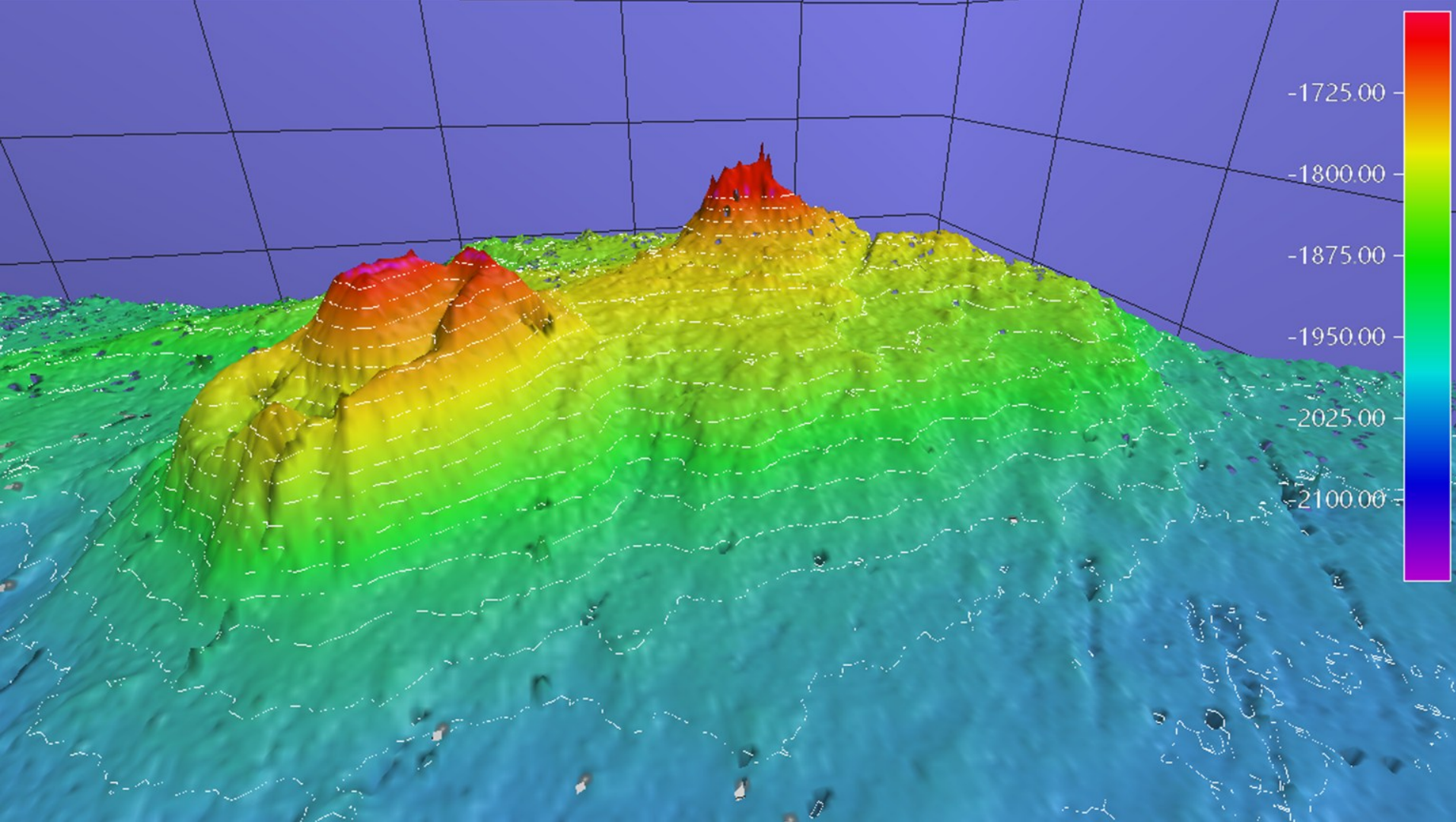
HLY2403 ECS = 1104 LNM

~50% unmapped (per bathy gap analysis)

