



THE

Science & Education Report

MS Fridtjof Nansen 2026

MS Fridtjof Nansen

Elemental Iceland – Circular
Saga from Reykjavik

19–26 May 2026



Science & Education Programme

As we circumnavigated Iceland, 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 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.





Citizen Science

Aboard HX vessels, we are guests in the places we visit, but through participating in Citizen Science projects, you have become part of something bigger.

By observing, recording, and sharing data, you have helped contribute to global research and gained a closer connection to the natural world.

This journey does not end here. You can keep exploring, documenting, and caring for nature wherever you go.

History & Culture

Around Iceland, our journey was shaped not only by landscapes, wildlife, and weather, but also by the people, stories, and traditions connected to each place we visited.

From Reykjavík to the fishing communities of the west, the island life of Vigur, the Arctic waters of Grímsey, the whale heritage of Húsavík, the eastern fjords, and the volcanic history of Heimaey, we explored how Iceland's culture and history are closely tied to the sea.

Through talks, local experiences, music, and time ashore, we shared information with you about the communities, traditions, and histories that continue to shape Iceland today.



Geology

Iceland is a land of fire and ice, shaped by the meeting of the North American and Eurasian tectonic plates. With 14 major ice caps and around 130 volcanoes, its landscapes are both powerful and fragile, from the summit of Hvannadalshnúkur to glacial lagoons, geothermal areas, and the volcanic Westman Islands.

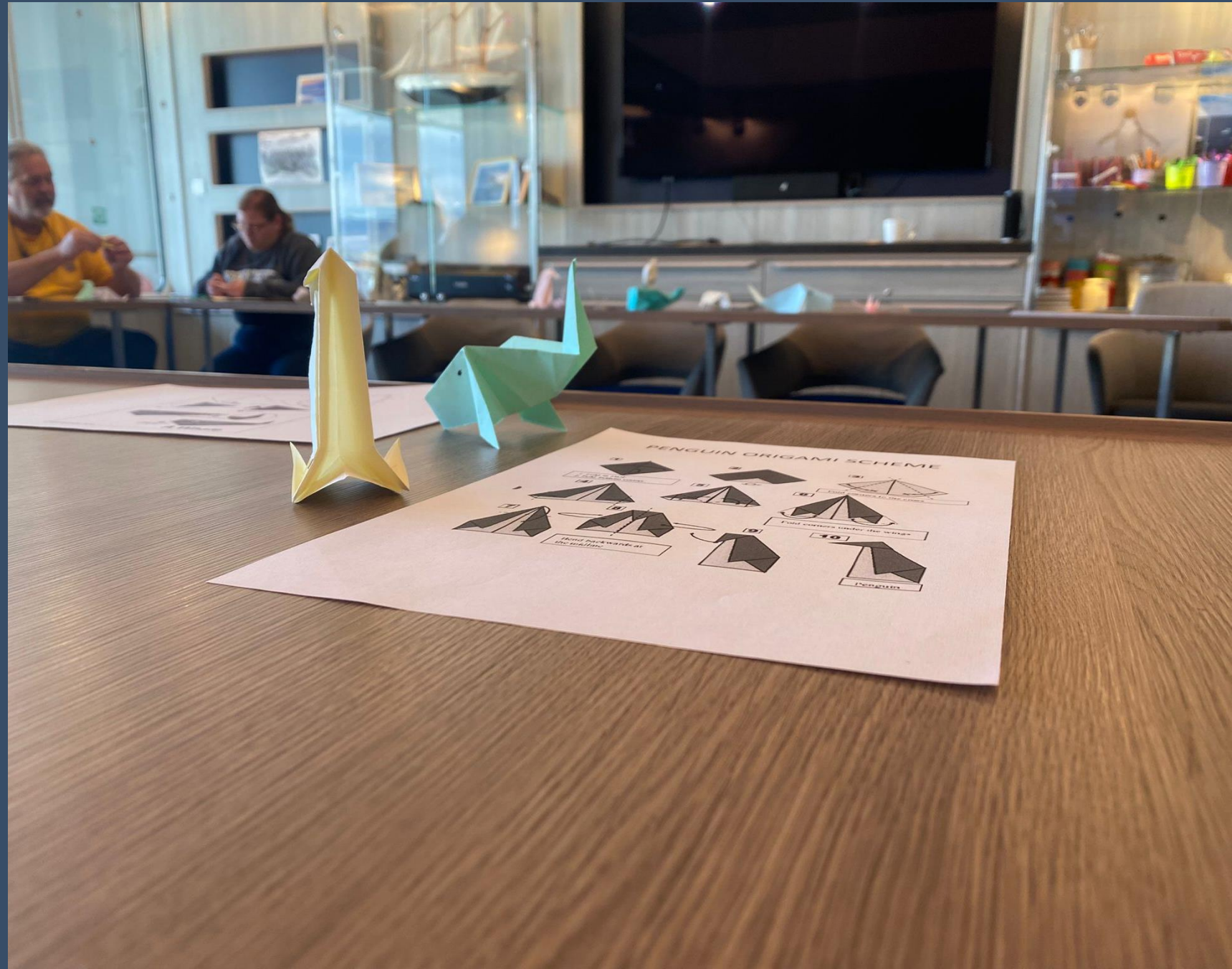
Here, nature and history are closely connected. The 1973 eruption on Heimaey reshaped the island and its harbour, showing how Icelanders have learned to live with powerful natural forces.



