

The background of the slide features two humpback whales swimming in a deep blue ocean. A large, semi-transparent watermark with the letters 'HIX' is overlaid on the left side of the image. The text 'Science Recap' is centered in a white, bold, sans-serif font.

Science Recap

MS FRAM

MS FRAM 24th- 31th August 2025

West Svalbard in Summer



Credit: Yuri Choufour/ HX



Citizen Science

Inaturalist

We submitted more than 120+ observations to Inaturalist., this is the record for this Arctic season in Svalbard! [You can view our observations by clicking here.](#)

Ebird

We submitted 14 checklists to Ebird. You can view the [trip report for your voyage by clicking here.](#)

Planktonics Project – eDNA around Svalbard.

We collected water samples once during this voyage.

Event in progress



2025-08-24 MS FRAM Svalbard

Aug 24, 2025 - Aug 31, 2025

Overview

121

OBSERVATIONS

47

SPECIES

29

IDENTIFIERS

iNaturalist

On our voyage we submitted 121 observations covering a wide range of 47 living species, from plants to animals passing to planktonic creatures.

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

[Click here to visit the iNaturalist Project for this voyage.](#)

Event in progress



IX 2025-08-24 MS FRAM Svalbard

Aug 24, 2025 - Aug 31, 2025

About

Members 16

Shared observations by our guests and team members during our voyage around the western part of the Svalbard archipelago.

[Read More >](#)

Project Members
Only

[Project Jour...](#)

Overview

121
OBSERVATIONS

47
SPECIES

29
IDENTIFIERS

8
OBSERVERS

[Stats](#)



10 observations



7 observations



3 observations



3 observations



3 observations

iNaturalist

The most abundant species registered were the Polar Willow, followed by Fulmar and Black Guillemots. 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.](#)

eBird

On our voyage we conducted 14 surveys, observed 17 bird species and counted a total of 721 individuals. The most abundant species were the Common Eider, followed by the Arctic Tern and the Kittywake. These data are crucial to document the abundance and distribution of emblematic polar and cosmopolitan species around Svalbard, both terrestrial and marine species.

Thank you very much for joining Julia 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.](#)





HappyWhale

During our voyage exploring Spitsbergen, we saw walrus, harbour seals, bearded seals, minke whales, and a polar bear!

Although we did not manage to take any individually identifiable photos of marine mammals on this voyage, you can do so for any older photos you may have from years gone by, this can give scientists a better idea of how long the individuals sighted more recently have been alive for!

Thank you very much for joining Jenna during our wildlife watches.

[Click here to visit the HappyWhale Project.](#)

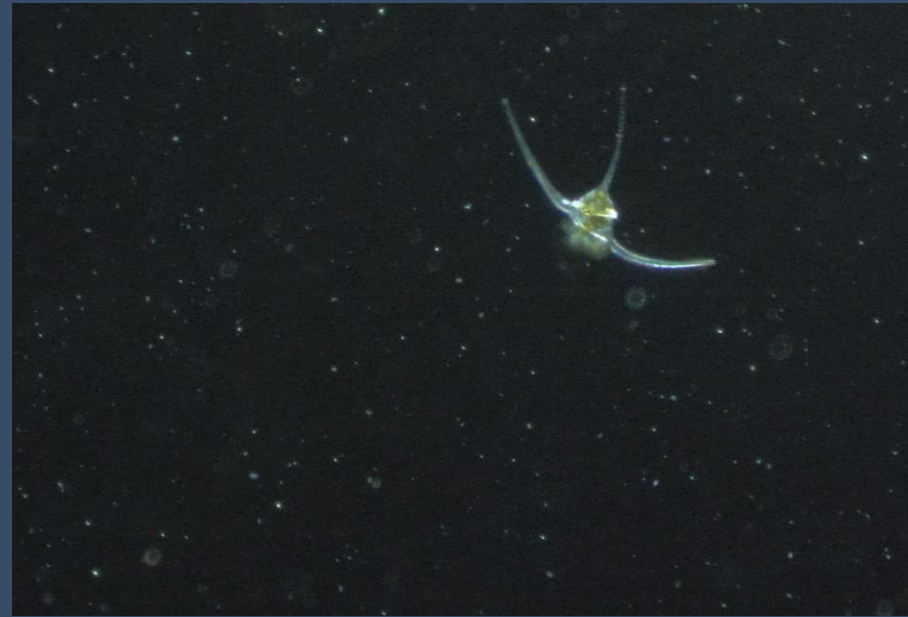
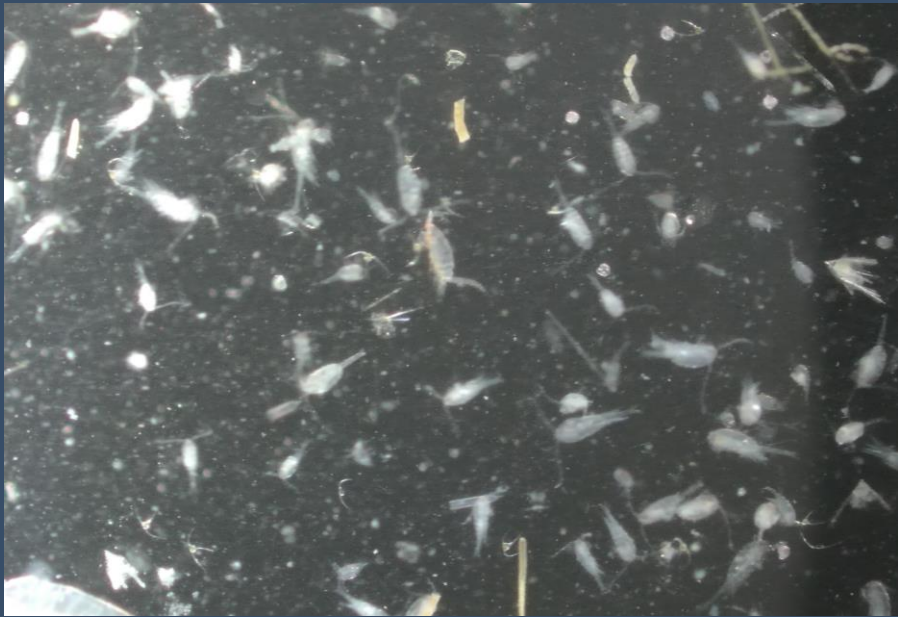


