Science & Education Report

MS Fridtjof Nansen 2026

MS Fridtjof Nansen

Expedition to Iceland – Hamburg to Reykjavík via North Atlantic Islands

7–19 May 2026

Science & Education Programme

From Hamburg to Reykjavík, we journeyed together through landscapes shaped by sea, weather, wildlife, history, and time.

Through lectures, workshops, time on deck, and moments ashore, we explored coastlines, fjords, islands, seabirds, whales, plants, clouds, and the forces shaping this northern route, while contributing to Citizen Science projects along the way.

We hope these shared experiences helped deepen your connection to the places we visited and inspired you to keep observing, recording, and caring for the natural world beyond this voyage.

History & Culture

From Hamburg to Reykjavík, our journey was not only shaped by landscapes, wildlife, and weather, but also by the people, stories, and traditions connected to the places we visited.

Through talks, local experiences, and time spent exploring ashore, we learned more about coastal communities, seafaring traditions, historic routes, local music, and the many ways people have lived with the sea across the North Atlantic.

We hope these moments helped bring the human side of this voyage to life, adding another layer of meaning to the places we visited and deepening your understanding of the cultures, histories, and communities that continue to shape this region today.

Geology

In Lysefjord, nature speaks in scale: towering cliffs, deep waters, and the quiet echo of a glacial past. This 42 kilometre (26 mile) fjord in southwestern Norway reaches over 400 metres deep, with granite walls rising high above the water and the iconic Preikestolen, the ‘Pulpit Rock’, standing at its heart. As we cruised through the fjord by Zodiac, we moved through a landscape shaped by ice. Smooth, polished rock surfaces along the fjord walls told the story of the last Ice Age, when glaciers slowly carved and shaped the valley into what we see today.

Even in this dramatic setting, life was all around us. Limpets and barnacles clung to the shoreline, and seaweeds moved below the surface. In Lysefjord, the power of glaciers met the quiet persistence of life.

Arts, Crafts & Creativity

Through bottle painting, origami, watercolours, and clay, we explored creativity as another way to connect with the places we visited.

No experience was needed, just curiosity and a willingness to try something new. Each creation became a small personal reminder of the landscapes, wildlife, and shared moments from this voyage.

Wildlife Watch

As we travelled from Hamburg to Reykjavík, time on deck gave us the opportunity to take in the changing landscapes, weather, and wildlife around us.

Together, we searched for life at sea and along the coast, from seabirds riding the wind, to whales, dolphins, and other wildlife appearing around the ship. Each sighting helped us better appreciate this northern route and the connections between land, sea, and sky.

These moments also reminded us that the journey was not only about the places we visited, but also about what we observed along the way.

Science Boat

Over five science boat sessions, you moved beyond observation and took part in hands-on exploration of the waters along our route.

Using the plankton net, CTD, and Secchi Disk, you collected samples and measurements to better understand the hidden world beneath the surface, from tiny drifting organisms to water conditions and clarity.

These sessions were a reminder that science begins with curiosity, careful observation, and a willingness to ask questions about the world around us.

Secchi Disk

Looking into the water, it's easy to forget how much hidden life lies beneath the surface.

With the Secchi Disk, you measured water clarity by lowering the disk until it disappeared from view, offering clues about plankton abundance and ocean conditions.

Some days, currents made measurements impossible, reminding us that nature sets the terms. Each reading helped contribute to a better understanding of our changing ocean.

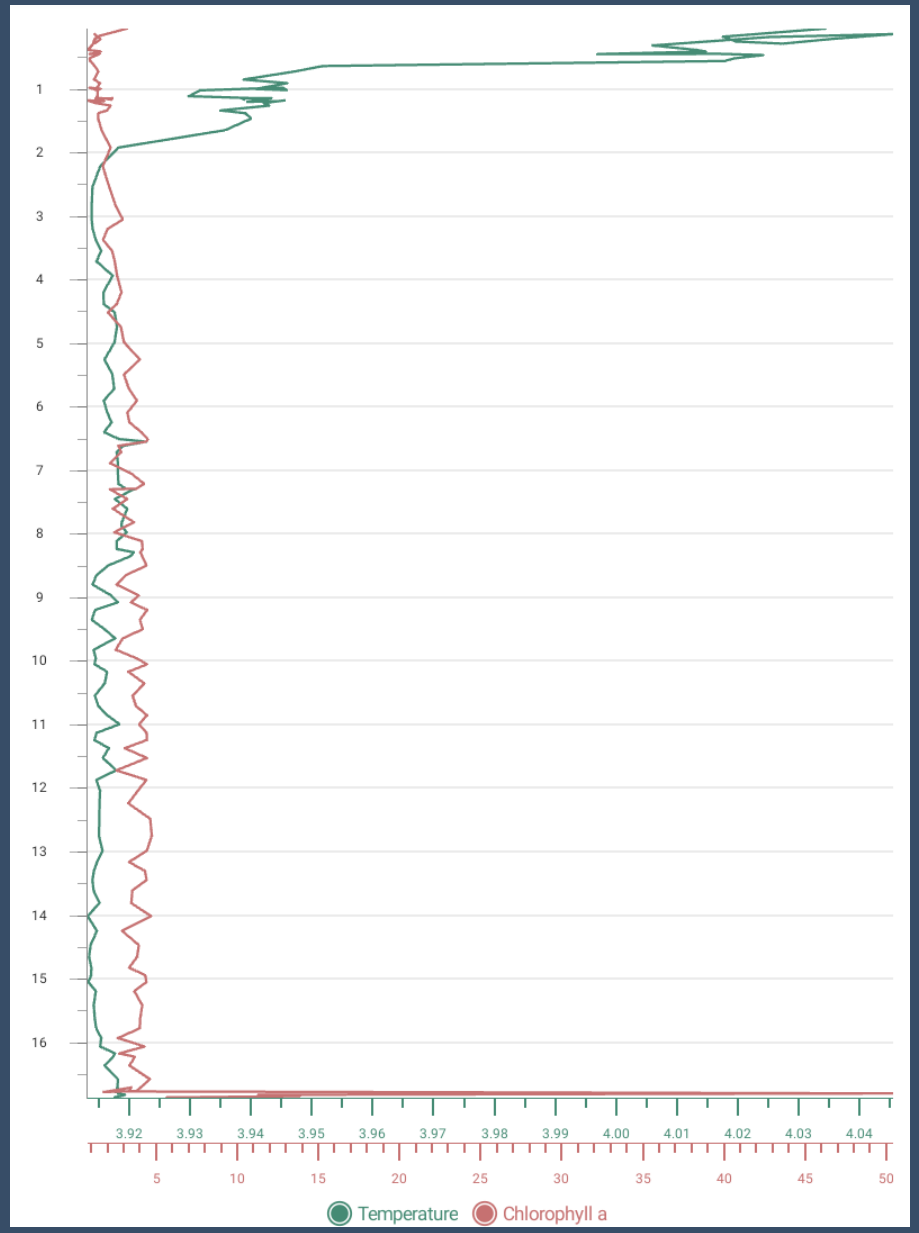
CTD

Beneath the surface, the ocean holds important clues.

