

Science & Education Report

Alaska & British Columbia

29th May – 10th June

The letters 'HX' are rendered in a large, white, serif font. They are semi-transparent, allowing the background image to be seen through them. The 'H' is on the left and the 'X' is on the right. The background is a landscape photograph of a calm body of water reflecting a forested shoreline under a dark, overcast sky. Two icebergs are visible in the water, one in the foreground and one further back. The overall color palette is dominated by blues, greys, and muted greens.

MS Roald Amundsen 29 May – 10th June, 2025

Alaska and British Columbia

When you arrived on the MS Roald Amundsen 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 through Alaska and British Columbia



Arts, Crafts & Creativity

We witnessed the amazing landscapes and culture of Alaska and British Columbia. We were inspired to create art reflecting our surroundings including watercolour post cards, and clay totem poles.





Science & Education Program

Our onboard naturalists guided our guests using scientific tools to investigate the world around us. Through lectures, discovery sessions, zodiac cruises, and visits ashore we aimed to make every expedition day a memorable and unique learning experience.

Alaska & British Columbia: Culture

One thing is hearing, reading or watching documentaries about the native cultures of Alaska. However, another very different one is to witness Norma, the best ambassador of her ancestral cultural heritage we could have hoped for, telling us all about her people, her culture, her language, her traditions, how they keep their heritage alive. How proud of their culture they are, to listen to her stories from childhood and so much more. This is the most genuine manner to learn about those cultures, and all the wisdom and knowledge Norma had to share with us we will not be able to find in any book or documentary!



History & Culture

Apart from the native Alaskan cultures, during this voyage we have dived deep into the human history from the moment the Russians invaded this territory and how it evolved during the last centuries. We learned the Russians monetary motivations, the time of their glory, their fall, and how it dramatically impacted the lives of those who lived here before. We also learned about the reasons behind the US purchase of Alaska and how it developed from then on. In the end, we finalized with the forgotten episode during WWII, when the Japanese bombarded and invaded US soil, how the US took it back, and all the human consequences for those involved.





Science Boat

During our voyage we conducted plankton sampling techniques focused on the the abundance and species of phytoplankton present in Alaskan waters.

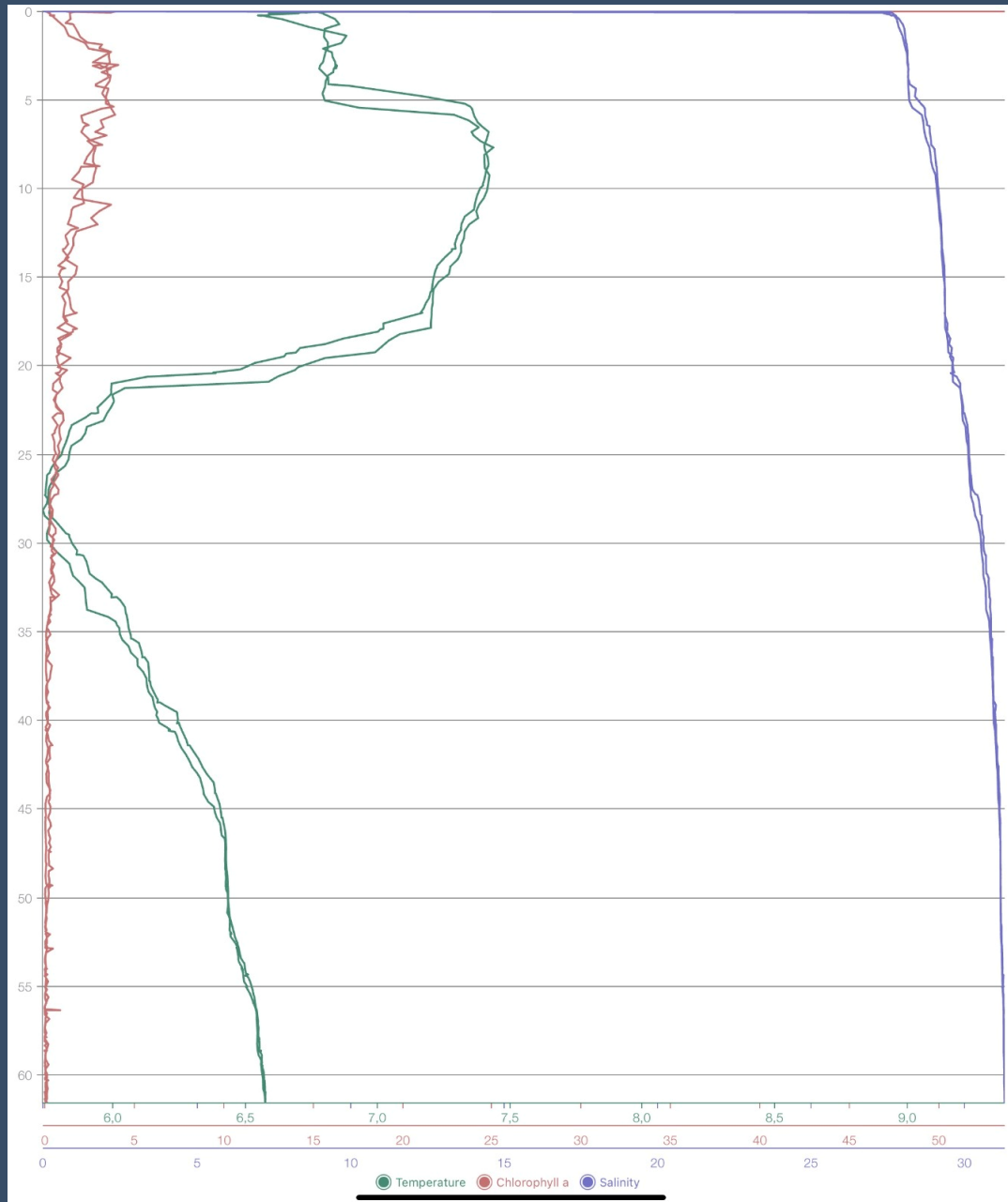
The samples and data which you recorded provided invaluable data for the NOAA-funded Harmful Algal Bloom (HAB) project, to monitor potentially harmful phytoplankton blooms.

