

A scenic landscape featuring a large brown bear walking across a shallow lake. The background consists of rugged, green mountains with patches of snow under a cloudy sky. The water is calm, reflecting the bear and the surrounding environment. A large, semi-transparent blue 'IY' logo is overlaid on the left side of the image.

Science & Education Report

MS Roald Amundsen 20 July – 05 August, 2024

Alaska and British Columbia - Inside Passage,
Bears and Aleutian Islands



Arts, Crafts & Creativity

We had a ship full of amazing artists, knitters, crafters, and poets! In addition to the memories of our trip, we created tangible keepsakes of our journey.



History & Culture

We started our journey in Nome, a place that for thousands of years was a seasonal hunting settlement of the Inupiat until gold was discovered by prospectors in 1898. We experienced the Unangax culture and history of the Aleutian Islands while visiting St. Paul and Dutch Harbor, and traversed the ancestral lands of the Sugpiaq as we headed east past Katmai National Park and Kodiak Island. Our voyage through Icy Bay and the Inside Passage were among Tlingit land, where we witnessed the thriving Tlingit culture expressed through art, cultural artifacts, and the stories of our local guides. As we sailed south into British Columbia and ended in Vancouver, we passed through the First Nation lands of the Haida.

We felt how the native histories and cultures of this region permeate all aspects of life. We were lucky to witness this in the communities we visited. Additionally, in our onboard lectures, we learned about the history of the region's settlement by Europeans and its purchase by and later statehood in the United States. All of these histories exist intertwined, in a story that is still being written!





Science & Education Program

Our onboard naturalists guided our guests through our expedition. We used scientific tools to investigate the world around us and saw many interesting fauna, flora, and phenomena!

We used science to observe and explore the places we visited both off and on the ship. From learning about how feathers work to discussing management strategies for Bering Sea snow crab, guests participated in activities and workshops that gave us a deeper understanding and appreciation for the natural world around us.

On the next pages you can find some highlights of our onboard Science Program as well as our Citizen Science Program.



