

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 'H' logo is overlaid on the left side of the image.

Science & Education Report

MS Roald Amundsen 04 – 20 July, 2024

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



Arts, Crafts & Creativity

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

In addition, our Cultural Interpreter Norma taught us two of her family's dances and shared with us the traditional tools and personal handicrafts she was creating over the course of our voyage.



History & Culture

As we set sail from Vancouver, we travelled through the First Nation lands of the Haida. Our voyage through the Inside Passage and Icy Bay were among Tlingit land, where we witnessed the thriving Tlingit culture expressed through art, cultural artifacts, and the stories of our local guides. We traversed the ancestral lands of the Sugpiaq as we headed west, and experienced the Unangax culture and history of the Aleutian Islands while visiting Dutch Harbor and St. Paul. We ended our journey in Nome, a place that for thousands of years was a seasonal hunting settlement of the Inupiat until gold was discovered by American prospectors in 1898.

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, as well as through the stories, songs, dances, and art our Yup'ik cultural interpreter, Norma, shared with us.

In our onboard lectures, we learned about the history 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.



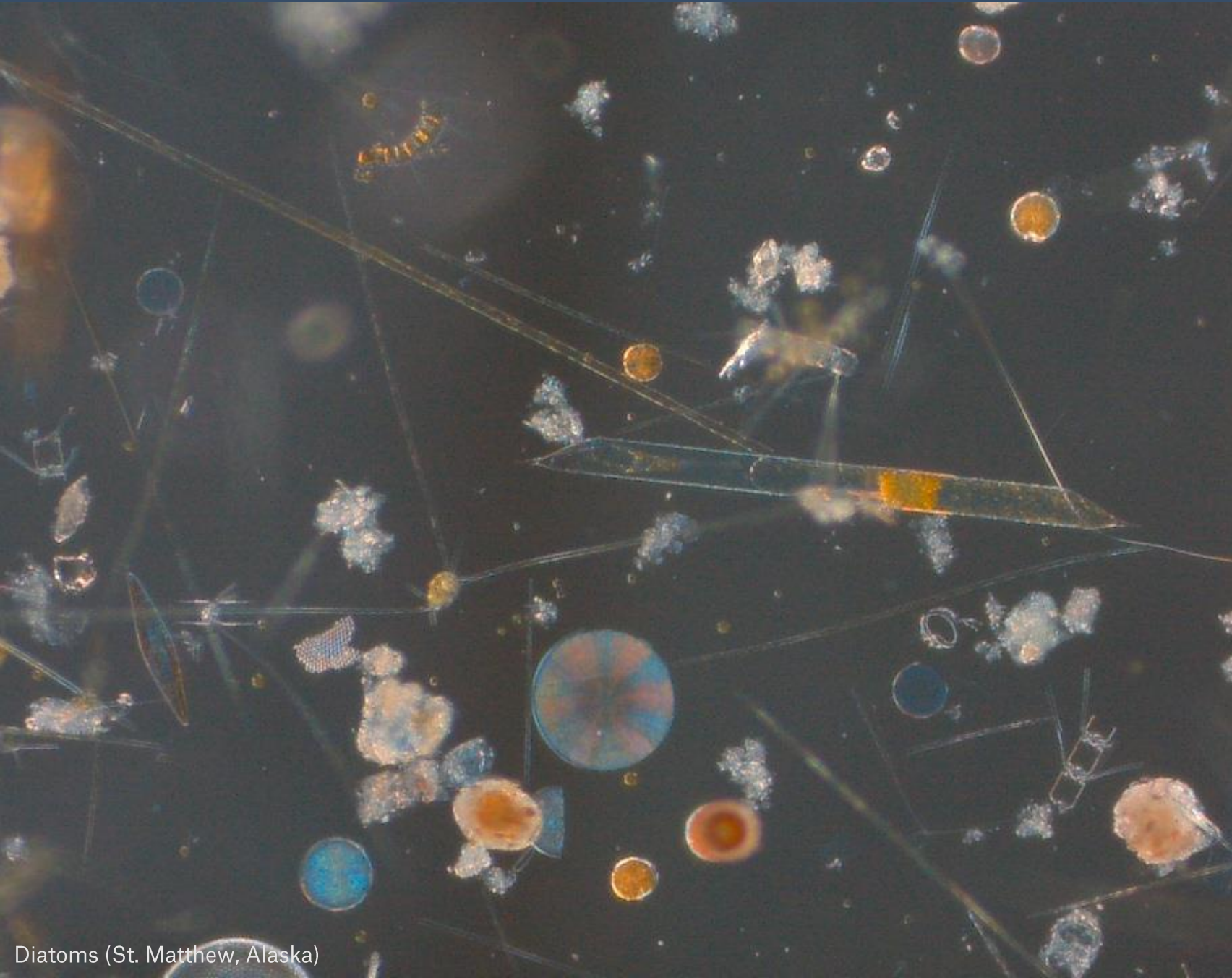
Science Boat

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

Icy Bay
Unga

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 megalop larvae (Unga, Alaska)