With the CTD, you measured temperature, salinity, and depth, helping us better understand water conditions along our route.

Each profile added useful data on how freshwater, currents, and ocean layers shape these waters, one measurement at a time.

Depth Profile: Grímsey



Our CTD profile from Grímsey shows a small difference in temperature between the surface and 16.7m depth. It was slightly warmer at the surface but overall, the water column was well mixed based on the temperature. This is not too surprising as it was only 16.7m deep at our sampling location.

Phytoplankton, shown here as a measure of chlorophyl A (µg/L), was equally distributed at a high level through out the water column. This was confirmed by our very brown plankton net after our plankton tow.

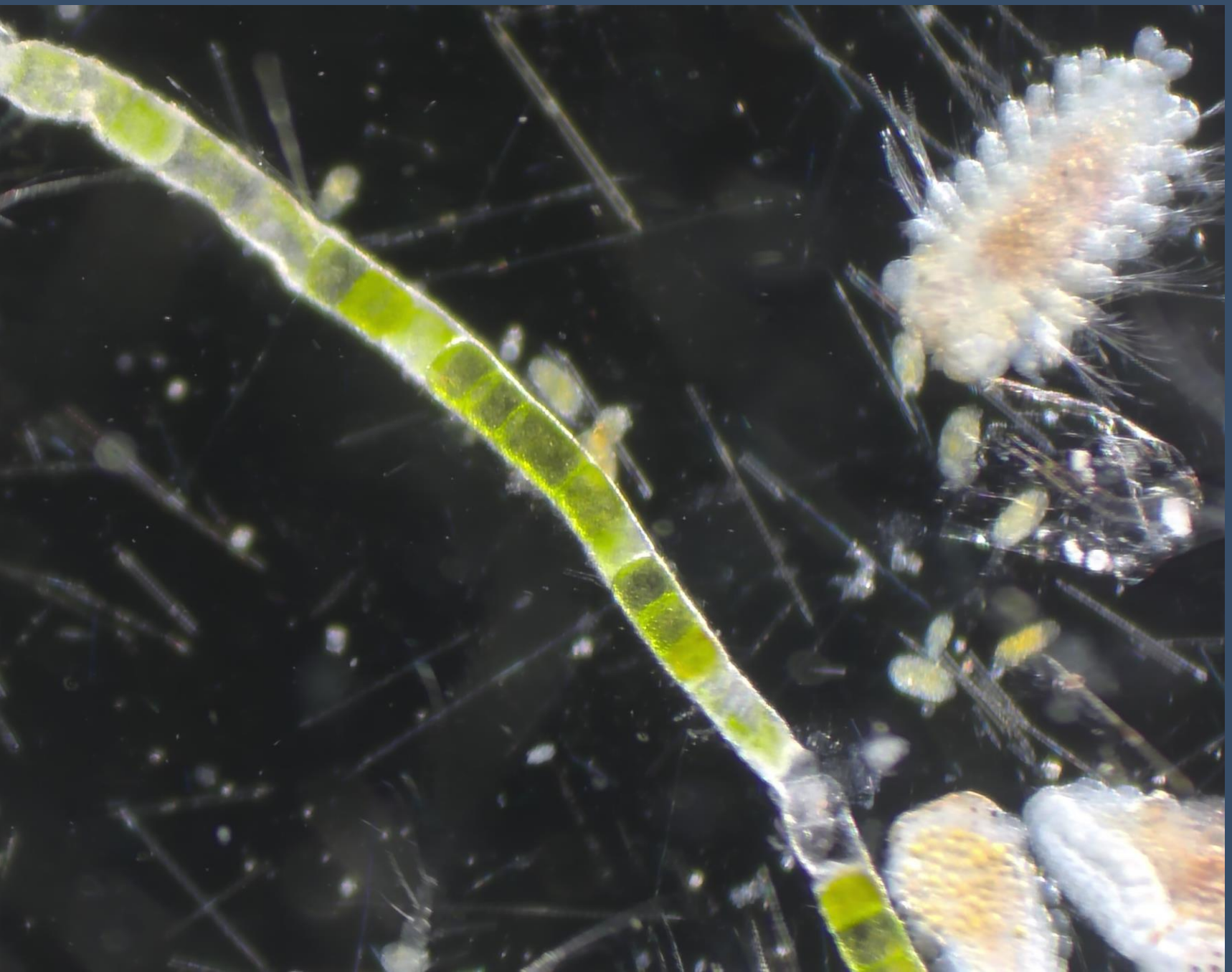
Temperature (°C)
Chlorophyl a (ug/L)

Water Sampling

During our expedition, we collected water samples from Grímsey and Sauðfjársetur á Ströndum.

From the science boat, we deployed plankton nets, towing them through the water to capture these drifting life forms. The phytoplankton net (20 µm mesh) collected microscopic plant-like organisms, forming the base of the marine food web in these fjord and coastal systems.

Each tow offered a glimpse into the hidden world beneath the surface, helping us understand how these tiny organisms support life along the Icelandic coast.