Science Boat

On our voyage we conducted 4 Science Boats during which we realized Secchi disc measurements & CTD profiles to characterize the water column parameters, and collected plankton & Niskin bottle samples for eDNA. We also helped our guest scientists to collect samples for their respective projects.

Once back on-board, we used the microscopes in the science centre to identify plankton caught during the science boats. We observed a great variety of zooplankton organisms, with copepods being the most abundant, but invertebrates larvae and eggs found in our samples. Dinoflagellates from *Triplos* spp were also caught. Please see the following slide for more pictures of plankton caught during our voyage.

[Click here to visit the Secchi Disc Project and view the Secchi data.](#)



Mr. Copepod. *Calanus finmarchicus* (below) and zooplankton soup (above)

Dinoflagellate *Tripos* sp. (above) and echinoderm larvae (below)



X 15

Underwater drone

During our voyage, we launched our Blueye drone into the water to explore the hidden underwater world. We found coastal fishes, most likely pollack or juvenile Arctic char, as well as sugar kelp and jellyfish. Our dive took us to a depth of 20 meters, where we found a vibrant diversity of organisms that demonstrate the abundance and variety of marine wildlife.



Planktonics Project – eDNA around Svalbard

This project aims to describe the diversity of jellies organisms present in waters around the archipelago of Svalbard using the eDNA technics. This consists of filtering water, extract and amplify the DNA preserved on the filters targeting specific groups of species. During our Science boat, we managed to collect one time in Magdalenafjorden for this project. Filters were kept 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.





Geology report

Svalbard is a paradise for geologists — a land where deep time rises to the surface. Its mountains and valleys reveal a story stretching back over 2.5 billion years. Here, you'll find rich seams of coal formed in tropical swamps, marine fossils of ichthyosaurs and ammonites from long-vanished seas, and even the preserved footprints of dinosaurs pressed into Cretaceous sandstone.

The next slides highlights the surprising rocks formation we discovered during our voyage.

Burgerbukta, Hornsund: (77.03875°N, 15.95512°E).

Burgerbukta is a fjord branching off the inner part of Hornsund, on the southwest coast of Spitsbergen, Svalbard. Geologically, the area lies within the Hecla Hoek succession, one of Svalbard's oldest geological units, composed of Proterozoic to lower Paleozoic sedimentary and metamorphic rocks. The bedrock around Burgerbukta includes quartzites, phyllites, and dolomitic marbles, which were deposited in shallow marine environments and later deformed and metamorphosed during the Caledonian orogeny (~430–390 Ma). Intrusions of Paleozoic and Mesozoic dolerites may be found nearby, related to regional tectonic activity during the opening of the North Atlantic and Arctic oceans. The fjord and its surroundings are also heavily shaped by Quaternary glaciation, with steep U-shaped valley walls, hanging glaciers, and moraine systems showing active glacial erosion and deposition. Present-day glaciers calve into the fjord, making it a key location for observing glacial–marine interaction and sediment transport.