Arts, Crafts & Creativity

Through bottle painting, origami, mandalas, and watercolours, 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 around Iceland, 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 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 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 six science boat sessions, you moved beyond observation and took part in hands-on exploration of the waters along our route.

Using a 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

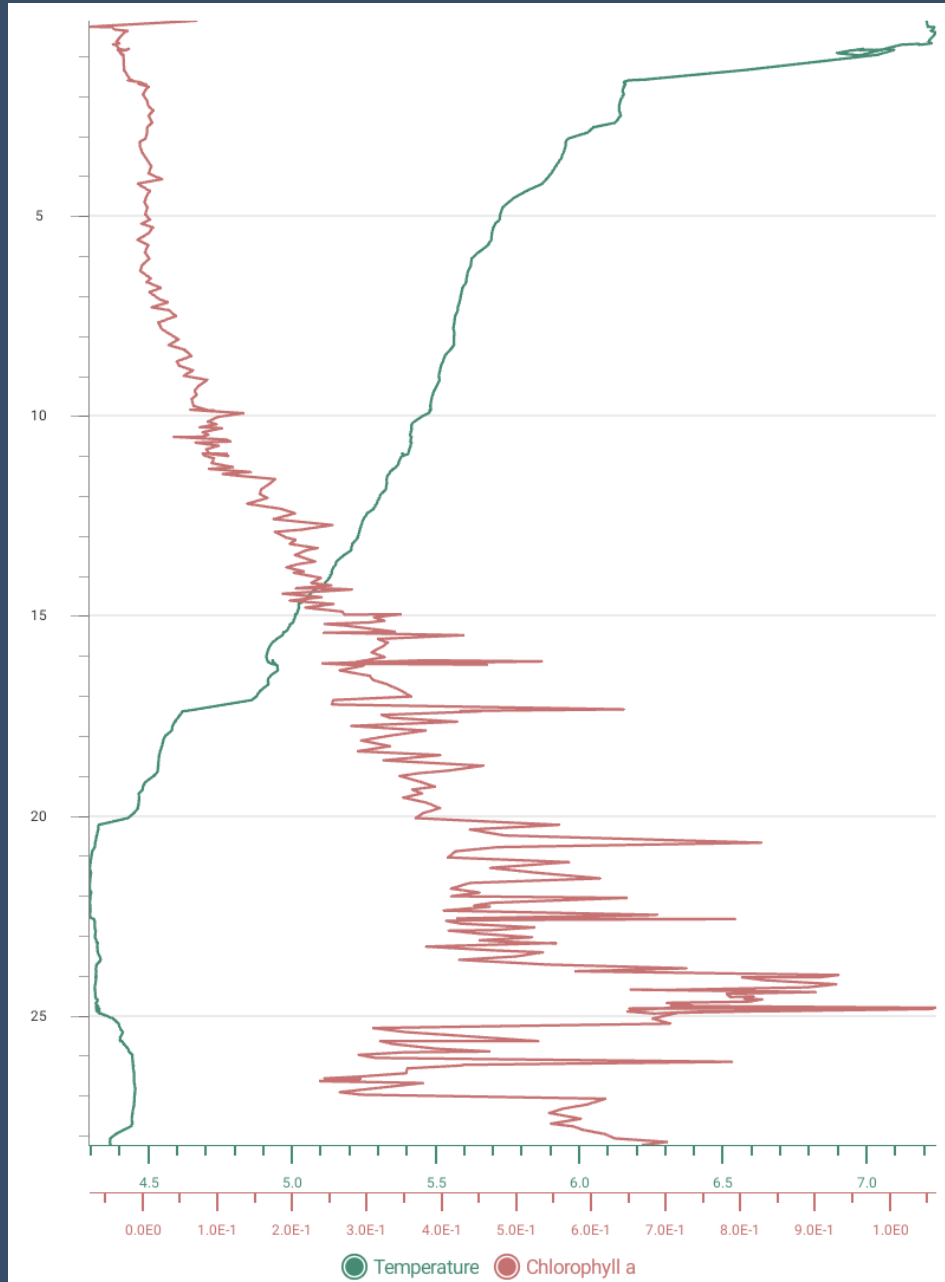
Beneath the surface, the ocean holds important clues about change.