During the science boats in Tracy Arm, Red Bluff and College Fjord, we used a CTD to create a physical profile of the water column, took measurements of turbidity to estimate phytoplankton abundance, then deployed a plankton net to collect phytoplankton and zooplankton.

Science Boat: CTD data

Our CTD casts gave us insight into the way salinity, temperature, and chlorophyll changed with depth.

Typically, salinity increases with depth while temperature decreases, since cold, salty water is more dense. Measuring chlorophyll— the photosynthetic pigments in phytoplankton— gives us information on phytoplankton abundance and primary productivity, usually more chlorophyll is detected in the first 20m of depth, where sunlight is able to penetrate the water.



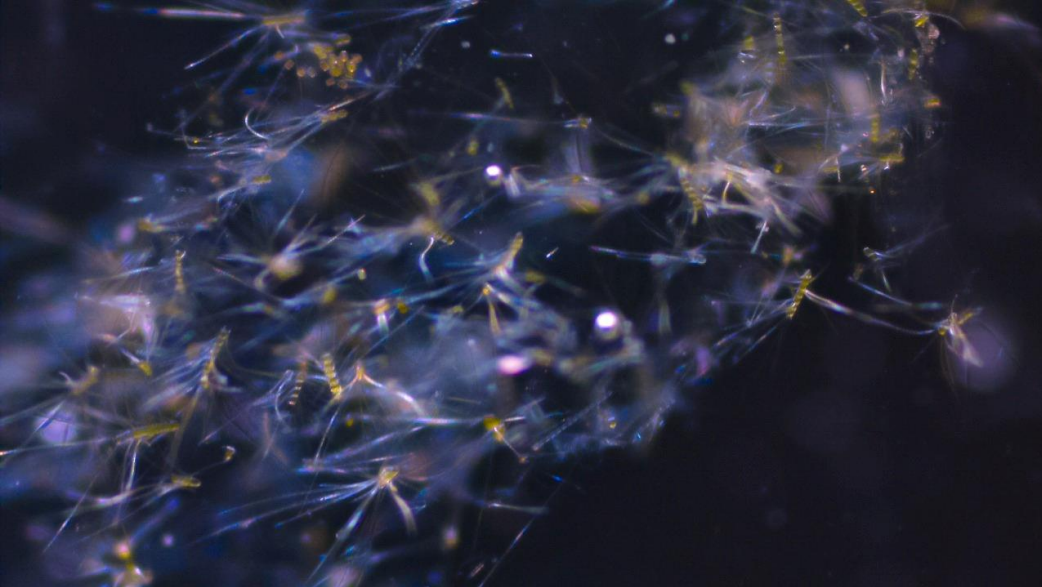
	Secchi depth (m)	Water temp (Celcius)
Tracy Arm	0.9	2.5
Red Bluff	10.5	7.0
College fjord	0.9	6.0



Plankton samples

Plankton are ocean drifters transported by currents and tides, and the lack of ability to navigate against these natural forces. Animals (zooplankton) and plant-like algae (phytoplankton) play a key role in supporting the marine food web and health of our oceans.

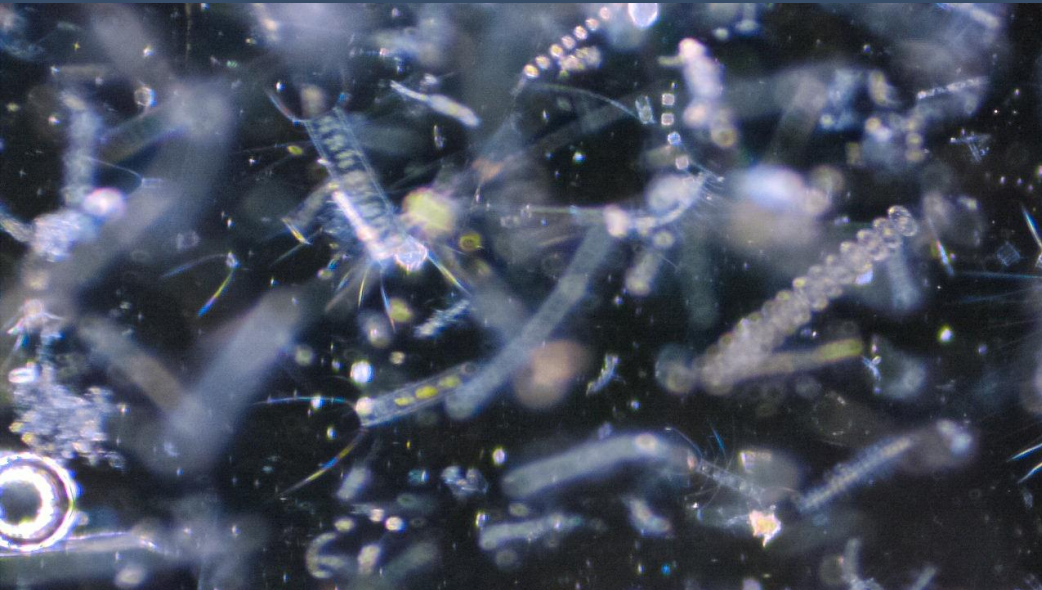
The image on the left shows a plankton sample from Red Bluff, AK. Including Copepods – both adult and nauplius larvae, shrimp larvae, and mussel larvae well as mix of phytoplankton, including Chaetocerus.



Chaetoceros spp.

Phytoplankton & Harmful Algal Bloom (HAB) Project

Phytoplankton underpin the marine food web as they, like plants on land, contain photosynthetic pigments (chlorophyll) that convert sunlight into energy and oxygen, and also sequesters carbon dioxide.



Chaetoceros spp, Thalassiosira spp.

We collected phytoplankton samples in Tracy Arm, Red Bluff and College Bay and reported the abundance and species present for the HAB project, to detect harmful blooms of microalge.