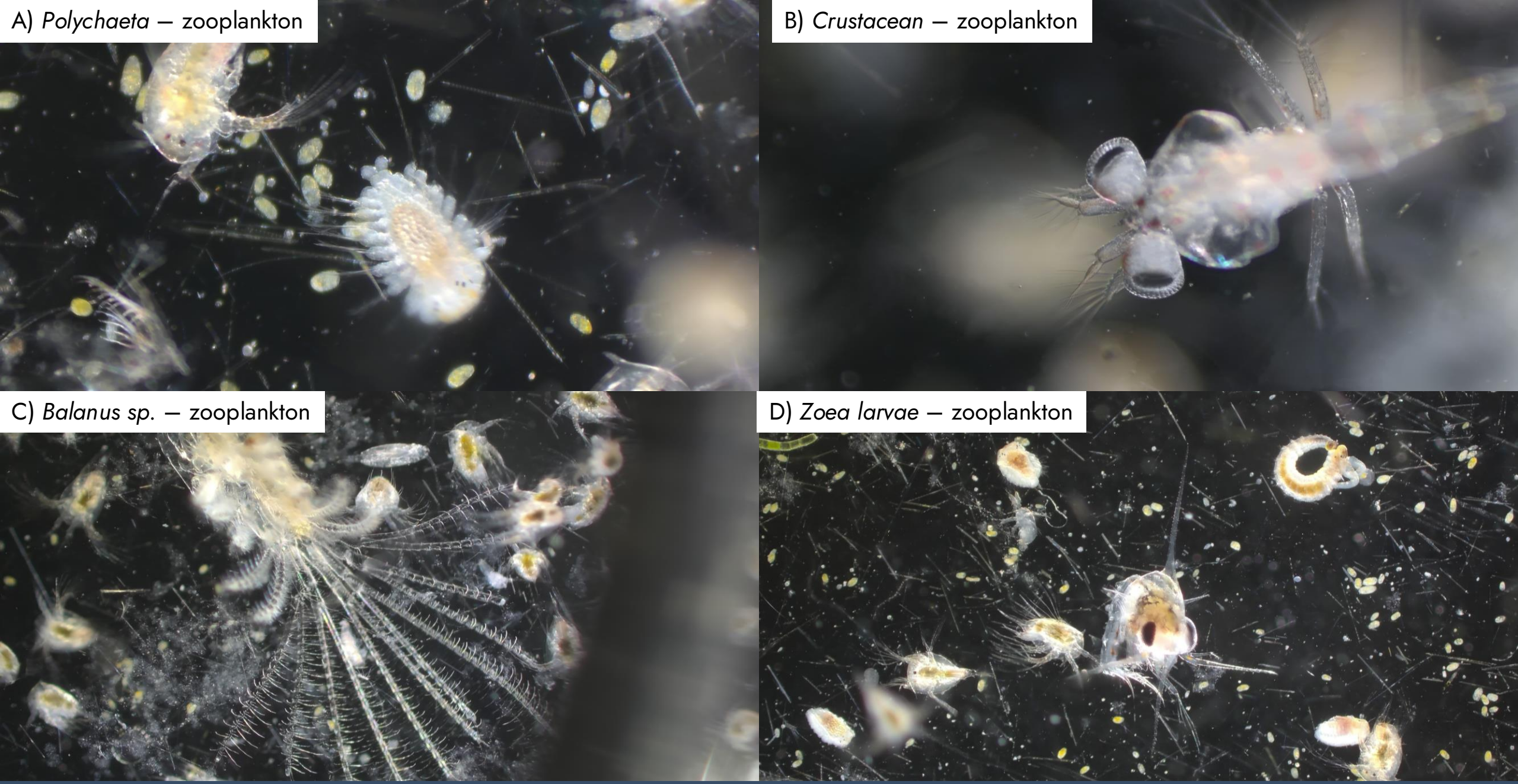


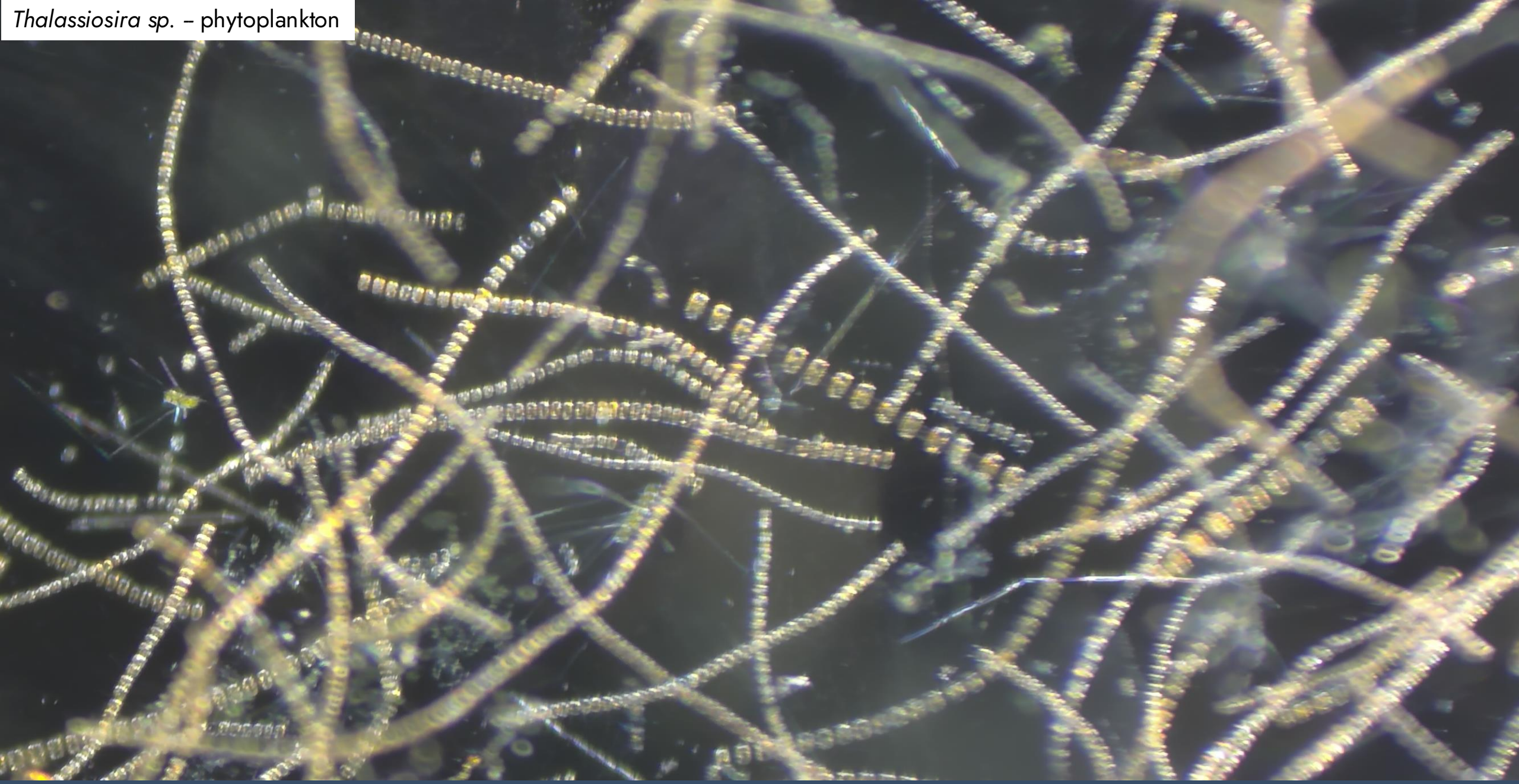
Plankton Samples

Back in the Science Centre, we brought our Grímsey and Sauðfjársetur á Ströndum surface tow samples into focus under the microscope, revealing a hidden world of plankton.

Using the main screen and smaller microscopes, you could explore each drop of water up close.

What appeared invisible to the naked eye quickly became a vivid reminder that these tiny organisms form the foundation of the rich ecosystems we've been travelling through.


A) *Polychaeta* – zooplankton
B) *Crustacean* – zooplankton
C) *Balanus sp.* – zooplankton
D) *Zoea larvae* – zooplankton



Thalassiosira sp. – phytoplankton

NASA Cloud Observer

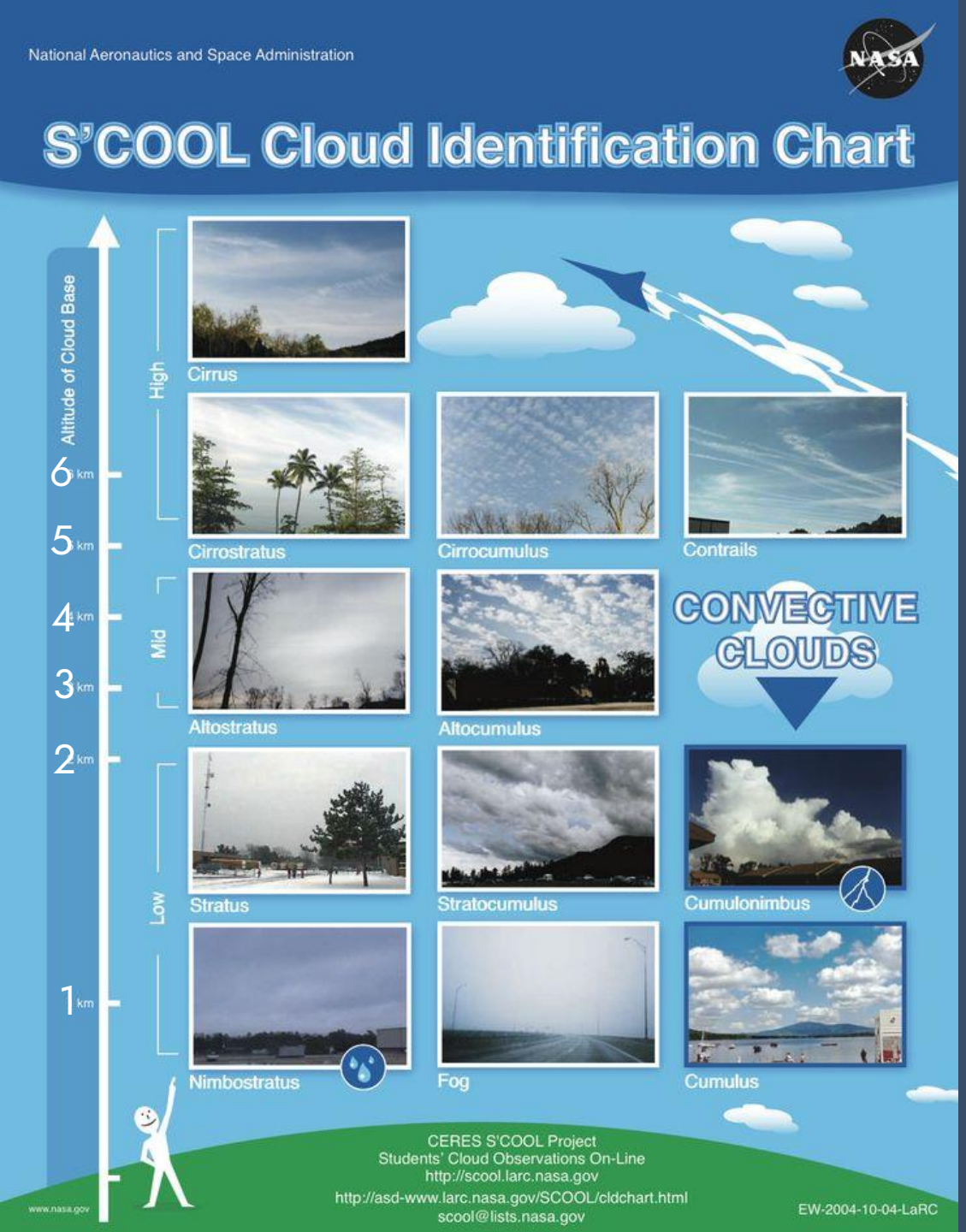
During our voyage, we contributed to NASA's **GLOBE Cloud Observations**, collecting data on:

- May 8th (At sea)
- May 11th (Tórshavn)
- May 14tjh (Akureyri)
- May 15rd (Sauðfjársetur á Ströndum)

By comparing our observations with satellite data, scientists can improve cloud classification, weather forecasting, and climate models.

You can continue contributing from home using the GLOBE Observer app.

View our data on the global map



NASA Cloud Observer

High Clouds (Base above 6,000 metres):

- **Cirrus**: Thin, wispy clouds composed of ice crystals. They often appear as delicate streaks or feathery wisps high in the sky.
- **Cirrostratus**: Thin, sheet-like clouds that cover large portions of the sky. They can create a halo around the sun or moon.
- **Cirrocumulus**: Small, fluffy clouds in a regular pattern, resembling fish scales or ripples.

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

- **Altocumulus**: 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 metrs):

- **Stratus**: Uniform, grayish 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.