Hornsund:

Deilegga Group (correlative of Nordbukta Group):

178 Undifferentiated: marble, quartzite and phyllite

Hornsund - Sørkapp Land:

99 Adriabukta Formation (Late Devonian or Early Carboniferous): polymict conglomerate in lower part, sandstone, shale

100 Marietoppen Formation (Pragian - Eifelian): multicoloured sandstone, shale

Hornsund - Sørkapp:

107 Arkfjellet Formation (age uncertain): carbonate rocks, sandstone and shale

Hornsund - Sørkapp:

Sørkapp Land Group (Ordovician):

110 Wiederfjellet Formation: quartzite

111 Dolomite and limestone formations, undifferentiated

IMAGES:

(A) TopoSvalbard (2025)

(B) Geoscience Atlas of Svalbard (2015)

(C) Arrangement of rocks found upon the moraine system in local area. Detailing the shallow marine fossils of Annelida. The hydrocarbon source rocks in purple shale stones, slate stone and mudstones.

(D) Complexity of conglomerates, quartzite and volcanic natured scoria.

(E) Further evidence of Svalbard once being a shallow marine environment, a fossilised nautilus or ammonite.

Graveneset, Magdalenefjorden: (79.553'N, 11.040'E).

Graveneset, a headland in Magdalenefjorden, is framed by mountains of Precambrian migmatites and granites, formed between 1.7 and 1.0 billion years ago during deep crustal melting and subsequent crystallisation. These basement rocks are cut by striking white calcite and quartz veins, emplaced during later hydrothermal activity in the Caledonian orogeny (~490–390 million years ago), when mountain-building processes fractured the crust and allowed hot, mineral-rich fluids to circulate and precipitate minerals in the cracks. The beaches are strewn with well-rounded granite boulders and pebbles, shaped by glacial grinding and wave action. Many contain the distinctive “wishing stones”—dark granite encircled by a single white vein. In Scottish folklore, such stones were kept for luck or thrown into the sea while making a wish, linking this Arctic landscape to a tradition carried by sailors and whalers far from home.



IMAGES:
(A) TopoSvalbard (2025)

(B) Geoscience Atlas of
Svalbard (2015)

(C) Whalers Rock:
Proterozoic migmatites and
granites

(D) Banded Gneiss

IMAGE C: The rock reads: “Whaling station and burial ground 1612 – 1800. The Whaling station was used by Dutch, English and Basque Expeditions 1612 – 1650. British, Dutch and German Whalers are buried here. The map shows graves and blubber cookeries. It is forbidden to walk in the burial area. The monuments are protected by law.”



Unconsolidated material (Pleistocene - Holocene):

- 1. Moraines
- 2. Marine deposits

Smeerenburgfjorden Complex:

- 210 Migmatite with aplites
- 211 Granitic orthogneiss
- 212 Banded gneiss

Monacobreen, Liefdefjorden. (79.6469° N, 12.6194° E)

Monacobreen is a large tidewater glacier flowing into Liefdefjorden, in northern Spitsbergen. It lies within a region where Paleozoic and Mesozoic sedimentary rocks overlie the Caledonian metamorphic basement. The surrounding bedrock includes Devonian red sandstones, Carboniferous to Permian limestones and dolomites, and Mesozoic shales and siltstones—all gently dipping and locally faulted. These layers record a shift from post-orogenic continental deposition to shallow marine shelf environments along the Barents Shelf margin. The glacier itself is actively reshaping this geology, with its terminus calving directly into the fjord, producing moraines, glaciomarine sediments, and iceberg-rafted debris. Monacobreen is also a key site for glaciological research, with studies focusing on glacier dynamics, sediment transport, and climate-related retreat. The combination of well-exposed stratigraphy and active glacial processes makes it an ideal location to study the interaction between tectonics, sedimentary evolution, and modern Arctic glaciation

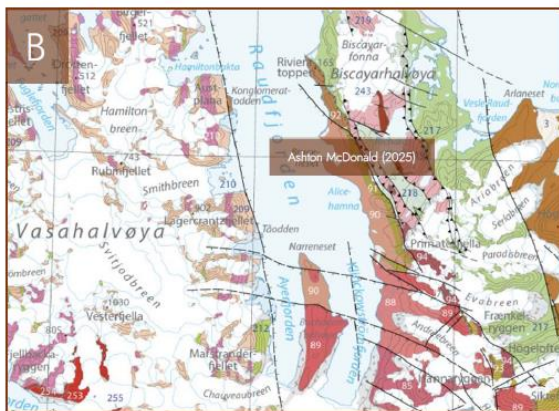


Images:

(A) Toposvalbard (2025) (B) Atlas of Svalbard (2015) (C) Old Red Sandstones displayed beautifully on the Høghotten mountainside at Monacobreen and Siegerbreen Glacier. (D) Boulders, pebbles, sands and silts hitching a ride on the back of an iceberg that calved in the area. Known as 'Ice Rafted Debris'. Later will produce dropstones into the bed sediments of Liefdefjorden

Alicehamna, Raudfjorden: (79.73662°N, 12.23099°E).