These blooms, caused by excessive nutrient pollution and environmental changes, can produce toxins that harm aquatic life, disrupt ecosystems, and pose health risks to humans. The HAB project aims to monitor outbreaks, identify contributing factors, and develop strategies to predict, prevent, and manage HABs through scientific research. The data we collected showed the presence of some of the HAB target species such as Chaetoceros in Red Bluff, and Psuedo-Nitzschia and Chaetoceros in College Bay which has since been reported to HAB.



Crab zoea larvae, Red Bluff

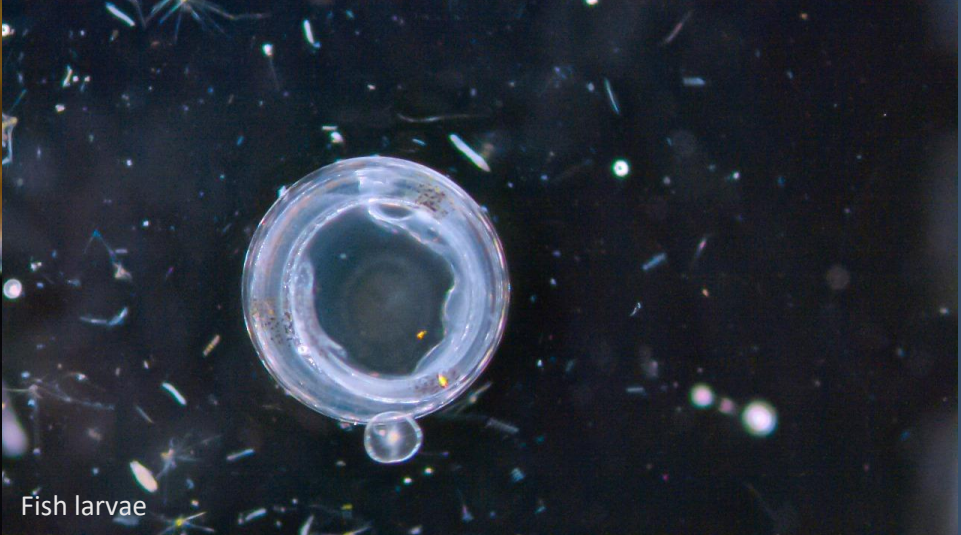
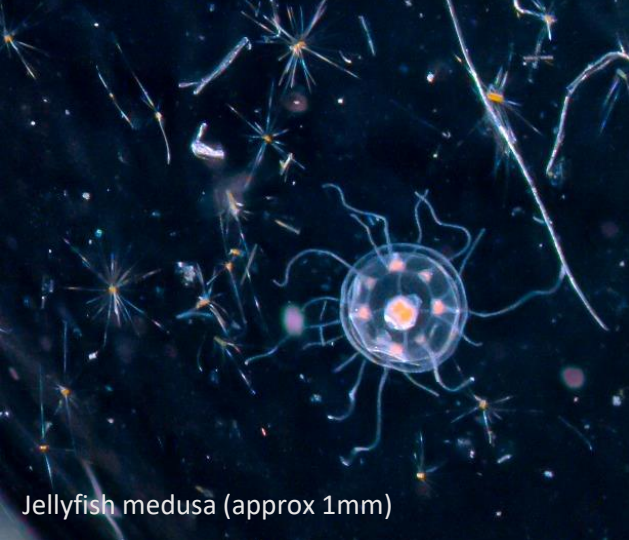


Spionid worm, Tracy Arm

Zooplankton

We collected zooplankton samples in Tracy Arm, Red Bluff, and College Fjord. Samples included both categories of zooplankton. 'Holoplankton', which remains planktonic their whole life cycle, which includes copepods, and scale worms (pictured bottom left). 'Meroplankton', is only planktonic for part of their life cycle, which includes larvae such as the crab zoea larvae (pictured top left).

The photos taken on our microscopes have also been added to our iNaturalist project, to help monitor plankton biodiversity.



Zooplankton

Zooplankton collected in Red Bluff



Polychaete worm



Polychaete worm (lot's of phytoplankton inside)



Sea urchin larvae (centre) and water flea (right)