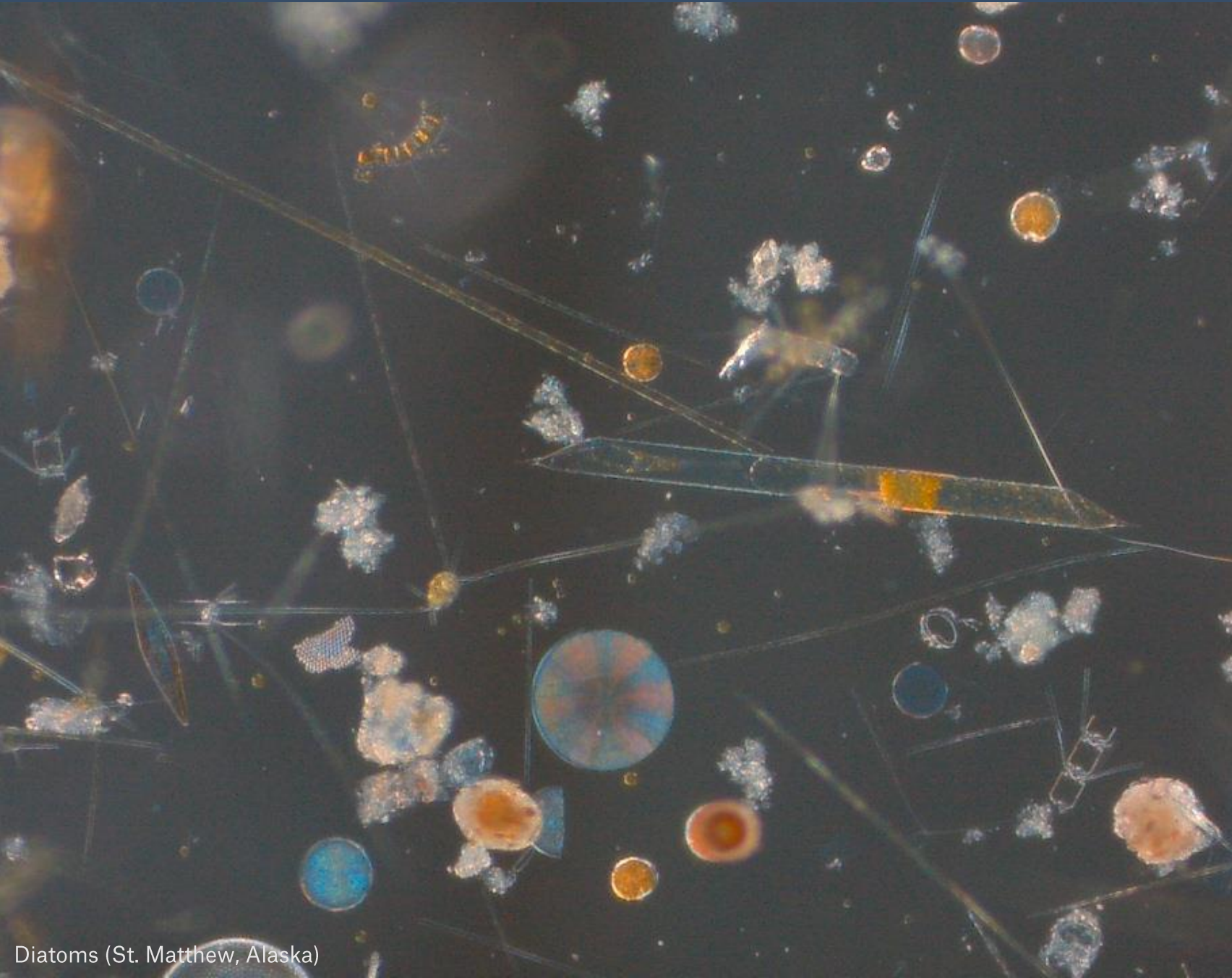
Science Boat

We investigated the underwater world in 6 Science Boat sessions in:

St. Paul
Unga
Icy Bay

We observed and discussed the wildlife and geology in each location to better understand the area's ecology.

We deployed a plankton net to collect phytoplankton and zooplankton, used a CTD to create a physical profile of the water column, and took measurements of turbidity to submit to the Citizen Science project the Secchi Disk Project.



Plankton Samples

After we collected water samples on the Science Boat, we brought them back to the Science Center to look at them under the microscope. We analyzed our samples for any species correlated to harmful algal blooms (HABs) and submitted this information to our partners at the Phytoplankton Monitoring Network (PMN).

Here are some of the things we found!

