

IX



Science & Education Report



MS Roald Amundsen 19 September – 05 October, 2025

Greenland, Labrador, and
Newfoundland - Encounters at the
Edge

When you arrived on the MS Roald you boarded a research-focused expedition ship, fully equipped as a floating laboratory, and designed to be a center of learning and discovery. In your time on board you contributed to scientific studies and expanded your knowledge of the world around you. Let's take a look back on our journey and what we accomplished while sailing along the wild and wonderful coasts of southern Greenland, Torngat Mountains National Park, Labrador, and Newfoundland.

Arts, music, crafts & creativity

We witnessed the wild beauty of Greenland's glaciers, Labrador's fjords, and Newfoundland's rocky coastlines. We were inspired to create art reflecting our surroundings and our feelings, and we were also guided by our Cultural Ambassadors to make art honoring Inuit and Canadian Indigenous cultural heritage. Through drawing sessions, painting sessions, sculpting sessions, and much more, we created tangible keepsakes of our journey. We also were able to immerse ourselves in the musical arts through insightful Greenlandic music sessions onboard and musical demonstrations by our community hosts in Nain.





Science & Education Program

The MS Roald Amundsen is more than a ship— it is a platform of opportunity for us to explore, collect meaningful data, and learn more deeply about the places we visit.

Our onboard naturalists guided our guests using scientific tools to investigate the environments around us. We observed, documented, and discussed many interesting fauna, flora, and phenomena. From learning about whale anatomy to exploring the rock cycle, guests participated in sessions that gave a deeper understanding and appreciation for the world around us. Our Cultural Ambassadors and historians put all of what we saw in the context of humans' relationships with these places— from the earliest inhabitants to modern society.

On the next pages you can find highlights of our onboard Science and Education Program and our Citizen Science Program.

History

Our journey took us along many paths of history: following the footsteps of the Thule and Inuit, to settlements of Norse Vikings, and to the modern day countries and territories where history is still being written.

We visited places we today call Greenland and Canada, but we recognized that these lands are the ancestral homes of the Inuit people. We saw how history from time immemorial is being carried into the modern day. We also learned of the challenges Inuit have faced, from early European contact to modern day policies and politics.

In addition to learning of Inuit history, we also visited some important Viking-age archaeological sites. In Greenland we were able to visit Qassiarsuk, where Erik the Red settled and Leif Erikson was born. In Newfoundland, we visited L'Anse aux Meadows, the first and only known site established by Vikings in North America.

Finally, as we moved into southern Labrador and Newfoundland, we were introduced to a more modern history that centered around fishing and whaling as the cornerstones of life, with European influences even including the Basque.





Archaeology

In the Canadian Arctic, we often visit locations we term “nature landings,” but many of these sites have been inhabited permanently or seasonally by people in the past. These sites can contain sensitive cultural and archaeological remains, but such remains are usually not obvious to the untrained eye. For this reason we were joined by Michelle, an archaeologist from Ontario, Canada, who has worked extensively at sites in Labrador. Michelle provided on-site interpretation of archeological features and delivered lectures about prehistoric archeology in Labrador and the transcultural influences between Labrador Inuit and Moravian missionaries. With the additional guidance of our Cultural Ambassadors, we gained an informed perspective on how archeology and living culture can continue to intersect and inform each other.

Our Cultural Ambassadors

On our voyage we were joined by 8 Cultural Ambassadors: Heidi, Kenneth, Sierra, Eli, Mariah, Inuuteq, and Jaqqa representing their homes and cultures in Inuit Nunaat across Canada and Greenland, and Sidsel sharing being Greenlandic of Danish heritage.

The Cultural Ambassadors were generous in not only sharing their knowledge of the culture, history, and nature of our destinations, but they also shared with us deeply personal stories, life experiences, and moments of connection. It was a privilege to share this journey with them, and their presence and guidance was crucial to helping us understand the places we visited, the people we met, and histories and cultures that are both beautiful and complex. Heidi, Kenneth, Mariah, Inuuteq, Jaqqa, and our Bear Guard Maria led us gracefully through sometimes challenging topics in Inuit histories, and helped us acknowledge that these histories hold pain, but also hope. For all of us, their hard work representing the diversity of life and culture in Inuit homelands was invaluable for us to learn and grow as travelers to this region, but, more importantly, to learn and grow as allies.