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: Vigur

Depth (m)



Our CTD profile from Vigur shows a three degrees Celsius difference in temperature between the surface and 29m depth. The surface was significantly warmer than at depth. Considering that it was a warm and sunny day, this makes sense. It is these differences in temperature and salinity that drive our ocean currents.

Phytoplankton, shown here as a measure of chlorophyll A ($\mu\text{g/L}$), was equally distributed at a slightly increased level through out the water column. Our plankton sample showed a lot of zooplankton, which likely has been feeding on a recent phytoplankton bloom.

Temperature (°C)
Chlorophyll a ($\mu\text{g/L}$)

Water Sampling

During our expedition, we collected water samples from Vigur and Húsavík.

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 that form 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 better understand how these tiny organisms support life along the Icelandic coast.





Plankton Samples

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

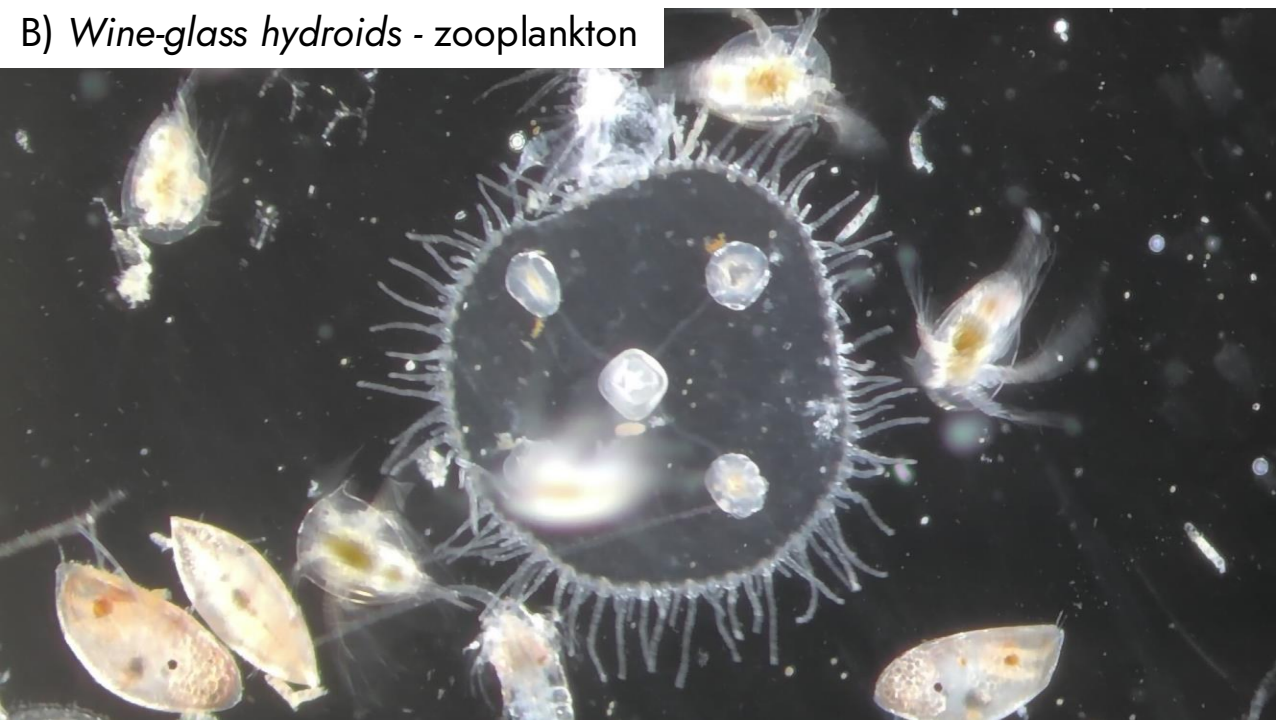
Using the main screen and smaller microscopes, you could explore each drop of water up close.