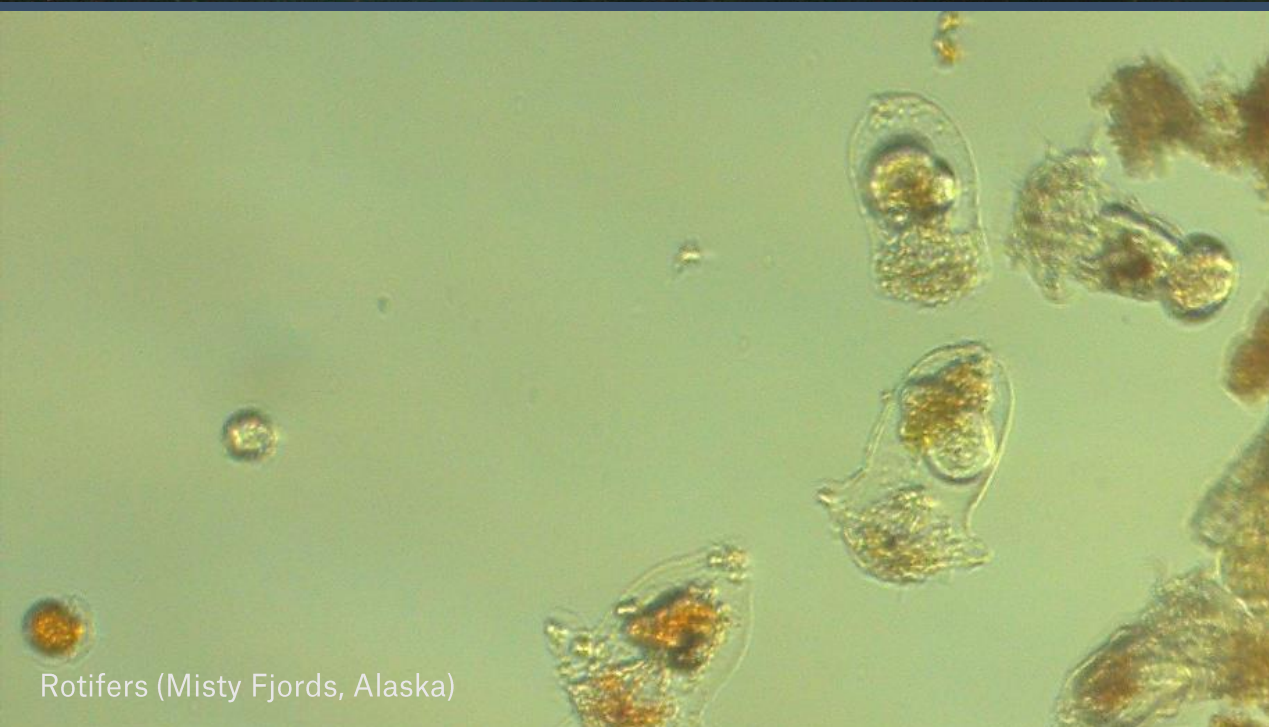
Learn more about the PMN's projects here: [Phytoplankton Monitoring Network \(PMN\) - NCCOS Coastal Science Website \(noaa.gov\)](https://www.noaa.gov/education/outreach-and-engagement/phytoplankton-monitoring-network-pmn-nccos-coastal-science-website)



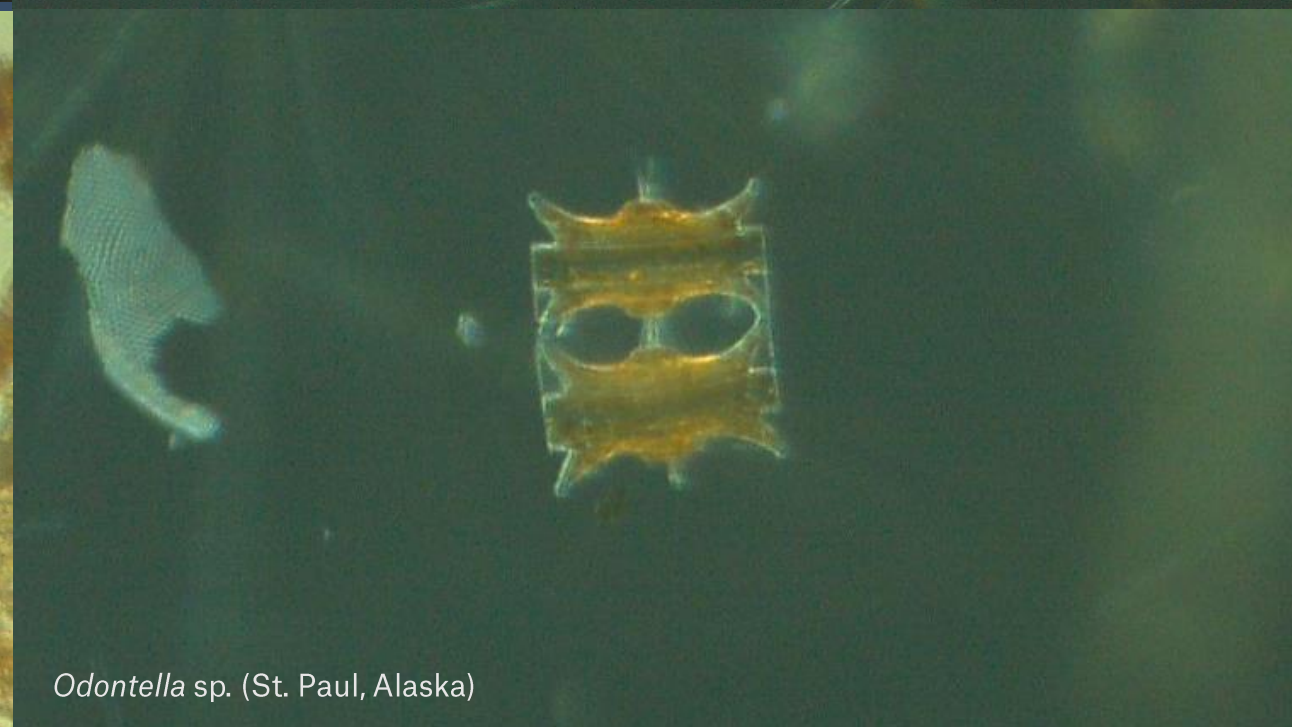
Crab zoea larvae (Icy Bay, Alaska)



