

Science & Education Report

Antarctica and Falklands Expedition

29th October – 15th November



MS Roald Amundsen

29th Oct – 15th Nov, 2025

Antarctica & The Falkland
Islands

When you arrived on the MS Roald Amundsen you boarded an education and 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 throughout our voyage.



Arts, Crafts & Creativity

We witnessed the amazing landscapes of Antarctica and the windswept shores of the Falkland Islands. We were inspired to create art reflecting our surroundings including watercolour post cards, sea glass jewelry, and clay penguins.





Science & Education Program

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



Area	Number of Recordings	Locations	Time of Recordings
Falklands	17	Sounders Island	28min36sec
Antarctic Peninsula	15	Half-Moon Island	37min44sec
	11	Danco Island	42min19sec
	19	Damoy Point	55min42sec
TOTAL	62	4	2h44min

Guest Scientists:
Marcos & Laura
University of Sao
Paulo

SOUNDS GOOD!

- ✓ Season: seabirds in colonies vs. cetaceans (mainly humpback whales) and seals.
- ✓ Phenology: Early reproductive season.
- ✓ Falklands: Second group of recordings.
- ✓ Antarctic Peninsula: First recordings in 3 locations.
- ✓ Protocol for underwater recordings: noise influence from ships – 2 nautic miles. [Additional 32 min of recordings]








**MS Amundsen
HX & USP**

**SOUNDS
GOOD!**

**Oct. 29th
to Nov 15th,
2025**

The second season of *Sounds Good!* sets out to consolidate and strategically expand the project across the austral region. The main objectives include:

- Expanding operations to all three HX vessels operating in polar and subpolar waters during the austral summer, ensuring broader reach and logistical versatility; 
- Training and integrating two new female collaborators into the *Sounds Good!* initiative, introducing them to the operational dynamics of HX cruises and strengthening the team's interdisciplinary capacity; 
- Continuing the collection of acoustic recordings in both marine and terrestrial environments, with improved techniques and broader geographic coverage; 
- Strengthening collaboration between guest scientists and Expedition Leaders, as well as other onboard team members, to refine data collection efforts and explore ways to enhance guest engagement; 
- Enhancing and diversifying onboard educational efforts, sharing knowledge with guests through dynamic and accessible formats, including lectures, sound-based experiences, and informal interactions. 

History & Culture: Antarctica

The establishment of Bases in Antarctica during the 1940s marked a pivotal shift from heroic age exploration to permanent territorial presence. These installations transformed Antarctica from a seasonal destination for whalers and explorers into a permanently inhabited continent. Today, these historic bases represent the transition from imperial territorial expansion to international scientific cooperation. During our voyage, we were privileged to visit one Argentine and one British base, the Penguin Post Office, witnessing firsthand this historic outposts.



History & Culture: Falkland Islands

Today, these bases stand as living museums and vital scientific research stations, serving a dual purpose that bridges past and present. As historical witnesses, they preserve the material culture or early Antarctic occupation, original buildings, equipment and artifacts that tell the story of human perseverance in Earth's harshest environment. The data collected at these stations contributes to our understanding of global environmental systems, from ozone depletion to ice sheet dynamics. While their original purpose was rooted in territorial claims and national prestige, these bases have evolved into collaborative nodes in the international scientific network that defines modern Antarctica, embodying the Antarctic Treaty's vision of the continent as a natural reserve devoted to peace and science.





Science Boat

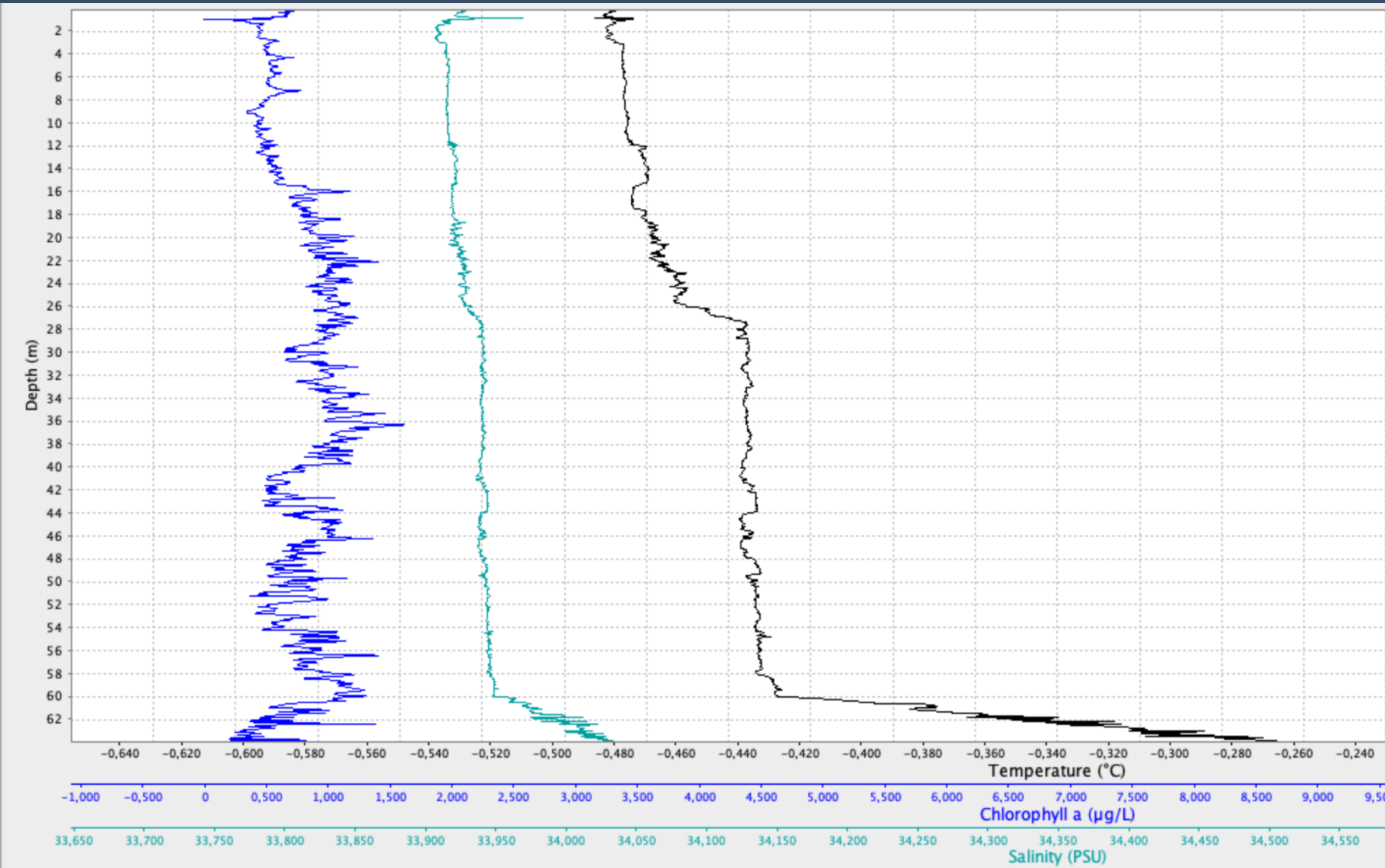
During our voyage we conducted plankton sampling techniques focusing on the abundance and type of plankton in the waters we sailed through. The samples and data which you recorded provided invaluable data for the Secchi Disk project, monitoring world-wide plankton abundance.