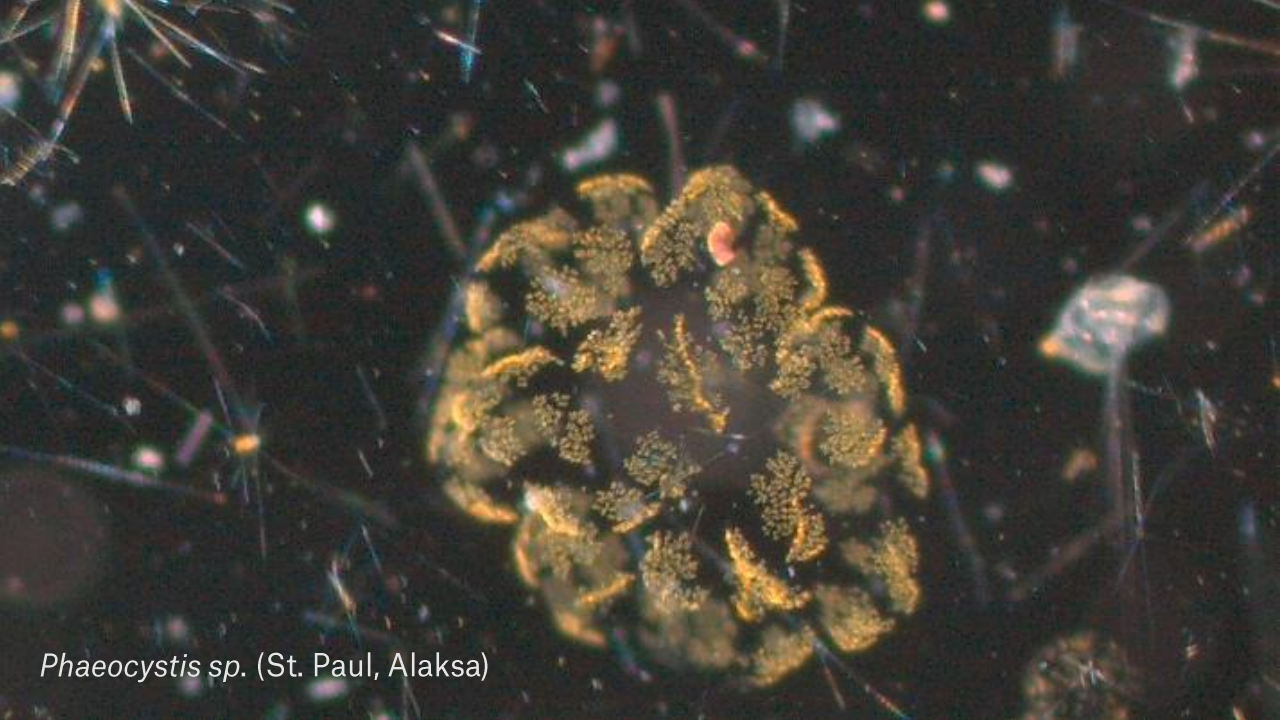
Copepod (Unga, Alaska)



Polychaete worm larvae (Wrangell, Alaska)



Pteropod (Geographic Harbor, Alaska)