<https://gis.charttools.noaa.gov/bathy-coverage-report/>

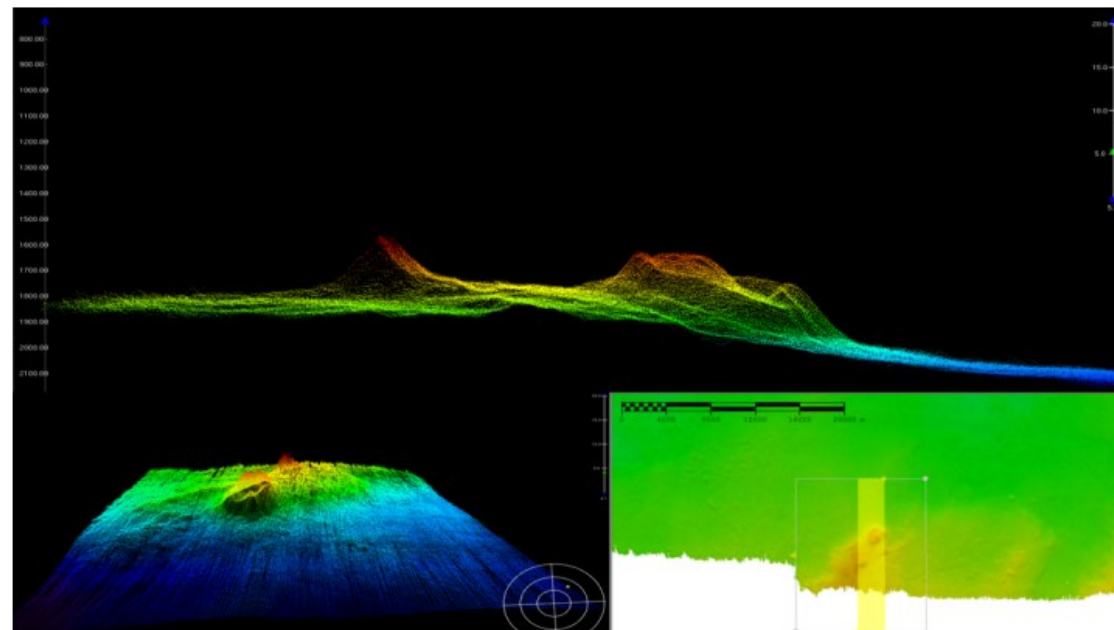


Blog post: <https://nauticalcharts.noaa.gov/updates/interagency-science-team-collects-ocean-and-weather-data-in-the-arctic-aboard-u-s-coast-guard-cutter-healy/>



Unusual Condition

Two features were observed around 70.84N 141.18W that may be of interest for further investigation. The field party processed watercolumn data over the features and observed a plume.