Alicehamna, on the southern shore of Raudfjorden, exposes a sequence of Devonian sedimentary rocks resting on Caledonian metamorphic basement. The area is dominated by units of the Ben Nevis Formation, composed of greenish-grey sandstones, and the Schivefjellet Member, a finer-grained interval within this sequence. These rocks represent deposition in fluvial and deltaic systems during the post-orogenic collapse of the Caledonides. The prominent red rocks belong to the Old Red Sandstone group, deposited in arid continental settings. Interbedded polymictic conglomerates with a red matrix contain clasts of quartzite, phyllite, and sandstone, derived from erosion of nearby Caledonian rocks. The Prinsesse Alicefjellet Formation, characterized by quartz-rich conglomerates, is also exposed, indicating high-energy river deposition. Greenish rocks in the area include chlorite-bearing phyllites and greenstones from the Proterozoic basement. The landscape shows strong glacial overprinting, with striated bedrock, moraines, and raised beach terraces recording the effects of Quaternary glaciation and post-glacial uplift.



Red Bay Group (Lochkovian):

- 85 Ben Nevis Formation: greenish and grey sandstone, siltstone and shale
- 86 Drakehaugen Member: greenish-grey sandstone
- 87 Schivefjellet Member: quartz conglomerate
- 88 Frænkelyggen Formation: red clastic rocks, mostly sandstone and siltstone
- 89 Andréebreen Formation: greenish sandstone and pebble conglomerate
- 90 Prinsesse Alicefjellet Formation: quartz conglomerate
- 91 Rabottdalen Formation: sandstone, siltstone, subordinate carbonate rocks
- 92 Wulffberget Formation: limestone conglomerate, quartz and polymict conglomerate

IMAGES:

- (A) TopoSvalbard (2025) (B) Geoscience Atlas of Svalbard (2015) (C) Alicehamna and Solanderfjellet summit.
- (D) Ben Nevis Formation (green sandstones)
- (E) Prinsesse Alicefjellet Conglomerates.



Beach clean-up

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

We collected 32 kg of ocean waste during our voyage, bringing the total for the season to 166.10 kg!

Trash-O-Meter:

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

Statistics so far:

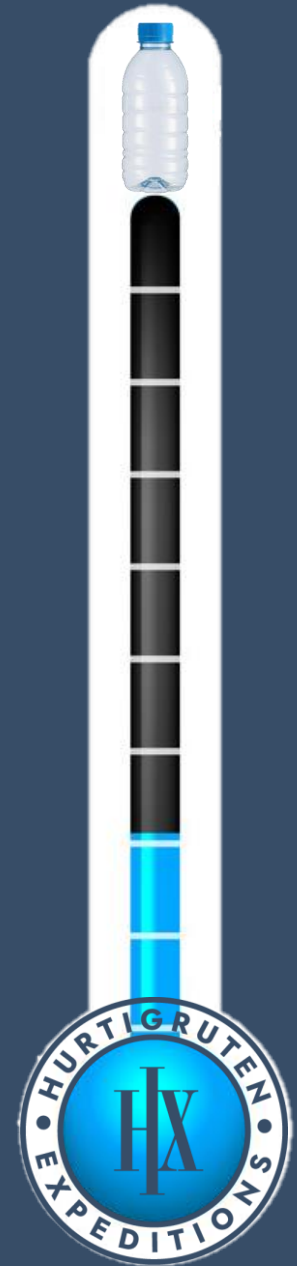
So far we have collected a whopping:
Weight: 134.10 KG

On our voyage we collected a total:
Weight: 32.30 KG

Combined weight of waste removed during
our voyage:

166.40 KG

Thank you for helping clean up the Arctic.