Coscinodiscus sp. (St. Paul Alaska)



Rotifers (Misty Fjords, Alaska)



Odontella sp. (St. Paul, Alaska)

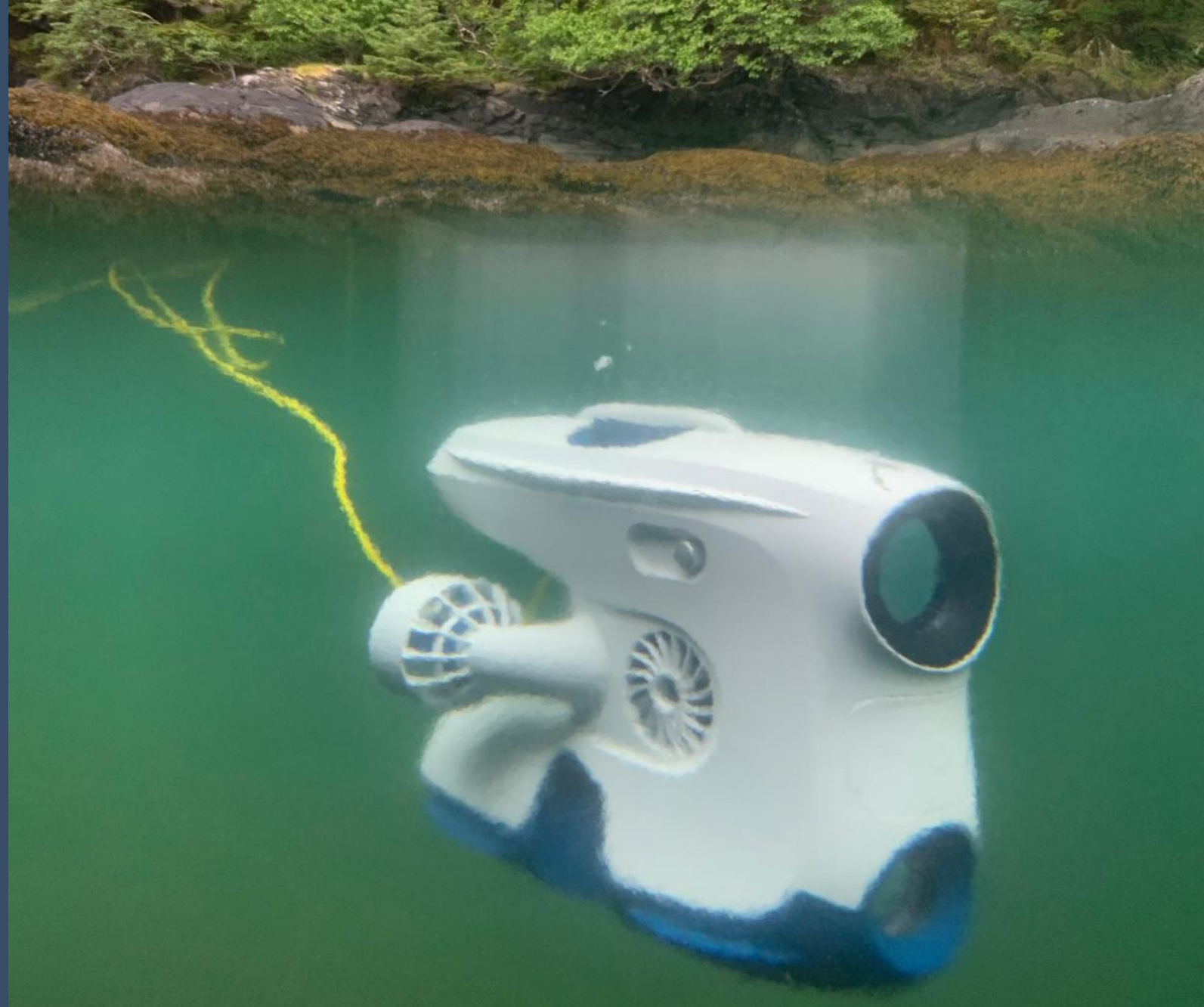
Underwater Drone

We had the opportunity to deploy our underwater drone at the following sites:

- St. Paul
- Geographic Harbor
- Kodiak Island (Uganik Bay)
- Sitka
- Misty Fjords

We saw a variety of the strange and beautiful creatures that inhabit the coastal waters of Southeast Alaska, including anemonies, sea cucumbers, fish, seastars, and forests of kelp.

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





CLOUD ID GUIDE

Cloud level	Cloud type	Altitude (m)	What to look for?
Low level	Stratus (St): Low, featureless layer cloud	500	Can shroud tops of buildings, trees, fog when at ground level
	Stratocumulus (Sc): Low layer typically irregular clumps	300-1,400	Well defined clumpy base, or varied white gray tones
	Cumulus (Cu): Low, separated "cotton Wool"- clumps	300-1,500	Cauliflower tops, flattish base or crisp edges. From when sun is high
	Cumulonimbus (Cb): Huge Storm Cloud, often anvil shaped	600-13,000	Showers from dark base, top, if visible, has soft base
Mid level	Nimbostratus (Ns): Thick gray layer, with steady Precipitation	0-3,000	Dark featureless overcast, Possible with darker shades
	Altostratus (As): Mid level featureless overcast layer	2,000-5,000	Dull gray covers the sun looks as if through a veil
	Alto cumulus (Ac): Mid Level or patch of clumps and rolls	2,000-6,000	Cloud-lets are 1-3 shaded on side and top
High level	Cirrostratus (Cs): Low, featureless layer cloud	5,000-9,000	Subtle milky wash, sunlight casts halos