Zooplankton

Zooplankton collected in Red Bluff & Tracy Arm



Copepod and assorted phytoplankton

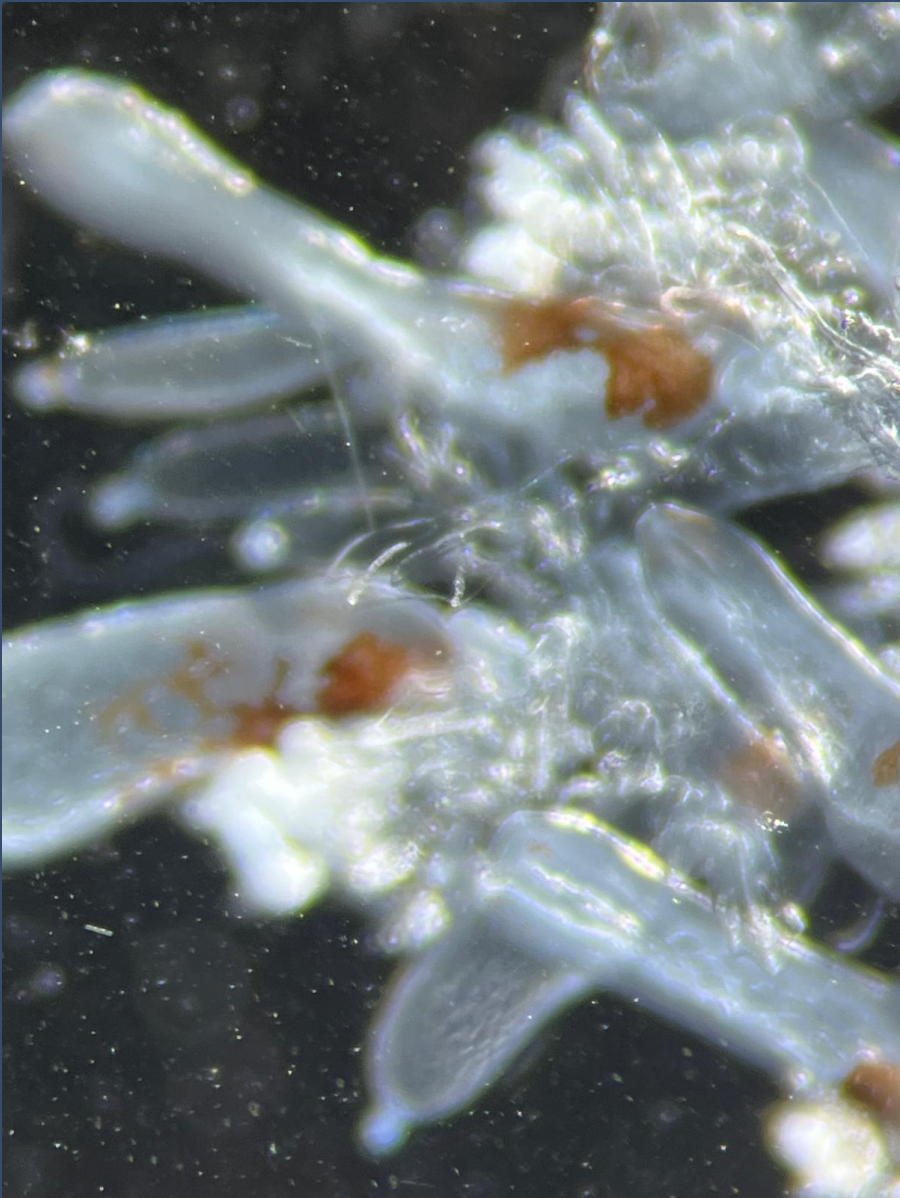


Shrimp larvae (centre), chaetoceros spp (bottom left)

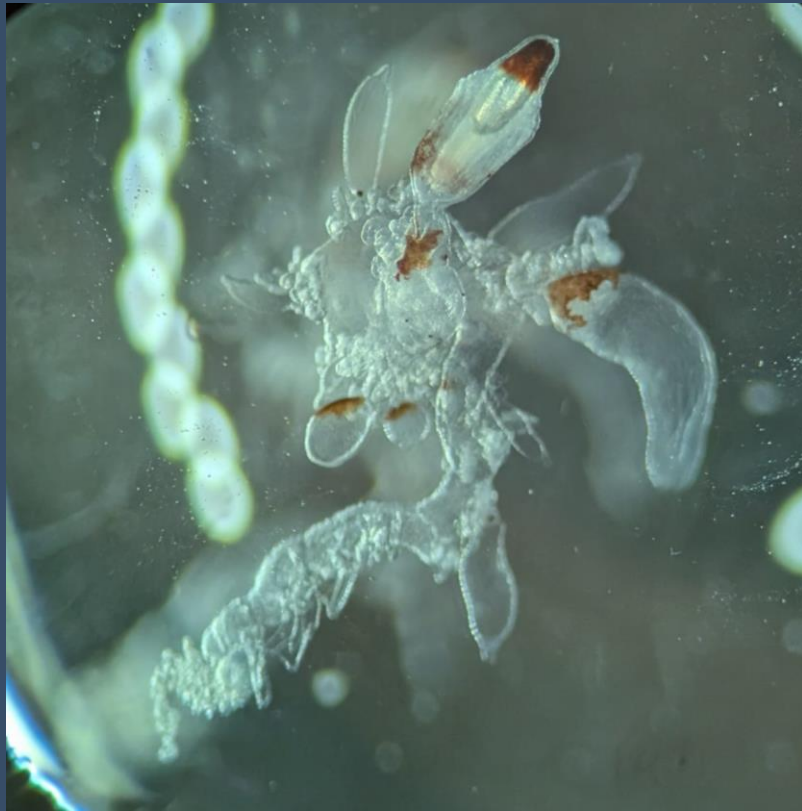


Barnacle larvae

Zooplankton



Unidentified zooplankton found at College Bay near Harvard Glacier. Current suggestions from our naturalists include a juvenile Man o' War hydrozoan, a siphonophore, or hooded nudibranch. We have uploaded the photos to iNaturalist — keep an eye on the project for any ID updates!