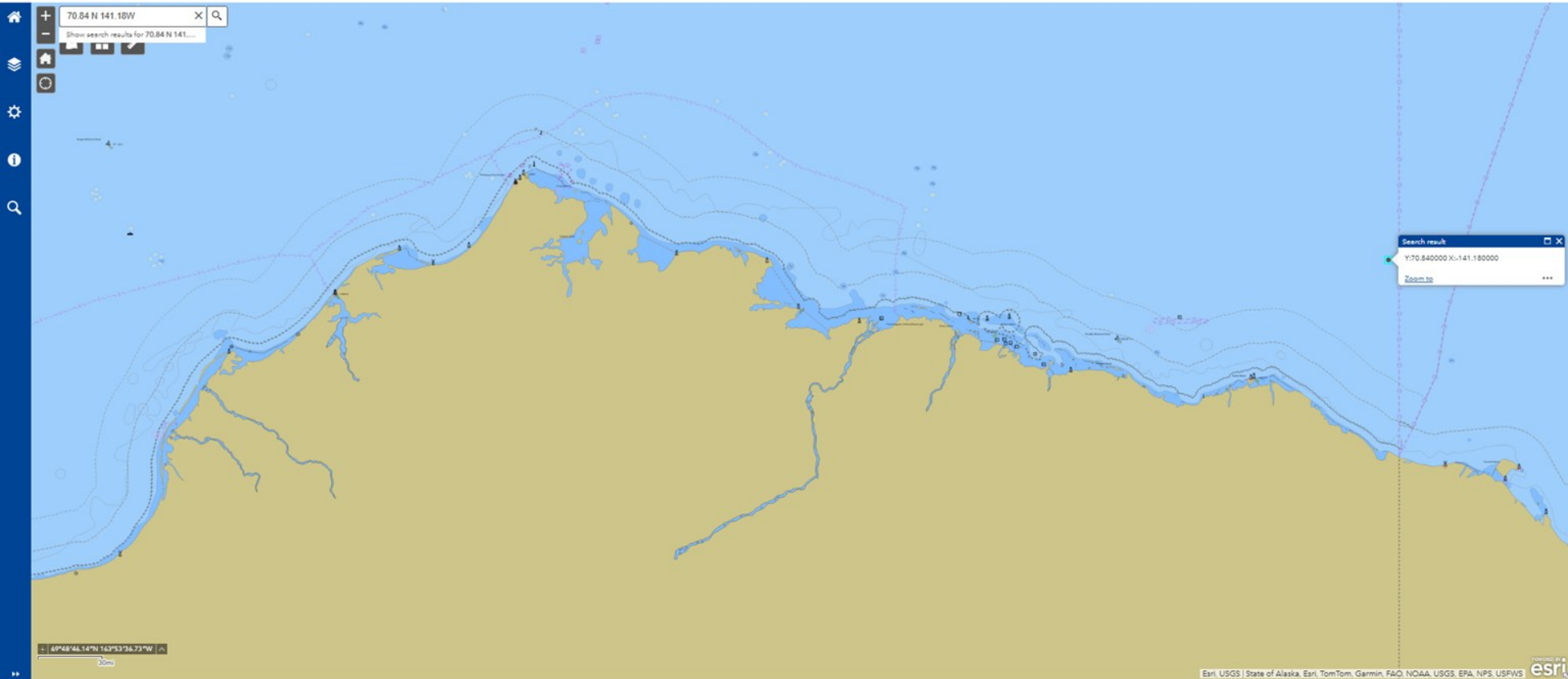
The two features observed around 70.84N 141.18W. (Top) 2D view with 5X exaggeration. (Bottom left) 3D view with 5X exaggeration. (Bottom right) top down view with box showing location of 3D and 2D view.

Additional Information

Related press release:

<https://www.news.uscg.mil/Press-Releases/Article/3959918/us-coast-guard-cutter-healy-crew-and-embarked-science-teams-discover-volcano-li/>

70° 50.4'N, 141°10.8'W



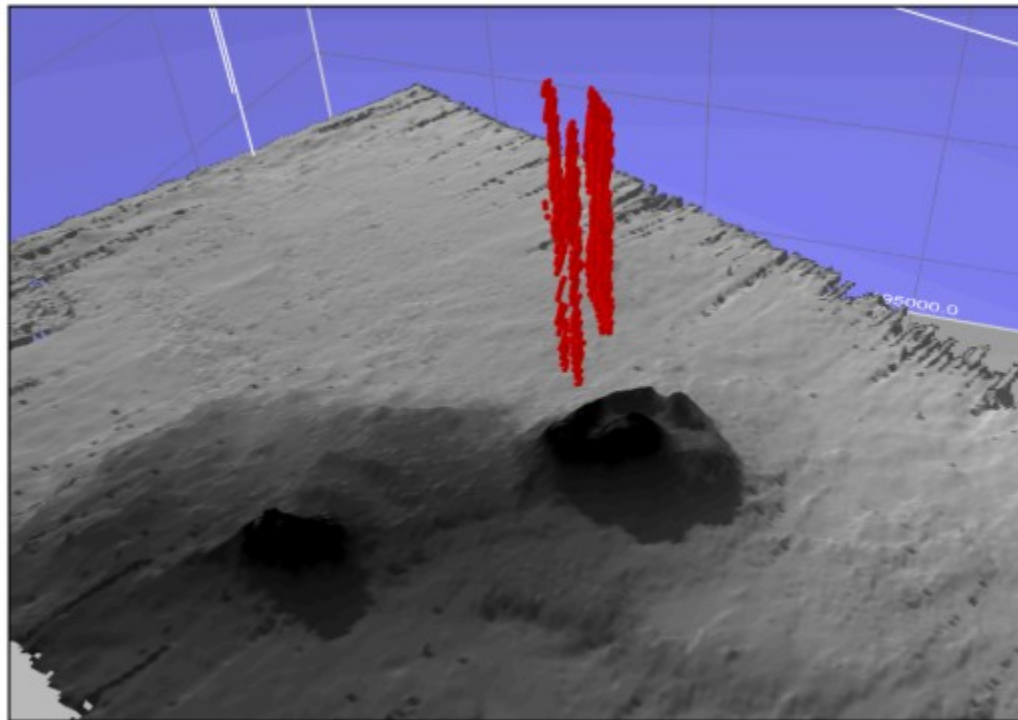


Image credit:
LT Andrew Niedbala, USCG



National Centers for Environmental Information- NCEI



National Centers for
Environmental Information
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Bathymetric Data Viewer