What was 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) Cnidaria - zooplankton



B) Wine-glass hydroids - zooplankton



C) Cyprid larvae - zooplankton



D) Zoea larvae - zooplankton



NASA GLOBE Cloud Observer

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

- **May 22nd** (Akureyri)
- **May 24th** (Seydisfjörður)
- **May 25th** (Heimaey)

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

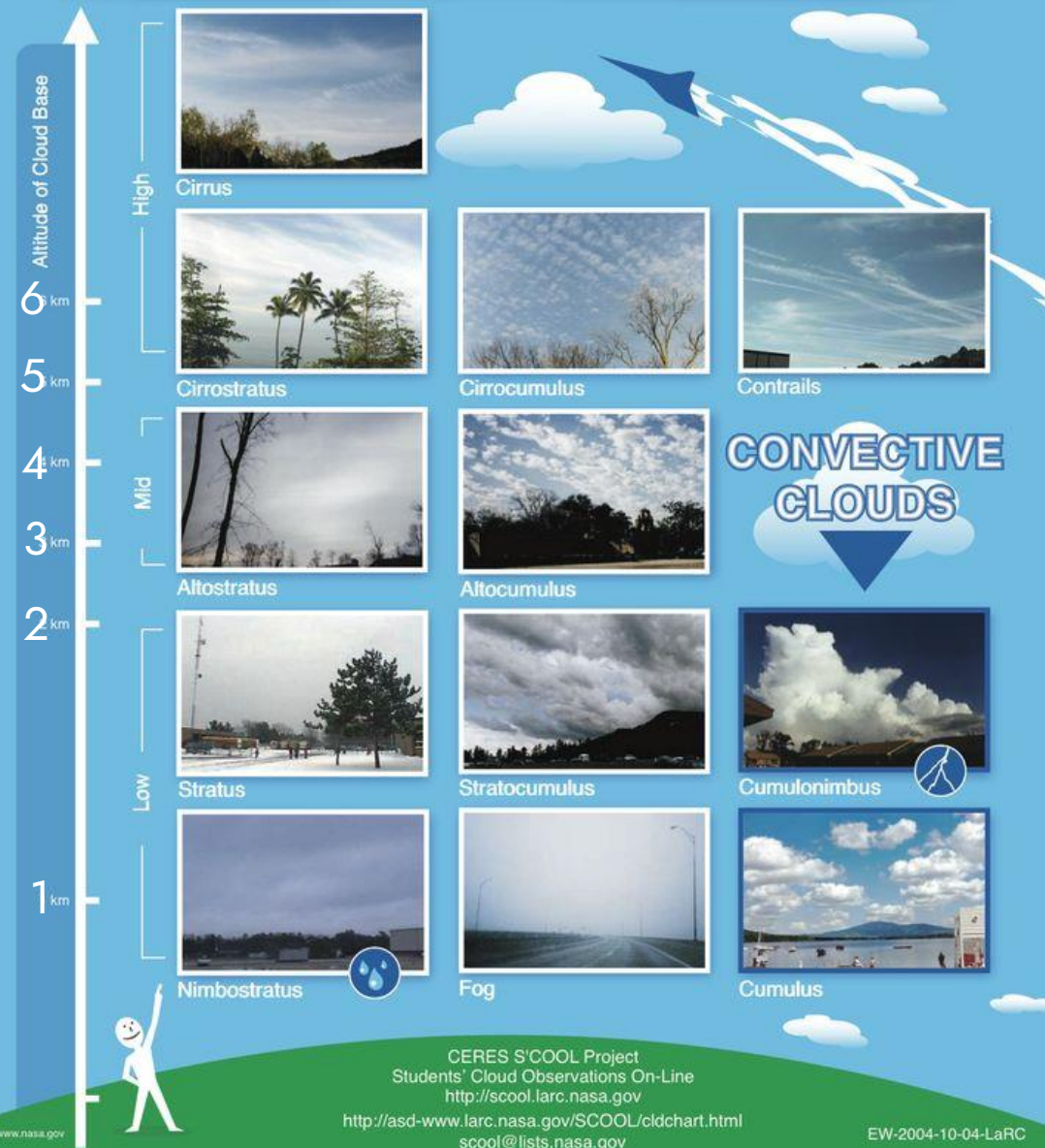
You can continue contributing from home using the GLOBE Observer app.