	Cirrocumulus (Cc): Low, featureless layer cloud	7,500-10,500	Cloud elements no larger than 1 degree
	Cirrus (Ci): High feathery streaks of ice crystals	6,000-12,000	Wavy hair-like clumps or streaks

NASA Cloud Observer

Our NASA citizen scientists submitted 9 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

iNaturalist

Our Onboard Naturalists and our guests used the citizen science app iNaturalist to record the flora and fauna seen on our journey. Our observations are available to be used in scientific research around the world.

In total we recorded:

- 79 Species
- 104 Observations

View our data submitted on our iNaturalist project here:

[2024 July 20 - Aug 05: MS Roald Amundsen - Alaska and British Columbia \(AMALA2408\) · iNaturalist](#)





eBird

Our onboard ornithologists were constantly surveying the birdlife we encountered along our route. Including 13 formal Wildlife Watches, we recorded 59 species across 25 eBird checklists. Through the eBird platform, the data we collected is available for scientists around the world.

View our data for this trip here:
[2024 July 20 to August 05 Inside Passage, Bears and Aleutian Islands \(Southbound\) - eBird Trip Report](#)

Happywhale

We encountered 6 species of whales and dolphins during our time along the Alaskan Coastline. Our guests can submit photos of individuals from this trip — especially the flukes of humpback whales— to Happywhale to add to their catalogue of identified whales across the world.

View the MS Roald Amundsen's submissions to Happywhale during our voyage:

<https://happywhale.com/user/11890:svy=107984>





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.