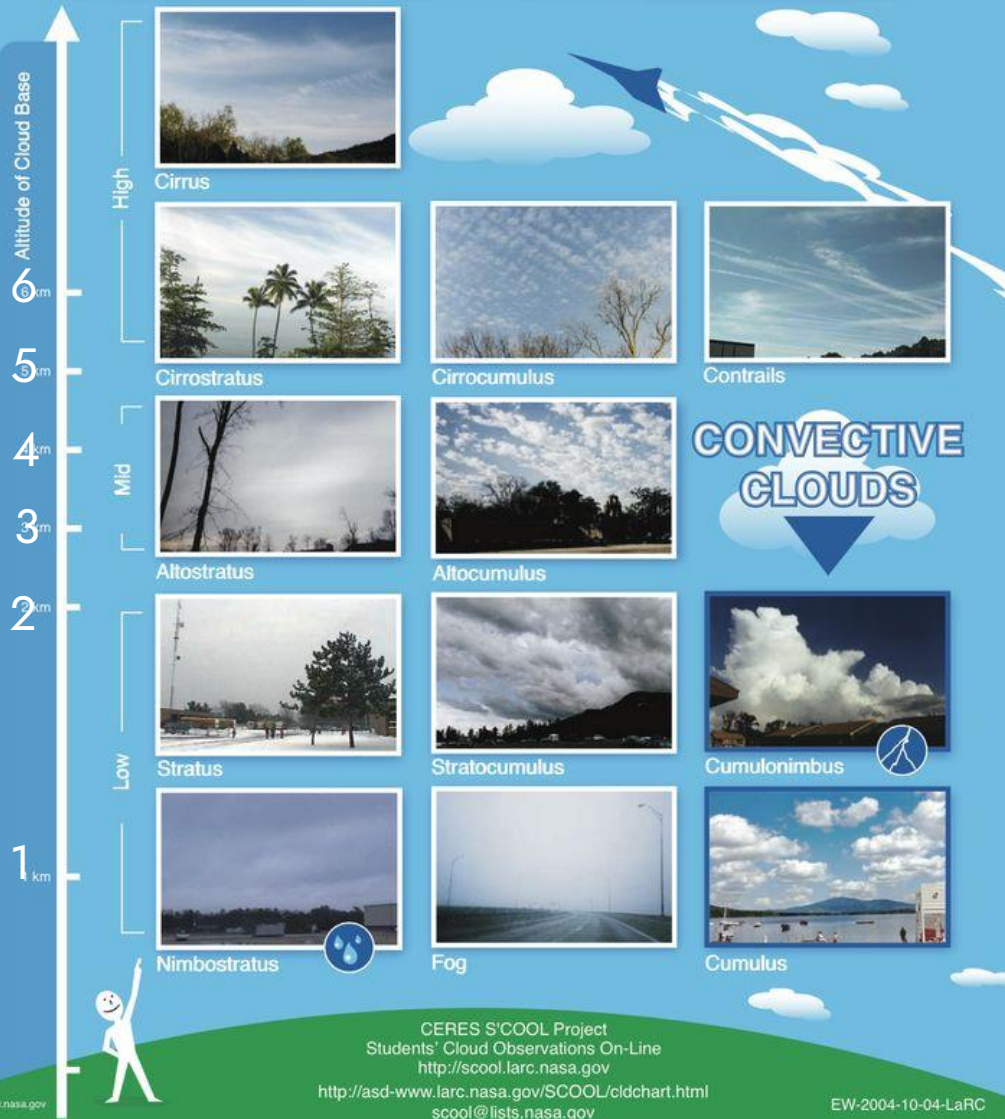
Citizen Science NASA Cloud Observer

Clouds aren't just shapes in the sky; they are important components of 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 such data.

Our citizen scientists **submitted 5 observations** to the global database run by NASA. Our observations might be matched to data from weather satellites orbiting above and will be used to better understand global weather phenomena.



S'COOL Cloud Identification Chart



Citizen Science

NASA Cloud Observer

High Clouds (Base above 6,000 meters):

Cirrus: Thin, wispy clouds composed of ice crystals. They often appear as delicate streaks or feathery wisps high in the sky.

Cirrostratus: Thin, sheet clouds that cover large portions of the sky. They can create a halo around the sun or moon.

Cirrocumulus: Small, fluffy clouds, resembling fish scales or ripples.

Medium Clouds (Base between 2,000 and 6,000 meters):

Altostratus: Puffy, grayish-white clouds with rounded edges. They often form parallel rows or patches.

Altostratus: Thick, grayish clouds that partially obscure the sun or moon. They lack the distinct features of cirrostratus.

Low Clouds (Base below 2,000 meters):

Stratus: Uniform, gray clouds that cover the sky like a blanket. They can bring drizzle or light rain.

Stratocumulus: Low, lumpy clouds with defined edges. They often appear in rows or patches.

Nimbostratus: Thick, dark gray clouds associated with steady rain or snow.

If you'd like to explore more examples, you can check out NASA's [On-Line Cloud Chart](#) [View our data](#) on the global map



Citizen Science eBird

At sea and on land, our onboard ornithologists were constantly surveying the avifauna we encountered along our route. The diversity of habitats we traveled through provided us with an equally diverse array of birds, from majestic albatrosses at sea to resplendent jungle parrots.

Including 11 onboard Wildlife Watches and eBird sessions on deck, we recorded 67 bird species across 13 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:

[AMALA2503b Alaska and British Columbia - Wilderness, Glaciers and Culture \(Northbound\) May 29 to June 10, 2025 - eBird Trip Report](#)

Wildlife List - Birds



Wildlife List – Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Anser albifrons</i>	Greater White-fronted Goose	Blässgans	Oie rieuse	Tundragås
<i>Branta canadensis</i>	Canada Goose	Kanadagans	Bernache du Canada	Kanadagås
<i>Anas platyrhynchos</i>	Mallard	Stockente	Canard colvert	Stokkand
<i>Histrionicus histrionicus</i>	Harlequin Duck	Kragenente	Arlequin plongeur	Harlekinand
<i>Melanitta perspicillata</i>	Surf Scoter	Brillenente	Macreuse à front blanc	Brilleand
<i>Melanitta deglandi</i>	White-winged Scoter	Höckersamtente	Macreuse à ailes blanches	Knoppsjørre
<i>Melanitta americana</i>	Black Scoter	Pazifiktrauerente	Macreuse à bec jaune	Amerikasvartand
<i>Clangula hyemalis</i>	Long-tailed Duck	Eisente	Harelde kakawi	Havelle
<i>Bucephala islandica</i>	Barrow's Goldeneye	Spatelente	Garrot d'Islande	Islandsand
<i>Mergus merganser</i>	Common Merganser	Gänsesäger	Grand Harle	Laksand
<i>Mergus serrator</i>	Red-breasted Merganser	Mittelsäger	Harle huppé	Siland
<i>Dendragapus fuliginosus</i>	Sooty Grouse	Küstengebirgshuhn	Tétras fuligineux	Sotjerpe
<i>Columba livia</i>	Rock Pigeon	Felsentaube	Pigeon biset	Klippedue (Bydue)
<i>Selasphorus rufus</i>	Rufous Hummingbird	Rotrücken-Zimtelfe	Colibri roux	Rødkolibri
<i>Phalaropus fulicarius</i>	Red Phalarope	Thorshühnchen	Phalarope à bec large	Polarsvømmesnipe