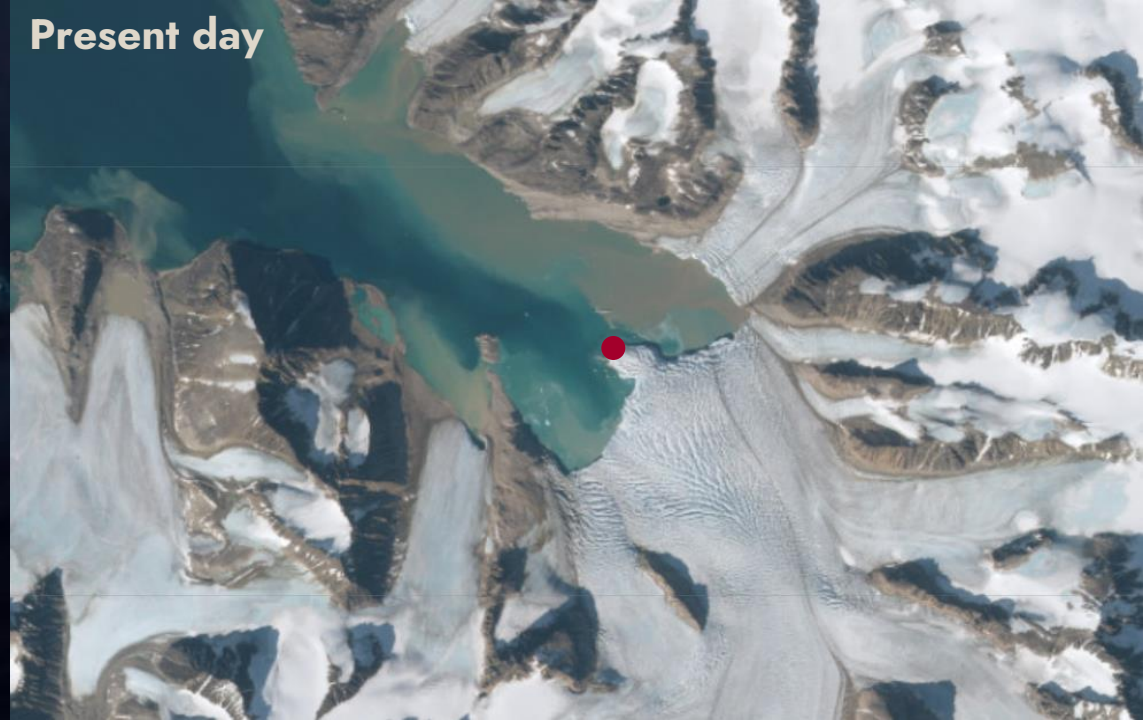
Burgerbukta and Brepollen



Smeerenburgreen



Present day



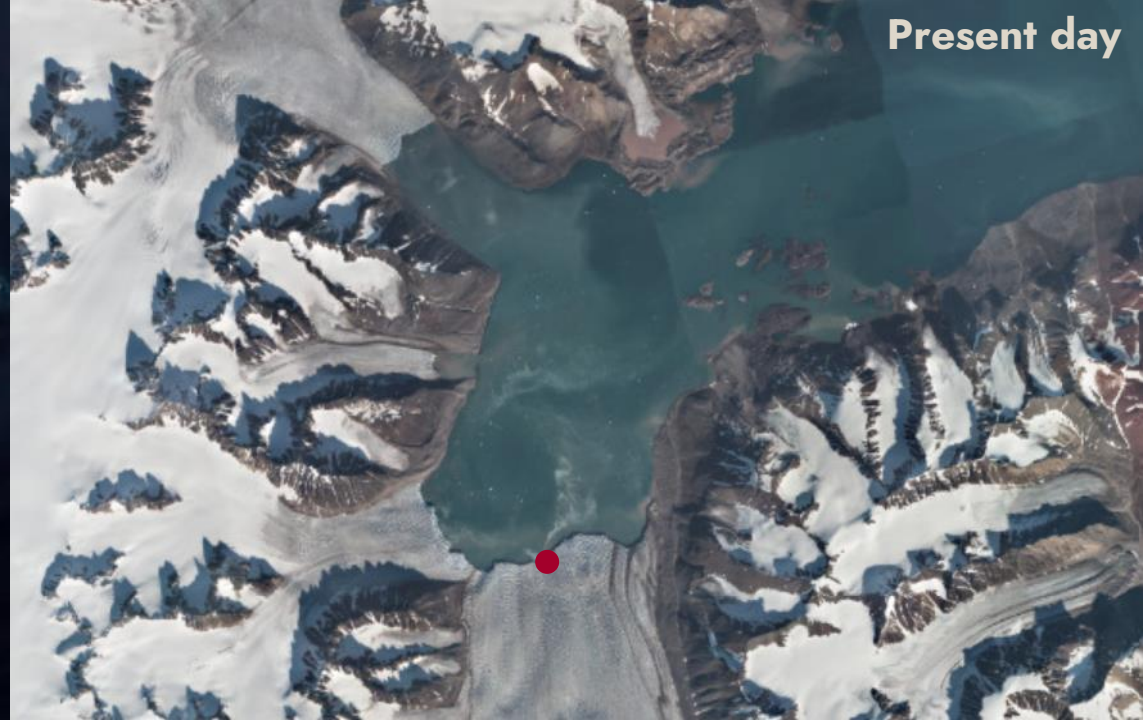
1936-38



Monacobreen



Present day



1936-38



GUEST SCIENTISTS

- **SOOP Project — Christian Hohe**
- **NPI — Fabienne Mannherz & Heidi Ahonen**

- 4 sampling locations
- Diverse sampling sites (Glaciers, run-off areas, converging fjords, clear water)
- 2 science boat sessions
- Water samples from the surface
- 3 samples each site
 - 1x eDNA analysis
 - 1x Chlorophyll analysis
 - 1x coloured dissolved organic matter
- CTD measurements from 20 m to 40 m depth
- 2 spectrometer measurements
- Visibility measurements with Secchi (5.40 m)
- Filtration to 0.4 μm -membranes
- Stored at -20°C in ethanol