During the science boats in Danco, Damoy, Brown, and Charlotte Bay 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 samples.

The image on the left shows Antarctic Krill washed up at Whalers Bay on the 12th November 2025.

Science Boat: Damoy Point CTD data

Our CTD casts gave us insight into how salinity, temperature, and chlorophyll changes with depth.

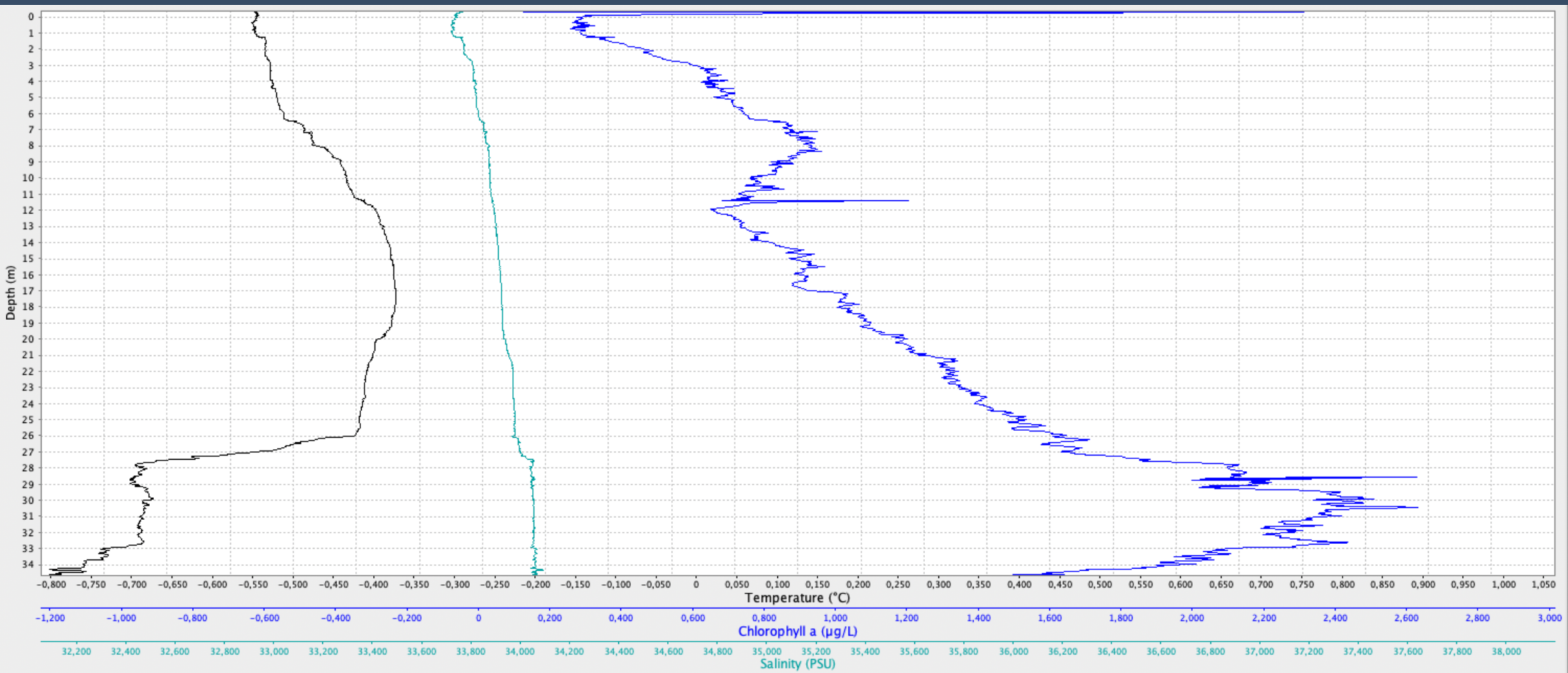


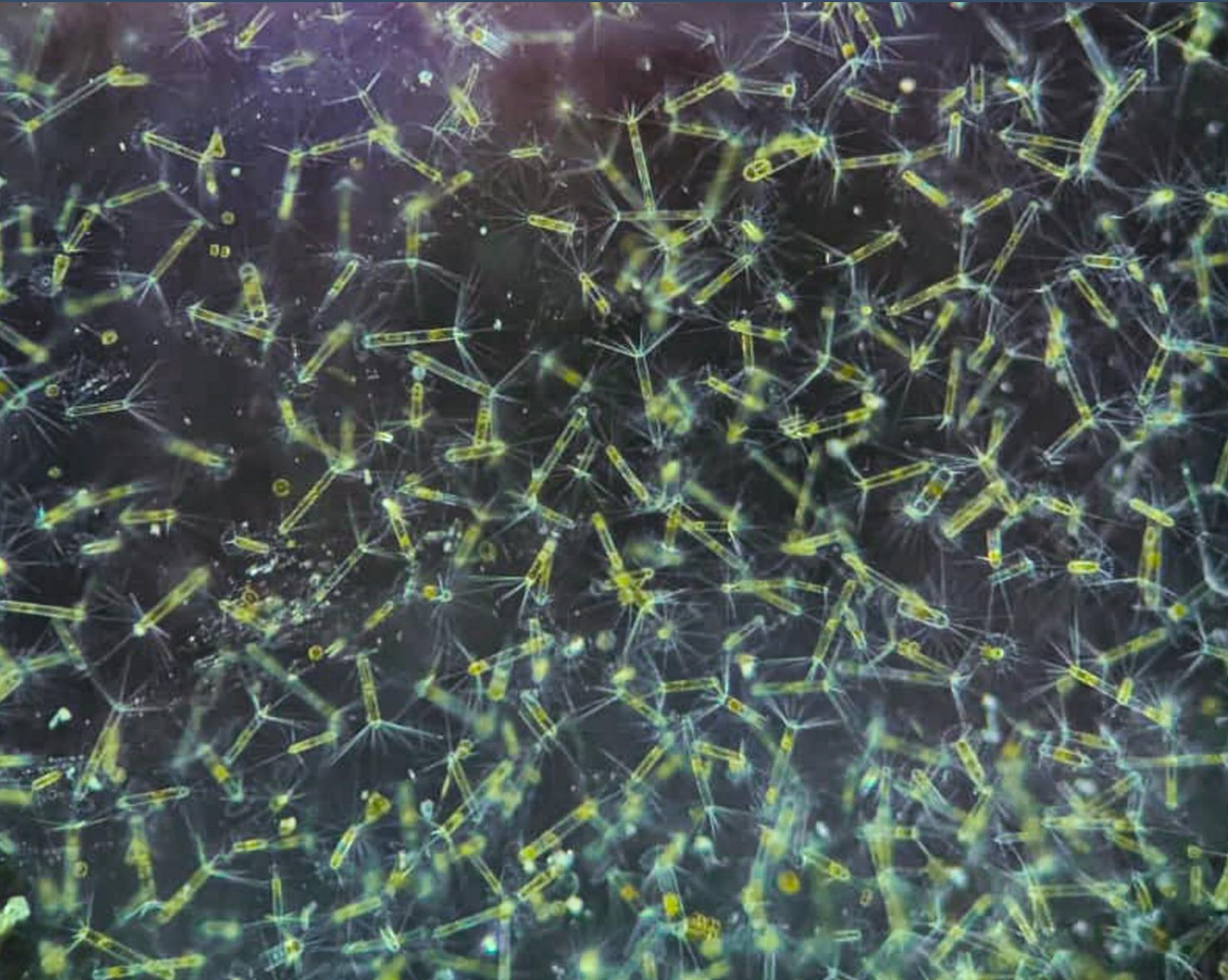
Typically, salinity increases with depth while temperature decreases since cold, salty water is more dense. On the chart to the left however, we can see that the water column is relatively uniform. Chlorophyll— the photosynthetic pigments in phytoplankton— measurements gives us information on phytoplankton abundance, usually more chlorophyll is detected in the first 30m of depth, where sunlight is able to penetrate. At Damoy Point we detected a peak of chlorophyll (3.5ug/l) at around 20m dept.

Science Boat: Charlotte Bay CTD data

Here our CTD cast shows:

- **Temperature (black)** at the surface (0–5m) is $\sim 0^{\circ}\text{C}$ (slightly below zero, common in polar or near-freezing waters due to seawater's freezing point being around -1.8°C). It stays fairly uniform until 26m. Below 45m, there is a small temperature decrease. This suggests a different water mass intruding at depth.
- **Salinity (green)** increases gradually with depth. This pattern suggests fresher water at the surface (likely from ice melt or runoff) and saltier, denser water at depth.
- **Chlorophyll a (blue)** is at its highest concentration between **30–33m**, where there's a broad peak. Below 34m, values drop off. This indicates a subsurface chlorophyll maximum — the depth where phytoplankton are most abundant because there is still light penetration but also more nutrients than at the surface.





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 Damoy, showing a large amount of phytoplankton — corethron!

