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Field Report from the journey to North-East Greenland 2026

The Ny Hedlund hut

In September 2023, a landslide occurred in Dickson Fjord in North-East Greenland. The landslide triggered a tidal wave that destroyed the old hut at Kap Hedlund. In the summer of 2026, a field team rebuilt the hut. The new hut has, however, been placed slightly further inland and at a higher elevation, beyond the reach of the tidal wave. This was just one of the many activities carried out during the summer of 2026. Read more about this – and much more – in the following report.

36th field season

Introduction

The North-East Greenlandic Company Nanok has successfully completed its 36th field season as planned.

This year, only one Nanok field team operated in North-East Greenland. The team carried out tasks at Kap Hedlund, at the Ella Ø station, and in the surrounding Ella Ø area. The field report also includes reports from two research groups, both of which used Nanok Station Ella Ø as their base for their fieldwork.

Weather and ice conditions have been exceptionally favourable this summer. Apart from a couple of days with strong winds, we have experienced a summer of almost uninterrupted clear skies, calm and warm weather. And, for the most part, hardly any mosquitoes!

Back in 1991–92, when we were a handful of former Sirius men and North-East Greenland enthusiasts who founded what is now Nanok, we could never have imagined how far our private non-profit initiative would develop; but today, 35 years later, it is clear that it has had a significant impact. For example, this summer, two larger research groups, each consisting of around 20 participants, have used our restored Nanok Station Ella Ø as their gateway and base for their work in the area. One of these groups, the CIFAR group from Aarhus University, has also used our new hut at Kap Hedlund during their work in the inner part of Kempe Fjord. In addition, we have supported both the CIFAR group and the other group, the GEUS group, with accommodation, transport, and equipment at Ella Ø. It has been a pleasure to support these two research groups with the excellent facilities that Nanok now has at its disposal at Ella Ø, thanks to the ever-ready financial support from our long-standing sponsor, the Aage V. Jensen Foundations.

Another example of what Nanok's work has led to is the many small and large historic trappers' huts that Nanok has restored over the years. Today, a number of these huts are used as regular destinations and major attractions for the cruise tourism industry, which has, incidentally, broken all previous records this year. More than 70 cruise ships have visited the National Park this summer! All of them stop and go ashore at one or more of the huts, allowing the tourists on board to experience the atmosphere in and around the hut. Understandably so, since the huts are more or less the only features that distinguish the area from the untouched wilderness. What is rather astonishing, however, is that the Government of Greenland and tourism experts have still not recognised that this could be an easy source of annual revenues in the tens of millions of kroner for Greenland, simply by introducing a mandatory cruise tax in the National Park, for example at 10% of the ticket price. Instead, cruise ships are still allowed to sail around the National Park, spewing out their emissions, entirely free of charge, while the cruise companies collect ticket revenues of several hundred thousand kroner – per tourist! All in all, we are probably talking about 5,000–10,000 tourists a year who are given free access to experience this unique National Park. Do the maths. Greenland is still failing to take advantage of this significant source of potential revenue!

AAGE V. JENSENS FONDE

Nanok first and foremost extends its deepest thanks to our sponsor, the Aage V. Jensen Foundations, for their unwavering trust and support. Without such continued support, Nanok would not be able to carry out its work, which is often costly, logistically demanding, and requires years of preparation.

We also owe special thanks to a number of units and individuals within the Danish Armed Forces for their cooperation, hospitality, and assistance in solving various logistical challenges.

We would also like to thank the CIFAR and GEUS groups at Ella Ø for their good cooperation.

Our heartfelt thanks also go to the families and friends who support the Nanok volunteers, many of whom spend an entire summer holiday working for Nanok. Such support and understanding from those at home mean a great deal to each individual Nanok volunteer. Many thanks as well to the many people who continue to show a positive interest in our work and support it.

Finally, sincere thanks to all our other valued collaborators and to the many public and private institutions whose positive contributions have helped make our work possible.