Remember that these cloud types can vary in appearance and behaviour, but this basic classification helps meteorologists understand weather patterns and atmospheric conditions. 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

GLOBE Cloud Observations Paired with NASA Satellite Data

Total Satellite Comparisons: 270

Useful Resources: How to Read My NASA GLOBE Clouds Satellite Comparison Table, How to Compare My Cloud Observations with Satellite Data, Cloud Cover, Cloud Type, Cloud Opacity, Satellites

Observation	GLOBE	METEOSAT-10 Satellite
Universal Date/Time	2026-05-08 14:48:00	2026-05-08 14:40
Latitude	57.24	56.92 to 57.56
Longitude	5.92	5.6 to 6.24
Total Cloud Cover	Scattered (25-50%)	Broken 60.78%
High Clouds	Cover: Few (<10%) Opacity: Translucent	No Clouds
Mid Clouds	Altocumulus Cover: Isolated (10-25%) Opacity: Translucent	No Clouds
Low Clouds	Stratocumulus Cover: Isolated (10-25%) Opacity: Translucent	Cover: Broken 60.78% Altitude: 1.17 (km) Phase: Water 273.95 (K) Opacity: Transparent
GLOBE Cloud Photos and Corresponding NASA Satellite Images. Click image to view --->*Note: Photos submitted though GLOBE need approval before being displayed, this may take a few days.*	GLOBE Photos North East South West Up Down	*METEOSAT-10* Visible Infrared GEO Tutorial
Sky Conditions, Surface Conditions and Observer Comments	**Sky Conditions** Sky Visibility : Somewhat Hazy Sky Color : Blue **Surface Conditions** Snow/Ice : No Standing Water : Yes Muddy : No Dry Ground : No Leaves on Trees : No Raining or Snowing : No	Are there any comments you would like to add? Be sure to add the name of the satellite for our record. Submit Comment

NASA Cloud Report

The NASA GLOBE Cloud Satellite Match reports provide an overview of the Citizen scientists' observations (blue) compared with satellite observations (white).

Remember that your data (blue column) is looking up from Earth's surface, while the satellites (white columns) are looking down from space.

This data is then used by NASA to fill gaps in satellite observations, verify their own data, and improve weather forecasting.

View our data on the global map

iNaturalist

Throughout this voyage, you played a vital role in documenting the incredible biodiversity of Europe and Iceland.

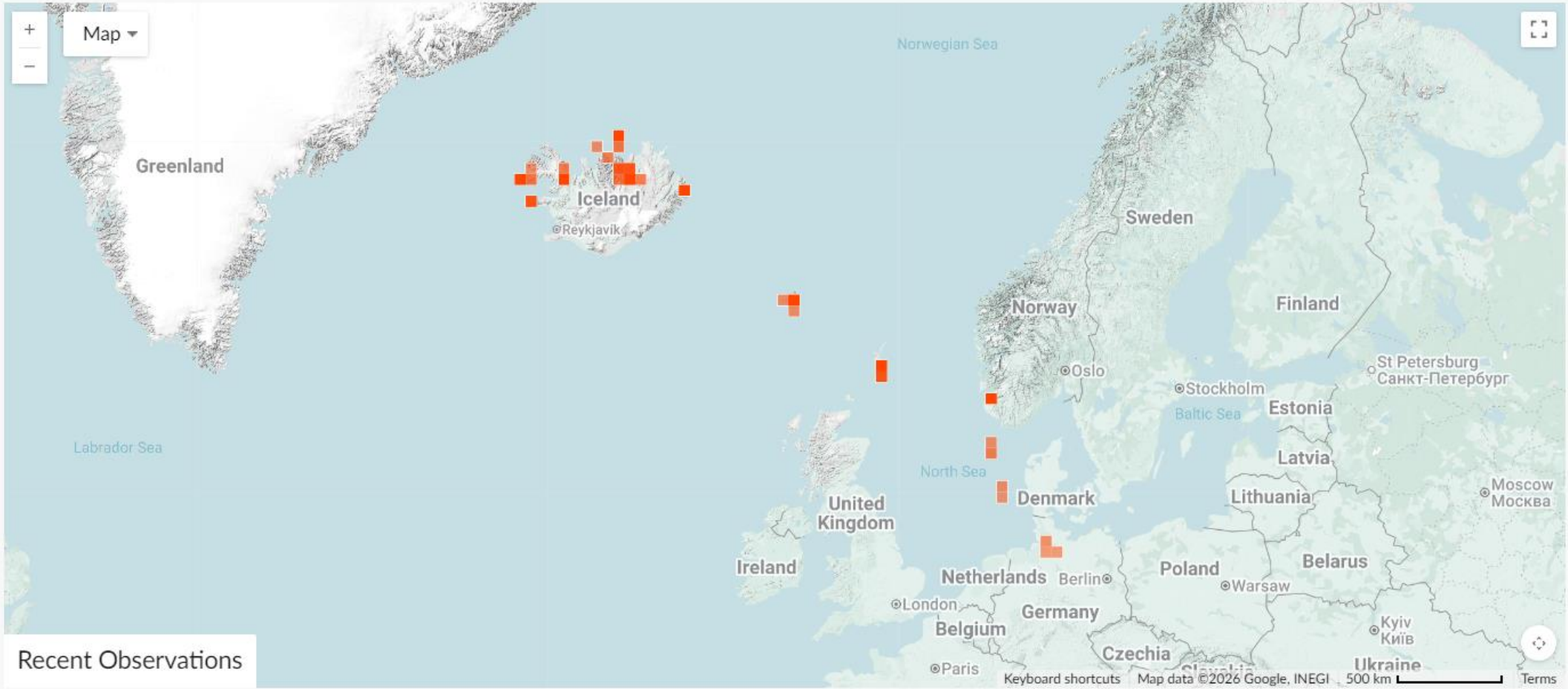
Together, we gathered:
919 Observations
255 Species Identified
10 Observers Participating

Each observation helps scientists build a clearer picture of biodiversity in polar regions.