View more information about our partnership with ORCA here [ORCA | HX Hurtigruten Expeditions US \(travelhx.com\)](https://travelhx.com)

Guest Scientists

We were pleased to host Dr. Saleem Ali from the University of Delaware for the first half of our voyage. Dr. Ali is conducting research centered around the following question: What is local and visitor perception on the role of science being used to improve trust in border regions between countries that are in conflict? To gather data, he surveyed participants in Nome, St. Paul, and Dutch Harbor.

Additionally, guests were able to be part of onboard focus groups gathering perspectives on the adaptive opportunities of climate change in the Arctic. We had insightful and engaging discussions over several sessions and completed surveys to record our opinions. This input will provide vital observational details for the narrative in Dr. Ali's upcoming book titled *Melting Horizons*.

Follow Dr. Ali's work here:

<https://www.udel.edu/academics/colleges/ceoe/departments/gss/faculty/saleem-ali/>



Wildlife List - Birds



Wildlife List – Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Anas platyrhynchos</i>	Mallard	Stockente	Canard colvert	Stokkand
<i>Anas carolinensis</i>	Green-winged Teal	Carolinakrickente	Sarcelle à ailes vertes	Amerikakrikkand
<i>Somateria mollissima</i>	Common Eider	Eiderente	Eider à duvet	Ærfugl
<i>Histrionicus histrionicus</i>	Harlequin Duck	Kragenente	Arlequin plongeur	Harlekinand
<i>Melanitta perspicillata</i>	Surf Scoter	Brillenente	Macreuse à front blanc	Brilleand
<i>Lagopus muta</i>	Rock Ptarmigan	Alpenschneehuhn	Lagopède alpin	Fjellrype
<i>Columba livia</i>	Rock Pigeon	Felsentaube	Pigeon biset	Klippedue (Bydue)
<i>Charadrius semipalmatus</i>	Semipalmated Plover	Amerikanischer Sandregenpfeifer	Pluvier semipalmé	Amerikasandlo
<i>Phalaropus lobatus</i>	Red-necked Phalarope	Odinshühnchen	Phalarope à bec étroit	Svømmesnipe
<i>Actitis macularius</i>	Spotted Sandpiper	Drosseluferläufer	Chevalier grivelé	Flekksnipe
<i>Arenaria interpres</i>	Ruddy Turnstone	Steinwälzer	Tournepierre à collier	Steinvender
<i>Stercorarius longicaudus</i>	Long-tailed Jaeger	Falkenraubmöwe	Labbe à longue queue	Fjelljo
<i>Stercorarius pomarinus</i>	Pomarine Jaeger	Spatelraubmöwe	Labbe pomarin	Polarjo
<i>Cerorhinca monocerata</i>	Rhinoceros Auklet	Nashornalk	Macareux rhinocéros	Neshornlunde
<i>Fratercula cirrhata</i>	Tufted Puffin	Gelbschopflund	Macareux huppé	Topplunde
<i>Fratercula corniculata</i>	Horned Puffin	Hornlund	Macareux cornu	Hornlunde
<i>Ptychoramphus aleuticus</i>	Cassin's Auklet	Aleutenalk	Starique de Cassin	Sotalke

