Science Recap

MS FRAM



MS FRAM
13th - 27th
September
2025





Onboard Program

Art Classes: 5 events.

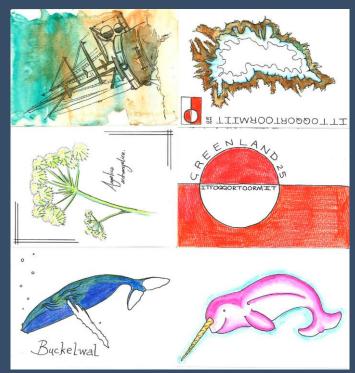
Photography Workshops: 3 events.

Ship Scavenger Hunts: 2 events.

Arts & Crafts

On our voyage we made time to relax by designing our own polar postcards and painting.

We were inspired by using scientific texts, species I.D cards, fossils, animal skins, bone clones, rocks samples, chemical models and maps.



Credit: Ashton McDonald / HX

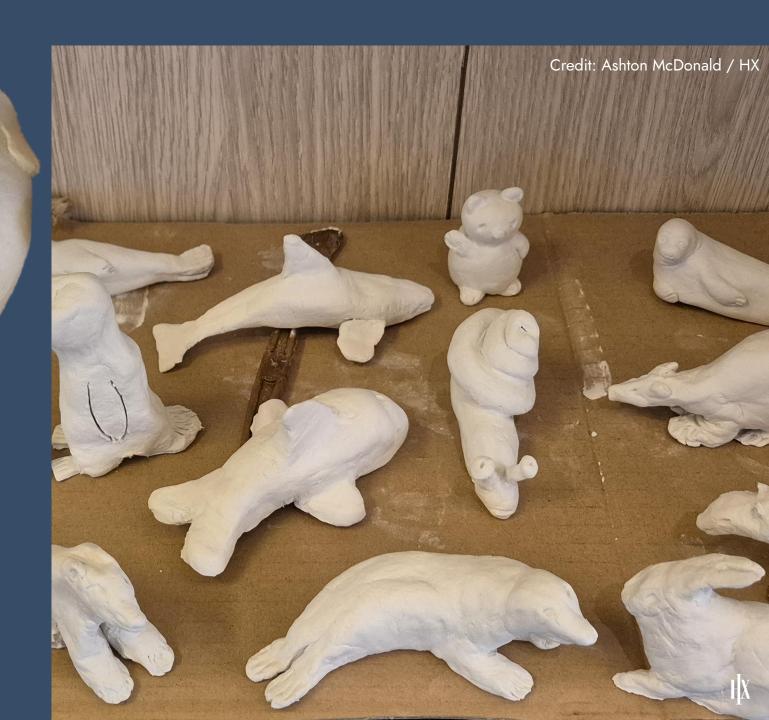




We also tried our hands at third dimensional craftmanship.

Using hard setting clay to make miniature memories to take home.

Everyone created polar bears, snails, eels, arctic hares and whales.



Landing Program

Exploration Hikes: 8 events.