NOAA / NESDIS / NCEI / Maps / Seafloor Mapping

Layers

Bathymetric Surveys and Products

- ☐ Multibeam Survey Tracklines (?)
- ☐ Multibeam Survey Footprints (?)
- ☐ Multibeam Bathymetry Mosaic (?)

NOAA NOS Hydrographic Data and Products

- ☐ Hydrographic Survey Outlines: (?)
- ☒ All Surveys with Digital Data
- ☐ Surveys with Bathymetric Attributed Grids (BAGs)
- ☐ Surveys without Digital Data
- ☐ BAG Color Shaded Relief (?)
- ☐ BlueTopo (?)

- ☐ Single-Beam Surveys (?)
- ☐ Single-Beam Sounding Density (?)

Search Bathymetric Surveys (?)

- ☐ Crowdsourced Bathymetry Files (?)
- Search CSB Files (?)

☒ U.S. Bathymetry Coverage and Gap Analysis (?)

Digital Elevation Models

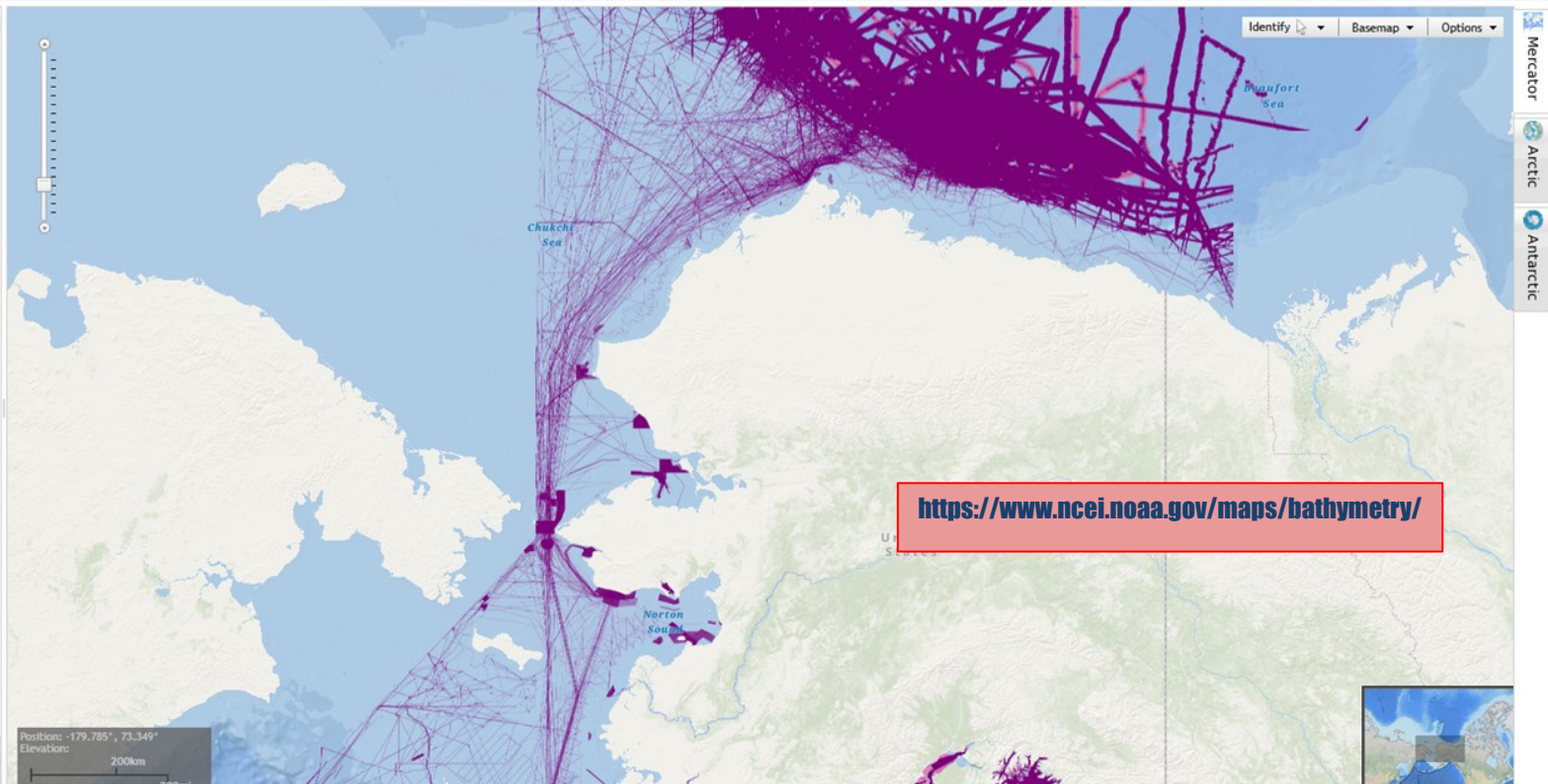
- ☐ DEM Footprints (?)
- ☐ DEM Color Shaded Relief (?)
- ☒ All DEMs
- ☐ Continuously Updated Digital Elevation Model (CUDEM)
- ☐ Coastal Relief Models (CRM)