[View our data on the global map](#)





S'COOL Cloud Identification Chart



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):

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

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

Low Clouds (Base below 2,000 metres):

Stratus: Uniform, greyish 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 grey 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

iNaturalist

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

Together, we gathered:

86 Observations

61 Species Identified

8 Observers Participating

Each observation helps scientists build a clearer picture of biodiversity in arctic and sub-Arctic regions.

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

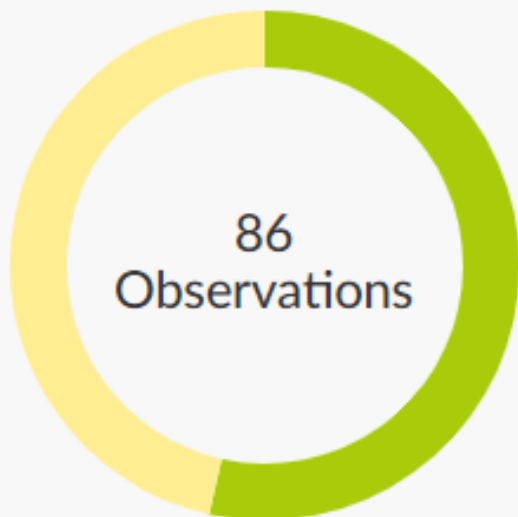
<https://www.inaturalist.org/projects/2026-may-19-26-reykjavik-to-reykjavik-ms-fridtjof-nansen>



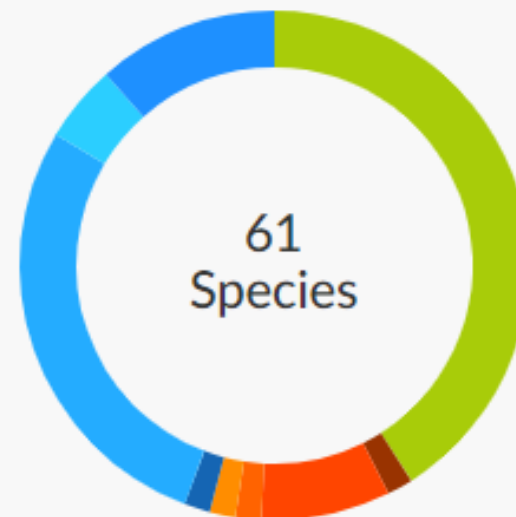
Map of Observations



Stats



- Research Grade
- Needs ID
- Casual



- | | |
|------------|-----------------|
| Unknown | Arachnids |
| Protozoans | Ray-Finned Fish |
| Fungi | Amphibians |
| Plants | Reptiles |
| Chromista | Birds |
| Mollusks | Mammals |
| Insects | 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 8 checklists and recording 41 bird species along the way.

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

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

<https://eBird.org/tripreport/521251>

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 humpback whales and orca so far. We now 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.