4 kayak groups

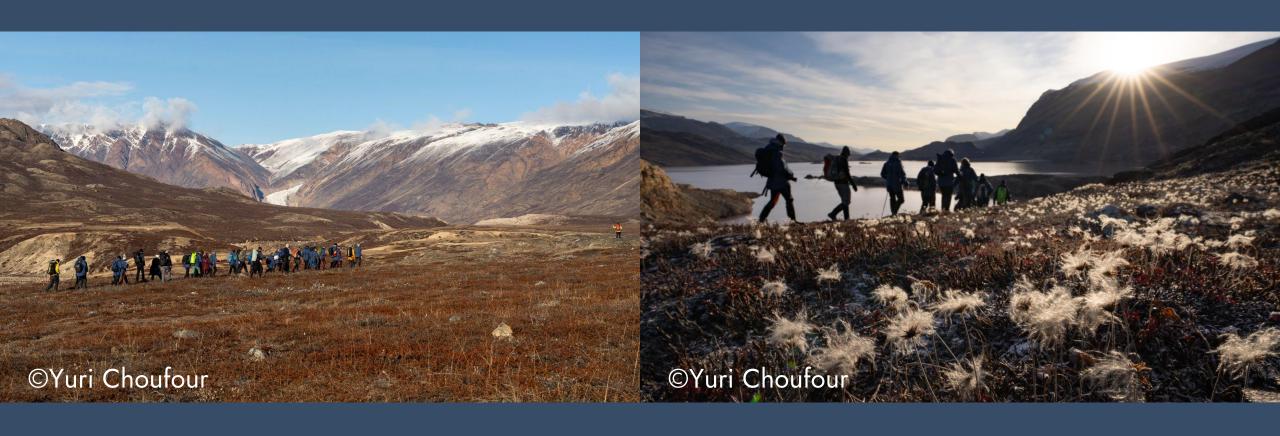








8 Hikes - 39.9 km



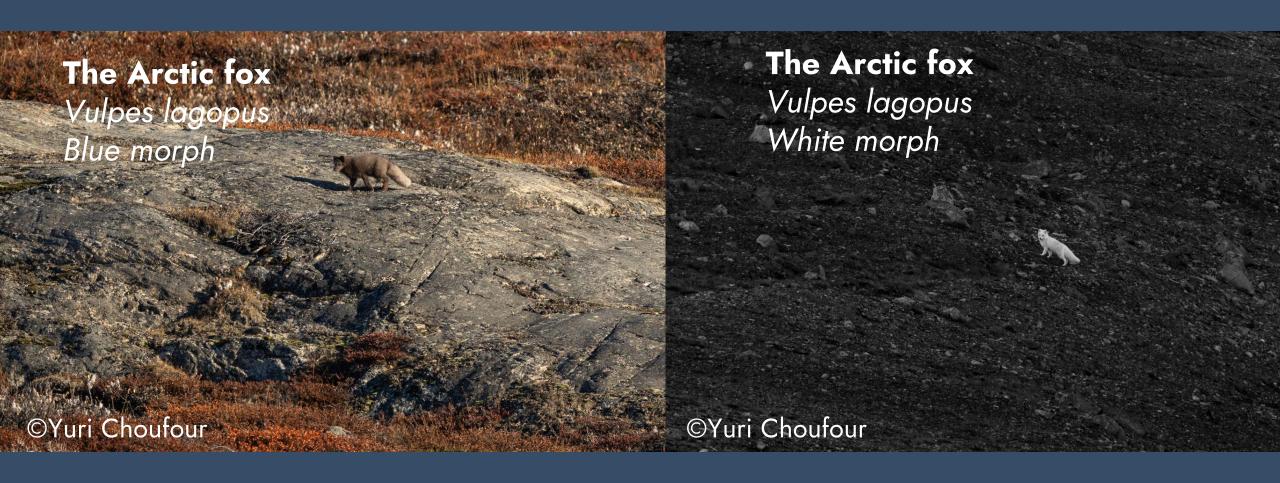
Wildlife encounter







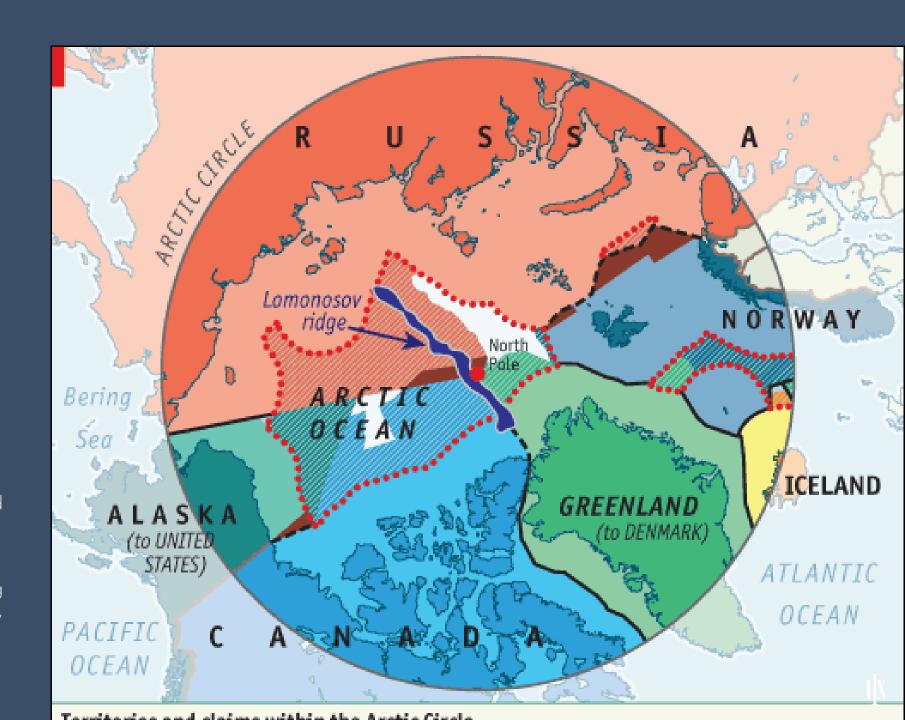
Wildlife encounters



History & Culture

Geopolitics of the Arctic

This Arctic Circle map illustrates territorial boundaries and maritime claims of circumpolar nations: Russia, Alaska (United States), Canada, Greenland (Denmark), Iceland, and Norway. The Lomonosov Ridge underwater formation extends toward the North Pole. Red dotted lines represent disputed maritime boundaries and sovereignty claims over Arctic Ocean resources, reflecting ongoing geopolitical tensions over potential oil, gas, and shipping routes in melting Arctic waters.



History & Culture

Erik the Red

Erik the Red escaped exile twice through violence and exploration. Born in Norway around 950, his father's murder conviction forced the family to Iceland. After Erik killed neighbors in disputes, he was banished from Iceland for three years in 982. Instead of waiting, he sailed west and discovered Greenland, naming it strategically to attract settlers. Returning with 25 ships carrying 400-700 colonists in 985, only 14 vessels survived the treacherous journey to establish Norse Greenland's first permanent settlements. This dramatic painting depicting Viking exploration was created by Norwegian artist Christian Krohg in 1893.





Science & Education Program

Lectures: 11 events.

Workshops: 11 events.

Citizen Science: 13 events.



Citizen Science

Nasa Cloud Observer

We collected together 3 observations during this voyage.

Inaturalist

We submitted more than 436 observations to Inaturalist during this voyage, thank you very much! You can view our observations by clicking here.

HappyWhale

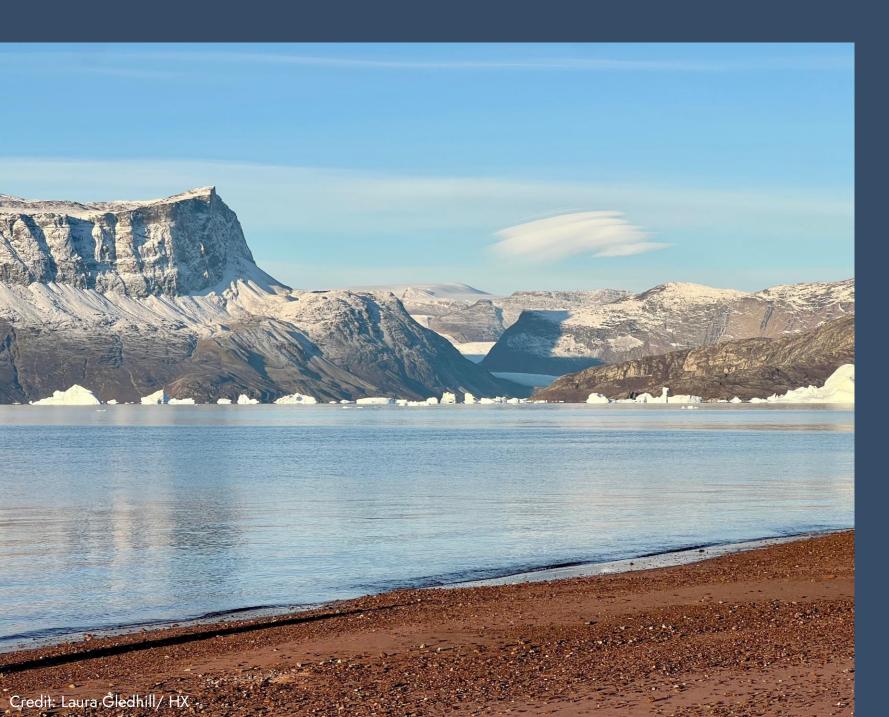
We submitted two separate sightings
HappyWhale. Click here to visit MS Fram
profile on HappyWhale.

Ebird

We submitted 23 checklists to Ebird. You can view the <u>trip report for your voyage by clicking</u> here.

Planktonics Project — eDNA

We collected water samples in one location during this voyage in Scorsby Sund.



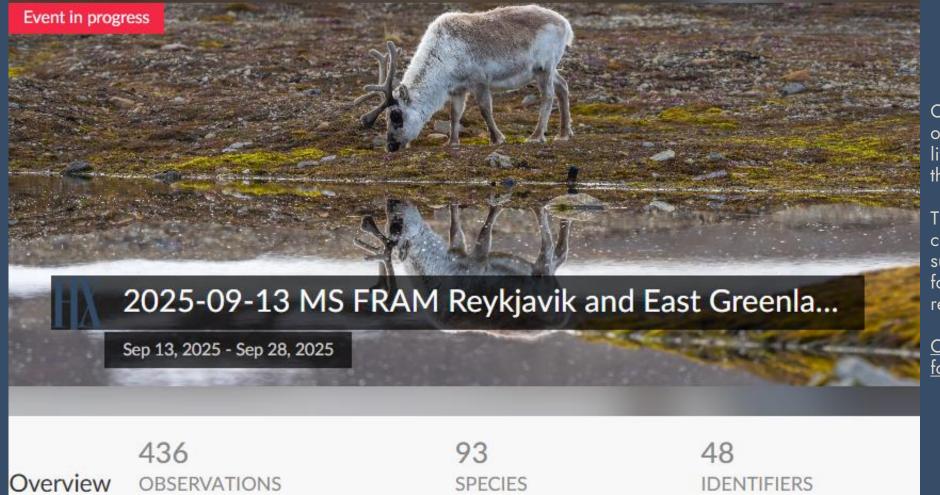
NASA Globe Cloud Observer

We collected 3 observations for NASA.