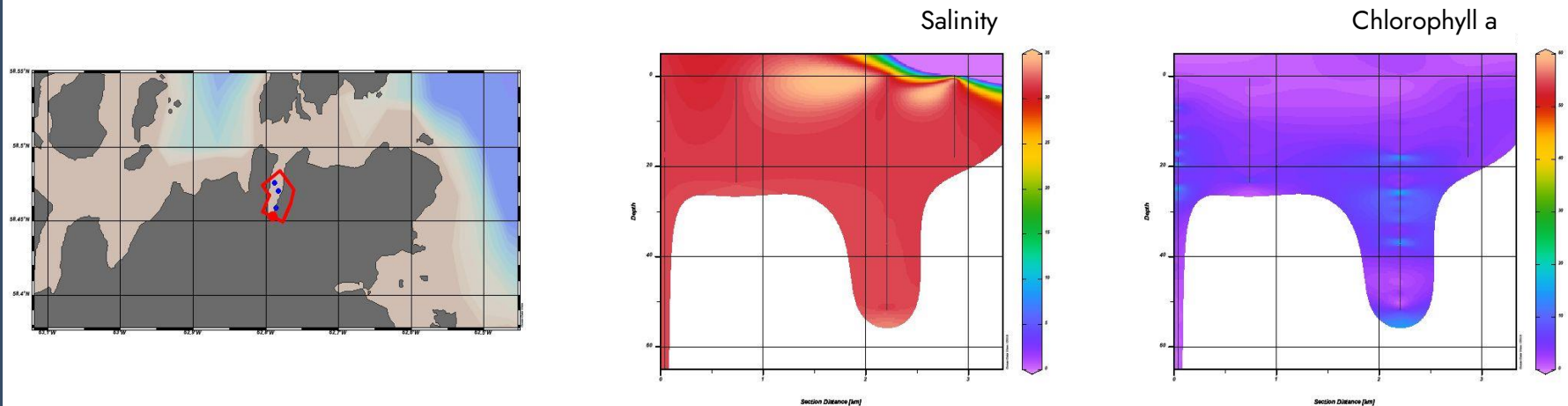
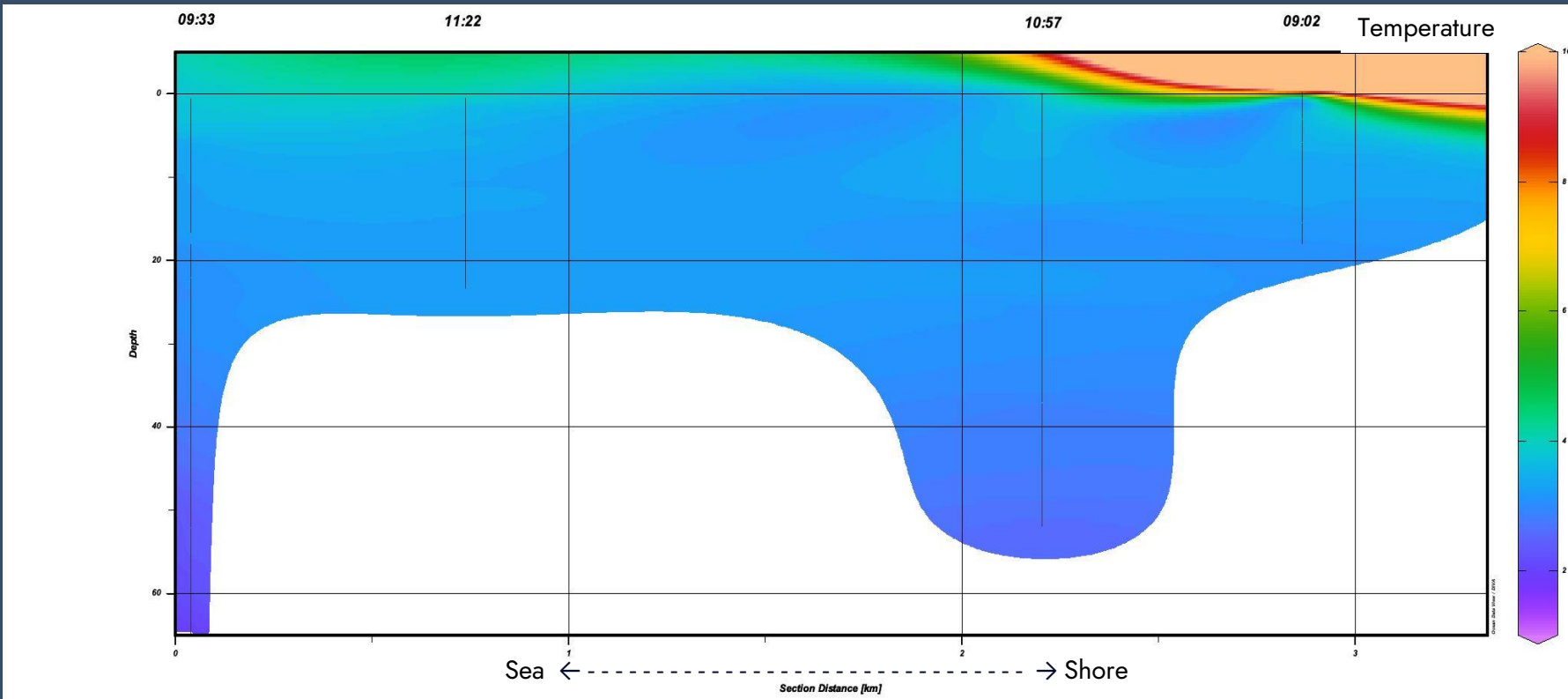
Science Boat

Learning in a lecture or workshop is one thing, but getting your hands 'dirty' in the pursuit of science is at another! For the guests who participated in the Science Boat, they joined an experience focused on collecting meaningful data by 'taking the lab outside' – and underwater!