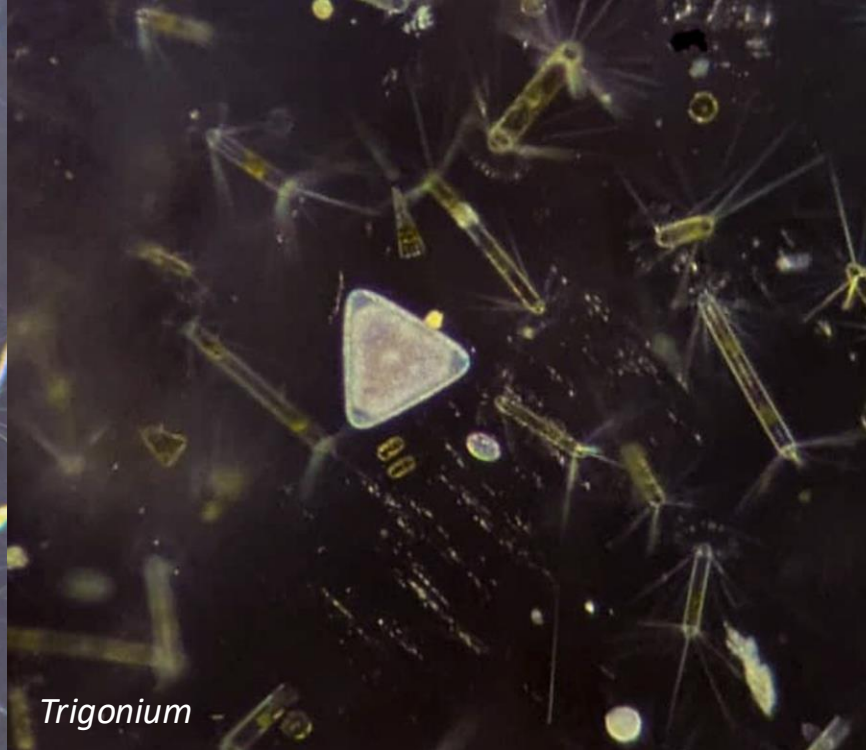
Phytoplankton

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

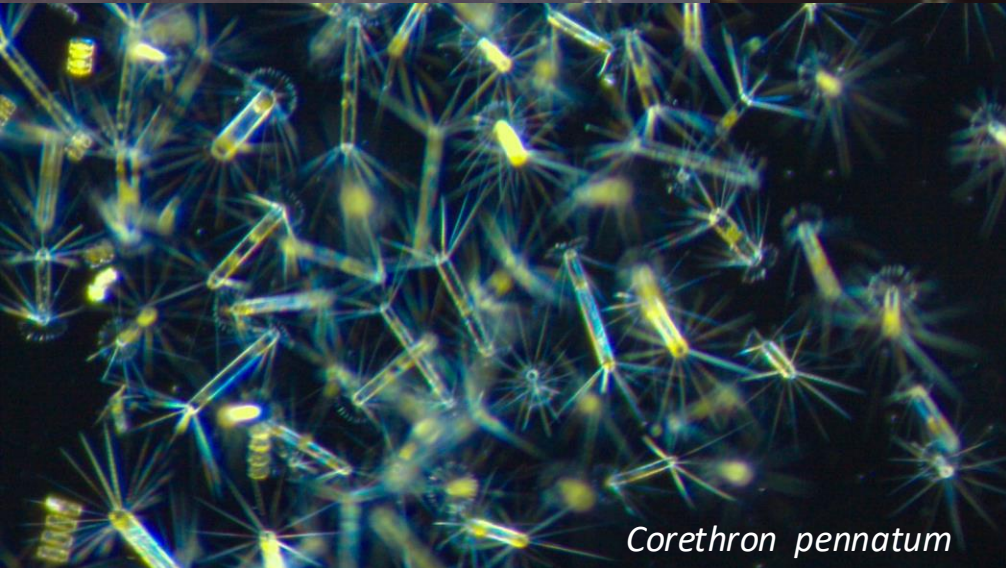
We collected phytoplankton samples at Danco Island, Damoy, Brown Station and Charlotte Bay. The prominent species we found was *Corethron*, a favourite food of krill and arguably the most important (and beautiful) Antarctic species, not that we are bias....