Wildlife List – Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Actitis macularius</i>	Spotted Sandpiper	Drosseluferläufer	Chevalier grivelé	Flekksnipe
<i>Tringa melanoleuca</i>	Greater Yellowlegs	Großer Gelbschenkel	Grand Chevalier	Plystresnipe
<i>Cerorhinca monocerata</i>	Rhinoceros Auklet	Nashornalk	Macareux rhinocéros	Neshornlunde
<i>Fratercula cirrhata</i>	Tufted Puffin	Gelbschopflund	Macareux huppé	Topplunde
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	Marmelalk	Guillemot marbré	Marmordvergteist
<i>Cepphus columba</i>	Pigeon Guillemot	Taubenteiste	Guillemot colombin	Beringteist
<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>Xema sabini</i>	Sabine's Gull	Schwalbenmöwe	Mouette de Sabine	Sabinemåke
<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 californicus</i>	California Gull	Kaliforniermöwe	Goéland de Californie	Præriegråmåke
<i>Larus glaucescens</i>	Glaucous-winged Gull	Beringmöwe	Goéland à ailes grises	Gråvingemåke

Wildlife List – Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Hydroprogne caspia</i>	Caspian Tern	Raubseeschwalbe	Sterne caspienne	Rovterne
<i>Sterna paradisaea</i>	Arctic Tern	Küstenseeschwalbe	Sterne arctique	Rødnebbterne
<i>Gavia stellata</i>	Red-throated Loon	Sternaucher	Plongeon catmarin	Smålom
<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>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>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	Kanadareiher	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>Sphyrapicus ruber</i>	Red-breasted Sapsucker	Feuerkopf-Saftlecker	Pic à poitrine rouge	Rødbrystsevjespett

Wildlife List – Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Vireo gilvus</i>	Warbling Vireo	Sängervireo	Viréo mélodieux	Sangvireo
<i>Cyanocitta stelleri</i>	Steller's Jay	Diademhäher	Geai de Steller	Furuskrike
<i>Corvus brachyrhynchos</i>	American Crow	Amerikakrähe	Corneille d'Amérique	Amerikakråke
<i>Corvus corax</i>	Common Raven	Kolkrabe	Grand Corbeau	Ravn
<i>Poecile rufescens</i>	Chestnut-backed Chickadee	Rotrückenmeise	Mésange à dos marron	Kastanjemeis
<i>Tachycineta bicolor</i>	Tree Swallow	Sumpfschwalbe	Hirondelle bicoloré	Tresvale
<i>Tachycineta thalassina</i>	Violet-green Swallow	Veilchenschwalbe	Hirondelle à face blanche	Talassinsvale
<i>Hirundo rustica</i>	Barn Swallow	Rauchschwalbe	Hirondelle rustique	Låvesvale
<i>Corthylio calendula</i>	Ruby-crowned Kinglet	Rubingoldhähnchen	Roitelet à couronne rubis	Rubinfuglekonge
<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>Cinclus mexicanus</i>	American Dipper	Grauwasseramsel	Cincle d'Amérique	Gråfossekall
<i>Sturnus vulgaris</i>	European Starling	Star	Étourneau sansonnet	Stær
<i>Ixoreus naevius</i>	Varied Thrush	Halsbanddrossel	Grive à collier	Båndtrost
<i>Catharus ustulatus</i>	Swainson's Thrush	Zwergmusendrossel	Grive à dos roussâtre	Brunkinnskogtrost

Wildlife List — Birds

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Catharus guttatus</i>	Hermit Thrush	Einsiedler-Musendrossel	Grive solitaire	Eremittskogtrost
<i>Turdus migratorius</i>	American Robin	Wanderdrossel	Merle d'Amérique	Vandretrost
<i>Spinus pinus</i>	Pine Siskin	Fichtenzeisig	Tarin des pins	Stripesisik
<i>Melospiza melodia</i>	Song Sparrow	Singammer	Bruant chanteur	Sangspurv
<i>Parkesia noveboracensis</i>	Northern Waterthrush	Drosselwaldsänger	Paruline des ruisseaux	Vannparula
<i>Leiothlypis celata</i>	Orange-crowned Warbler	Orangefleck-Waldsänger	Paruline verdâtre	Oransjekroneparula
<i>Setophaga petechia</i>	Yellow Warbler	Goldwaldsänger	Paruline jaune	gulparula
<i>Setophaga coronata</i>	Yellow-rumped Warbler	Kronenwaldsänger	Paruline à croupion jaune	Myrteparula
<i>Setophaga townsendi</i>	Townsend's Warbler	Townsendwaldsänger	Paruline de Townsend	Granparula
<i>Cardellina pusilla</i>	Wilson's Warbler	Mönchswaldsänger	Paruline à calotte noire	Kalottparula

Citizen Science

Happywhale

Cetaceans— whales, dolphins, and porpoises— capture our imaginations and our hearts whenever we witness them. And, doing something as simple as taking a photo of them can help scientists learn more about these animals. That's where Happywhale comes in: by using AI to match images of whales submitted by users, they can track individuals as they migrate across the world and through their lives. When you submit a photo of a whale, you will be notified of any past and future matches of that individual!

We uploaded in total 6 observations of two species: humpback whale and gray whale. Four humpback whales were known to Happywhale and had already been sighted between Hawaii and Alaska. One individual humpback we encountered as we were leaving Sitka was instead new to Happywhale.

[View](#) the MS Roald Amundsen's submissions to Happywhale during our voyage





Albatross (Northern BC)

ID SEAK-2283

SEX Unknown

Humpback Whale

Also Known As:

HW-MN0400477

BCZUKNC2019_02

BCZ0491

PWF-NP_6056

HI24_0025

Sightings: 17

First:



2011-07-30

Alaska, United States

Last:



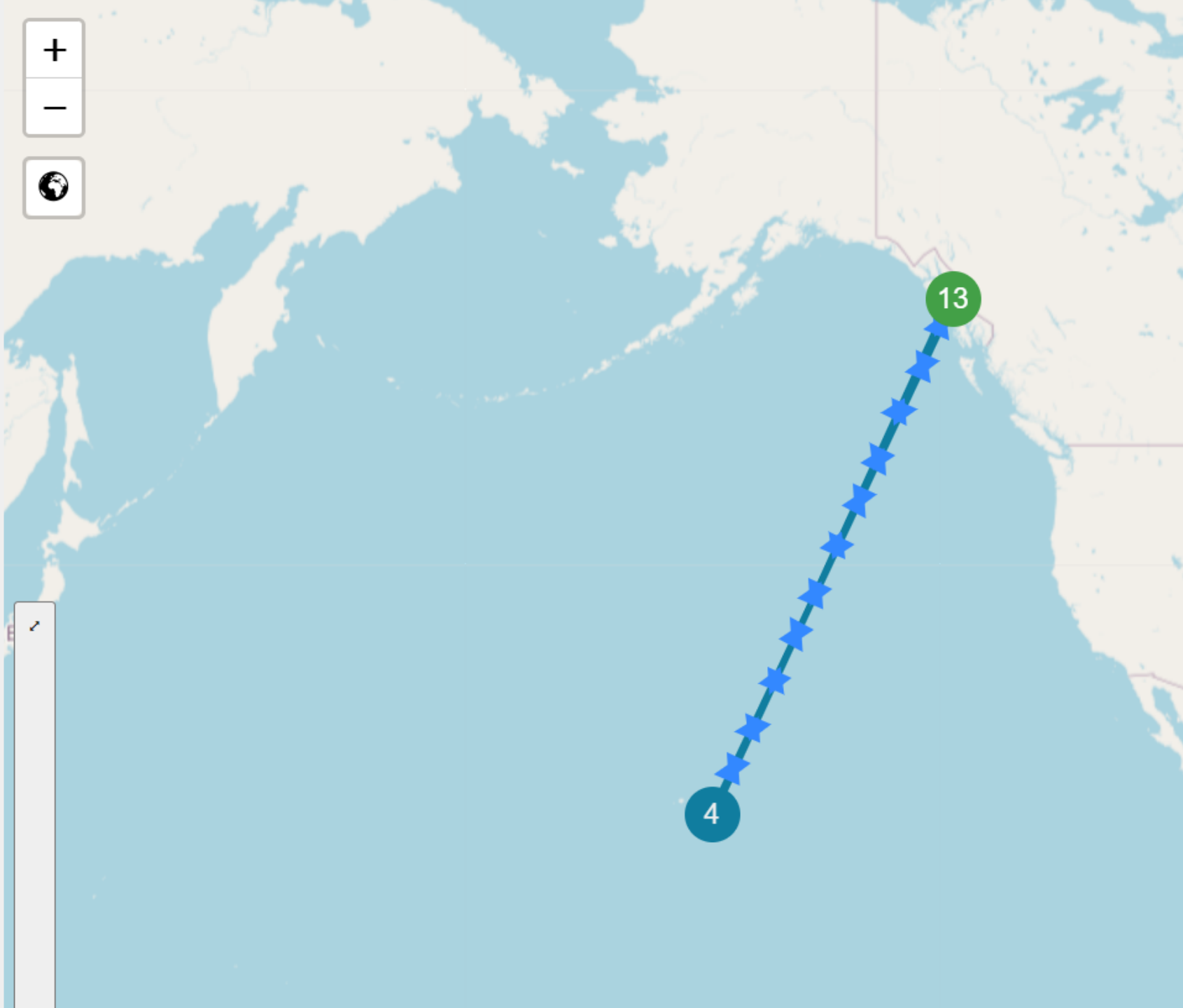
2025-06-02

Alaska, United States

Followers

2

Follow





[Unnamed]

ID BCZ0346

SEX Unknown

Humpback Whale

Also Known As:

HW-MN0442075

Sightings: 1

First:  2025-06-06
Alaska, United States

Last:  2025-06-06
Alaska, United States

Followers

0

Follow



Seen this individual?

Share Your Experience



Chichagof
Island

Sitka

Baranof
Island

Citizen Science iNaturalist

During our voyage we had the chance to explore many different ecosystems: from the rainforest, to the intertidal zone and the kelp forest; from rivers and lakes to glaciated fjords. In these habitats we observed a big variety of trees, flowers, marine invertebrates, mammals and birds.

In total we recorded:

- **332** Species
- **890** Observations

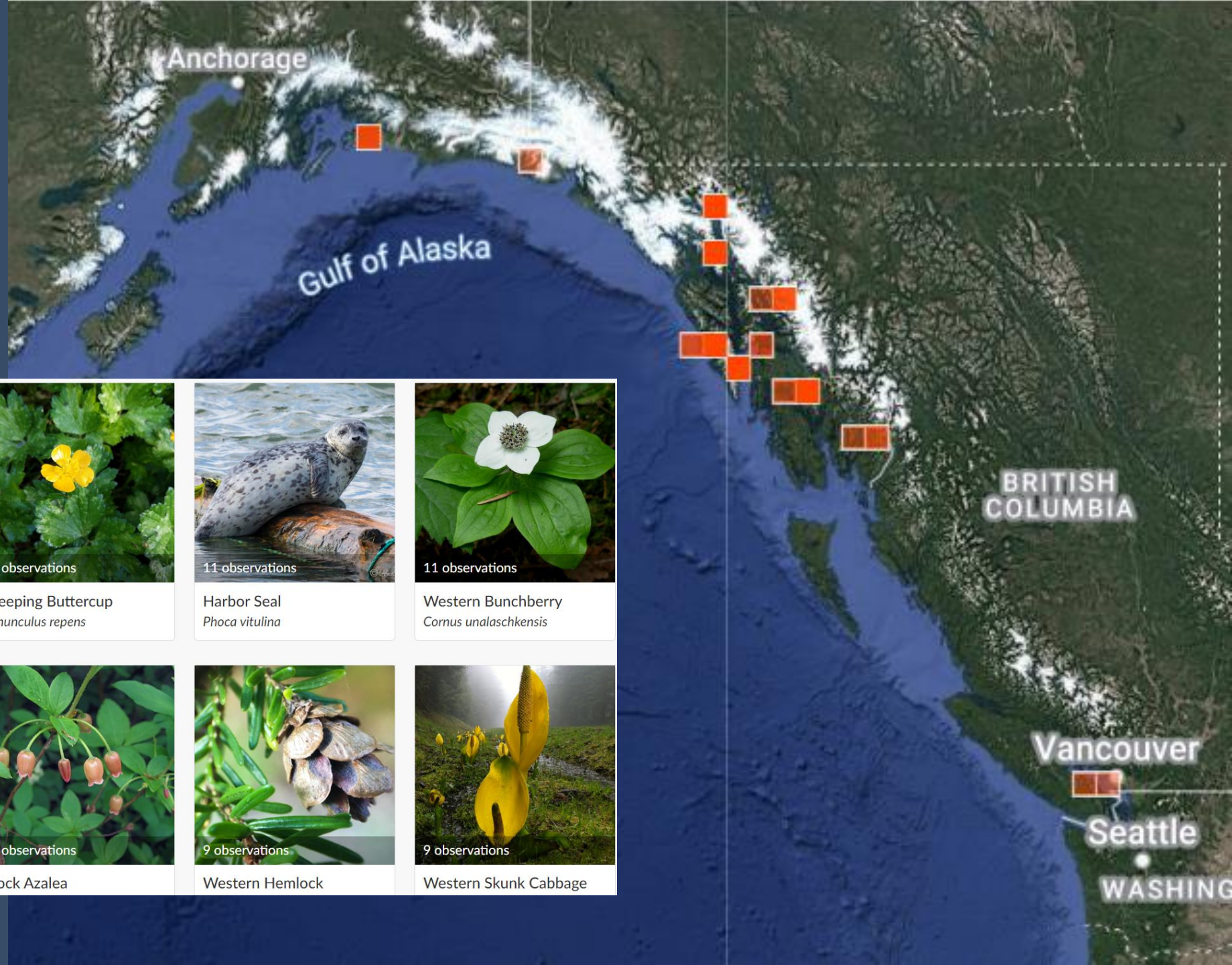
... and counting; as you upload more photos from home our dataset grows! Through iNaturalist, these observations can now be used as data in global scientific research.