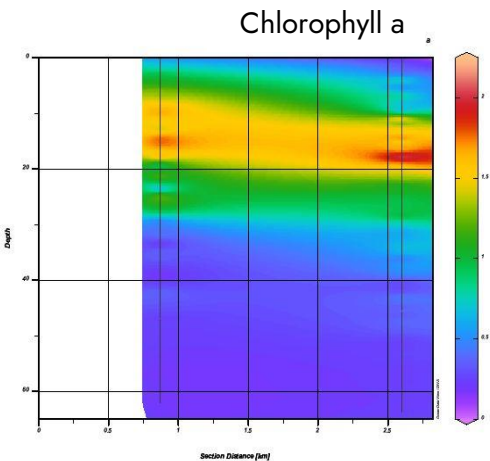
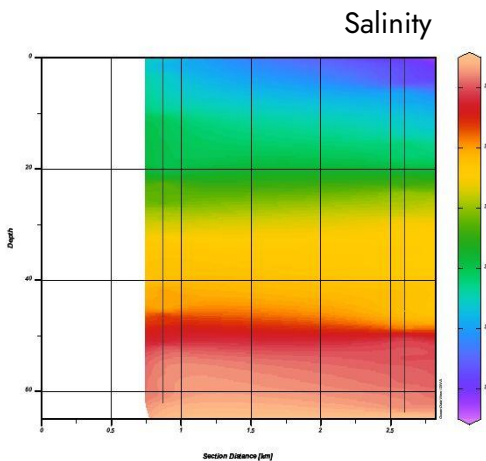
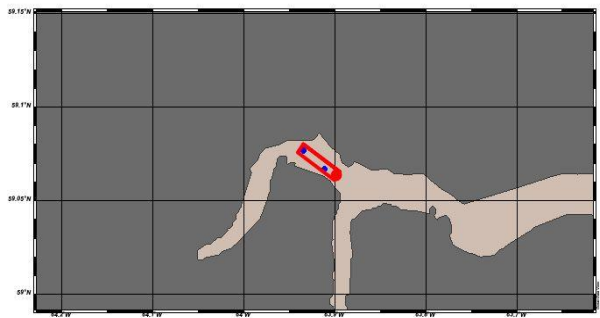
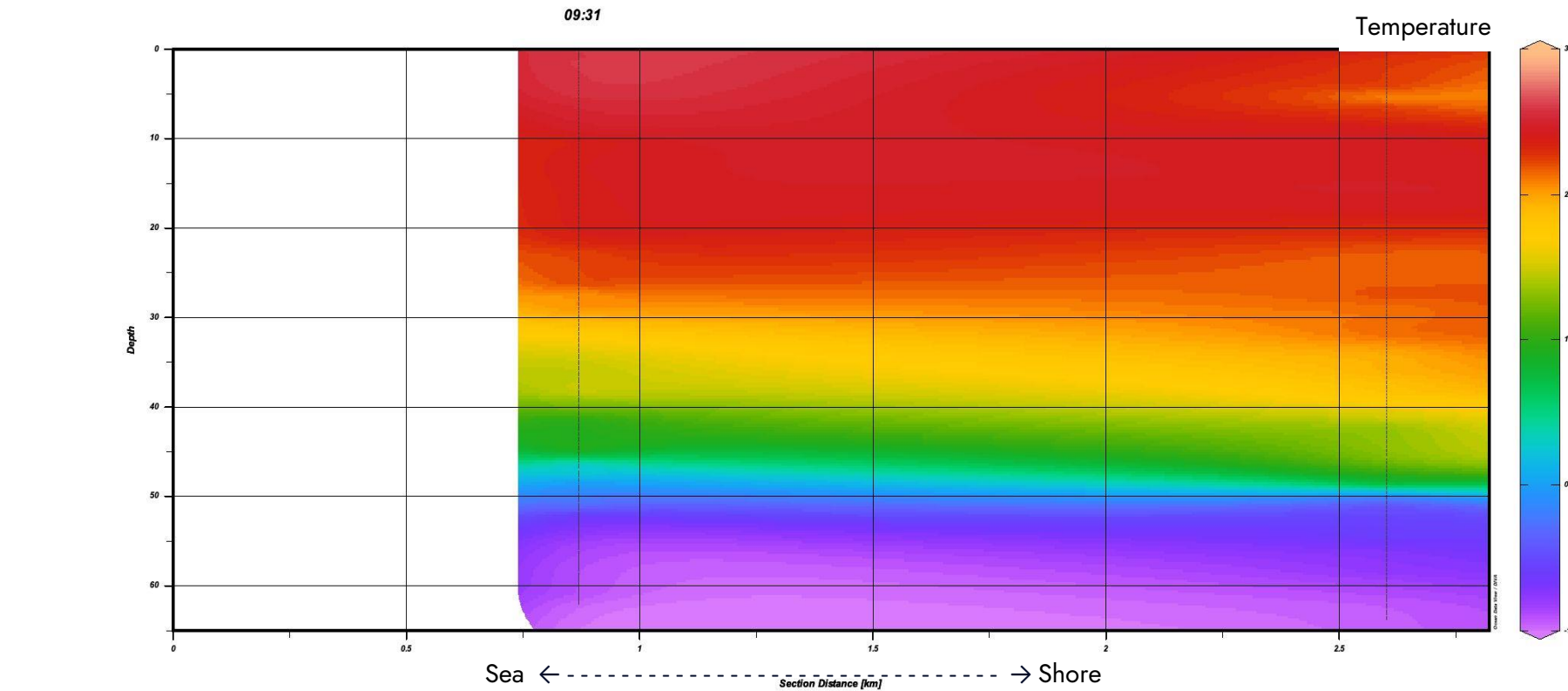
We investigated the underwater world in **4** Science Boat sessions in Saglek Bay, Nachvak Fjord, and Hebron. We observed and discussed the wildlife and geology in each location to better understand the area's ecology.

We deployed a CTD at multiple points along the length of these fjords in order to create a cross section of the water column. We were able to see how **temperature**, **salinity**, and **phytoplankton density** changed with depth and across the fjords—or, in all cases, how they did not change very much! We also took measurements of turbidity to submit to the Citizen Science project the Secchi Disk Project to help them track the distribution and density of phytoplankton across the world's oceans.