Sound-Cruising

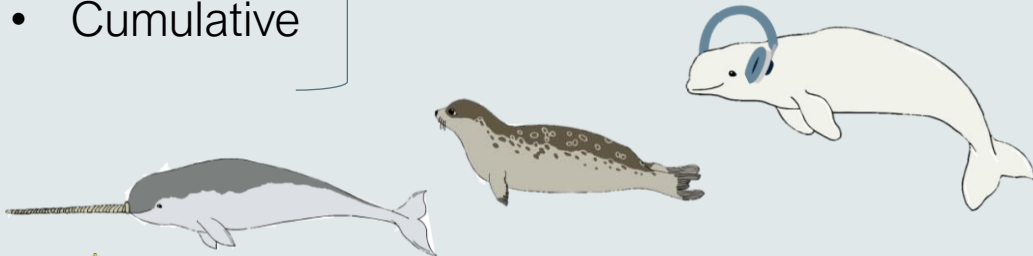


Investigating underwater noise of cruise operations in Svalbard

Funded study (900.000 NOK) to collect a data set of noise budgets and characteristics associated with local cruise activities

- Prolonged
- Repeated
- Cumulative

noise exposure for



Heidi Ahonen, PhD
Researcher Marine Bioacoustics
Norwegian Polar Institute



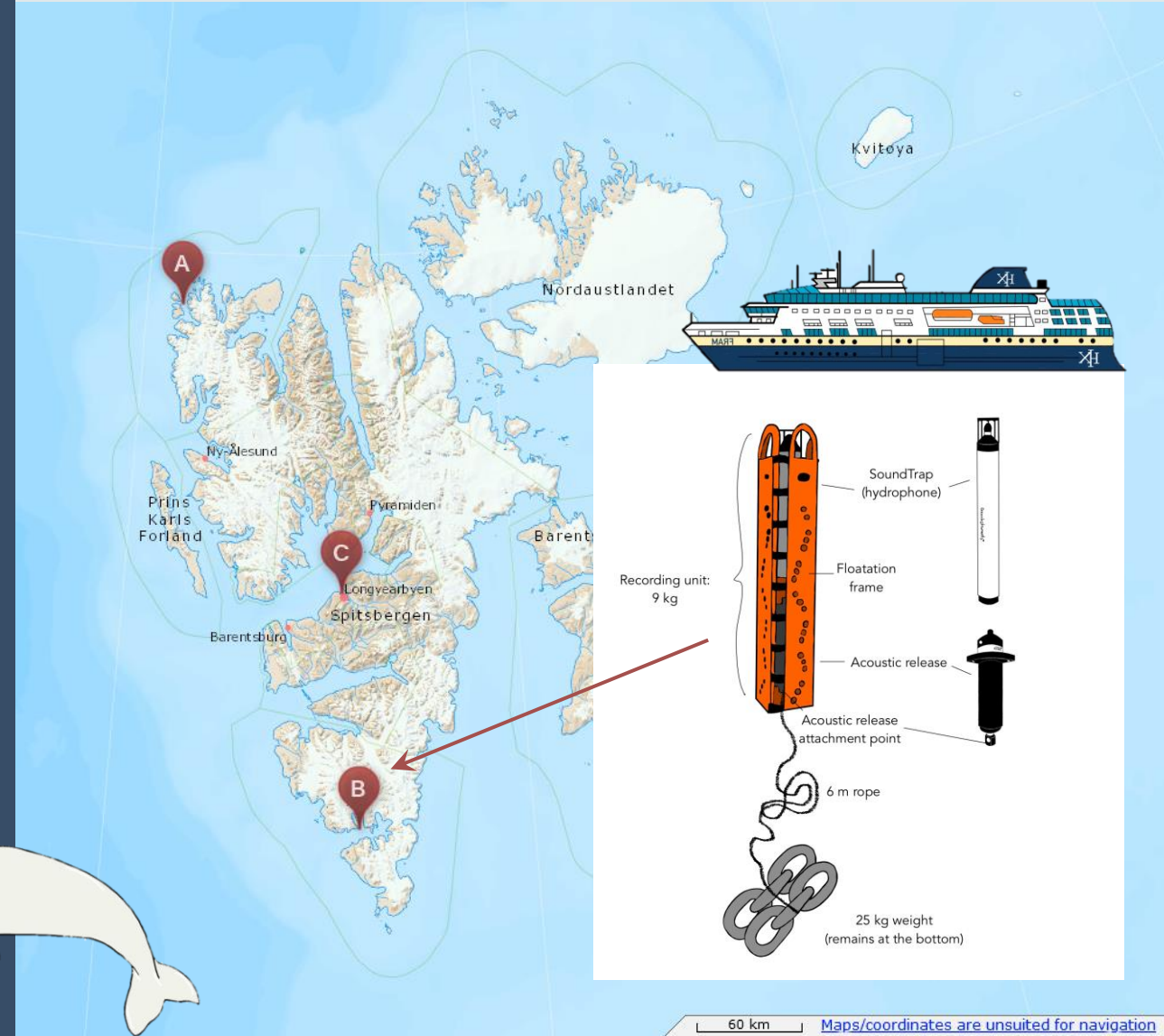
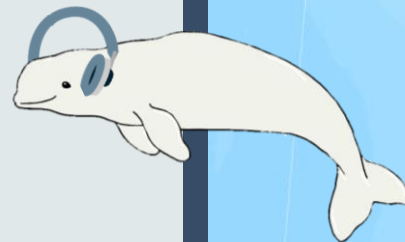
Fabienne Mannherz
PhD student Marine Bioacoustics
Aarhus University, Denmark