We observed lenticular clouds, for example at Harefjord. These are a unique type of cloud generated by high speed winds at high altitudes in mountainous environments.

Don't hesitate to continue looking at the sky back home, since every contribution helps scientists.

View our data on the global map

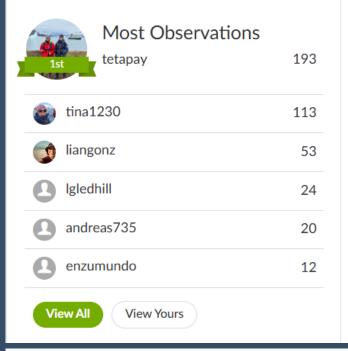




On our voyage we submitted 436 observations covering a wide range of 93 living species, from plants to animals of the Arctic.

Thank you very much for your contribution, and feel free to keep submitting your sightings to our project for this voyage when you are back home reviewing your photos.

<u>Click here to visit the iNaturalist Project</u> <u>for this voyage.</u>

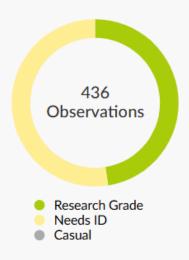


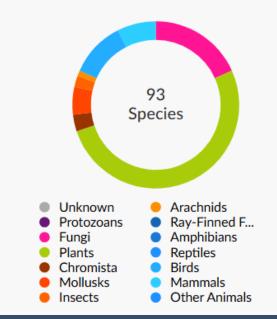
Most Species tetapay	57
ina1230	39
liangonz	26
Igledhill	11
andreas735	9
enzumundo	7
View Yours	





Stats









(Salix arctica)



Muskox (Ovibos moschatus)



Arctic Bell-Heather (Cassione tetragona)



Dwarf Birch (Betula nana)



Eight-petal Mountain-Avens



Crinkled Snow Lichen



Arctic Wintergreen (Pyrola grandiflora)



Alpine Bearberry (Arctous alpina)



Alpine Mouse-Ear (Cerastium alpinum)



Arctic Hare (Lepus arcticus)



Elegant Sunburst Lichen (Rusavskia elegans)

Drabas



Northern Fulmar (Fulmarus glacialis)

Black Crowberry



Bog Bilberry (Vaccinium uliginosum)



Dwarf Fireweed (Chamaenerion latifolium)



Yellow Saxifrage (Saxifraga aizoides)



Rock Ptarmigan



Ringed Seal



Moss Campion



iNaturalist

The most abundant species registered were the Arctic Willow, followed by Musk Ox, Arctic Bell-Heather and Dwarf Birch. Thank you so much for your passion, dedication and interest in our project!

You can still upload your photos to our project once back home.

Click here to visit the iNaturalist Project for this voyage.





iNaturalist

The map of all our trip sightings looks amazing. Thank you for collaborating with the project! Don't forget you can continue submitting photos at home.

<u>Click here to visit the iNaturalist</u> <u>Project for this voyage.</u>





HappyWhale

During our voyage exploring East Greenland, ringed seals were the most abundant species of seal we saw, and one day we sighted a bearded seal. Unfortunately, we did not manage to take any individually identifiable photos of them.

On two consecutive days, we were lucky enough to see two different pods of killer whales (orcas). In both encounters Lilia took clear photos of the dorsal fin & saddle patch of the individuals and submitted to HW. Now we just need to wait for them to process the photos and, finger crossed, get a match or could be that we have seen whales that are new to HW data base!

<u>Click here</u> to join our trip sightings information and don't miss any of the updates!

Click here to visit MS Fram profile on HappyWhale.





Pod 1

Sighted on September 24th, 2025

- 2 adult males
- 1 adult female
- 1 younger orca (could be male or female)
 1 calf (could be male or female)





Photo credits: Lilia Gonzalez / HX





Pod 2

Sighted on September 25th, 2025

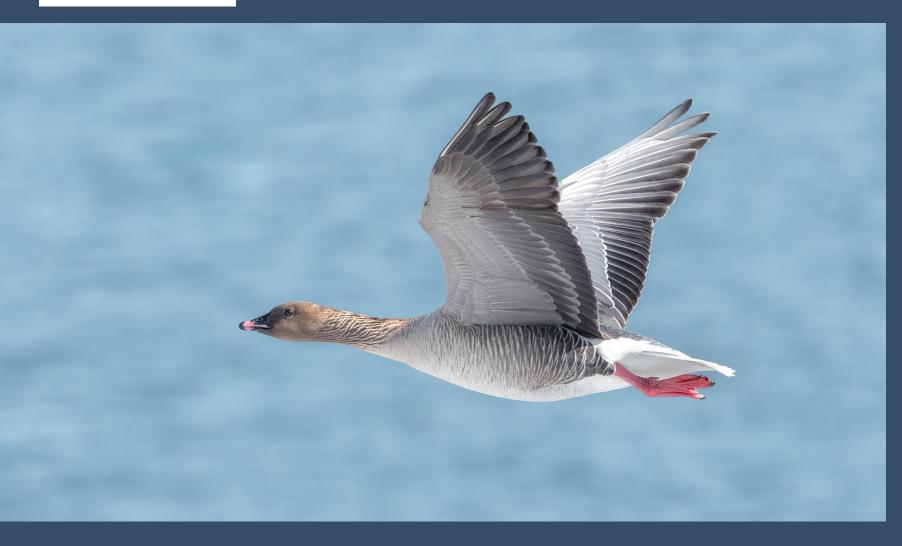
- 2 adult males
- 1 younger orca (could be male or female)











eBird

On our voyage we conducted 23 surveys, observed 24 bird species and counted 1600 individuals. The most abundant species were the Black-legged Kittiwake and the Northern Fulmar. These data are crucial to document the abundance, distribution and diversity of bird species.

Thank you very much for joining Enzo during our wildlife watch and help us contributing to the greatest birding project at a worldwide scale!

Click here to visit the Ebird Project for this voyage.