Want to explore our findings? Link on the **link** here below to view our collective data and see the impact of your contributions:

https://www.inaturalist.org/projects/2026-may-7-hamburg-to-reykjavik-ms-fridtjof-nansen

Map of Observations



Recent Observations

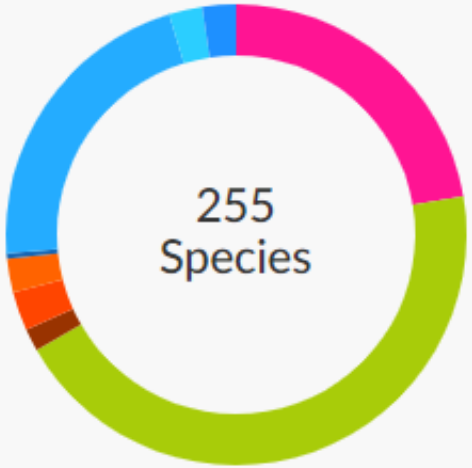






Stats

- Research Grade
- Needs ID
- Casual



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

eBird

Birdwatching isn't just a hobby, it's a powerful tool for science. eBird, a global Citizen Science platform, allows bird enthusiasts to record and share sightings, contributing valuable data for research and conservation.

During our voyage, our onboard ornithologists conducted 7 wildlife watches, completing 10 checklists and recording 40 bird species along the way.

Every entry adds to a growing database that helps scientists track migration patterns, monitor populations, and understand bird behaviour in the North Atlantic.

Click the **link** to explore our data and see how your observations contribute to a global effort in avian research:

eBird Trip Report Hamburg-Reykjavik 7-19 May 2026

Happywhale

Cetaceans, whales, dolphins, and porpoises, always capture our attention. By submitting photos to Happywhale, we can help scientists track individual animals through their lives and movements.

During this voyage, our team and guests uploaded observations of two blue whales, three humpback whales, and one orca. Now we wait to see whether they can be matched to known or new individuals.

You can **view** MS Fridtjof Nansen's Happywhale submissions from this voyage, follow individual whales for future updates, or upload your own photos from this voyage or past encounters.

Blue Whale

Individual

[Unnamed]