On behalf of Nanok

Peter Schmidt Mikkelsen

This field report is also available in English and Danish at: www.xsirius.dk/nanok.html

Field Report for the Nanok Team

Tasks

The team was assigned the following tasks:

- Rebuild Kap Hedlund hytten
- Install the remaining bear grilles in Fjøset and 12-mandsbarakken
- Inspect and take inventory of Nanok's equipment at Ella Ø
- Receive cargo for Nanok at Ella Ø
- Prepare for the Nanok expedition to Ella Ø in 2027
- Collaborate with the Center for Ice-free Arctic Research (CIFAR)

Participants

- Team leader Tommy Pedersen (Sirius '93)
- Ole Schirmer Nielsen (Sirius '97)
- Kristoffer Kruuse (Nanok '20)
- For Aarhus University: Peter Schmidt Mikkelsen (Sirius '77)

Historical background

The original Kap Hedlund hut was established by the Sirius Sledge Patrol in 1964 and continued to be used by researchers and Sirius until it was unfortunately destroyed by the tsunami triggered by a massive landslide in Dickson Fjord on 16 September 2023.
For historical reasons, and partly in response to the needs of Aarhus University, Nanok's board decided to rebuild a new hut at Kap Hedlund in the summer of 2026.

Journey up

After setting off from Frederikshavn, Odense, and Aarhus, there was great excitement at seeing each other again when the team assembled in Kastrup in the afternoon of 15 July. From there, we travelled to Iceland the same day and, after an overnight stay in Reykjavík, continued by air to Constable Pynt, where we were met by what

Pakning af værktøj og materialer.

would be the beginning of three weeks of sunshine, warm weather, and dry conditions. After a short wait, we continued by Twin Otter to Ella Ø, where we landed safely on the short runway. We were warmly welcomed by Sirius personnel, who had already helped open the station, among other things by removing the shutters from 12-mandsbarakken and Fjøset. We were therefore quickly settled in and were soon able to begin preparing for the summer and the tasks that lay ahead.

Preparations on Ella Ø

We spent just under three days at Ella Ø preparing for the summer. During this time, the Buster dinghy was unpacked and anchored, and new tyres were fitted to the boat trailer. We then prepared the cutter "Agsut", and it was a pleasure to use the new slipway and winch, which have clearly improved both safety and the launching of the vessel.
The "Agsut" and the Buster dinghy were given a test run and loaded in preparation for the upcoming task of constructing a new hut at Kap Hedlund. Materials for this task had already been shipped out by sea in 2025, and building materials had also been collected from the depot at Nyhavn near Mestersvig, most of which Sirius had already

Preparation of the Nanok cutter "Agsut" and the Buster dinghy.

En route to and arrival at Kap Hedlund.

helped transport to Kap Hedlund. However, there were still quite a few building materials that we had to take with us in the "Agsut", along with tools, a tent, personal equipment, and so on, which amounted to a considerable load.
In addition, we baked bread and rolls and stocked up on provisions for the more than seven days we estimated the construction of the new hut would take in good weather, camping out in the open.

Journey to Kap Hedlund

We departed from Ella Ø in the "Agsut" and the Buster dinghy at noon on 19 July in calm conditions. After an hour, a fault developed in Buster's steering system, but it could still be manoeuvred, and the two boats continued together through Kempe Fjord. We arrived at Kap Hedlund later that afternoon, where we immediately unloaded the Buster dinghy and the "Agsut", including all materials, tools, equipment, and other supplies. The "Agsut" was then anchored, and we surveyed the area to establish where the Kap Hedlund hut had stood and where the new hut was to be built. The materials from the original hut were scattered over a large area, clearly reflecting the forces of nature that had destroyed it. The stove and a sack of coal were found on one side of the bay, while Sirius' wire cage and the hut's boards were lying on the other. Based on historical photographs of the Kap Hedlund hut, we estimated that the hut itself had also been swept at least 200 metres further inland from the coast.

Work on the new hut at Kap Hedlund gets underway.

Left: Remains of the old Kap Hedlund hut. Right: The new hut begins to take shape.