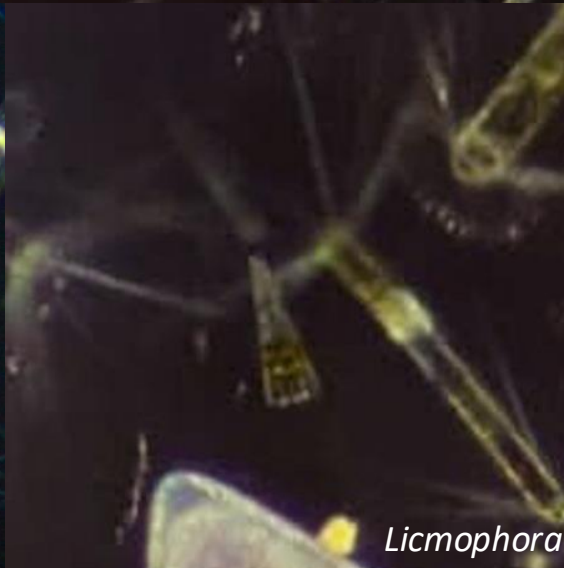
Tripus longipepes



Trigonium



Corethron pennatum

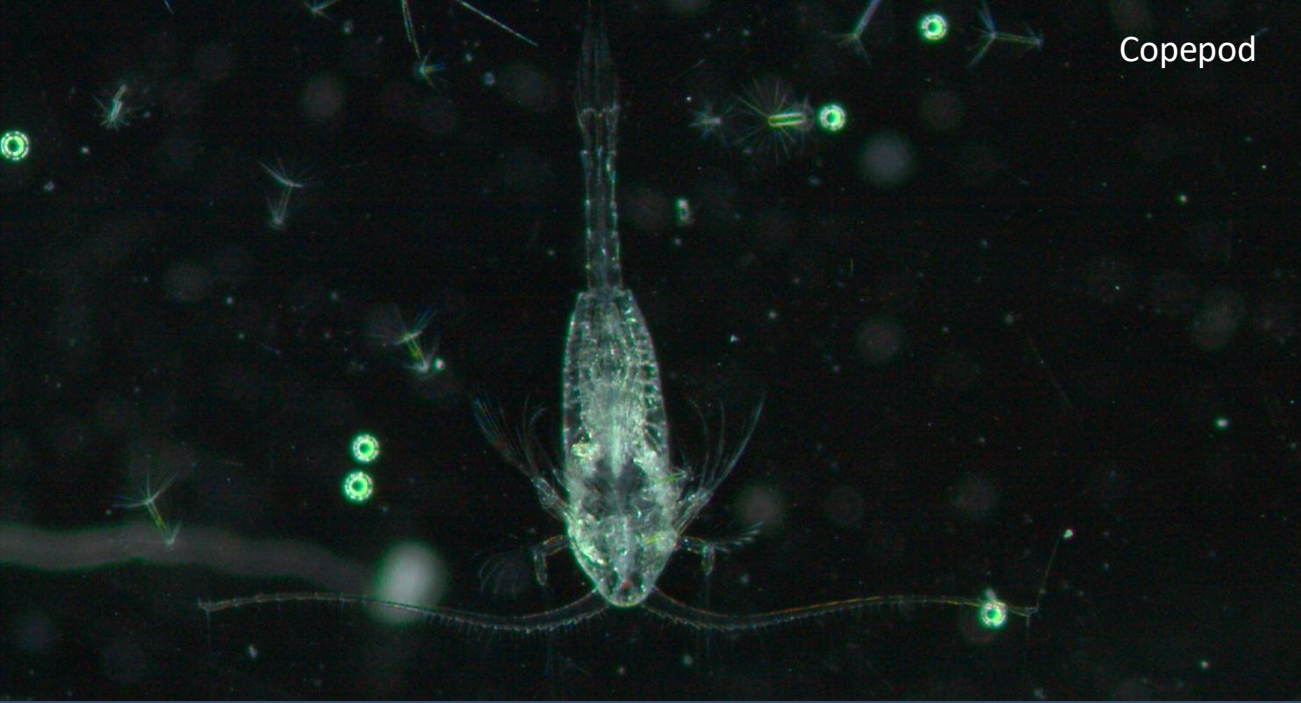


Licmophora

Tomopteris (Gossamer) polychaete worm



Copepod

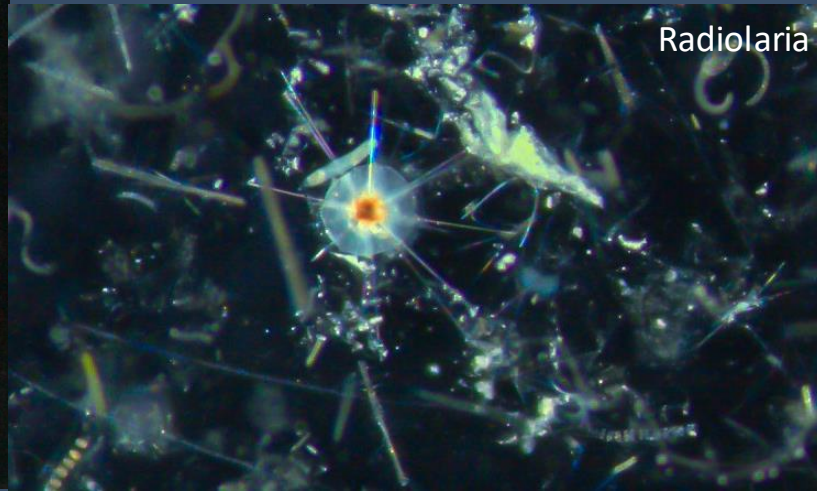


Zooplankton

As it is spring in the Antarctic peninsula, phytoplankton dominated most of our plankton harvest. However, we did also see a number of zooplankton species including the polychaete worm found at Danco Island, krill at Whalers Bay, copepods in Damoy and Charlotte Bay, jellyfish in Damoy, and even a rare radiolaria sighting (single-celled marine protists - not classified as a plant, animal, or fungus — but instead it's own unique kingdom) at Danco Island.