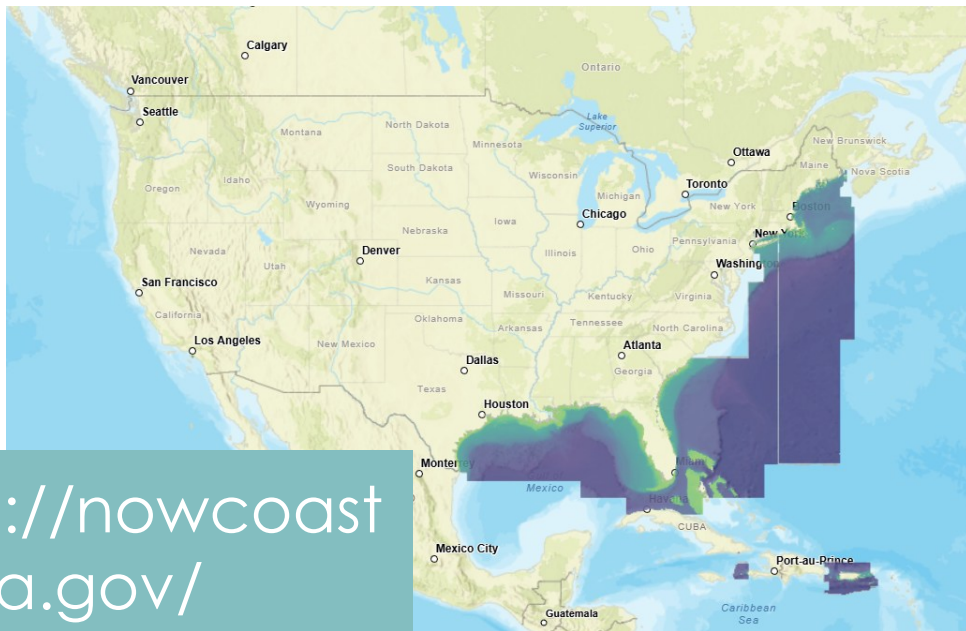
Coastal Lidar

- ☐ Topo-Bathy/Bathy Lidar Datasets (?)