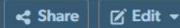


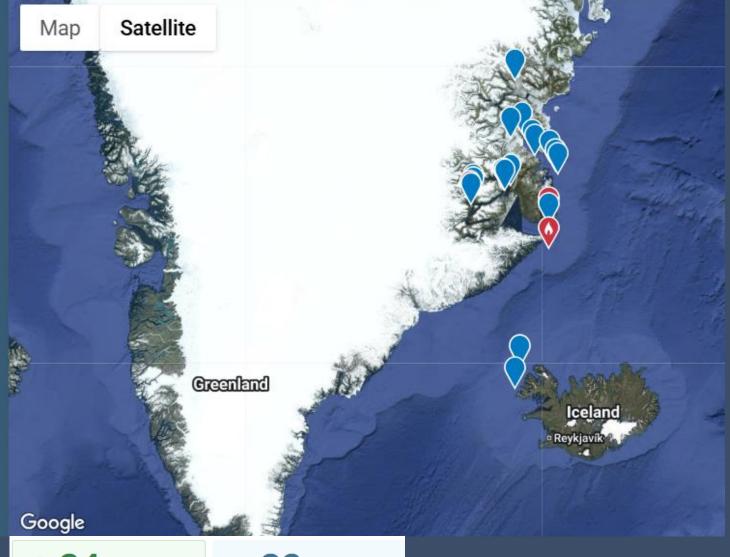
2025-09-14 MS FRAM Reykjavik and East Greenland

13 – 28 Sep 2025 (16 days) Public

● Greenland | Iceland | Subregions

Science Coordinator MS FRAM, Enzo Mardones, HX Science&Education





Species Observed

■ 23 Checklists

Species Observed	
3	Pink-footed Goose Anser brachyrhynchus
11	Common Eider Somateria mollissima
9	Harlequin Duck Histrionicus histrionicus
29	Rock Ptarmigan Lagopus muta
5	Purple Sandpiper Calidris maritima
6	Parasitic Jaeger Stercorarius parasiticus
2	Pomarine Jaeger Stercorarius pomarinus
1	Atlantic Puffin Fratercula arctica
4	Razorbill Alca torda
1	Common Murre Uria aalge
209	Black-legged Kittiwake Rissa tridactyla
6	Great Black-backed Gull Larus marinus
25	Glaucous Gull Larus hyperboreus
1	Arctic Tern Sterna paradisaea

1	Red-throated Loon Gavia stellata
205	Northern Fulmar Fulmarus glacialis
2	Sooty Shearwater Ardenna grisea
12	Northern Gannet Morus bassanus
6	Snowy Owl Bubo scandiacus
5	Peregrine Falcon Falco peregrinus
17	Common Raven Corvus corax
4	Northern Wheatear Oenanthe oenanthe
35	Redpoll Acanthis flammea
5	Snow Bunting Plectrophenax nivalis

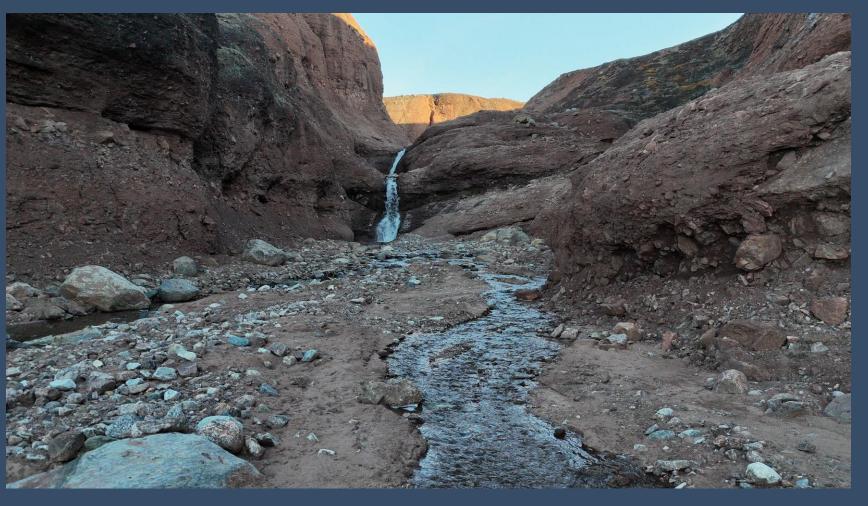
Special sighting



Yuri Choufour – Expedition Photographer



Birds of the World. Cornell Lab of Ornithology Illustrations by Tim Worfolk



Geology report

Geology is often referred to as the key to looking into the past, and in East Greenland we are transported into deep time.

The landing sites we visited on our voyage helped us to detail a world unrecognizable 3 billion years ago.

The formations and patterns we witnessed told us about continents smashing and colliding, the Earth becoming fully enveloped in ice and snow from the poles to the equator and the birth of a young Atlantic Ocean.















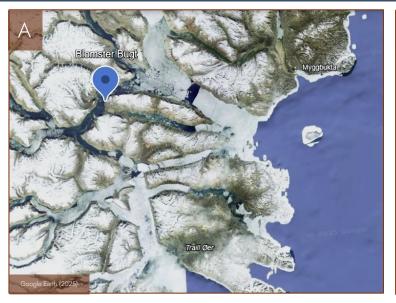
Segelsalliskapets Fjord, Greenland: 72°07'N, 25°27'W.

This is an amazing location for geology. The rock formations here were formed 600 – 900 million years ago and were subsequently folded during the Caledonian Orogeny.

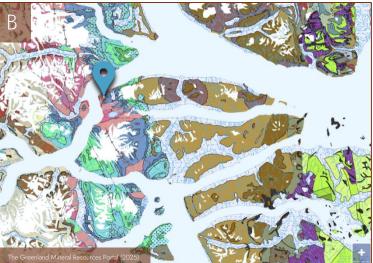
The patterns formed in the rocks are incredible and show the power of the earth to move and bend rock strata.

The last image is of a frosst shattered rock showing how it has split due to water getting into cracks freezing and expanding and cracking the rock. In Iceland these rocks are called Troll Bread.

Credit: Ashton McDonald/ HX









- (A) Google Earth (2025), showing location of Blomster Bugt on Ymer Island.
- (B) The Greenland Mineral Resource Portal (2015), indicating the coloured geological sections of the Eleonore Bay Supergroup.
- (C) Kong Oscar Fjords cliff faces of Eleonore Bay Supergroup.
- (D) Sedimentary section of the Upper Lyell Group, sub section of EBS.
- (E) A fine specimen rock of the cyclicity of the passive margin sedimentary deposition

Blomster Bugt (Flower Bay), Kong Oscar Fjord, Greenland: 72.4500°N, 24.0833°W.

The geology of Blomster Bugt preserves a long record from the Neoproterozoic (~1,000-541 Ma) into the Caledonian (~490–390 Ma). The Eleonore Bay Supergroup (~950–635 Ma) the Lower Lyell Land Group is composed mainly of sandstones and mudstones, deposited in broad marine basins along an ancient continental margin. Above this, the Upper Lyell Land Group also contains sandstones and mudstones, representing continued sedimentation. Overlying these successions, the Upper Ymer Ø Group (~635–541 Ma) includes dolomites, mudstones, and sandstones that record shallow marine carbonate platforms with locally mixed facies. Intruding through these Neoproterozoic strata are Caledonian-age ultramafic dykes and sills (~430-390 Ma), marking tectonic and magmatic activity during the Caledonian

mountain-building event.
Together, these rocks document the transition from long-lived Proterozoic passive margin sedimentation to Paleozoic orogenesis (mountain building).

Credit: Ashton McDonald/ HX









- (A) Google Earth (2025), showing location of Gully Glacier and Alpefjord.
- (B) The Greenland Mineral Resource Portal (2015), indicating the coloured geological sections of the Hagar Bjerg
- (C) Gully Glacier with Stauning Alos in the background. Sediments and rock debris litter the supra-glacial halform
- D) Mountain sides of granites and older metasediments
- (E) Dropstone floating of ice rafted debris from the calving of Gully

Gully Glacier, Alpefjord, Kong Oscar Fjord, Greenland: 72°07'N, 25°27'W.

