ARHC 12 Operations and Technology Working Group

OTWG Arctic Activities since ARHC11

- Collaborative Mapping Mission Opportunities
- NOAA Survey Activities (presented in US National Report)
- 2022 Arctic Saildrone Mission (USA)
- 2023 Chart Adequacy Assessment

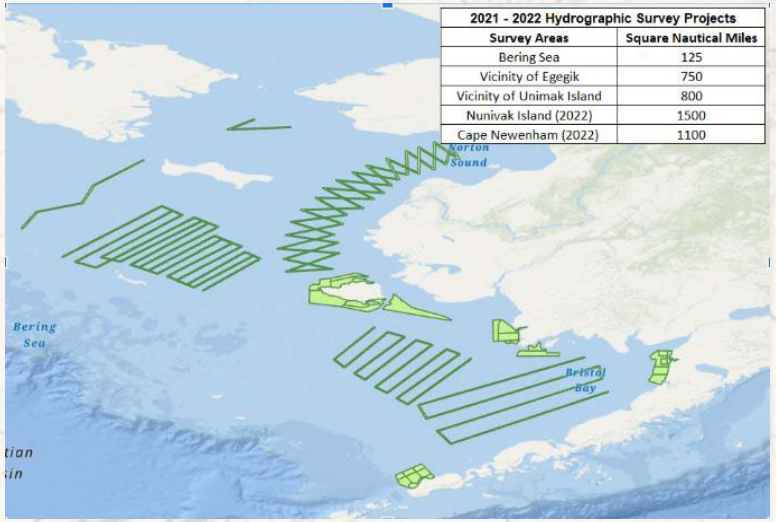
Collaborative Mapping Mission Opportunities

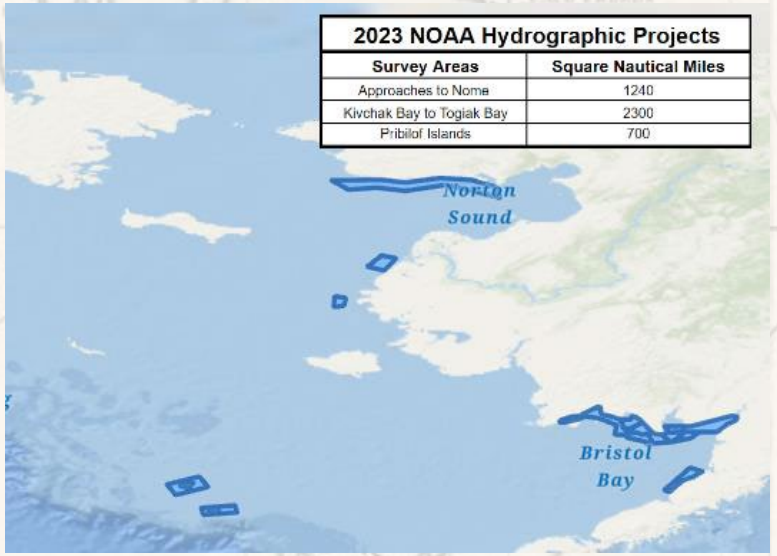
OTWG seeking interest in opportunities to:

- Test application of remote systems
- Collect data and joint operations relevant to member groups
- Compile collective successes and lessons learned

NOAA Survey Activities

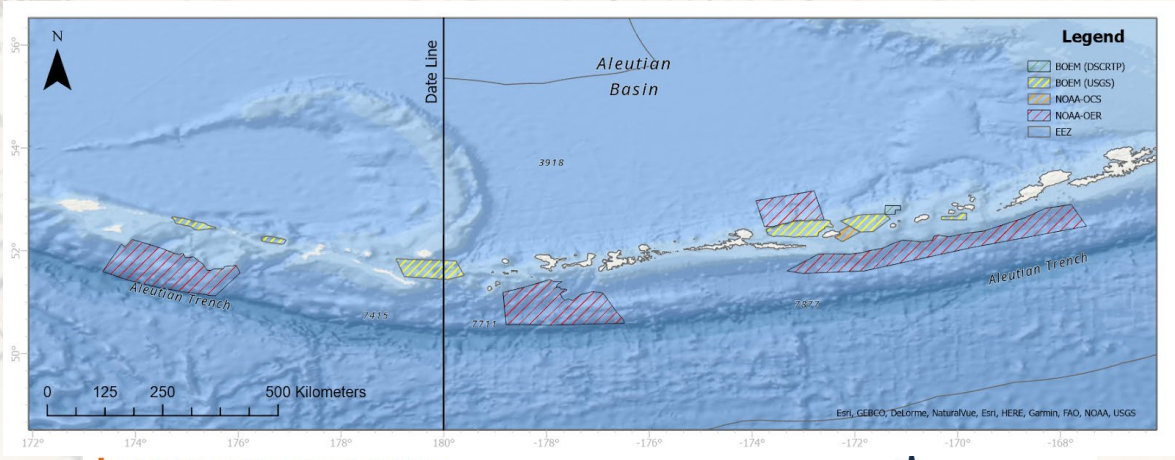
- As discussed in National Report –United States of America
  - *DOC: ARHC12-B6 United States National Report*
- In 2021 and 2022, NOAA surveyed approximately 4300 square nautical miles (SNM) of Arctic seafloor across five separate projects
- In 2023, three Arctic hydrographic surveys are planned to provide updated bathymetry in over 4200 SNM of Arctic waters
- Continued investigation into operationalizing Uncrewed Systems (UxS) and Autonomous Surface Vehicles (ASVs)