Grid Extract

More Information

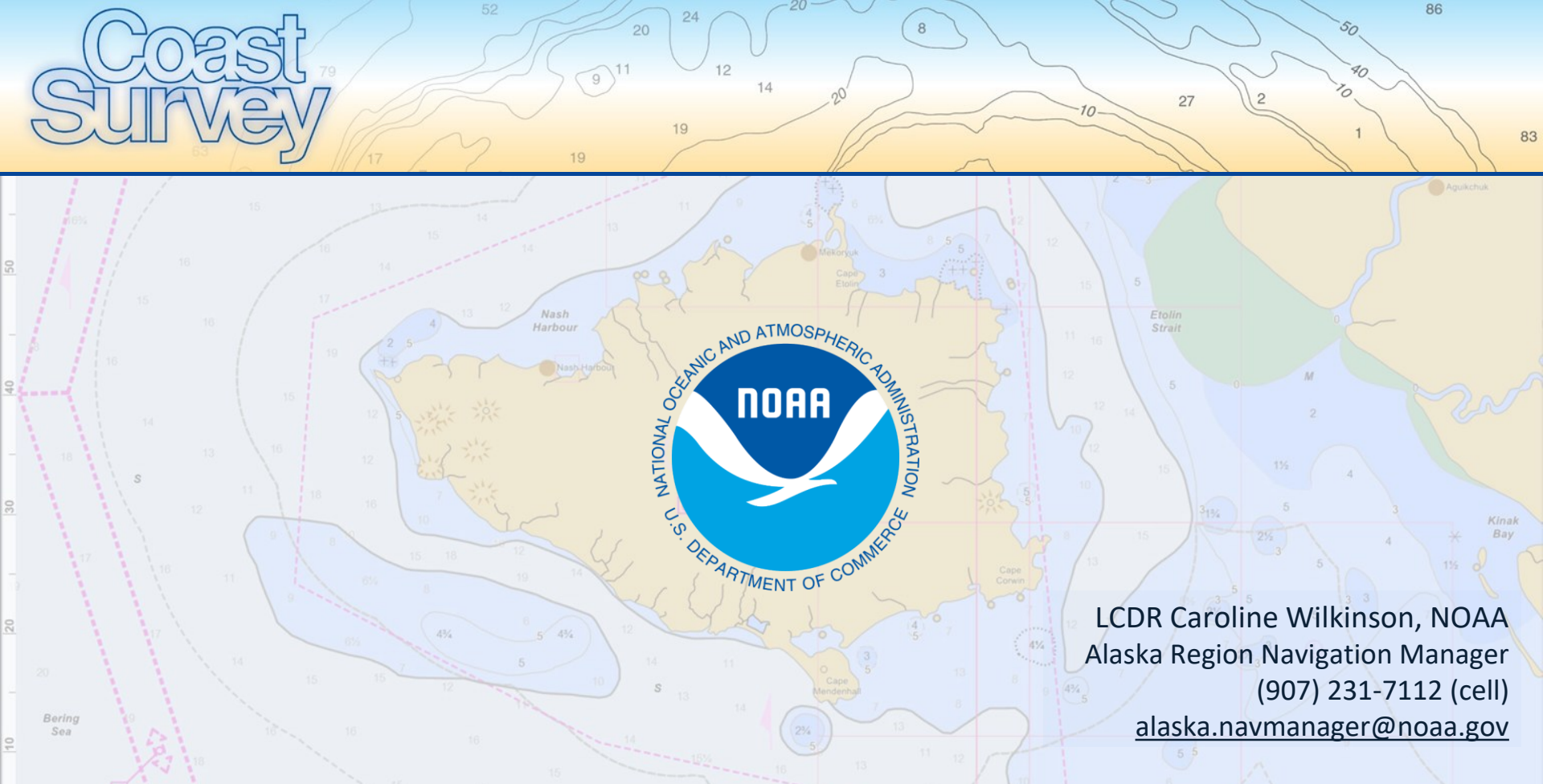




<https://nowcoast.noaa.gov/>

Kaan Cav, CCOM
Lily Dove, Brown
Lloyd Pikok Jr., UIC Science
Fernanda Gastelu, Virginia Tech
Pushyami Kaveti, Northeastern
Evan Lucas, Michigan Tech
Alexandra Ravelo, UAF
Maddie Smith, WHOI
Jackie Veatch, Rutgers
Mike Wood, Moss Landing
Shannon Doherty, UAF
Lucia Maldonado, UAF
CDR Bart Buesseler, NOAA
NOAA External Data Source team
Alaska Eskimo Whaling Commission
Crew of the CGC *Healy*

Coast Survey



LCDR Caroline Wilkinson, NOAA
Alaska Region Navigation Manager
(907) 231-7112 (cell)
alaska.navmanager@noaa.gov



Office of Coast Survey
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