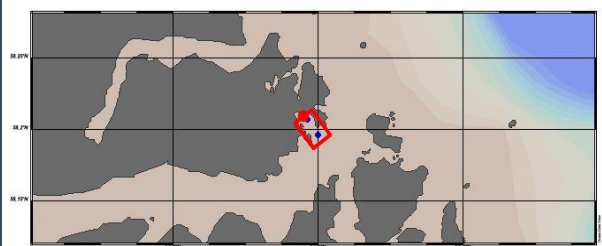
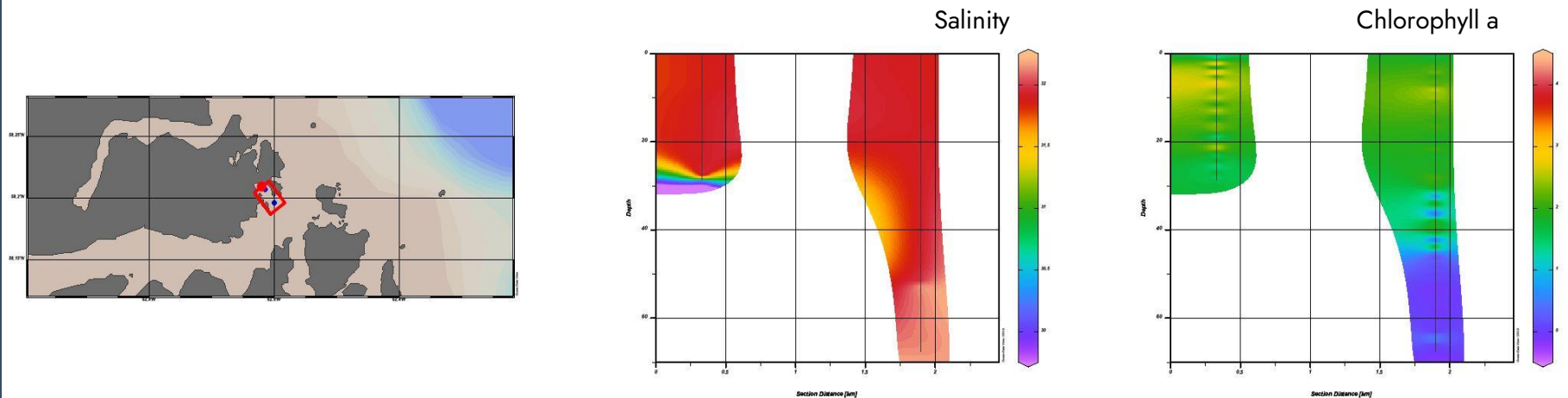
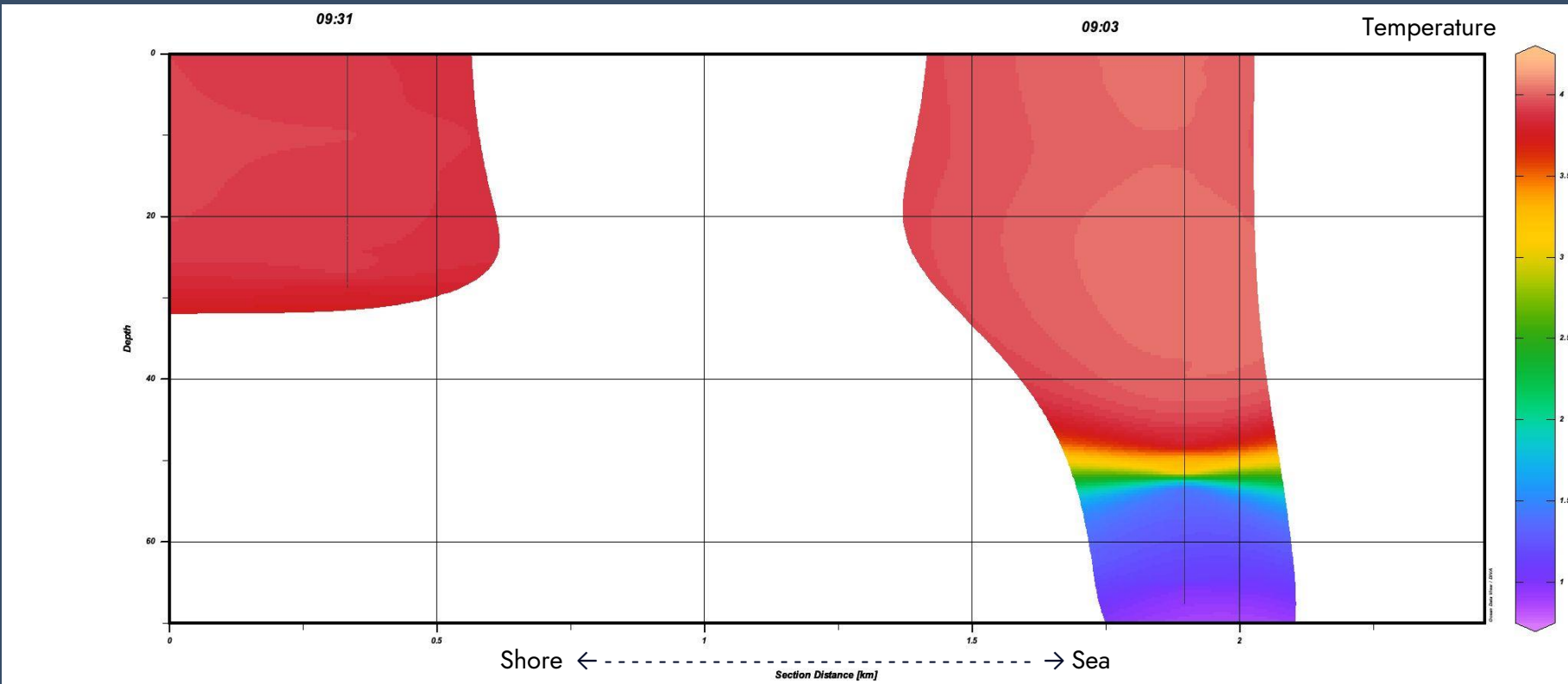
CTD Profile: Saglek Fjord