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

Radiolaria

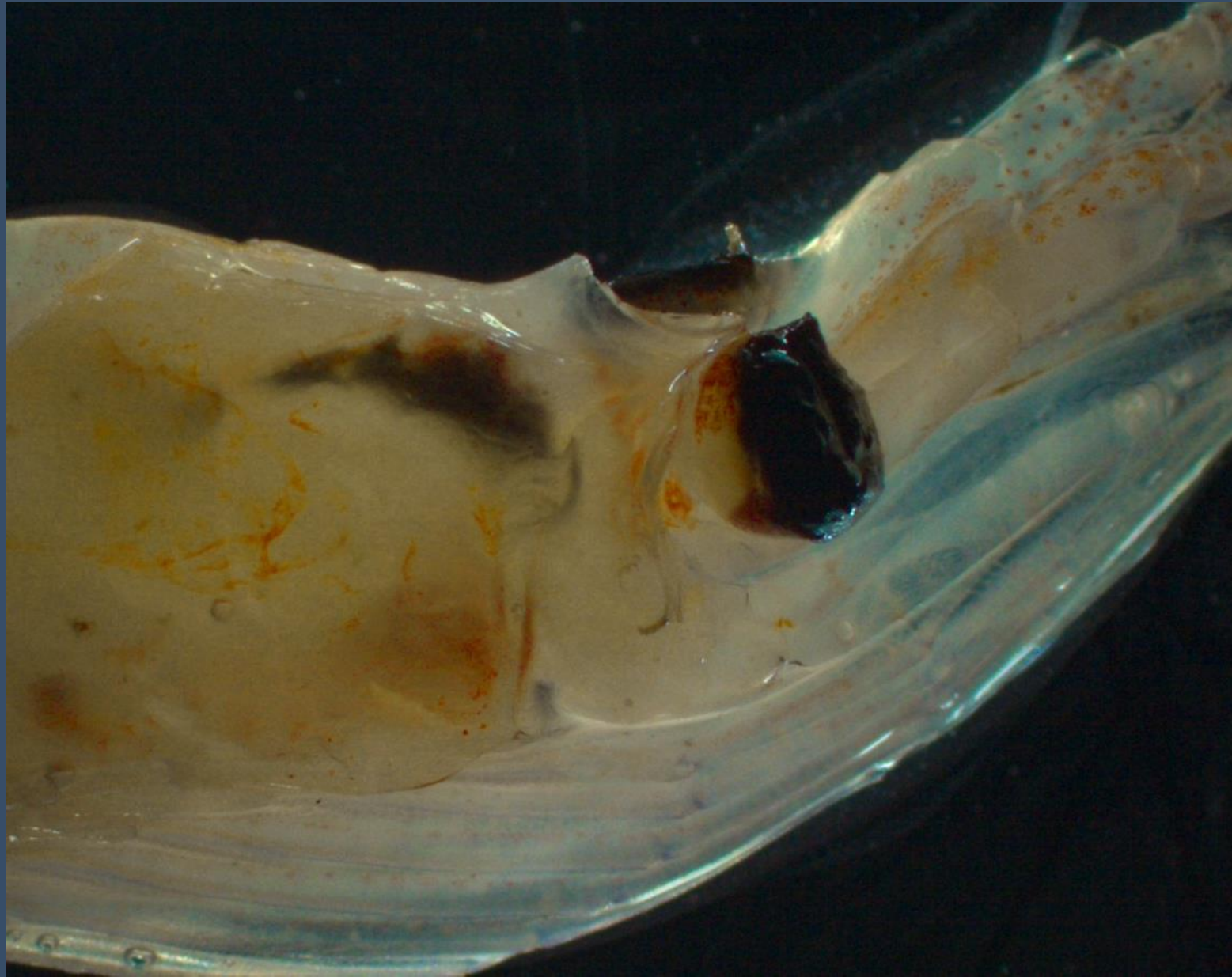


Plankton Highlight:

Krill (*Euphasia superba*)

Antarctic krill is a small, free swimming crustacean found around the Southern Ocean and is a vital food source for penguins, whales (including humpback and southern right), seals, and sea birds. Current estimates put krill biomass at almost 380 million tonnes, 70% of which lives around the Antarctic peninsula. In 2024 half a million tonnes of krill was collected for human use, mainly by Norway, China, South Korea, and Chile.

The red pigment, which we noticed in the krill washed up at Whaler's Bay, is caused by astaxanthin, a type of carotenoid which also gives salmon and flamingos their pink / red coloration. This pigment also helps protect cells from oxidative stress in cold Antarctic waters, and provides photoprotection from UV rays.
















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.



Observation	GLOBE	GOES-19 Satellite
Universal Date/Time	2025-11-02 13:25:00	2025-11-02 13:37
Latitude	-51.83	-52.15 to -51.51
Longitude	-59.86	-60.18 to -59.54
Total Cloud Cover	Broken (50-90%) 	Broken 85.25% 
High Clouds		No Clouds 
Mid Clouds		Cover: Scattered 27.87%  Altitude: 2.83 (km) Phase: Ice/Water Mix 259.81 (K) Opacity: Opaque
Low Clouds	  Cover: Broken (50-90%)  Opacity: Opaque	Cover: Broken 57.38%  Altitude: 1.33 (km) Phase: Water 270.74 (K) Opacity: Transparent
GLOBE Cloud Photos and Corresponding NASA Satellite Images.	<div>GLOBE Photos</div> <div><div>North</div><div>East</div><div>South</div></div> <div><div>West</div><div>Up</div></div> 	<div>GOES-19</div> <div>Visible </div> <div>Infrared </div> <div>GEO Tutorial</div>
Click image to view --->		
<i>Note: Photos submitted though GLOBE need approval before being displayed, this may take a few days.</i>		

Feedback From Our Observations: 2nd Nov 2025, Falkland Islands

Total Cloud Cover:

The human observer reported 50–90% broken cloud, and the satellite recorded 85% broken cloud, showing strong agreement.

Cloud Types:

High clouds: The satellite detected no high clouds, matching our report.

Mid-level clouds: The satellite detected scattered mid-level clouds.

Low clouds: Both the observer and satellite saw broken low clouds (stratus/cumulus).

What does this mean?

This feedback confirms that the human observation matches well with the satellite’s view, showing that citizen scientists can provide reliable cloud data that helps validate and improve NASA satellite measurements, with the satellite providing extra details humans cannot see, such as mid-level clouds.



Exceptional Cloud Observations: Lenticular Cloud

Some very special clouds were observed throughout the trip. In this case, Globe Observer requests us to upload an observation even in the absence of a satellite flyover.

These lenticular clouds were photographed by Chris on 08 November 2025 ^h.

When air flows over a mountain range, it can create a series of large standing waves downstream, similar to ripples in a river. If the air contains enough moisture, the rising forming the distinctive lenticular motion of these waves causes condensation, clouds.



Exceptional Cloud Observations: Banner cloud

Some very special clouds were observed throughout the trip. In this case, Globe Observer requests us to upload an observation even in the absence of a satellite flyover.

These banner clouds form above the ice field where the air is cold.

This image was taken on 08 November 2025 in Wilhelmina Bay.

Any water vapour will condense in this colder air to form this cloud. It needs calm conditions for this to happen. Note the blue sky above the banner cloud.

Geological Highlight: Going Ashore in Africa

When carrying out a thorough analysis of the rocks worldwide, you use fossils and the overall properties of the strata, like composition, grain size, matrix, degree of alteration, and many more. One of the most stunning results of this is the presence of South African sediments at the heart of the Falkland Islands geology. This means, the beautiful cliffs of the Falklands have traveled about 4000 km from East to West in the last 125 million years. A real tectonics puzzler! At the beginning of their voyage they were deposited as shallow-marine sandstones, and then were squeezed to become quartzite rocks. These in return occasionally show remarkable weathering features — at the end of a long journey





Geological Highlight: The Waning of the Ice

Visiting Neptune's Window in Deception Island has never been easier. The upper image shows the great view from Neptune's Window into Port Foster taken some days ago— but where is the snow?!