The Gully Glacier and neighbouring Sefström Glacier flow from the Stauning Alps into Alpefjord as marine-terminating tidewater glaciers. Their combined snouts calve icebergs that release coarse debris as dropstones into finer fjord sediments, creating a dynamic glacimarine environment of erosion and deposition. The surrounding mountains form part of the Caledonian orogen. Here, the Niggli Spids and Hagar Bjerg thrust sheets consist of granites with screens of older metasediments. These rocks record two distinct stages of emplacement, one with protoliths as old as ~930 Ma and another linked to Caledonian tectonism around ~430—390 Ma. Together they preserve the history of continental collision between Laurentia and Baltica. A narrow ridge between Gully and Sefström Glaciers divides their flow before both fronts

enter Alpefjord. Though not consistently named in published sources, this ridge plays a key role in controlling ice movement and directing sediment transport from land to fjord.



Credit: Ashton McDonald/ HX









- (A) Google Earth (2025), showing location of Rødepynt, Rødefjord, Scoresby Sund.
- (B) The Greenland Mineral Resource Portal (2015), indicating the coloured geological sections of the Permian conglomerates
- C) The striking red Permian cliffs, with their erosional shapes and chimney stacks created later in the Paleozoic
- (D) The red beach landing site converse with the blue waters of the bay.
- (E) Alpine Bearberry vegetation favours the cliffs sides with dense matting

Rødepynt (Red Point), Rødefjord, Scoresby Sund, Greenland: 70.8550°N, 27.8867°W.

The coastal headland of Rødepynt sits within one of East Greenland's striking Permian sedimentary basins. Here, the Røde Ø Conglomerate (Mid–Late Permian, ~270–260 Ma) forms steep, high-angled valley walls built of coarse, red-weathering sedimentary rocks.

Conglomerates (rocks made up of rounded pebbles and cobbles cemented together) accumulated in continental basins along the margin of Greenland, recording episodes of erosion and redeposition during the later stages of the Paleozoic. The landscape is marked by dramatic red stone chimney-like stacks that rise from the shoreline, shaped by differential erosion (when softer layers erode faster than harder ones). At the base of the cliffs, weathered material produces a distinctive red beach, a feature that gives the fjord its name. These rocky surfaces also support hardy Arctic vegetation such as bracken, willow, and dwarf birch, which take advantage of thin soils that collect

in cracks and weathered pockets of the conglomerate. Together, these elements highlight the combination of Permian basin sedimentation and modern erosional processes that create the vivid scenery of Rødefjord.



Science Boat

Science Boats: 7 events.



View our data submitted to the Secchi Disk Project



Science Boat

On our voyage we conducted 7 Science Boats during which we released instruments into the waters to help understand the waters explored.

Secchi disc measurements & CTD profiles help to characterize the physical properties of the water columns parameters. We collected plankton samples with the sock nets & Niskin bottle samples for eDNA to help characterise the biological properties of the waters.

Once back on-board, we used the numerical data and physical samples to investigate the underwater environment further.

16.09.2025 Sydkap, Scorsby Sund x 1. 16.09.2025 Bjorn Islands, Scorsby Sund x 2. 17.09.2025 Rypenæs, Scorsby Sund x 1. 17.09.2025 Terrassepynt, Scorsby Sund x 1. 18.09.2025 Harefjord, Scorsby Sund x 1. 18.09.2025 Rødpynt, Scorsby Sund x 1.

Click here to visit the Secchi Disc Project and view the Secchi data.

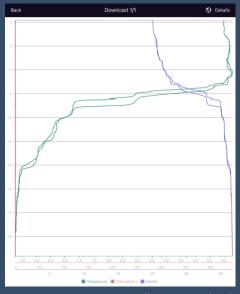


Plankton Samples

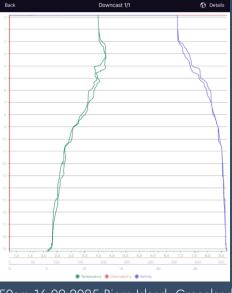
We collected 5 water samples with our plankton sock nets from around Scorsby Sund.

With further inspection under the microscopes we found in our larger catches zero evidence if plankton, however in our smaller catch in Sydkap we found a couple of examples (left).

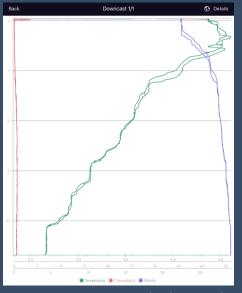
We also turned to our other collections of data to understand the story further.



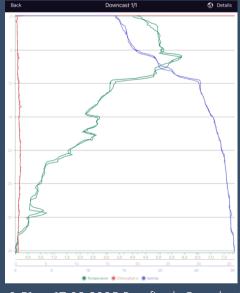
8:44am 16.09.2025 Sydkap, Greenland



8:50am 16.09.2025 Bjorn Island, Greenland



4.16pm 16.09.2025 Bjorn Islands, Greenland



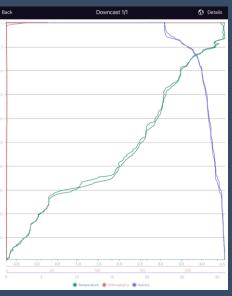
8.51am 17.09.2025 Rypefjord, Greenland



3.12pm 17.09.2025 Terrassepynt, Greenland



8.45am 18.09.2025 Harefjord, Greenland



3.17pm 18.09.2025 Rødpynt, Greenland

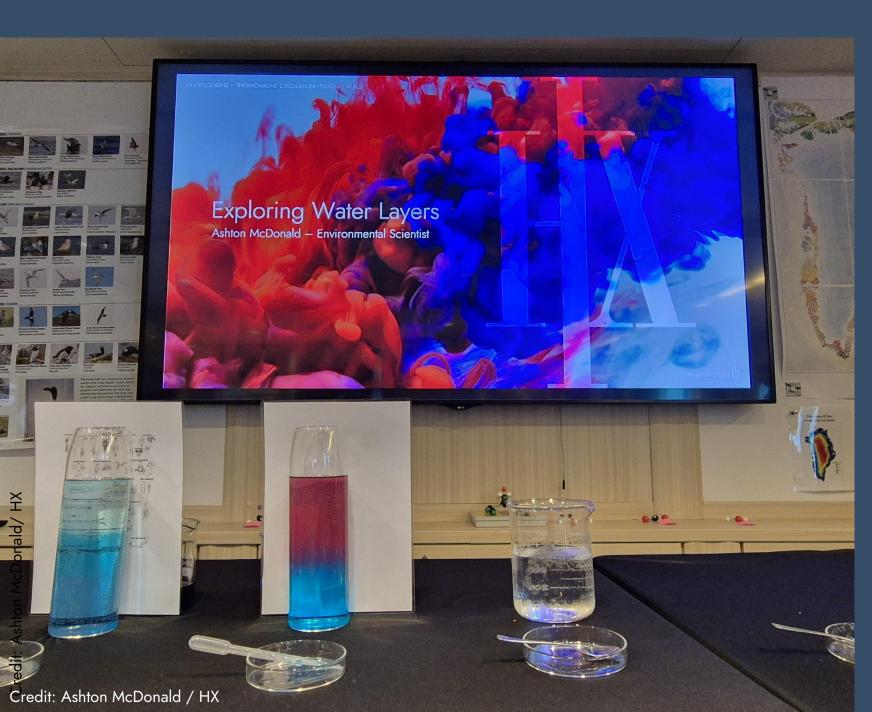
CTD Samples

The CTD (Conductivity, Temperature, Depth and Chlorophyll A) instrument was descended at 7 different locations (see below graphs).