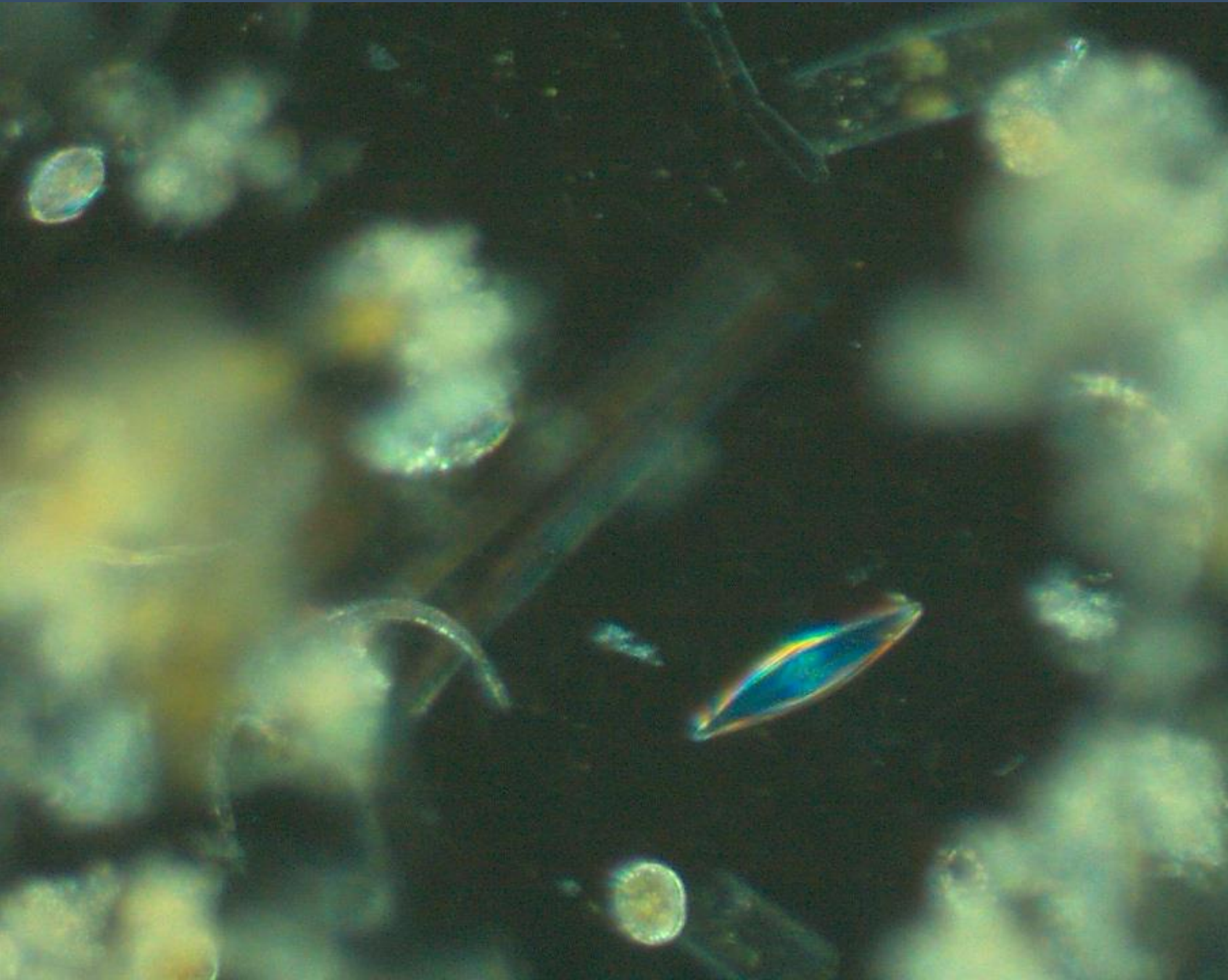


CTD Profile: Nachvak Fjord



CTD Profile: Hebron





Plankton samples

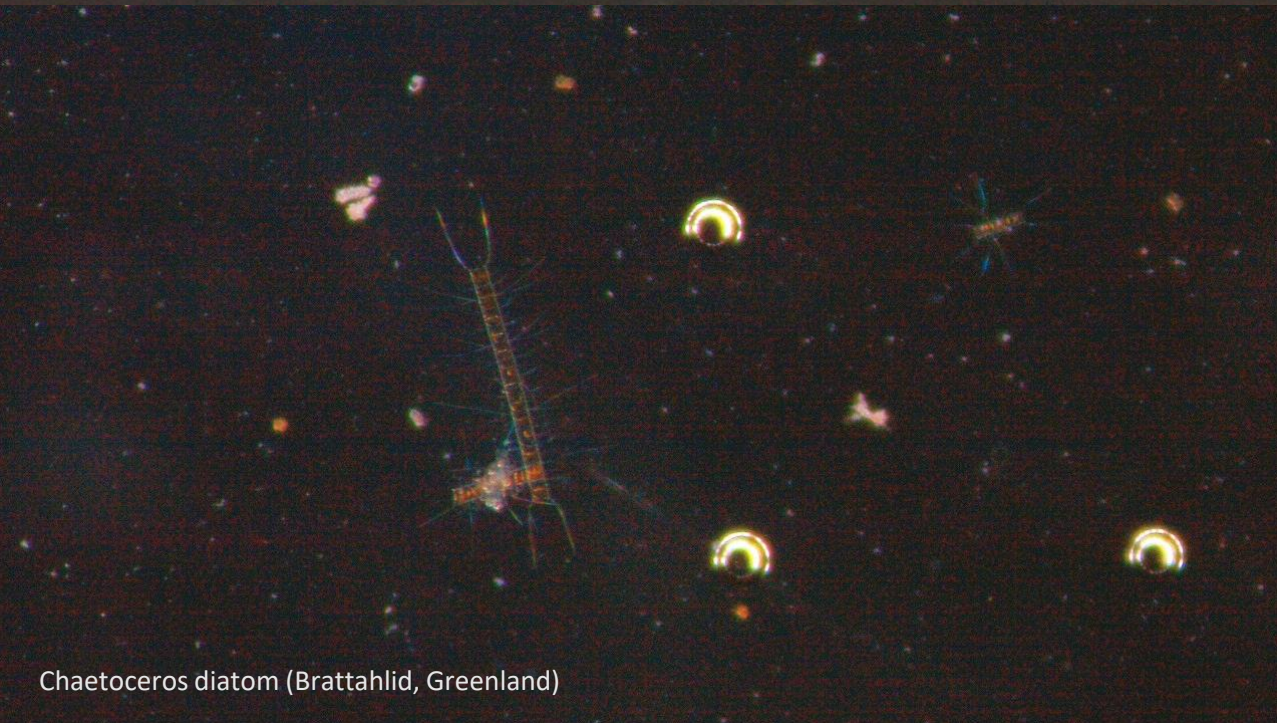
We were able to take a water sample with the plankton net in Greenland. We brought our catch back to the Science Center to look at it under the microscope and discover "What's In the Water?" From phytoplankton, those tiny photosynthetic organisms at the base of the food web, to crustaceans like copepods, we encountered many different creatures. We noticed fewer phytoplankton than zooplankton; a sign that the summer phytoplankton blooms are coming to an end. Let's look at some of what we found!