Wildlife List – Birds

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<i>Aethia pusilla</i>	Least Auklet	Zwergalk	Starique minuscule	Flekkdvergalke
<i>Aethia pygmaea</i>	Whiskered Auklet	Bartalk	Starique pygmée	Praktdvergalke
<i>Aethia cristatella</i>	Crested Auklet	Schopfalk	Starique cristatelle	Toppdvergalke
<i>Aethia psittacula</i>	Parakeet Auklet	Rotschnabelalk	Starique perroquet	Papegøyealke
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	Marmelalk	Guillemot marbré	Marmordvergteist
<i>Cephus columba</i>	Pigeon Guillemot	Taubenteiste	Guillemot colombin	Beringteist
<i>Uria lomvia</i>	Thick-billed Murre	Dickschnabellumme	Guillemot de Brünnich	Polarlomvi
<i>Uria aalge</i>	Common Murre	Trottellumme	Guillemot marmette	Lomvi
<i>Synthliboramphus antiquus</i>	Ancient Murrelet	Silberalk	Guillemot à cou blanc	Nordstarik
<i>Rissa tridactyla</i>	Black-legged Kittiwake	Dreizehenmöwe	Mouette tridactyle	Krykkje
<i>Rissa brevirostris</i>	Red-legged Kittiwake	Klippenmöwe	Mouette des brumes	Rødfotkrykkje
<i>Chroicocephalus philadelphia</i>	Bonaparte's Gull	Bonapartemöwe	Mouette de Bonaparte	Kanadahettemåke
<i>Larus brachyrhynchus</i>	Short-billed Gull	Kurzschnabel-Sturmmöwe	Goéland à bec court	kortnebbmåke
<i>Larus smithsonianus</i>	Herring Gull	Kanadamöwe	Goéland hudsonien	Amerikagråmåke
<i>Larus hyperboreus</i>	Glaucous Gull	Eismöwe	Goéland bourgmestre	Polarmåke
<i>Larus glaucescens</i>	Glaucous-winged Gull	Beringmöwe	Goéland à ailes grises	Gråvingemåke
<i>Gavia stellata</i>	Red-throated Loon	Sterntaucher	Plongeon catmarin	Smålom

Wildlife List – Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Gavia pacifica</i>	Pacific Loon	Pazifiktaucher	Plongeon du Pacifique	Amerikastorlom
<i>Phoebastria immutabilis</i>	Laysan Albatross	Laysanalbatros	Albatros de Laysan	Laysanalbatross
<i>Phoebastria nigripes</i>	Black-footed Albatross	Schwarzfußalbatros	Albatros à pieds noirs	Svartfotalbatross
<i>Phoebastria albatrus</i>	Short-tailed Albatross	Kurzschwanzalbatros	Albatros à queue courte	Galapagosalbatross
<i>Oceanodroma furcata</i>	Fork-tailed Storm Petrel	Gabelschwanz-Wellenläufer	Océanite à queue fourchue	Gråstormsvale
<i>Fulmarus glacialis</i>	Northern Fulmar	Eissturmvogel	Fulmar boréal	Havhest
<i>Ardenna grisea</i>	Sooty Shearwater	Dunkler Sturmtaucher	Puffin fuligineux	Grålire
<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	Kurzschwanz-Sturmtaucher	Puffin à bec grêle	Smalnebblire
<i>Phalacrocorax urile</i>	Red-faced Cormorant	Rotgesichtscharbe	Cormoran à face rouge	Rødmaskeskarv
<i>Phalacrocorax pelagicus</i>	Pelagic Cormorant	Meerscharbe	Cormoran pélagique	Beringskarv
<i>Nannopterum auritus</i>	Double-crested Cormorant	Ohrenscharbe	Cormoran à aigrettes	Totoppskarv
<i>Ardea herodias</i>	Great Blue Heron	Kanadareiherr	Grand Héron	Herodiashegre
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Weißkopf-Seeadler	Pygargue à tête blanche	Hvithodehavørn
<i>Megaceryle alcyon</i>	Belted Kingfisher	Gürtelfischer	Martin-pêcheur d'Amérique	Belteisfugl
<i>Falco peregrinus</i>	Peregrine Falcon	Wanderfalke	Faucon pèlerin	Vandrefalk
<i>Pica hudsonia</i>	Black-billed Magpie	Hudsonelster	Pie d'Amérique	Svartnebbskjære
<i>Corvus brachyrhynchos</i>	American Crow	Amerikakrähé	Corneille d'Amérique	Amerikakråke