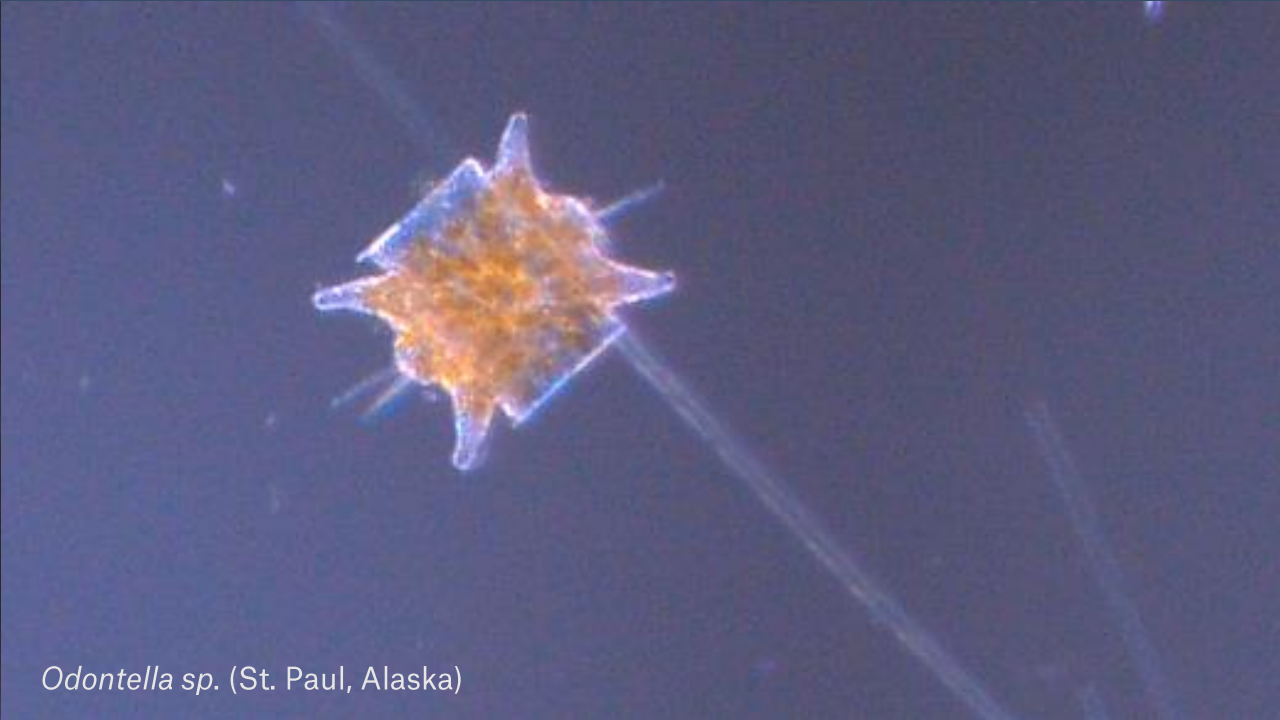
Phaeocystis sp. (St. Paul, Alaska)



Isthmia sp. (Unga, Alaska)



Arachnoidiscus sp. (Unga Alaska)



Odontella sp. (St. Paul, Alaska)