2022 Arctic Saildrone Mission (USA)

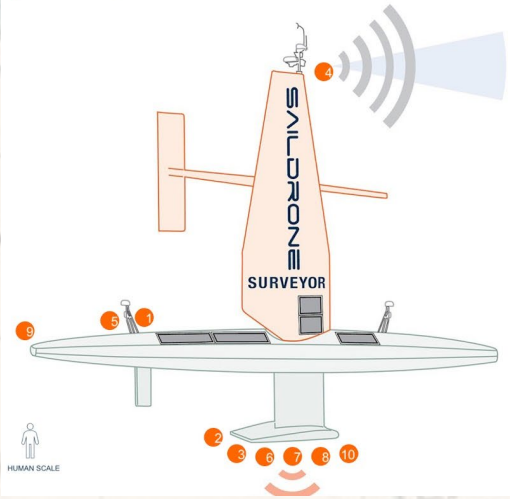
- Partnership with NOAA Office of Ocean Exploration Research
- Approximately 96 days in Alaska's Aleutian island chain
- MBES and biological sampling (eDNA)
- Active, ongoing project as of this presentation
- Performance to guide future work



SAILDRONE SURVEYOR

World's largest and most advanced, uncrewed surface vehicle for ocean mapping and exploration

SAILDRONE

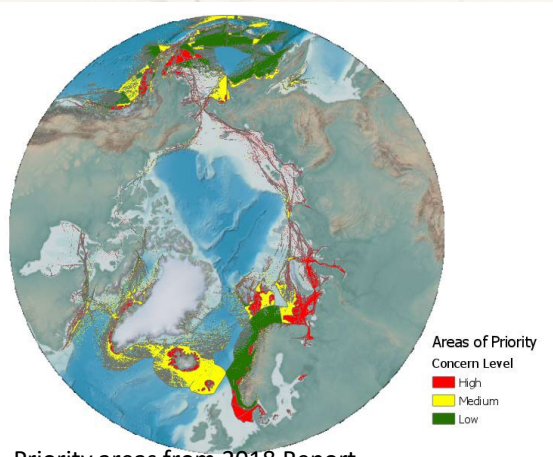


PAYLOAD OPTIONS

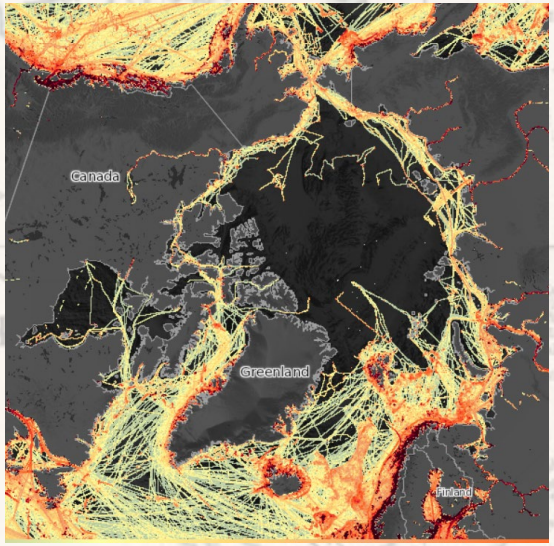
No.	Variable	Sensor
1	Positioning	Seapath 380+ GNSS/INS system
2	Deep-water bathymetry	Kongsberg EM 304 multibeam sonar
3	Shallow-water bathymetry	Kongsberg EM 2040 multibeam sonar
4	Wind speed & direction	B&G WS730S
5	Barometric pressure	Yacht Devices YDBC-05N
6	Ocean currents	Simrad EC150 ADCP
7	Ocean currents	Teledyne Pinnacle 45 ACDP
8	Fish biomass	Simrad EK80 echo sounder
9	Sound velocity profiler	Valeport SWiFT SVP (cast depth: 100 m)
10	Surface sound	Teledyne SVP 70 (fixed on bottom of gondola)

2023 Chart Adequacy Assessment

- Update to 2018 Hydrographic Adequacy Risk Assessment
- Call for data holdings and process improvements from member states sent out 25th July 2022
- Planned improvements for 2023 release
  - Improved AIS data using better vessel density methods based upon EU Vessel density map Detailed Method sourced from Global Maritime Traffic Density Service (GMTDS)
  - Higher resolution data analysis
  - Updated CATZOC/Survey method
  - Updated bathymetry information
  - Shared webservice and output data layers



Priority areas from 2018 Report



GMTDS Vessel Density, August 2022