ID HW-BM0100017

Sex Unknown

Blue Whale

Sightings 1

First

2026-05-13

Northeast, Iceland

Last

2026-05-13

Northeast, Iceland

Followers

0

Follow

Humpback Whale

Piero (Husavik) aka Proppy

ID HRC-Mn1205
Sex Unknown
Humpback Whale

Also Known As

HW-MN0103117

WW-meno0395

Sightings 85

First

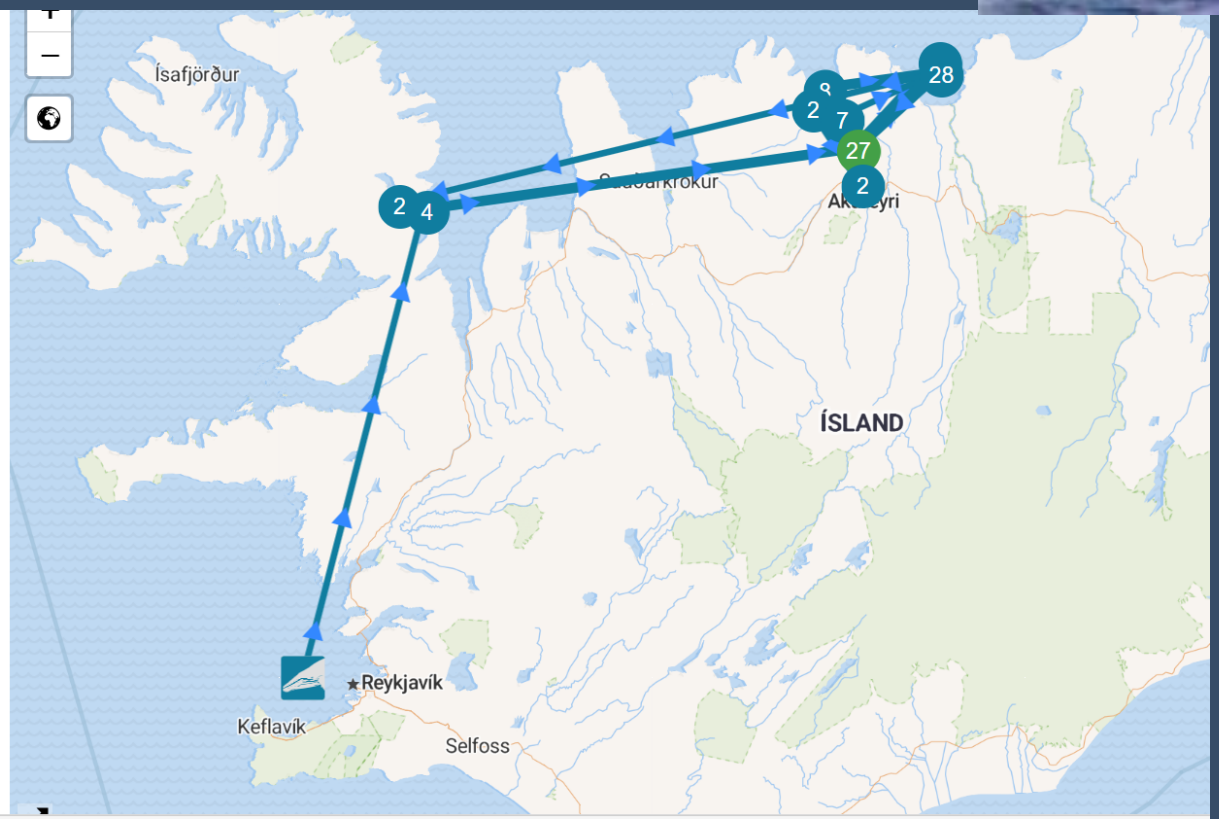
2022-03-31
Southern Peninsula, Iceland

Last

2026-05-14
Northeast, Iceland

Followers 19

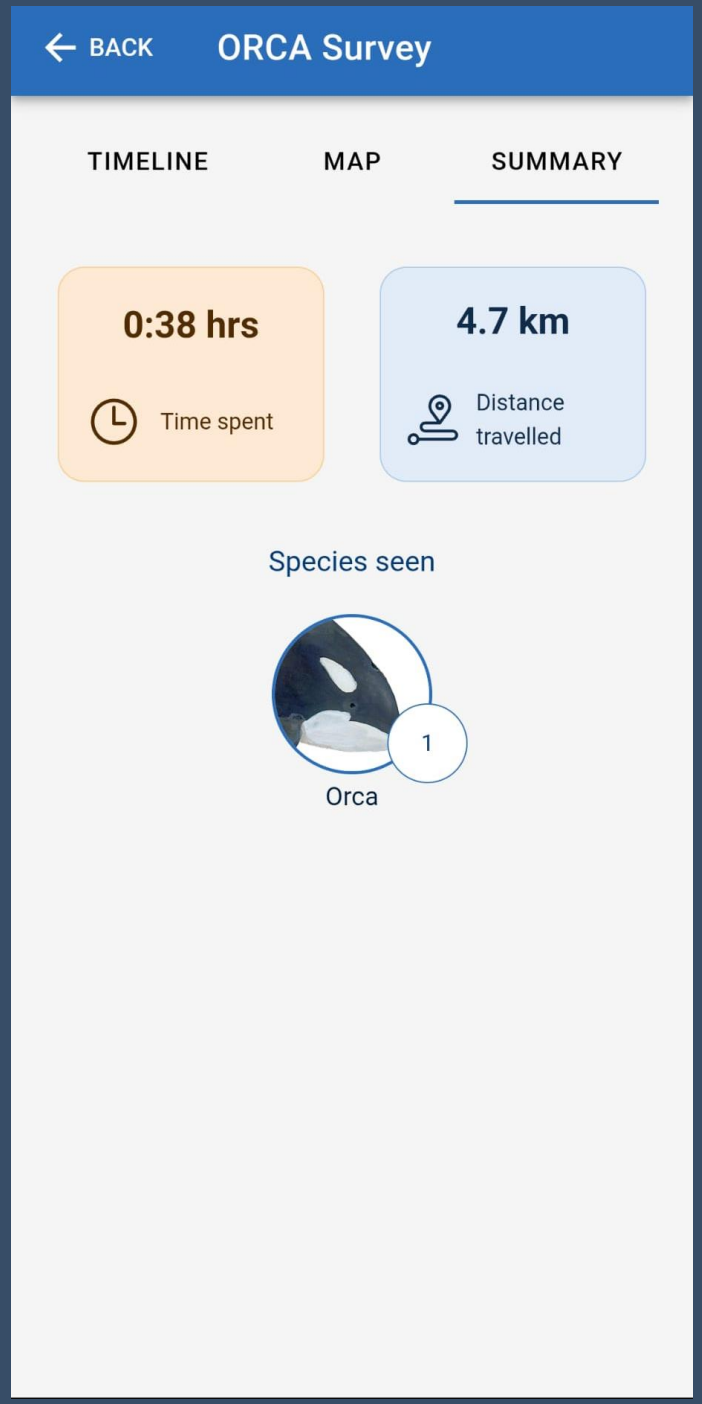
Follow

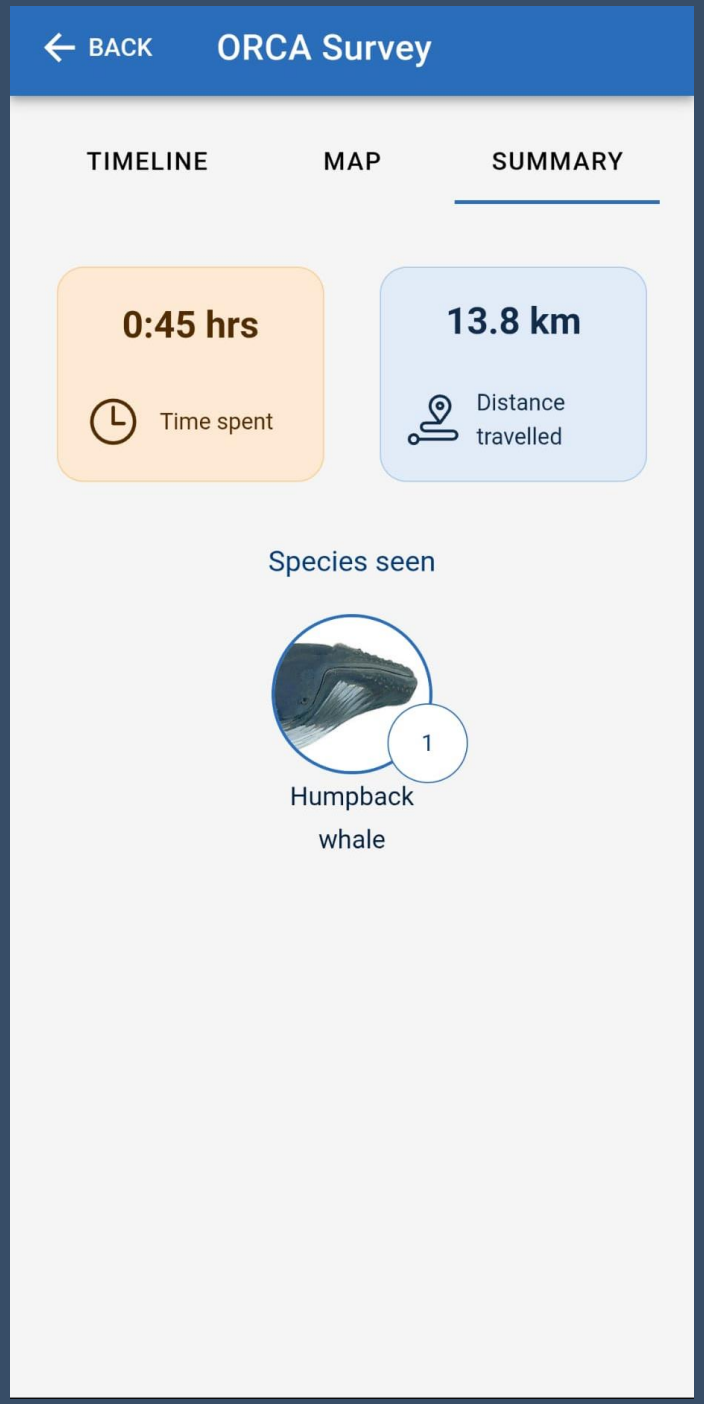


ORCA

While on your journey through the North Sea you were joined by ORCA Ocean Conservationist, Pete, who was collecting data on whales, dolphins, and porpoises. This data was collected using the ORCA OceanWatchers app and sent back to ORCA to be made available for many organisations interested in cetacean conservation. It will also be made available on the ORCA website interactive map for anyone who wishes to get an overview of what species you might find where.

On this journey a total of **13 hours** and **35 minutes** of data was collected, spanning a distance of **355.8 km**. **Five** species of cetacean were recorded during these surveys, with a total of **64** Individuals recorded.