Coscinodiscus diatom (Brattahlid, Greenland)



Protoperidinium dinoflagellate (Brattahlid, Greenland)



Chaetoceros diatom (Brattahlid, Greenland)



Arctic Comb Jelly (Brattahlid, Greenland)

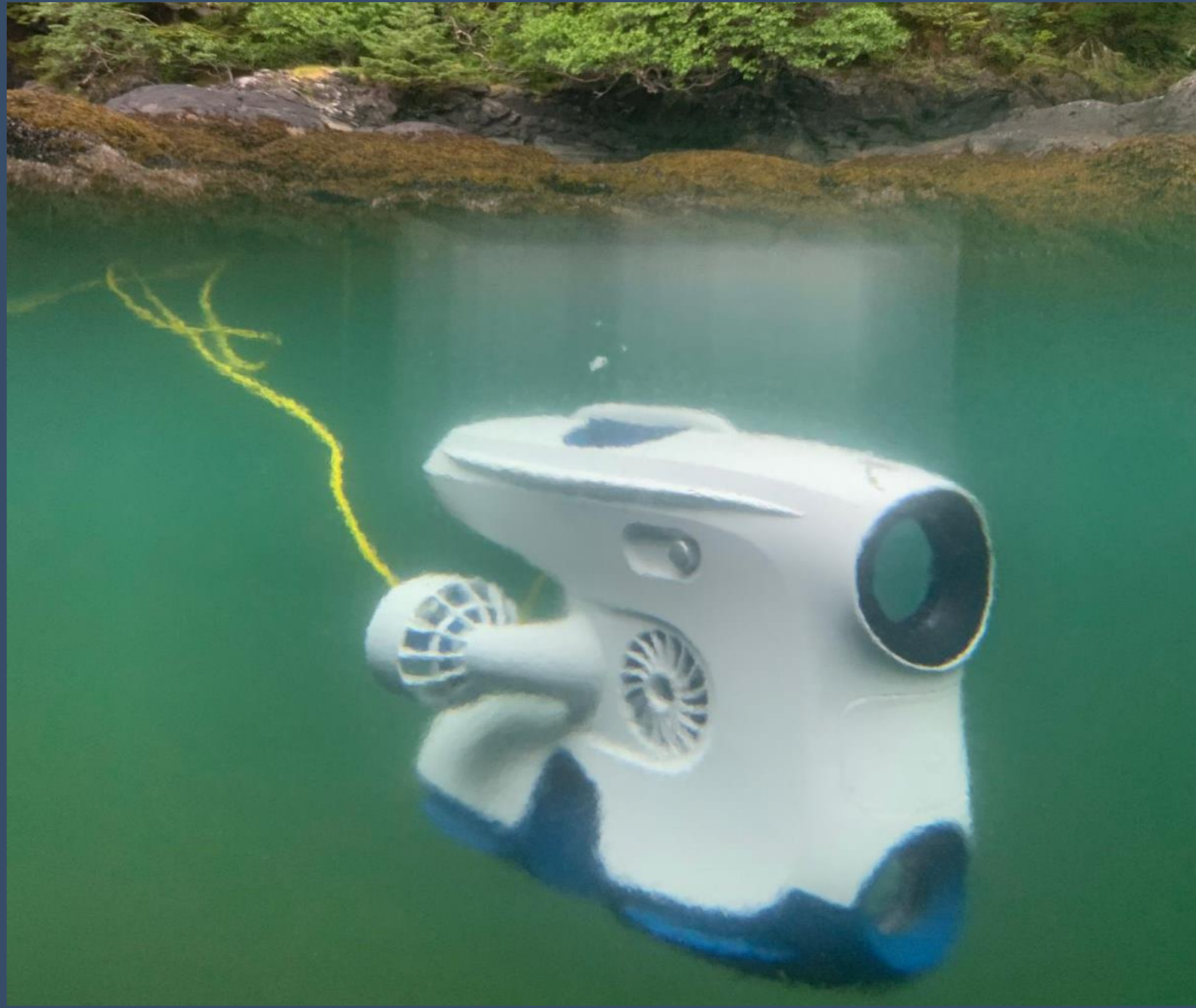
Underwater drone

The underwater world is endlessly fascinating: it seems as if it holds an entire universe in its depths. Luckily, with our state of the art underwater drone, we are able to explore some of those places that we would otherwise only be able to imagine! We had the opportunity to deploy our drone at the following sites:

- **Qaqortoq, Greenland**
- **Nain, Labrador, Canada**
- **Red Bay, Labrador, Canada**

Through the lens of the drone, we saw a variety of strange and beautiful creatures in their natural habitats. Fish, invertebrate communities, kelp forests, sea stars and sea urchins— the citizens of these Arctic waters, as glimpsed with this tool of modern exploration.

View the highlights from our underwater drone footage on HX Underwater Drone Footage [YouTube Channel](#)



Citizen Science

NASA Cloud Observer

Clouds aren't just fluffy shapes in the sky; they are incredibly important components to Earth's heat budget and balance. Information about when, where, and what types of clouds are forming helps scientists understand more about Earth's climate and climate change. Through NASA's GLOBE Cloud Observer program, we help contribute this kind of data.

Our citizen scientists submitted **8** observations to the global database run by NASA. Our observations were matched to data from weather satellites orbiting above and will be used to better understand global weather phenomena.

If you would like to continue cloud observations at home, you can download the app 'GLOBE Observer.'

[View our data on the global map](#)

CLOUD ID GUIDE

Cloud level	Cloud type
Low level	Stratus (St): Low, featureless layer cloud
	Stratocumulus (Sc): Low layer typically irregular clumps
	Cumulus (Cu): Low, separated "cotton Wool"- clumps
	Cumulonimbus (Cb): Huge Storm Cloud, often anvil shaped
Mid level	Nimbostratus (Ns): Thick gray layer, with steady Precipitation
	Altostratus (As): Mid level featureless overcast layer
	Alto cumulus (Ac): Mid Level or patch of clumps and rolls
High level	Cirrostratus (Cs): Low, featureless layer cloud
	Cirrocumulus (Cc): Low, featureless layer cloud
	Cirrus (Ci): High feathery streaks of ice crystals

Altitude (m)

500
300-1,400
300-1,500
600-13,00
0-3,000
2,000-5,000
2,000-6,000
5,000-9,000
7,500-10,500
6,000-12,000

What to look for?

Can shroud tops of buildings/trees, fog when at ground level
Well defined clumpy base, or varied white gray tones
Cauliflower tops, flattish base or varied white gray tones
Showers from dark base, crisp edges. From when s
Dark featureless overcast
Possible with darker s

Dull gray covers the sun looks as if thro
Cloud-lets are 1-3 shaded on side a

Subtle milky w sunlight casts

Cloud elements no larger than

Wavy hair-like clumps or

Citizen Science

Aurorasaurus

We were incredibly lucky to witness several nights of aurora, or the Northern Lights, during our voyage. These sightings allowed us to take stunning photographs to share with friends and family, but that is not the only use of these photographs— every observation can be a data point for science using the Aurorasaurus platform!