What we found was a trend for the variables of temperature and salinity to exchange their values with depth.

Showing that the fjords of Scorsby Sund were influenced by glacial melt water and iceberg run off staying buoyant while cold saline waters from outside the fjords remained denser and deep in the fjordic systems.

Credit: Ashton McDonald/ HX



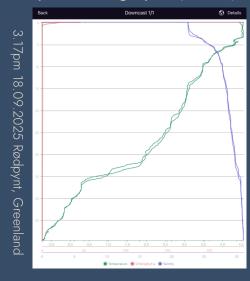
Salinity Experiment

We understood the waters stratification upon the CTD graphs by playing with the properties of water.

One fresh (sweet) water sample, heated it and coloured it red. Making it light and buoyant.

One salty (saline) water sample, cooled it and coloured it blue. Making it dense and sinking.

We then we able to layer the two in a glass column to prove the graphs (below).



Underwater Drone

During our voyage, we launched our Blueye drone four times into the water to explore the hidden underwater world of East Greenland. We found diverse habitats, from red sandstone beaches with sandy bottoms, littered with predated bi valve shells to icebergs with walls of ice as deep as your imagination.

View the highlights from our underwater drone footage on YouTube





Underwater drone

During our landing at Terrasepynt, Greenland (17.09.2025) there were small icebergs dotted in the bay.

To better understand buoyant icebergs and the ratio between 10% above and 90% below, the team decided to send out the drone to investigate the depths.

From the video you can see that our drone reaches down to a staggering 28 meters before seeing the bottom of the iceberg. Roughly equating to the iceberg above being only 4 meters high.

We can see different patterns as the drone descends, the straight lines are called 'Bubble Rails' and the pucks shaped like a golf ball are called 'Cupules.

View the highlights from our underwater drone footage on YouTube



Planktonics Project: eDNA

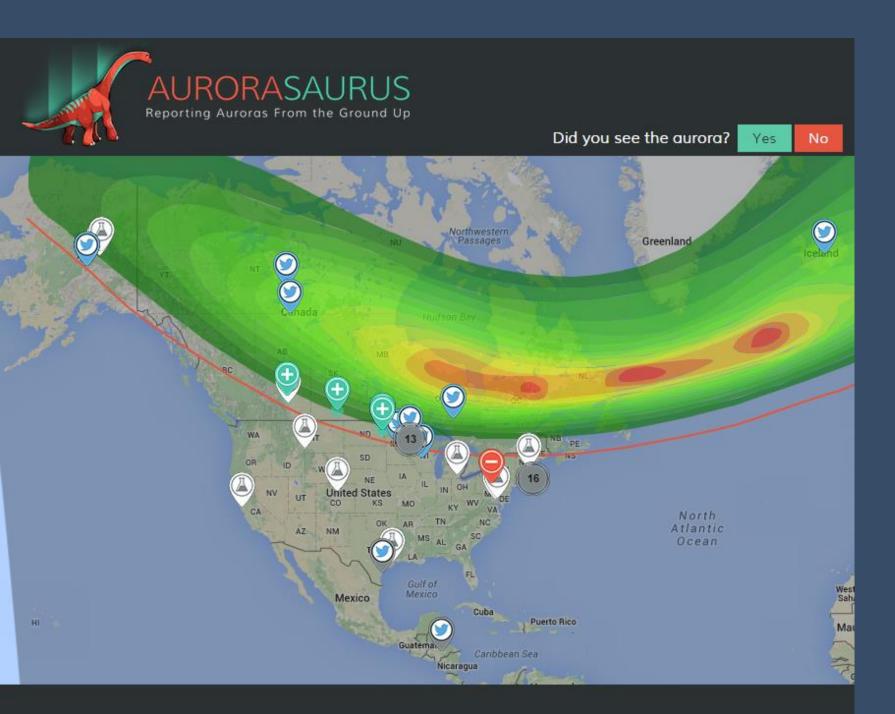


This project aims to describe the diversity of organisms present in fjordic systems around the East of Greenland using the eDNA technique capturing water packets at depth.

This consists of filtering water, extracting and amplifying the biological fragments preserved on the filters & targeting specific groups of species DNA.

During our Science boat, we managed to collect three times in Bjorn Islands. Filters were kept chemically frozen in our facilities until they will be picked up by the scientists to be analysed in the laboratory.

This project has been founded in part by the HX Foundation.



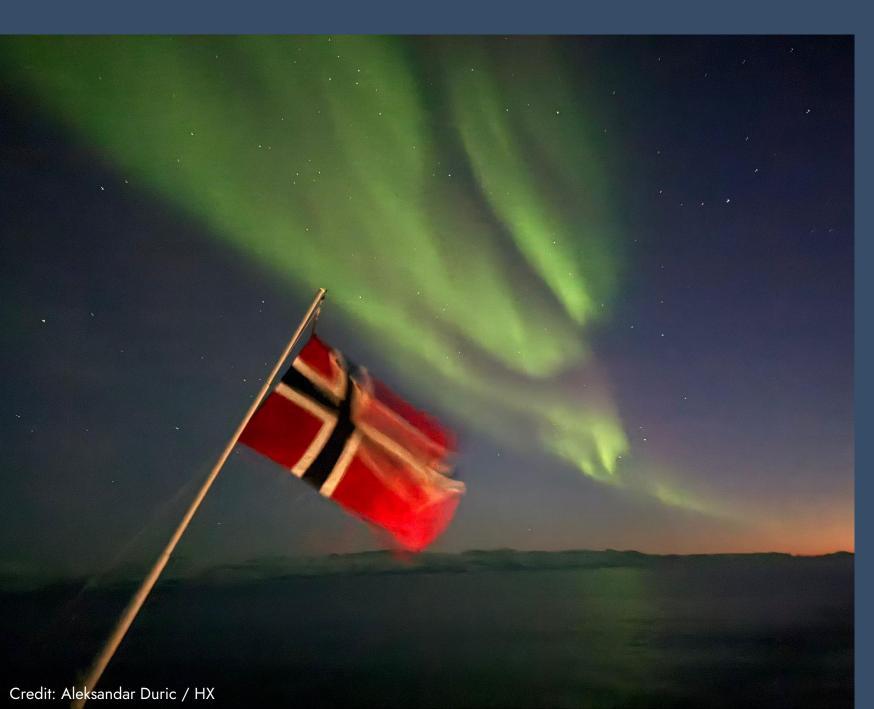
Aurorasaurus

Aurorasaurus is a <u>participatory science</u> <u>project</u> that uses volunteer reports to generate a real-time, global map of the Northern and Southern Lights.