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<i>Corvus corax</i>	Common Raven	Kolkrabe	Grand Corbeau	Ravn
<i>Riparia riparia</i>	Bank Swallow	Uferschwalbe	Hirondelle de rivage	Sandsvale
<i>Regulus satrapa</i>	Golden-crowned Kinglet	Indianergoldhähnchen	Roitelet à couronne dorée	Ildkronefuglekonge
<i>Troglodytes pacificus</i>	Pacific Wren	Pazifikzaunkönig	Troglodyte de Baird	Barsmett
<i>Catharus guttatus</i>	Hermit Thrush	Einsiedler-Musendrossel	Grive solitaire	Eremittskogtrost
<i>Anthus rubescens</i>	American Pipit	Pazifikpieper	Pipit d'Amérique	Myrpiplerke
<i>Leucosticte tephrocotis</i>	Grey-crowned Rosy Finch	Schwarzstirn-Schneegimpel	Roselin à tête grise	Grånakkefjellfink
<i>Acanthis flammea</i>	Common Redpoll	Birkenzeisig	Sizerin flammé	Gråsisik
<i>Loxia curvirostra</i>	Red Crossbill	Fichtenkreuzschnabel	Bec-croisé des sapins	Grankorsnebb
<i>Spinus pinus</i>	Pine Siskin	Fichtenzeisig	Tarin des pins	Stripesisik
<i>Calcarius lapponicus</i>	Lapland Longspur	Spornammer	Plectrophane lapon	Lappspurv
<i>Plectrophenax hyperboreus</i>	McKay's Bunting	Beringschneeammer	Plectrophane blanc	Hvitspurv
<i>Passerella iliaca</i>	Fox Sparrow	Fuchsammer	Bruant fauve	Revespurv
<i>Junco hyemalis</i>	Dark-eyed Junco	Winterammer	Junco ardoisé	Vinterjunko
<i>Passerculus sandwichensis</i>	Savannah Sparrow	Grasammer	Bruant des prés	Musespurv
<i>Melospiza melodia</i>	Song Sparrow	Singammer	Bruant chanteur	Sangspurv

Wildlife List - Marine Mammals



Wildlife List – Marine Mammals



SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Callorhinus ursinus</i>	Northern Fur Seal	Nördliche Seebär	Otarie à fourrure du Nord	Otarie à fourrure du Nord
<i>Phoca vitulina</i>	Harbor seal/Common seal	Seehund	Phoque veau-marin	Steinkobbe
<i>Eumetopias jubatus</i>	Steller sea lion/Northern sea lion	Stellerscher Seelöwe	Lion de mer de Steller	Stellers sjøløve
<i>Enhydra lutris</i>	Sea otter	Seeotter	Loutre de mer	Havoter
<i>Balaenoptera acutorostrata</i>	Common minke whale	Zwergwal	Rorqual à museau pointu	Vågehval
<i>Balaenoptera physalus</i>	Fin whale	Finnwal	Rorqual commun	Finhval
<i>Megaptera novaeangliae</i>	Humpback whale	Buckelwal	Baleine à bosse	Knølhval
<i>Orcinus orca</i>	Killer whale/Orca	Schwertwal, Orca	Orque	Spekkhogger
<i>Phocoenoides dalli</i>	Dall's porpoise	Weißflankenschweinswal	Marsouin de Dall	Dalls nise
<i>Phocoena phocoena</i>	Harbor porpoise	Schweinswal	Marsouin commun	Nise

Wildlife List - Land Mammals



Wildlife List – Land Mammals

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Ursus arctos</i>	Brown bear	Braunbär	Ours brun	Isbjon
<i>Odocoileus hemionus sitkensis</i>	Black-tailed deer	Großohrhirsch	Cerf a queue noire	Svart-tailed Hjort
<i>Tamiasciurus hudsonicus</i>	Red squirrel	Rotes Eichhörnchen	Écureuil rouge	Rød Ekorn
<i>Ursus americanus</i>	American black bear	Amerikanischer Schwarzbär	Ours noir	Amerikansk svartbjørn
<i>Alopex lagopus</i>	Arctic fox	Polarfuchs	Renard polaire	Fjellrev
<i>Vulpes vulpes</i>	Red fox	Rotfuchs	Renard roux	Rødrev
<i>Tamiasciurus hudsonicus</i>	American Red-Squirrel	Gemeines Rothoernchen	Ècureuil roux	Amerikansk rødekorn
<i>Lontra Canadensis</i>	North American River Otter	Nord-amerikanischer Fischotter	Loutre de rivière	Loutre de rivière

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