Only ten years ago the situation was quite different: The lower image shows MS Fram's hikers on the way to the top of the caldera's ridge, fighting their way through deep snow — at least a meter deep. These times seem to be over, so if you hear someone denying the disappearance of ice in the Antarctic Peninsula — show them these images. Changes have occurred many times in Earth History, and this is another one.



Citizen Science **ORCA**

Whilst on your journey to Antarctica and back you were joined by ORCA Ocean Conservationist, Tony, who was collecting data during wildlife watches on whales, dolphins and porpoises. This data was sent back to ORCA and made available for many organisations interested in cetacean conservation. But also, for anyone who wishes to get an overview of what you might find where.

During the trip 10 species of cetaceans were recorded!



ORCA: OceanWatcher Survey

On this journey a total of 68.5 hours of data was collected, spanning over 814 km. And this does not cover all the time some of you have been standing out there, being our eyes.

And a huge thank you to everyone that came out and joined the naturalists for the wildlife watches. And thank you for your humor, brightening up the watches when it was few and far between the animal sightings.

Throughout the journey 10 species of cetaceans were seen: A total of 107 animals (plus another 16 animals that were not identified to species level).



What Species Did We See?

Species Name	Number of Individuals Seen	Species Name	Number of Individuals Seen	Species Name	Number of Individuals Seen
Southern Right Whale	9	Minke Whale	1	Dusky Dolphin	5
Fin Whale	5	Peales Dolphin	4	Orca	48
Humpback Whale	12	Hourglass Dolphin	5	Unidentified whale	15
Southern Bottlenose Whale	3	Commersons Dolphin	18	Unidentified Dolphin	1

eBird





- Altogether, we saw 57 bird species on the trip
- 25 of these are found only in the Falkland Islands
- We logged 44 species in 23 eBird sessions
- Those records are now available for scientists around the world studying bird distribution, migration, and habitat use

Antarctica



74
Species

30,664
Checklists

2550
eBirders

My Stats 34 679 3 0

Overview

Bird List

Recent Checklists

Trip Reports

Hotspots

eBirders

Illustrated Checklist

VIEW MY...

My eBird

Life List

Target Species

Needs Alerts

Checklists

eBirding This Month Nov 2025

Updated ~5 hours ago

30
Species

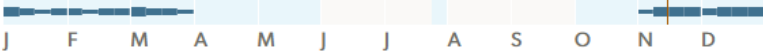
838
Checklists

70
eBirders

Community Targets



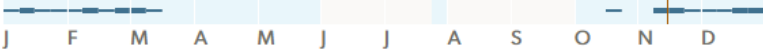
Southern Royal Albatross *Diomedea epomophora*



Last observed by Simon Davies on 21 Mar 2025



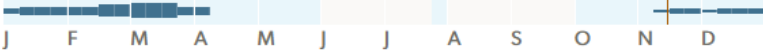
Arctic Tern *Sterna paradisaea*



Last observed by Martin Renner on 20 Oct 2025



Soft-plumaged Petrel *Pterodroma mollis*



Last observed by Megan Dimitrov on 21 Mar 2025

New Species

Macaroni Penguin *Eudyptes chrysolophus*

1 13 Nov 2025 margie orrick
Gibbs Island Antarctica

Common Diving-Petrel *Pelecanoides urinatrix*

1 13 Nov 2025 Jeff Skevington
Southern Ocean (-60.0709,-62.2808) Antarctica

Snowy Albatross *Diomedea exulans*

1 9 Nov 2025 Martin Renner
Auto selected -58.23009, -41.66974 Antarctica

Gray-headed Albatross *Thalassarche chrysostoma*

Chris's Bird highlight: Antarctic petrel (*Thalassoica antarctica*)



Citizen Science iNaturalist

During our voyage we had the chance to explore many different ecosystems: from the windy shores of the Falklands, to the icy paradise of Antarctica, we observed a huge variety of flowers, marine invertebrates, birds and mammals.

In total we recorded:

- **113** Species
- **476** 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 Oct 29 - Nov 15: MS Roald Amundsen: Antarctica & Falklands Expedition - iNaturalist](#)



Where Have We Observed?



What Have We Observed?



55 observations

Gentoo Penguin •
Eselspinguin
Pygoscelis papua



20 observations

Black-browed Albatross •
Schwarzbrauenalbatros
Thalassarche melanophris



20 observations

Imperial Cormorant •
Blauaugenscharbe
Leucocarbo atriceps



17 observations

Pintado Petrel •
Kapsturmvogel
Daption capense



14 observations

Kelp Gull •
Dominikanermöwe
Larus dominicanus



13 observations

Humpback Whale •
Buckelwal
Megaptera novaeangliae



12 observations

Southern Giant Petrel •
Riesensturmvogel
Macronectes giganteus



11 observations

Magellanic Penguin •
Magellan-Pinguin
Spheniscus magellanicus



11 observations

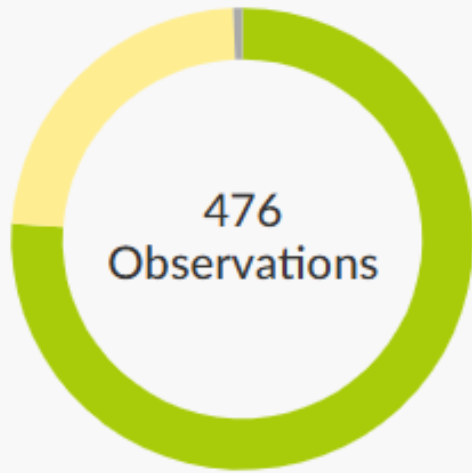
Southern Fulmar •
Silbersturmvogel
Fulmarus glacialisoides



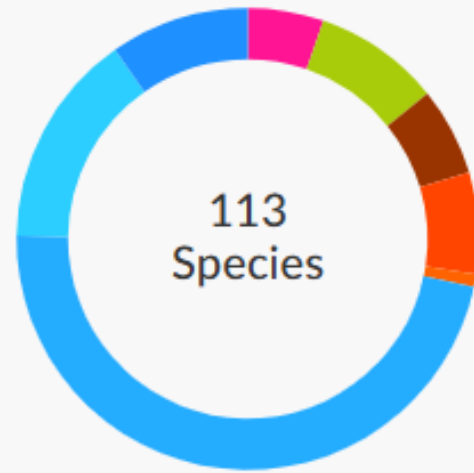
10 observations

Weddell Seal •
Weddellrobbe
Leptonychotes weddellii

What Have We Observed?