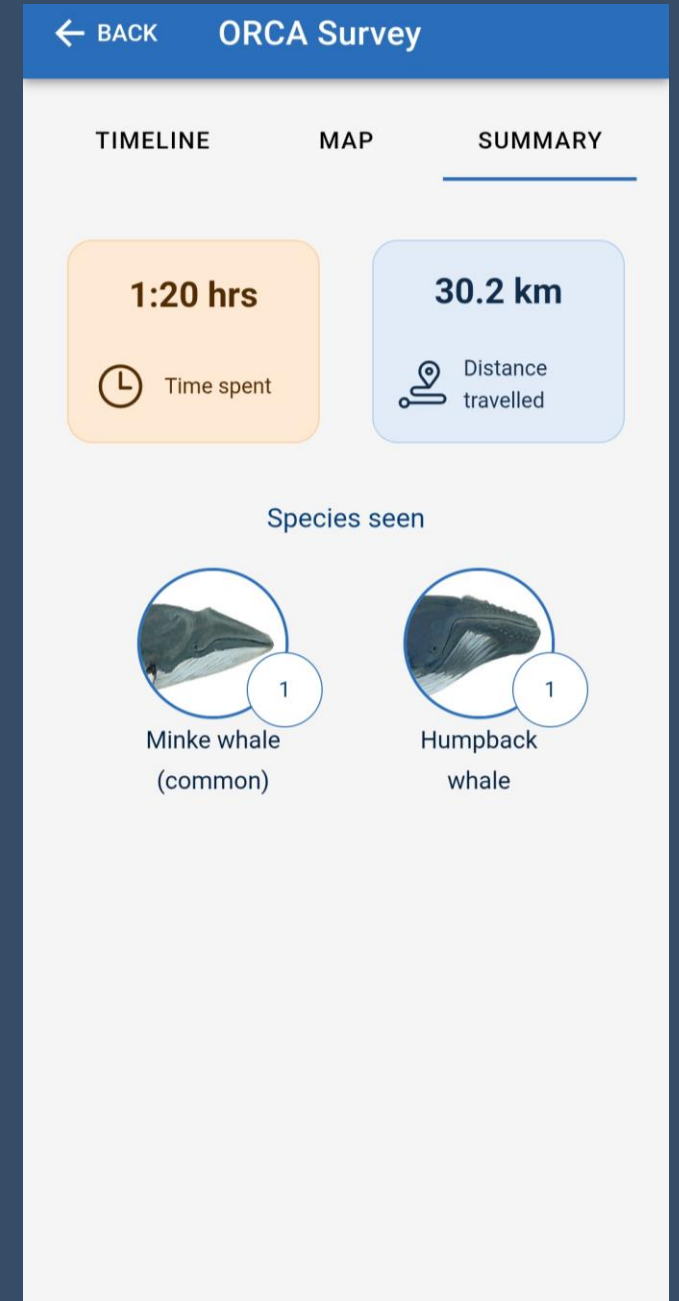


ORCA

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 **6 hours** and **18 minutes** of data was collected, spanning a distance of **127.2 km**. **Two** species of cetacean were recorded during these surveys, with a total of **9** Individuals recorded.



Sightings

Species	Number of individuals seen
Humpback whale (<i>Megaptera novaeangliae</i>)	5
Minke whale (<i>Balenoptera acutorostrata</i>)	4

Wildlife List — Birds



Wildlife List — Birds

Scientific Name	English	Deutsch	Français
<i>Fulmarus glacialis</i>	northern fulmar	Eissturmvogel	fulmar boréal
<i>Morus bassanus</i>	northern gannet	Basstölpel	fou de bassan
<i>Phalacrocorax carbo</i>	great cormorant	Kormoran	grand cormoran
<i>Stercorarius parasiticus</i>	Arctic skua	Schmarotzerraubmöwe	labbe parasite
<i>Stercorarius skua</i>	great skua	Skua	grand labbe
<i>Larus fuscus</i>	lesser black-backed gull	Heringsmöwe	goéland brun
<i>Larus hyperboreus</i>	glaucous gull	Eismöwe	goéland bourgmestre
<i>Chroicocephalus ridibundus</i>	black-headed gull	Lachmöwe	mouette rieuse
<i>Rissa tridactyla</i>	black-legged kittiwake	Dreizehenmöwe	mouette tridactyle
<i>Sterna paradisaea</i>	Arctic tern	Küstenseeschwalbe	sterne arctique
<i>Uria aalge</i>	common guillemot	Trottellumme	guillemot marmette
<i>Alca torda</i>	razorbill	Tordalk	pingouin torda
<i>Cepphus grylle</i>	Black guillemot	Gryllteiste	guillemot à miroir
<i>Fratercula arctica</i>	Atlantic puffin	Papageitaucher	macareux moine
<i>Cygnus cygnus</i>	Whooper swan	Singschwan	cygne chanteur
<i>Branta bernicla</i>	Brent goose	Ringelgans	bernache cravant
<i>Anser anser</i>	Greylag goose	Graugans	oie cendrée
<i>Aythya fuligula</i>	Tufted duck	Reiherente	fuligule morillon
<i>Aythya marila</i>	Greater scaup	Bergente	fuligule milouinan