Thank you for joining the project and contributing to this amazing citizen science platform.

View our data submitted on our iNaturalist project [here](#):

[2025 May 29 - June 10: MS Roald Amundsen - Alaska & British Columbia](#)





14 observations

Bald Eagle
Haliaeetus leucocephalus



13 observations

Salmonberry
Rubus spectabilis



12 observations

Creeping Buttercup
Ranunculus repens



11 observations

Harbor Seal
Phoca vitulina



11 observations

Western Bunchberry
Cornus unalaschkensis



10 observations

American Red Squirrel



10 observations

Beach Strawberry



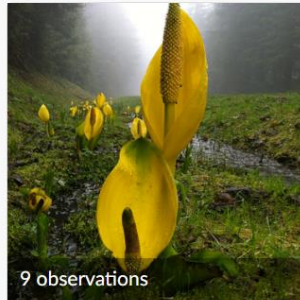
10 observations

Mock Azalea












9 observations

Western Hemlock

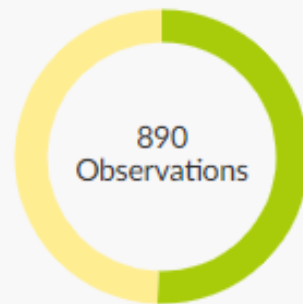


9 observations

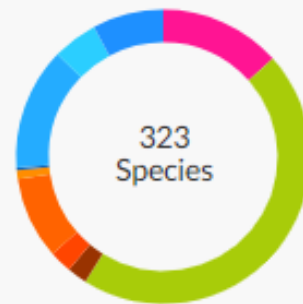
Western Skunk Cabbage

Rank	User	Observations ▾	Species ▾
1	 ccilfone88	205	139
2	 threewavespro	138	108
3	 gspadoni	132	79
4	 holly513	132	78
5	 lancycheng	84	61
6	 tom17230	74	55
7	 annie7576	23	14
8	 nicki2062	19	18
9	 scienceco_ra	19	1

Stats



● Research Grade
● Needs ID
● Casual



● Unknown
● Protozoans
● Fungi
● Plants
● Chromista
● Mollusks
● Insects
● Arachnids
● Ray-Finned F...
● Amphibians
● Reptiles
● Birds
● Mammals
● Other Animals

Wildlife List - Mammals



Wildlife List – Marine Mammals

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Megaptera novaeangliae</i>	Humpback whale	Buckelwal	Baleine à bosse	Knølhval
<i>Eschrichtius robustus</i>	Gray whale	Grauwal	Baleine grise	Gråhval
<i>Phocoena phocoena</i>	Harbor porpoise	Schweinswal	Marsouin commun	Nise
<i>Phocoenoides dalli</i>	Dall's porpoise, Dall porpoise	Weißflankenschweinswal	Marsouin de Dall	Dalls nise
<i>Grampus griseus</i>	Risso's dolphin	Rundkopfdelfin	Dauphin de Risso	Arrdelfin
<i>Eumetopias jubatus</i>	Steller Sea Lion	Stellerscher Seelöwe	Lion de mer de Steller	Hvalross
<i>Phoca vitulina</i>	Harbour Seal	Seehund	Phoque commun	Steinkobbe
<i>Enhydra lutris</i>	Sea Otter	Meerotter	Loutre de mer	Havoter

Wildlife List – Terrestrial Mamals

SCIENTIFIC NAME	ENGLISH	DEUTSCH	FRANÇAIS	NORSK
<i>Tamiasciurus hudsonicus</i>	American Red Squirrel	Gemeines Rothörnchen	Écureuil roux américain	Amerikansk ekorn
<i>Ursus americanus</i>	American black bear	Amerikanischer Schwarzbär	Ours noir	Amerikansk svartbjørn
<i>Ursus arctos</i>	Brown bear	Braunbär	Ours brun	Isbjørn
<i>Alces alces gigas</i>	Alaskan Moose	Elch	Élan	Elk
<i>Oreamnos americanu</i>	Mountain goat	Schneeziege	Chèvre des montagnes Rocheuses	Snøgeit
<i>Neogale vison</i>	American mink	Amerikanischer Nerz	Vison d'Amérique	Mink
<i>Lontra canadensis</i>	North American River Otter	Nord-amerikanischer Fischotter	Loutre de rivière	Amerikansk elveotter

Thank you for participating!