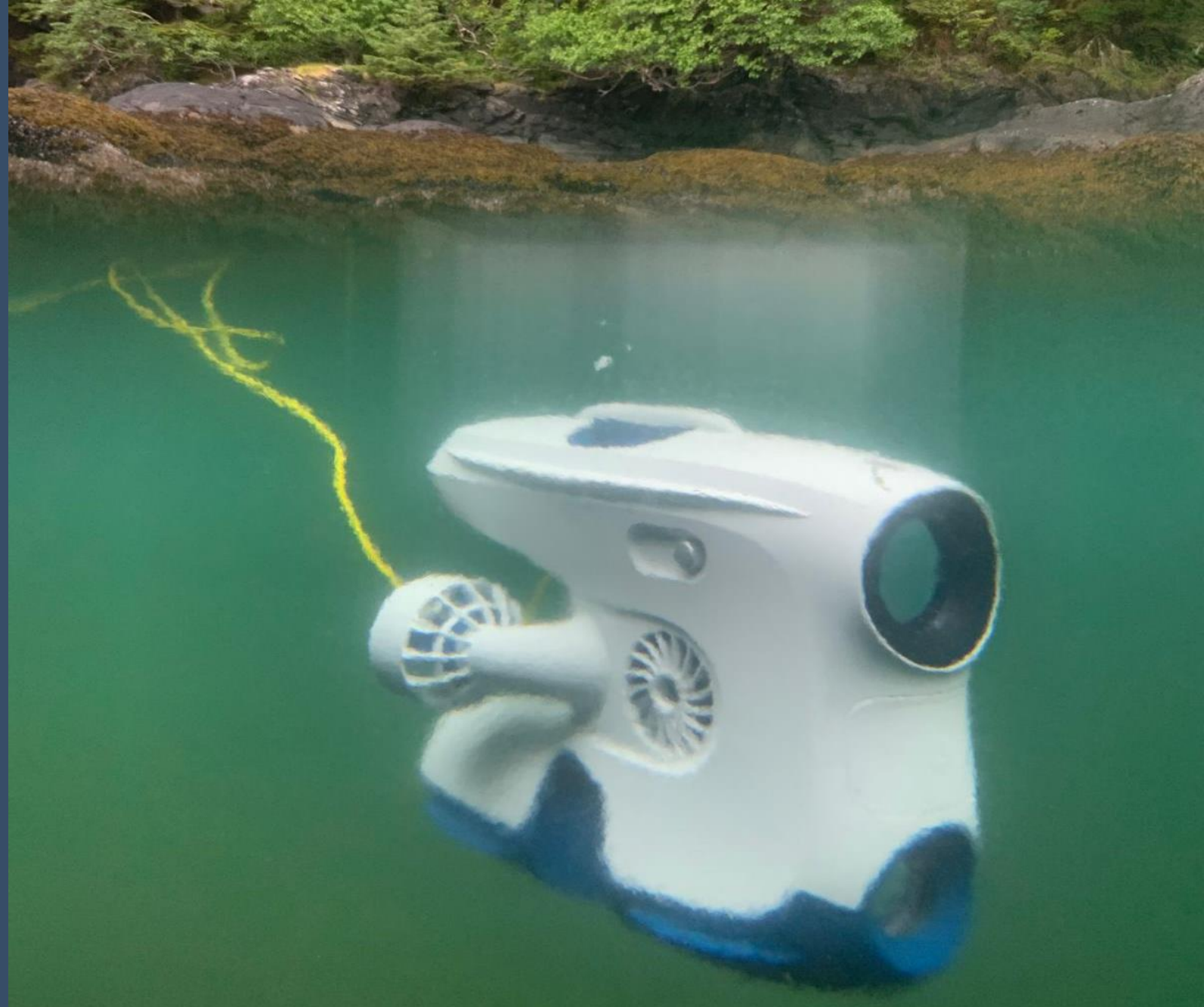
Underwater Drone

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

- Misty Fjords
- Wrangell
- Sitka
- Uyak Bay
- St. Paul

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

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





CLOUD ID GUIDE

Cloud level

Cloud type

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

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

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

600-13,000

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 crisp edges. From when seen

Showers from dark base top, if visible, has soft base

Dark featureless overcast Possible with darker shades

Dull gray covers the sun looks as if through

Cloud-lets are 1-3 shaded on side and

Subtle milky white sunlight casts

Cloud elements no larger than

Wavy hair-like clumps or

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:

- 138 Species
- 256 Observations

View our data submitted on our iNaturalist project here:

[2024 July 04 -20: MS Roald Amundsen - Alaska and British Columbia \(AMALA2407\) · iNaturalist](#)





eBird

Our onboard ornithologists were constantly surveying the birdlife we encountered along our route. Including 14 formal Wildlife Watches, we recorded 42 species across 21 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 04 to July 20 Inside Passage, Bears and Aleutian Islands \(Northbound\) - eBird Trip Report](#)

Happywhale

We encountered 6 species of whales and dolphins during our time along the Alaskan Coastline. We have submitted photos of 4 individuals to Happywhale to add to their catalogue of identified whales across the world, one of which had already returned with a match by the end of the trip!

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

<https://happywhale.com/org/25;svy=107983>





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)

Wildlife List - Birds



Wildlife List – Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Melanitta perspicillata</i>	Surf Scoter	Brillenente	Macreuse à front blanc	Brilleand
<i>Mergus merganser</i>	Common Merganser	Gänsesäger	Grand Harle	Laksand
<i>Columba livia</i>	Rock Pigeon	Felsentaube	Pigeon biset	Klippedue (Bydue)
<i>Streptopelia decaocto</i>	Eurasian Collared Dove	Türkentaube	Tourterelle turque	Tyrkerdue
<i>Selasphorus rufus</i>	Rufous Hummingbird	Rotrücken-Zimtelte	Colibri roux	Rødkolibri
<i>Haematopus bachmani</i>	Black Oystercatcher	Klippenausternfischer	Huîtrier de Bachman	Amerikasvarttjeld
<i>Charadrius semipalmatus</i>	Semipalmated Plover	Amerikanischer Sandregenpfeifer	Pluvier semipalmé	Amerikasandlo
<i>Calidris ptilocnemis</i>	Rock Sandpiper	Beringstrandläufer	Bécasseau des Aléoutiennes	Klippesnipe
<i>Calidris bairdii</i>	Baird's Sandpiper	Bairdstrandläufer	Bécasseau de Baird	Gulbrystsnipe
<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>Aethia pusilla</i>	Least Auklet	Zwergalk	Starique minuscule	Flekkdvergalke
<i>Aethia cristatella</i>	Crested Auklet	Schopfalk	Starique cristatelle	Toppdvergalke
<i>Aethia psittacula</i>	Parakeet Auklet	Rotschnabelalk	Starique perroquet	Papegøyealke
<i>Brachyramphus brevirostris</i>	Kittlitz's Murrelet	Kurzschnabelalk	Guillemot de Kittlitz	Kortnebbdvergteist