- Research Grade
- Needs ID
- Casual









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







Species

- 53 Birds
- 17 Mammals
- 8 Molluscs
- 10 Plants
- 76% are already research grade

Who Has Observed?

 1st	Most Observations ajarmund	283
	katrin_schmidt	72
	holly513	66
	mercenarymedic	27
	piskey	11
	quakquak	11

[View All](#)[View Yours](#)

 1st	Most Species ajarmund	70
	katrin_schmidt	42
	holly513	36
	mercenarymedic	20
	quakquak	11
	piskey	10

[View All](#)[View Yours](#)

- 32 members
- 10 observers

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 1 observation of a humpback whale we encountered in near Danco Island which came back as a match!

We also uploaded Commerson's dolphins seen at Saunders Island (Falklands), Orcas near Deception Island, and Southern Right Whales in the South Atlantic.

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



Thanks to Carol Gross, and Katrin Schmidt for this sighting!



XJTLU-AS-2 (Antarctica)

ID : HW-MN1304876

SEX : Unknown

Humpback Whale

Sightings 10

First  2023-01-22
Antarctica

Last  2025-11-08
Antarctica

Followers

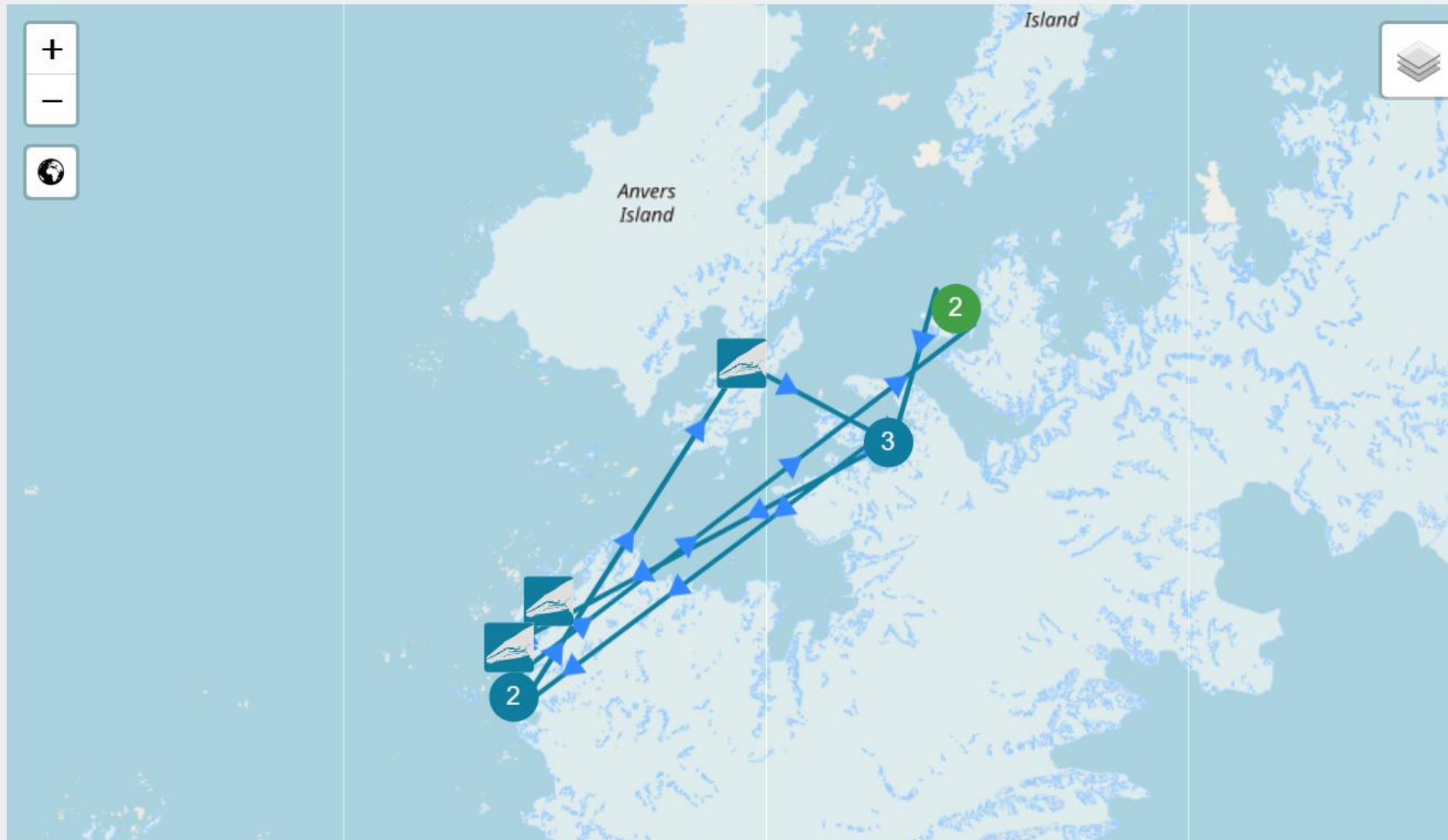
3

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Share Your Experience



Thank you!