Wildlife List — Birds

Scientific Name	English	Deutsch	Français
<i>Bucephala islandica</i>	Barrow's goldeneye	Spatelente	garrot d'Islande
<i>Mareca penelope</i>	Eurasian wigeon	Pfeifente	canard siffleur
<i>Anas platyrhynchos</i>	mallard	Stockente	canard colvert
<i>Histrionicus histrionicus</i>	harlequin duck	Kragenente	arlequin plongeur
<i>Somateria mollissima</i>	common eider	Eiderente	eider à duvet
<i>Clangula hyemalis</i>	long-tailed duck	Eisente	harelda kakawi
<i>Mergus serrator</i>	red-breasted merganser	Mittelsäger	harle huppé
<i>Gavia stellata</i>	red-throated diver	Sterntaucher	plongeon catmarin
<i>Podiceps auritus</i>	Slavonian/horned grebe	Ohrentaucher	grèbe esclavon
<i>Haematopus ostralegus</i>	Eurasian oystercatcher	Austernfischer	huîtreier pie
<i>Charadrius hiaticula</i>	Common ringed plover	Sandregenpfeifer	pluvier grand-gravelot
<i>Pluvialis apricaria</i>	European golden plover	Goldregenpfeifer	pluvier doré
<i>Calidris alpina</i>	dunlin	Alpenstrandläufer	bécasseau variable
<i>Calidris canutus</i>	(red) knot	Knutt	bécasseau maubèche
<i>Gallinago gallinago</i>	common snipe	Bekassine	bécassine des marais
<i>Limosa limosa</i>	black-tailed godwit	Uferschnepfe	barge à queue noire
<i>Numenius phaeopus</i>	whimbrel	Regenbrachvogel	courlis corlieu
<i>Tringa totanus</i>	common redshank	Rotschenkel	chevalier gambette

Wildlife List — Birds

Scientific Name	English	Deutsch	Français
<i>Arenaria interpres</i>	ruddy turnstone	Steinwälzer	tournepierre à collier
<i>Phalaropus lobatus</i>	red-necked phalarope	Odinshühnchen	phalarope à bec étroit
<i>Anas strepera</i>	gadwall	Schnatterente	canard chipeau
<i>Melanitta nigra</i>	common scoter	Trauerente	macreuse noire
<i>Gavia immer</i>	great northern diver	Eistaucher	plongeon imbrin
<i>Lagopus muta</i>	rock ptarmigan	Alpensneeuwhoen	lagopède alpin
<i>Haliaeetus albicilla</i>	white-tailed eagle	Seeadler	pygargue à queue blanche
<i>Columba livia</i>	rock dove/feral pigeon	Felsentaube	pigeon biset
<i>Anthus pratensis</i>	meadow pipit	Wiesenpieper	pipit farlouse
<i>Motacilla alba</i>	white wagtail	Bachstelze	bergeronnette grise
<i>Turdus iliacus</i>	redwing	Rotdrossel	grive mauvis
<i>Turdus merula</i>	common blackbird	Amsel	merle noir
<i>Corvus corax</i>	common raven	Kolkrabe	grand Corbeau
<i>Sturnus vulgaris</i>	European starling	Star	étourneau sansonnet
<i>Acanthis flammea</i>	redpoll	Birkenzeisig	sizerin flammé
<i>Plectrophenax nivalis</i>	snow bunting	Schneeammer	plectrophane des neiges
<i>Troglodytes troglodytes</i>	(winter) wren	Zaunkönig	troglodyte mignon

Wildlife List — Marine Mammals



Wildlife List – Mammals



Scientific Name	English	Deutsch	Français
<i>Balaenoptera musculus</i>	blue whale	Blauwal	baleine bleue
<i>Balaenoptera acutorostrata</i>	minke whale	Zwergwal	petit rorqual
<i>Megaptera novaeangliae</i>	humpback whale	Buckelwal	baleine à bosse
<i>Physeter macrocephalus</i>	sperm whale	Pottwal	cachalot
<i>Orcinus orca</i>	orca	Killerwal, Orca	orque
<i>Phocoena phocoean</i>	harbour porpoise	Schweinswal	marsouin commun
<i>Halichoerus grypus</i>	grey seal	Kegelrobbe	phoque gris
<i>Phoca vitulina</i>	common / harbour seal	Seehund	phoque commune

The background of the slide features a deep blue, underwater scene with two whales. A large, semi-transparent watermark consisting of the Roman numerals 'IX' is positioned on the left side of the image. The text 'Thank you for your participation!' is centered in the middle of the slide in a white, sans-serif font.

Thank you for your participation!