Aurorasaurus allows for users and scientists to track aurora in real time, and alerts users to sightings in their area. Sightings that are uploaded can also be compared to model predicted viewlines of the aurora to help improve aurora forecasting.

On our voyage we uploaded **5** observations of the Northern Lights to Aurorasaurus. You can upload your own photos to their website at any time to contribute to the global database!

Visit the Aurorasaurus live sightings page and create your own account at [Aurorasaurus - Reporting Auroras from the Ground Up](#)





Citizen Science eBird

From seabirds to passerines, we were able to observe the late-summer resident and migrating bird species of Southern Greenland and eastern Canada. Our onboard naturalists were constantly surveying the avifauna we encountered along our route.

Including during **9** onboard Wildlife Watch and eBird sessions, we recorded **47** bird species across **58** eBird checklists. Through the eBird platform, the data we collected is available for scientists around the world to help understand patterns of bird distribution, migration, and habitat use.

View our data for this trip here:

[Greenland, Labrador, and Newfoundland - Encounters at the Edge - eBird Trip Report](#)

Citizen Science iNaturalist

In our voyage we delved deep into the sub-Arctic ecosystems on land and at sea. In a region where one expects comparatively little diversity, we found an abundance of different species— over 500, the highest of any HX trip ever recorded! This diversity was represented most by the kingdoms of plants and fungi, proving our observers have a keen eye for these often under-appreciated (and under-foot) organisms.

We used the citizen science app iNaturalist to identify and record the flora and fauna seen on our journey. Our observations are available to be used in global scientific research.












In total we recorded:

- **553** Species
- **2735** Observations

... and counting; as you upload more photos from home our dataset grows!

View our data submitted on our iNaturalist project
[2025 19 Sept - 5 Oct: MS Roald Amundsen](#)
[Greenland, Labrador & Newfoundland](#)
[\(AMCAN2510\)](#)



Species Name <i>Seals</i>	Number of Individuals Seen
Harp seal 	50+
Harbour seal 	6
Bearded seal 	3
Unidentified Seals ?	4
Species Name <i>Baleen whales</i>	Number of Individuals Seen
Common minke whale 	3
Humpback whale 	3
Fin whale 	2
Unidentified whale ?	8
Species Name <i>Toothed whales</i>	Number of Individuals Seen
Atlantic white-sided dolphin 	6
Common dolphin 	3
Northern bottlenose whale 	7
Pilot whale 	2
Sperm whale 	2



Partnership ORCA

Our partners at the whale and dolphin conservation charity ORCA are committed to conducting research that helps to identify important whale and dolphin habitats by using “platforms of opportunity” including expedition ships like the Roald Amundsen! Our onboard ORCA Conservationist, with the help of our guests, recorded vital sightings data across the course of our cruise that will help inform conservation decisions and policy in the future.

On our voyage, we surveyed **234.7 km** of ocean over the course of **1194 minutes!**

View more information about our partnership with ORCA here
[ORCA | HX Hurtigruten Expeditions](#)

Wildlife List — Birds



Wildlife List — Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS
<i>Branta canadensis</i>	Canada Goose	Kanadagans	Bernache du Canada
<i>Anas platyrhynchos</i>	Mallard	Stockente	Canard colvert
<i>Anas rubripes</i>	American Black Duck	Dunkelente	Canard noir
<i>Anas acuta</i>	Northern Pintail	Spießente	Canard pilet
<i>Anas crecca</i>	Green-winged Teal	Krickente	Sarcelle d'hiver
<i>Somateria mollissima</i>	Common Eider	Eiderente	Eider à duvet
<i>Mergus serrator</i>	Red-breasted Merganser	Mittelsäger	Harle huppé
<i>Charadrius semipalmatus</i>	Semipalmated Plover	Eskimoregenpfeifer	Pluvier semipalmé
<i>Tringa melanoleuca</i>	Greater Yellowlegs	Großer Gelbschenkel	Grand Chevalier
<i>Calidris fuscicollis</i>	White-rumped Sandpiper	Weißbürzel-Strandläufer	Bécasseau à croupion blanc
<i>Stercorarius pomarinus</i>	Pomarine Jaeger	Spatelraubmöwe	Labbe pomarin
<i>Fratercula arctica</i>	Atlantic Puffin	Papageitaucher	Macareux moine
<i>Cephus grylle</i>	Black Guillemot	Gryllteiste	Guillemot à miroir
<i>Alle alle</i>	Dovekie	Krabbentaucher	Mergule nain
<i>Uria lomvia</i>	Thick-billed Murre	Dickschnabellumme	Guillemot de Brünnich
<i>Uria aalge</i>	Common Murre	Trottellumme	Guillemot marmette

Wildlife List — Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS
<i>Rissa tridactyla</i>	Black-legged Kittiwake	Dreizehenmöwe	Mouette tridactyle
<i>Larus delawarensis</i>	Ring-billed Gull	Ringschnabelmöwe	Goéland à bec cerclé
<i>Larus smithsonianus</i>	Herring Gull	Kanadamöwe	Goéland hudsonien
<i>Larus marinus</i>	Great Black-backed Gull	Mantelmöwe	Goéland marin
<i>Larus fuscus</i>	Lesser Black-backed Gull	Heringsmöwe	Goéland brun
<i>Larus glaucoides</i>	Iceland Gull	Polarmöwe	Goéland arctique
<i>Gavia immer</i>	Common Loon	Eistaucher	Plongeon huard
<i>Fulmarus glacialis</i>	Northern Fulmar	Eissturmvogel	Fulmar boréal
<i>Ardenna gravis</i>	Great Shearwater	Großer Sturmtaucher	Puffin majeur
<i>Ardenna grisea</i>	Sooty Shearwater	Dunkler Sturmtaucher	Puffin fuligineux
<i>Nannopterum auritus</i>	Double-crested Cormorant	Ohrenscharbe	Cormoran à aigrettes
<i>Haliaeetus albicilla</i>	White-tailed Eagle	Seeadler	Pygargue à queue blanche
<i>Falco peregrinus</i>	Peregrine Falcon	Wanderfalke	Faucon pèlerin
<i>Cyanocitta cristata</i>	Blue Jay	Blauhäher	Geai bleu
<i>Corvus brachyrhynchos</i>	American Crow	Amerikakrähe	Corneille d'Amérique
<i>Corvus corax</i>	Common Raven	Kolkrabe	Grand Corbeau