Each report serves as a valuable data point for scientists to analyze and incorporate into space weather models.

Aurorasaurus was created by heliophysicist <u>Dr. Elizabeth MacDonald</u>, and the co-PI is Dr. Matthew Heavner of the <u>New Mexico Consortium</u>. The project is supported by a small team, as well as the Aurorasaurus Ambassador Network and Early Career Group.

Visit Aurorasaurus to add your sightings



Aurora Borealis

On our voyage we had three aurora events. Mainly occurring in Scorsby Sund.

We collected the images shared by the expedition team members and uploaded them onto the database on behalf of our voyage.

This kind of real time data dropping helps better computer modelling for atmospheric sciences.

You still have time to upload your best photos to the website, just follow the link below.

We hope you enjoyed this magical evenings on board as much as the MS Fram-ily did with you.

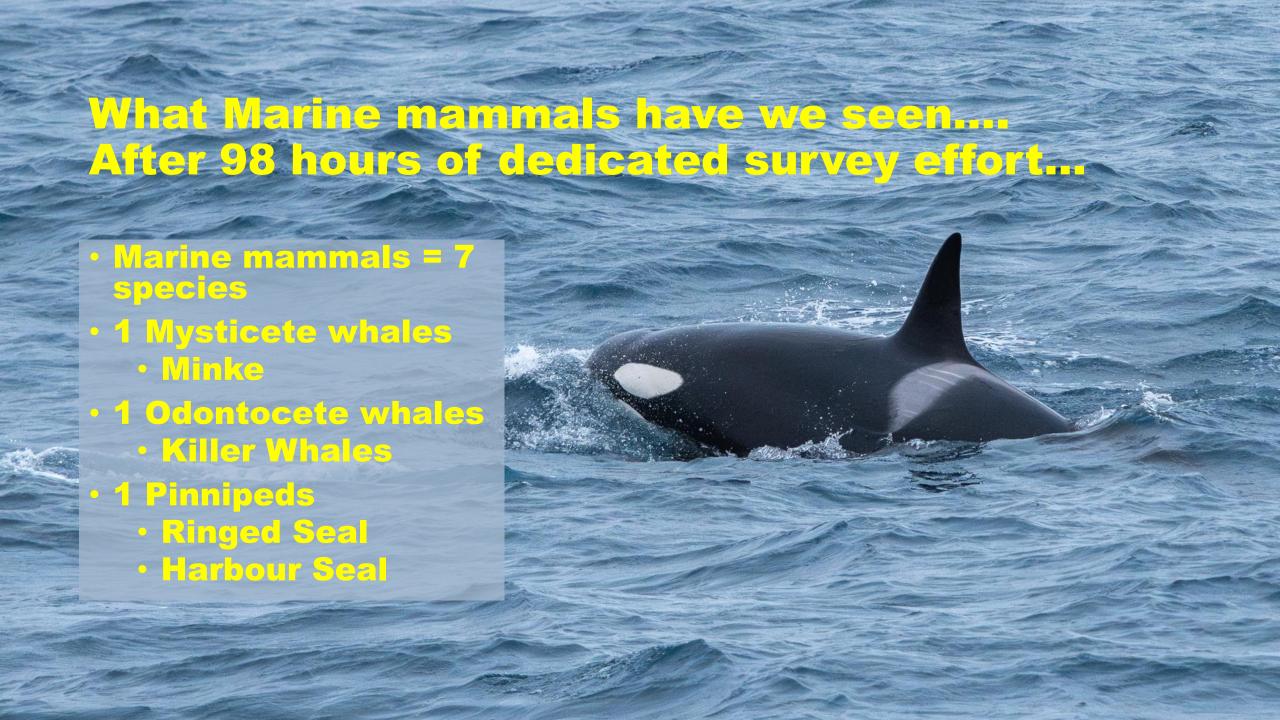
user per day: 100 Scoresby Sund, Greenland Ongoing? What colors did you see? What type of aurora did you see? ☑ Discrete Arcs ☑ Diffuse Glow □ Patches (pulsating) (?)

<u>Visit Aurorasaurus</u> to add your sightings

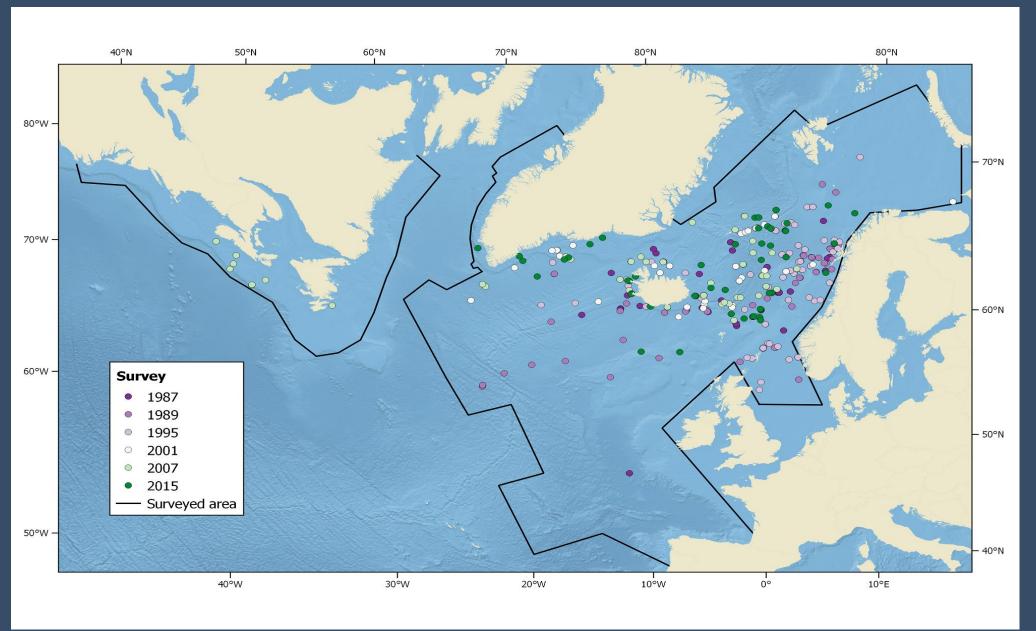
Guest Scientists:

Dr Lauren McWhinnie and Sophie Cox

Whales and Arctic Vessels (WAVE)
Heriot-Watt University



Greenlandic Killer Whale Distribution



AND... just in case you missed having a chat with us about WAVE – Whales & Arctic Vessel









Funders: Royal Society of Edinburgh, UKRI Arctic Office, EU Horizon Programme, Heriot-Watt University and HX Expeditions and the HX Foundation







Aims

- Establish an understanding of presence of Arctic cetacean populations in collaboration with expedition operators
- Understand the exposure of Arctic whales to vessels
- Inform decision-making relating to the conservation of Arctic Cetaceans and their Habitats

Keep up to date with the project and stay involved: www.wave-arcticwhales.com

PLEASE SEND US MARINE MAMMAL PHOTOS l.mcwhinnie@hw.ac.uk







Beach clean-up

MS Fram is on a mission to collect ocean waste in the isolated locations we visit.