Sightings

Species	Number of individuals seen
Humpback whale (*Megaptera novaeangliae*)	4
Orca (*Orcinus orca*)	1
White-beaked dolphin (*Lagenorhynchus albirostris*)	45
Unidentified whale	2
Unidentified dolphin	12

Wildlife List – Birds

Wildlife List – Birds

Scientific Name	English	Deutsch
Fulmarus glacialis	northern fulmar	Eissturmvogel
Morus bassanus	northern gannet	Basstölpel
Phalacrocorax carbo	great cormorant	Kormoran
Phalacrocorax aristotelis	European shag	Krähenscharbe
Stercorarius parasiticus	Arctic skua	Schmarotzerraubmöwe
Stercorarius skua	great skua	Skua
Stercorarius pomarinus	pomarine skua	Spatelraubmöwe
Larus canus	common gull	Sturmmöwe
Larus fuscus	lesser black-backed gull	Heringsmöwe
Larus argentatus	herring gull	Silbermöwe
Larus hyperboreus	glaucous gull	Eismöwe
Larus glaucoides	Iceland gull	Polarmöwe
Larus marinus	great black-backed gull	Mantelmöwe
Chroicocephalus ridibundus	black-headed gull	Lachmöwe
Rissa tridactyla	black-legged kittiwake	Dreizehenmöwe
Sterna paradisaea	Arctic tern	Küstenseeschwalbe
Sterna hirundo	common tern	Flusseschwalbe

Wildlife List – Birds

Scientific Name	English	Deutsch
Uria aalge	common guillemot	Trottellumme
Uria lomvia	Brünnich's guillemot	Dickschnabellumme
Alca torda	Razorbill	Tordalk
Cepphus grylle	black guillemot	Gryllteiste
Fratercula arctica	Atlantic puffin	Papageitaucher
Ardea cinerea	grey heron	Graureiher
Cygnus cygnus	whooper swan	Singschwan
Cygnus olor	mute swan	Höckerschwan
Anser brachyrhynchus	pink-footed goose	Kurzschnabelgans
Anser anser	greylag goose	Graugans
Branta bernicla	brent goose	Ringelgans
Tadorna tadorna	common shelduck	Brandgans
Anas crecca	Eurasian teal	Krickente
Mareca penelope	Eurasian wigeon	Pfeifente
Anas platyrhynchos	mallard	Stockente
Somateria mollissima	common eider	Eiderente
Clangula hyemalis	long-tailed duck	Eisente
Bucephala islandica	barrow's goldeneye	Spatelente

Wildlife List – Birds

Scientific Name	English	Deutsch
Aythya fuligula	tufted duck	Reiherente
Aythya marila	greater scaup	Bergente
Histrionicus histrionicus	harlequin duck	Kragenente
Mergus serrator	red-breasted merganser	Mittelsäger
Mergus merganser	goosander	Gänsesäger
Gavia stellata	red-throated diver	Sterntaucher
Gavia immer	great northern diver	Eistaucher
Podiceps auritus	slavonian/horned grebe	Ohrentaucher
Haematopus ostralegus	Eurasian oystercatcher	Austernfischer
Charadrius hiaticula	common ringed plover	Sandregenpfeifer
Pluvialis apricaria	European golden plover	Goldregenpfeifer
Calidris alba	sanderling	Sanderling
Calidris alpina	dunlin	Alpenstrandläufer
Gallinago gallinago	common snipe	Bekassine
Limosa limosa	black-tailed godwit	Uferschnepfe
Numenius phaeopus	whimbrel	Regenbrachvogel
Numenius arquata	Eurasian curlew	Brachvogel
Vanellus vanellus	northern lapwing	Kiebitz

Wildlife List – Birds

Scientific Name	English	Deutsch
Tringa totanus	common redshank	Rotschenkel
Arenaria interpres	ruddy turnstone	Steinwälzer
Calidris canutus	red knot	Knutt
Calidris maritima	purple sandpiper	Meerstrandläufer
Phalaropus lobatus	red-necked phalarope	Odinshühnchen
Lagopus muta	rock ptarmigan	Alpensneeuwhoen
Haliaeetus albicilla	white-tailed eagle	Seeadler
Falco peregrinus	peregrine falcon	Wanderfalke
Asio flammeus	short-eared owl	Sumpfohreule
Columba livia	rock dove/feral pigeon	Felsentaube
Alauda arvensis	skylark	Feldlerche
Hirundo rustica	barn swallow	Rauchschwalbe
Anthus pratensis	meadow pipit	Wiesenpieper
Motacilla alba	white/pied wagtail	Bachstelze
Motacilla cinerea	grey wagtail	Gebirgsstelze
Troglodytes troglodytes	Eurasian wren	Zaunkönig
Phylloscopus collybita	chiffchaff	Zilpzalp
Oenanthe oenanthe	northern wheatear	Steinschmätzer

Wildlife List – Birds

Scientific Name	English	Deutsch
Turdus iliacus	redwing	Rotdrossel
Turdus merula	common blackbird	Amsel
Corvus corax	common raven	Kolkrabe
Corvus cornix	hooded crow	Nebelkrähe
Corvus corone	carrion crow	Rabenkrähe
Sturnus vulgaris	European starling	Star
Passer domesticus	house sparrow	Haussperling
Fringilla coelebs	common chaffinch	Buchfink
Acanthis flammea	redpoll	Birkenzeisig
Plectrophenax nivalis	snow bunting	Schneeammer

Wildlife List — Marine Mammals

Wildlife List – Mammals

Scientific Name	English	Deutsch	French
Balaenoptera musculus	**blue whale**	Blauwal	rorqual bleu, baleine bleue
Balaenoptera acutorostrata	**minke whale**	Zwergwal	petit rorqual
Megaptera novaeangliae	**humpback whale**	Buckelwal	baleine à bosse
Lagenorhynchus albirostris	**white-beaked dolphin**	Weißschnauzendelfin	dauphin à bec blanc
Orcinus orca	**orca**	Killerwal, Orca	orque
Phocoena phocoean	**harbour porpoise**	Schweinswal	marsouin commun
Halichoerus grypus	**grey seal**	Kegelrobbe	phoque gris
Phoca vitulina	**common/harbour seal**	Seehund	phoque commune


Thank you for your participation!