Wildlife List — Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS
<i>Sturnus vulgaris</i>	European Starling	Star	Étourneau sansonnet
<i>Turdus migratorius</i>	American Robin	Wanderdrossel	Merle d'Amérique
<i>Oenanthe oenanthe</i>	Northern Wheatear	Steinschmätzer	Traquet motteux
<i>Acanthis flammea</i>	Common Redpoll	Birkenzeisig	Sizerin flammé
<i>Plectrophenax nivalis</i>	Snow Bunting	Schneeammer	Plectrophane des neiges
<i>Junco hyemalis</i>	Dark-eyed Junco	Winterammer	Junco ardoisé
<i>Passerculus sandwichensis</i>	Savannah Sparrow	Grasammer	Bruant des prés
<i>Lagopus muta</i>	Rock Ptarmigan	Alpenschneehuhn	Lagopède alpin
<i>Lagopus lagopus</i>	Willow Ptarmigan	Moorschneehuhn	Lagopède des saules
<i>Histrionicus histrionicus</i>	Harlequin Duck	Kragenente	Arlequin plongeur
<i>Spizelloides arborea</i>	American Tree Sparrow	Baumammer	Bruant hudsonien
<i>Columba livia</i>	Rock Pigeon	Felsentaube	Pigeon biset

A photograph of a seal swimming in the water, with its head and eyes visible above the surface. The water is dark blue with small ripples. The seal is positioned in the upper right quadrant of the image.

Wildlife List – Marine Mammals

Wildlife List – Marine Mammals

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Megaptera novaeangliae</i>	Humpback whale	Buckelwal	Baleine à bosse	Knølhval
<i>Balaenoptera physalus</i>	Fin whale	Finnwal	Rorqual commun	Finhval
<i>Balaenoptera acutorostrata</i>	Common minke whale	Zergwal	Rorqual à museau pointu	Vågehval
<i>Globicephala melas</i>	Long-finned Pilot Whale	Grindwal	Globicéphale noir	Grindhval / Langsveivet grindhval
<i>Lagenorhynchus acutus</i>	Atlantic White-sided Dolphin	Atlantischer Weißseitendelfin	Lagénorhynque à flancs blancs de l'Atlantique	Kvitskjeving
<i>Delphinus delphis</i>	Common Dolphin	Gemeiner Delfin	Dauphin commun à bec court	Gulflankedelfin
<i>Phocoena phocoena</i>	Harbour Porpoise	Schweinswal	Marsouin commun	Nise
<i>Physeter macrocephalus</i>	Sperm Whale, Cachalot	Pottwal	Cachalot	Spermhval
<i>Hyperoodon ampullatus</i>	North Atlantic Bottlenose Whale	Entenwal	Hyperoodon boréal	Nebbhval
<i>Erignathus barbatus</i>	Bearded Seal	Bartrobbe	Phoque barbu	Storkobbe
<i>Pusa hispida</i>	Ringed seal	Ringelrobbe	Phoque annelé	Ringsel
<i>Pagophilus groenlandicus</i>	Harp Seal	Sattelrobbe	Phoque du Groenland	Grønlandssel
<i>Ursus maritimus</i>	Polar Bear	Eisbär	Ours blanc	Isbjørn



Wildlife List – Land Mammals

Wildlife List – Terrestrial Mammals

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Ursus americanus</i>	American Black Bear	Amerikanischer Schwarzbär	Ours noir	Amerikansk svartbjørn
<i>Tamiasciurus hudsonicus</i>	Red Squirrel	Rotes Eichhörnchen	Ecureuil rouge	Rød Ekor
<i>Neogale vison</i>	Mink	Nerz	Vison	Mink
<i>Vulpes lagopus</i>	Arctic Fox	Polarfuchs	Le renard arctique	Arktisk rev



Cultural Highlights & Resources

Inuit Places we visited

- Nuuk Greenland
- Qassiarsuk Greenland
- Qaqortoq Greenland
- Saglek Fjord Nunatsiavut Canada
- Nachvak Fjord Nunatsiavut Canada
- Ramah Bay Nunatsiavut Canada
- Hebron Nunatsiavut Canada
- Nain Nunatsiavut Canada

Inuit Cultural Ambassadors on Board

- Inuuteq Kriegel (Oxen Network)
- Jaqqa Petersen
- Mariah Erkloo (Oxen Network)
- Kenneth Langille
- Eli Langille
- Heidi Metcalfe

Nain Bear Guards

- Maria
- Harry
- Rodney
- Patrick
- Curtis

Further Exploration

Music

- Elisapie Isaac
- Terry Uyarak
- Riit
- Saali & the Ravenhearts
- Aasiva
- Sauwestari
- Sume
- Tutu
- The Trade-Offs
- Ole Kristiansen

Movies/Television/Documentaries

- North of North
- Slash/Back
- The Grizzlies
- Atarnajuat: The Fast Runner
- Angry Inuk
- Twice Colonized
- The Last Ice
- Between Two Worlds

- So that You Can Stand
- Martha of the North
- Experimental Eskimos
- The Necessities of Life
- SUME – Sound Of A Revolution
- White Gold

Books

- Life Among the Qallunaat by Mini Aodla Freeman
- The Right to Be Cold by Sheila Watt Cloutier
- The Diary of Abraham Ulrikab (edited by Hartmut Lutz)
- In the Footsteps of Abraham Ulrikab (France Rivet)
- Dispossessed: The Eviction of Inuit from Hebron, Labrador by Carol Brice Bennet

A large, jagged iceberg floats in the distance under a hazy, orange-tinted sky. In the foreground, the dark blue ocean is textured with small waves. A whale's tail, dark and curved, is visible in the middle ground, having just breached the water. A large, semi-transparent white 'TV' logo is overlaid on the left side of the image.

**Connect With Your Inner
Scientist**