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SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	Marmelalk	Guillemot marbré	Marmordvergteist
<i>Cepphus 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>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>Sterna paradisaea</i>	Arctic Tern	Küstenseeschwalbe	Sterne arctique	Rødnebbterne
<i>Gavia immer</i>	Common Loon	Eistaucher	Plongeon huard	Islom
<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>Oceanodroma furcata</i>	Fork-tailed Storm Petrel	Gabelschwanz-Wellenläufer	Océanite à queue fourchue	Gråstormsvale
<i>Fulmarus glacialis</i>	Northern Fulmar	Eissturmvogel	Fulmar boréal	Havhest

Wildlife List – Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Ardenna grisea</i>	Sooty Shearwater	Dunkler Sturmtaucher	Puffin fuligineux	Grålire
<i>Phalacrocorax urile</i>	Red-faced Cormorant	Rotgesichtscharbe	Cormoran à face rouge	Rødmaskeskarv
<i>Phalacrocorax pelagicus</i>	Pelagic Cormorant	Meerscharbe	Cormoran pélagique	Beringskarv
<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>Pica hudsonia</i>	Black-billed Magpie	Hudsonelster	Pie d'Amérique	Svartnebbskjære
<i>Corvus brachyrhynchos</i>	American Crow	Amerikakrähé	Corneille d'Amérique	Amerikakråke
<i>Corvus corax</i>	Common Raven	Kolkrabe	Grand Corbeau	Ravn
<i>Poecile atricapillus</i>	Black-capped Chickadee	Schwarzkopfmeise	Mésange à tête noire	Amerikameis
<i>Riparia riparia</i>	Bank Swallow	Uferschwalbe	Hirondelle de rivage	Sandsvale
<i>Hirundo rustica</i>	Barn Swallow	Rauchschwalbe	Hirondelle rustique	Låvesvale
<i>Corthylio calendula</i>	Ruby-crowned Kinglet	Rubingoldhähnchen	Roitelet à couronne rubis	Rubinfuglekonge
<i>Troglodytes pacificus</i>	Pacific Wren	Pazifikaunkönig	Troglodyte de Baird	Barsmett
<i>Ixoreus naevius</i>	Varied Thrush	Halsbanddrossel	Grive à collier	Båndtrost
<i>Catharus ustulatus</i>	Swainson's Thrush	Zwergmusendrossel	Grive à dos roussâtre	Brunkinnskogtrost
<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

Wildlife List – Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Acanthis flammea</i>	Common Redpoll	Birkenzeisig	Sizerin flammé	Gråsisik
<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>Junco hyemalis</i>	Dark-eyed Junco	Winterammer	Junco ardoisé	Vinterjunko
<i>Passerculus sandwichensis</i>	Savannah Sparrow	Grasammer	Bruant des prés	Musespurv
<i>Setophaga coronata</i>	Yellow-rumped Warbler	Kronenwaldsänger	Paruline à croupion jaune	Myrteparula

An aerial photograph of two whales breaching the surface of the ocean. The water is a deep, clear blue-green. Two distinct plumes of white spray rise from the whales' blowholes, indicating they are exhaling. The whales' dark, sleek bodies are partially visible above the water's surface, with some splashing around their heads. The overall scene is dynamic and captures a moment of natural behavior in the wild.

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>Orcinus orca</i>	Killer whale/Orca	Schwertwal, Orca	Orque	Spekkhogger
<i>Lagenorhynchus acutus</i>	Atlantic white-sided dolphin	Atlantischer Weißseitendelfin	Lagénorhynque à flancs blancs de l'Atlantique	Kvitskjeving
<i>Phocoenoides dalli</i>	Dall's porpoise	Weißflankenschweinswal	Marsouin de Dall	Dalls nise
<i>Phocoena phocoena</i>	Harbor porpoise	Schweinswal	Marsouin commun	Nise
<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>Phocoenoides dalli</i>	Dall's porpoise, Dall porpoise	Weißflankenschweinswal	Marsouin de Dall	Dalls nise
<i>Balaenoptera physalus</i>	Fin whale	Finnwal	Rorqual commun	Finhval

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>Microtus miurus</i>	Singing Vole	Alaska-Wühlmaus	Campagnol chanteur	
<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	

A humpback whale is captured in the middle of a breach, its dark, ribbed body arched out of the blue ocean. The whale's white, mottled head is raised high, and its pectoral fin is extended. The background shows a vast, blue sea under a sky with light, wispy clouds. Overlaid on the left side of the image are large, white, semi-transparent letters 'THY'.

THY

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Inner Scientist