We collected 8.52kg of ocean waste during our voyage, bringing the total for the season to 199.02kg!

Trash 'O' Meter Update

MS Fram is on a mission to collect ocean waste in the isolated locations we visit.

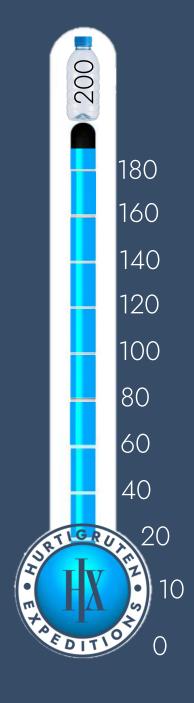


Statistics so far:

So far we have collected a whopping: Weight: 189.50 KG

On our voyage we collected a total: Weight: 8.52 KG

Combined weight of waste removed during our voyage:



Trash 'O' Meter Update

MS Fram is on a mission to collect ocean waste in the isolated locations we visit.



Statistics so far:

So far we have collected a whopping: Weight: 189.50 KG

On our voyage we collected a total: Weight: 8.52 KG

Combined weight of waste removed during our voyage:

199.02 KG

Thank you for helping clean up the Arctic.

Wildlife List-Marine & Lanc Mammals

Cetaceans																		
Scientific Name	English	Deutsch	Norsk	13.09	14.09	15.09	16.09	17.09	18.09	19.09	20.09	21.09	22.09	23.09	24.09	25.09	26.09	27.09
Orcinus orca	Killer whale, orca	Schwertwal, Orca	Spekkhogger												Х	X		
	Unidetified whale	Nicht identifizierter Wal	Uidentifisert Hval															
	Unidetified dolphin	Nicht identifizierter Delfin	Uidentifisert Delfin															
Pinnipeds																		
Scientific Name	English	Deutsch	Norsk	13.09	14.09	15.09	16.09	17.09	18.09	19.09	20.09	21.09	22.09	23.09	24.09	25.09	26.09	27.09
Erignathus barbatus	Bearded seal	Bartrobbe	Storkobbe											Х				
Pusa hispida	Ringed seal	Ringelrobbe	Ringsel							Х		X	X					
Land Mamma	ls																	
Scientific Name	English	Deutsch	Norsk	13.09	14.09	15.09	16.09	17.09	18.09	19.09	20.09	21.09	22.09	23.09	24.09	25.09	26.09	27.09
Alopex lagopus	Arctic Fox	Polarfuchs	Fjellrev				X	X										
Ovibos moschatus	Musk Ox	Moschusochse	Moskus				х	X				X	X					
Lepus arcticus	Arctic Hare	Polarhase	Polarhare				х	X						х	X	X		
Dicrostonyx groenlandicus	Northern Collared Lemming	Nörvlicher Halsbandlemming	Ringstrynet Lemming				x							x		Х		

Wildlife List – Birds

MS FRAM Wildlife List Svalbard - East Greenland **Birds** Scientific name 15.09 | 16.09 | 17.09 | 18.09 | 19.09 | 20.09 | 21.09 | 22.09 | 23.09 | 24.09 | 25.1 | 26.09 | 27.09 English Deutsch Norsk 13.1 14.09 Stercorarius skua **Great Skua** Skua Storjo Stercorarius pomarinus Pomarine Jaeger Spatelraubmöwe Polarjo Х Х Schmarotzerraubmöwe Stercorarius parasiticus Parasitic Jaeger Tyvjo Х X Х Stercorarius longicaudus Long-tailed Jaeger Falkenraubmöwe Fjelljo Alle alle Little Auk Krabbentaucher Alkekonge Uria Iomvia Thick-billed Murre Dickschnabellumme Polarlomvi Uria aalge Common Murre Trottellumme Lomvi Alke Alca torda Razorbill Tordalk Х Black Guillemot Gryllteiste Cepphus grylle Teist Fratercula arctica **Atlantic Puffin** Papageitaucher Lunde Х Falco rusticolus Gyrfalcon Gerfalke Jaktfalk Corvus corax Northern Raven Kolkrabe Ravn Х Х Х X Х Oenanthe oenanthe Northern Wheatear Steinschmätzer Steinskvett Х Х Motacilla alba White Wagtail Bachstelze Linerle **Meadow Pipit** Anthus pratensis Wiesenpieper Heipiplerke Acanthis flammea Common Redpoll Birkenzeisig Gråsisik х Plectrophenax nivalis **Snow Bunting** Schneeammer Snøspurv X Х Puffinus puffinus Manx Shearwater Atlantiksturmtaucher Havlire Fulmarus glacialis Northern Fulmar Havhest Х Х Eissturmvogel X X X Х Ardenna gravis **Great Shearwater** Großer Sturmtaucher Storlire Sooty Shearwater Dunkelsturmtaucher Grålire Ardenna grisea Х Morus bassunus Northern Gannet Basstölpel Havsule Х Х Snøugle **Bubo scandiacus** Snowy Owl Schneeeule X X

X

Х

Falco peregrinus tundrius

Histrionicus histrionicus

Peregrin Falcon

Harlequin Duck

Wanderfalke

Kragenente

Vandrefalk

Harlekinand

MS FRAM Wildlife List Svalbard - East Greenland **Birds** Scientific name English Deutsch 14.09 | 15.09 | 16.09 | 17.09 | 18.09 | 19.09 | 20.09 | 21.09 | 22.09 | 23.09 | 24.09 | 25.1 | 26.09 | <u>27.09</u> Norsk 13.1 Branta leucopsis Barnacle Goose Weißwangengans Hvitkinngås Ringgås Branta bernicla Brant Goose Ringelgans Pink-footed Goose Kortnebbgås Anser brachyrhynchus Kurzschnabelgans Mallard Stokkand Anas platyrhynchos Stockente Somateria spectabilis King Eider Prachteiderente Praktærfugl Common Eider Somateria mollissima Eiderente Ærfugl X Long-tailed Duck Clangula hyemalis Eisente Havelle Х Alpenschneehuhn Х Lagopus muta **Rock Ptarmigan** Fjellrype X **Red-throated Loon** Sterntaucher Smålom Gavia stellata Х Gavia immer Common Loon Eistaucher Islom X X Phalacrocorax carbo **Great Cormorant** Kormoran Storskarv Charadrius hiaticula Common Ringed Plover Sandregenpfeifer Sandlo Ruddy Turnstone Steinwälzer Arenaria interpres Steinvender Sanderling Sanderling Calidris alba Sandløper Calidris maritima Purple Sandpiper Meerstrandläufer Fjæreplytt Х Phalaropus lobatus Red-necked Phalarope Odinshühnchen Svømmesnipe Rissa tridactyla Black-legged Kittiwake Dreizehenmöwe Krykkje Х X Х Great Black-backed Gull Mantelmöwe Larus marinus Svartbak X Polarmåke Larus hyperboreus Glaucous Gull Eismöwe X X X X X X X X Х Х Xema sabini Sabine's Gull Schwalbenmöwe Sabinemåke

Sterna paradisaea

Arctic Tern

Küstenseeschwalbe

Rødnebbterne



Thank you all for your contribution to science!

Stay curious and question everything!