The new hut

We therefore decided to place the new hut even further from the coast. This meant a longer "shuttle run" with building materials and supplies, but here too we benefited from the preparatory work carried out by Sirius, who had already moved the materials that had been deposited there a good distance towards the new site.

We then began by collecting stones to support the hut's beam foundation, which was then measured out and set in place. Next, we started on the floor joists, laid the floorboards, assembled the wall frames, and prepared the timber for the roof structure. The weather was fantastic, and it was a pleasure to work outdoors in the Greenlandic wilderness.

The continuous daylight allowed us to work long days, and the construction of the hut visibly progressed as the larger elements – walls, rafters, ceiling beams, and the like – were put in place. From time to time, we glanced over at the remains of the old hut and then checked the construction of the new hut once more. While the new hut was being built, the remains of the Kap Hedlund hut

Left: Tommy was a keen user of the circular saw. Right: Preparing for the roof-raising ceremony.




Wildlife at the hut. It wasn't long before both musk oxen and snow buntings came to visit.

were gradually gathered up and burned. This was a bittersweet process, but also a necessary one. After just three days, we had mounted all four sides of the hut and the roof, and the interior partition wall had also been installed and boarded. As a break from the work, we often went for an evening walk, including to Eli Knudsen's cairn, where we read his account, which always creates




Installation of walls and windows and covering the roof with roofing felt.

Ny Hedlund interior.

a special atmosphere. From the cairn, we could also look across towards the mouth of Dickson Fjord, from where the wave that destroyed the old hut had come.

On the fourth day, the corners were trimmed, and we fitted underlay roofing felt to the walls and roof. Up to that point, we had made good use of the mitre saw we had brought with us, and the nail gun also proved to be a great success, making the job of securing the underlay roofing felt considerably easier. The bunks were then made to fit the mattresses we had brought with us, and the windows, shutters, interior door, and door frame were fitted. Later that evening, we all slept in the hut for the first time – with smiles on our faces and a great sense of satisfaction with the hut's capacity and potential.

The following day, we had a visit from Sirius, who came by to inspect the hut and expressed an interest in using it during their upcoming sledging trips. When they sailed back to Ella Ø, they were carrying a substantial load, as they kindly took the surplus timber, transport pallet, and wire cage with them.

We then installed and tested the stove, fitted the outer roofing felt to the entire hut, and built an outdoor bench and table. We expected these to be put to good use by researchers and other visitors, as we knew they would be using the hut just a few days after we finished the work.

The new nameplate.

Finally, we painted the stairs, drip edges and shutters, and fitted and painted the landing. With just a few minor jobs left to finish, the team's main task was essentially complete. We therefore began dismantling the camp and spent quite some time carrying equipment and surplus materials down to the shore.

The following morning, we finished clearing the site, took the remaining photos, and loaded as much as we could onto the "Agsut". We had to leave some of the timber behind at the shore to be collected at a later date. The "Agsut" and Buster dinghy were therefore both heavily loaded, but once again we were lucky enough to have calm conditions and a beautiful trip back to Ella Ø.

Ny Hedlund and the construction team, from left: Peter, Kristoffer, Tommy and Ole.

Left: Nanok's fuel drums on the new stand. Right: Musk ox and the cross for Axel Søth.

Drift Ice in Kong Oscar Fjord

After a couple of days spent clearing up, we left Ella Ø in the "Agsut" on 29 July to inspect Kongeborgen, count the Nanok depot at Nyhavn, and inspect Hamna. The weather was clear and sunny, with calm seas, but on the way to Kongeborgen we soon encountered heavy pack ice and had to turn back. We followed the edge of the ice towards Nyhavn, but decided not to venture into the pack ice. We were unsure whether we might get trapped by the ice at Nyhavn, either on the way in or when trying to leave again the following day. Instead, we decided to abandon the plan and sailed on to Kap Peterséns, which we inspected. We then spent some time considering where to head next, but eventually decided to turn back towards Ella Ø, where we arrived shortly after midnight.