Sound Cruising Recap

Svalbard 14th -31st August

Location B) Gnålodden (Burgerbukta)

- Successful re-deployment for winter
- Will record 10 min. every hour until June '26

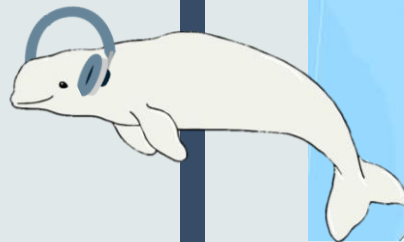


Sound Cruising Recap

Svalbard 14th -31st August

Handheld recordings

- 7 locations
- Documentation of sound characteristics during guest operations (Fram & zodiaks)



Winter is coming ...

... with **11 Terabytes** of audio data (.wav files) waiting to be processed and analysed for:

- Ship presence
- Duration of ship noise
- Absolute levels (decibels)
- Frequency range (& acoustic overlap with Arctic marine mammals)



AECO[®]

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Newsletter/Blog:
Postcards by Fabienne



(generated with ChatGPT)

<https://hejfabienne.substack.com/>



Wildlife List - Marine & Land Mammals



Cetaceans

Scientific Name	English	Deutsch	Francais	中文	24/08	25/08	26/08	27/08	28/08	29/08	30/08	31/08
<i>Balaenoptera acutorostrata</i>	Common Minke Whale	Zwergwal	Petit rorqual	小须鲸		x	x			x		
<i>Balaenoptera musculus</i>	Blue Whale	Blauwal	Rorqual bleu	蓝鲸								
<i>Balaenoptera physalus</i>	Fin Whale	Finnwal	Rorqual commun	长须鲸/鳍鲸								
<i>Megaptera novaeangliae</i>	Humpback Whale	Buckelwal	Baleine à bosse	座头鲸								
<i>Delphinapterus leucas</i>	Beluga Whale	Weißwal	Béluga	白鲸						x		
<i>Lagenorhynchus albirostris</i>	White-beaked Dolphin	Weißschnauzendelfin	Lagénorhynque à bec blanc	白喙海豚								
<i>Physeter macrocephalus</i>	Sperm Whale	Pottwal	Grand cachalot	抹香鲸								
-	Unidentified whale	Nicht identifizierter Wal	Non identifié Baleine	未识别鲸类								

Pinnipeds and Polar Bear

Scientific Name	English	Deutsch	Francais	中文	24/08	25/08	26/08	27/08	28/08	29/08	30/08	31/08
<i>Erignathus barbatus</i>	Bearded Seal	Bartrobbe	Phoque barbu	髯海豹		x			x			
<i>Phoca vitulina</i>	Harbour Seal, Common Seal	Seehund	Phoque veau-marin	港海豹			x	x	x			
<i>Pusa hispida</i>	Ringed Seal	Ringelrobbe	Phoque annelé	环斑海豹								
<i>Odobenus rosmarus</i>	Walrus	Walross	Morse	海象				x	x	x		
<i>Cystophora cristata</i>	Hooded seal	Klappmützenrobbe	Phoque à capuchon	冠海豹								
<i>Pagophilus groenlandicus</i>	Harp/Greenland seal	Sattelrobbe	Phoque du Groenland	竖琴海豹								
<i>Ursus maritimus</i>	Polar Bear	Eisbär	L'ours blanc	北极熊		x						

Land Mammals

Scientific Name	English	Deutsch	Francais	中文	24/08	25/08	26/08	27/08	28/08	29/08	30/08	31/08
<i>Rangifer tarandus</i>	Reindeer	Rentier	Renne	驯鹿			x		x			
<i>Alopex lagopus</i>	Arctic Fox	Polarfuchs	Renard arctique	北极狐			x	x				

Wildlife List — Birds



Birds - Wildlife List - MS FRAM 24/08 - 31/08/2025

Scientific Name	English	Deutsch	Francais	中文	24/08	25/08	26/08	27/08	28/08	29/08	30/08	31/08
<i>Alle alle</i>	Little Auk/Dovekie	Krabbentaucher	Mergule nain	侏海雀								
<i>Anser brachyrhynchus</i>	Pink-footed Goose	Kurzschnabelgans	Oie à bec court	粉脚雁					x	x		
<i>Arenaria interpres</i>	Ruddy turnstone	Steinwälzer	Tournepieuvre à collier	翻石鹬								
<i>Branta bernicla</i>	Brant Goose	Ringelgans	Bernache cravant	黑雁	x							
<i>Branta leucopsis</i>	Barnacle Goose	Weißwangengans	Bernache nonnette	白颊黑雁			x	x	x			
<i>Calidris alba</i>	Sanderling	Sanderling	Bécasseau sanderling	三趾滨鹬			x					
<i>Calidris maritima</i>	Purple Sandpiper	Meerstrandläufer	Bécasseau violet	紫滨鹬			x		x			
<i>Cephus grylle</i>	Black Guillemot	Gryllteiste	Guillemot à miroir	白翅斑海鸽	x	x	x	x	x	x	x	
<i>Charadrius hiaticula</i>	Common Ringed Plover	Sandregenpfeifer	Pluvier grand-gravelot	環頸鸻								
<i>Clangula hyemalis</i>	Long-tailed duck	Eisente	Harelde boréale	长尾鸭								
<i>Fratercula arctica</i>	Atlantic Puffin	Papageitaucher	Macareux moine	北极海鹦					x	x	x	
<i>Fulmarus glacialis</i>	Northern Fulmar	Eissturmvogel	Fulmar boréal	暴雪鵰	x	x	x	x	x	x	x	
<i>Gavia stellata</i>	Red-throated Diver/Loon	Sternaucher	Plongeon catmarin	紅喉潛鳥					x			
<i>Lagopus mytus</i>	Rock Ptarmigan	Alpenschneehuhn	Lagopède alpin	岩雷鳥								
<i>Larus hyperboreus</i>	Glaucous Gull	Eismöwe	Goéland bourgmestre	北极鸥		x	x	x	x	x	x	
<i>Mergus serrator</i>	Red-breasted Merganser	Mittelsäger	Harle huppé	红胸秋沙鸭								
<i>Pagophila eburnea</i>	Ivory Gull	Elfenbeinmöwe	Mouette blanche	白鸥					x			
<i>Phalaropus fulicarius</i>	Grey/Red Phalarope	Thorshühnchen	Phalarope à bec large	灰瓣蹼鹬								
<i>Plectrophenax nivalis</i>	Snow Bunting	Schneeammer	Plectrophane des neiges	雪鹀						x		
<i>Pluvialis apricaria</i>	European Golden Plover	Goldregenpfeifer	Pluvier doré	欧金鸻								
<i>Polgstickta stlleri</i>	Steller's Eider	Scheckente	Eider de Steller	小绒鸭								
<i>Rissa tridactyla</i>	Black-legged Kittiwake	Dreizehenmöwe	Mouette tridactyle	三趾鸥	x	x	x	x	x	x	x	
<i>Somateria mollissima</i>	Common Eider	Eiderente	Eider à duvet	欧绒鸭		x					x	
<i>Somateria spectabilis</i>	King Eider	Prachteiderente	Eider à tête grise	王绒鸭								
<i>Stercorarius longicaudus</i>	Long-tailed Skua/Jaeger	Falkenraubmöwe	Labbe à longue queue	长尾贼鸥								
<i>Stercorarius parasiticus</i>	Arctic Skua/ Parasitic Jaeger	Schmarotzerraubmöwe	Labbe parasite	短尾贼鸥		x	x	x	x	x	x	
<i>Stercorarius pomarinus</i>	Pomarine Skua/Jaeger	Spatelraubmöwe	Labbe pomarin	中贼鸥		x						
<i>Stercorarius skua</i>	Great Skua	Skua	Grand Labbe	北贼鸥								
<i>Sterna paradisaea</i>	Arctic Tern	Küstenseeschwalbe	Sterne arctique	北极燕鸥		x	x	x	x	x	x	
<i>Uria lomvia</i>	Brünnich's Guillemot / Thick-billed Murre	Dickschnabellumme	Guillemot de Brünnich	厚嘴崖海鸦					x			
<i>Xema sabini</i>	Sabine's Gull	Schwalbenmöwe	Mouette de Sabine	叉尾鷗					x			

Wildlife List — Flora



Credit: Martin Barreiro/ HX



Thank you all
for your
contribution
to science!