Return to Ella Ø, bear grilles, and completion

During a hike to Tømmerbugten, we had found a suitable plank for a new nameplate for the hut at Kap Hedlund, and we were also waiting for some materials to arrive on the ship "Tulu", which GEUS had chartered as a support vessel for the summer. On 2 August, shortly after the "Tulu" arrived, we were able to return to Kap Hedlund on board a Sirius patrol vessel to carry out, among other things, some final work on the hut. We fitted the new exterior door, installed the new nameplate, and fitted zinc sheets around the stove. We also put a new visitors' book in the hut, as the old one had been lost. Finally, we brought back the remaining timber that we had left on the beach. This completed the expedition's main task, and we had also cleared up both the remains of the old hut and the construction site. The new hut now bears the name "Ny Hedlund".

Back at Ella Ø, we spent the remaining days installing the remaining bear grilles, hauling the "Agsut" ashore, and beginning to take inventory of Nanok's equipment. We were also able to resolve the steering problems with the Buster dinghy using the replacement components we had received. We also spent the time to repair the cross at Axel Søht's grave and to build a stand for Nanok's fuel drums, making it easier to fill fuel containers such as jerry cans.

There was also time at Ella Ø for hikes in the mountains, some good times with the research teams from Aarhus University, and taking the Sirius personnel who were there for a little trip in our cutter "Agsut".

Ella Ø provides a solid base for Nanok's activities, including this year's reconstruction of the hut at Kap Hedlund. The support and assistance we received, particularly from Sirius at Ella Ø and the Tårnuglerne at Mestersvig, were

Left: Simon Kortegaard from Mopa Boats had brought spare parts for the Buster dinghy.
Right: Additional bear protection was fitted to the windows of both 12-mandsbarakken and Fjøset.

The construction site at Kap Hedlund.

essential in making it possible to clear up the remains of the original hut and construct the new one at Kap Hedlund. It is the team's hope that Ny Hedlund will bring benefit and enjoyment to those who use it for many years to come..

The journey home

As our departure drew closer, the weather began to deteriorate. So when we were offered the opportunity to be picked up by Norlandair's Twin Otter a day earlier than planned, to fit in with the scheduling of flights and crews, we quickly packed up and got ready to leave. We flew from Ella Ø on the afternoon of 5 August and, after a short stop at Constable Pynt, continued on to Akureyri. The following day, we travelled to Reykjavík for an overnight stay before continuing from Keflavík to Copenhagen. From there, the team went their separate ways to our respective final destinations.

Tommy – Ole – Kristoffer

Nordøstgrønlandsk Kompagni Nanok Station Ella Ø.

Left: The expedition ships "Tilvera" and "Tulu" at anchor off Ella Ø station.
Right: The CIFAR group has arrived at Ella Ø and is busy organising their equipment.

The subsequent events

After returning from our hut-building project at Kap Hedlund and our trip to Kong Oscar Fjord, Tommy, Ole, Kristoffer and the undersigned began a series of working days at the Ella Ø station.

The first members of the CIFAR group from Aarhus University (AU) arrived by Twin Otter on the afternoon of 30 July. The following morning, we arranged a shooting practice session for the newly arrived members of the group, giving them the opportunity to test their firearms and familiarise themselves with the procedures for handling firearms in North-East Greenland.

On 1 August, the full GEUS geology team arrived aboard the "Tulu" – almost 20 people in all. It had been agreed in advance that I would help GEUS with unloading and transporting their fuel and equipment locally. When unloading the "Tulu" began the following morning, Nanok's Weidemann mini loader really proved its worth and showed just how indispensable it was. Everything went better than expected, with many hands helping out, a barge shuttling back and forth, and Nanok's mini loader making regular runs between the barge and the location behind the station where GEUS had been allocated a site for their camp. That afternoon, a further 48 drums of helicopter fuel were transported up to the camp, from where the GEUS helicopter would be operating over the following weeks.

Late in the afternoon on 3 August, the ship "Tilvera" arrived with the remaining members of the CIFAR group, bringing the total number of participants to around 20. This meant that, together with the Nanok and Sirius personnel, there were for a brief period almost 50 people at and around the Ella Ø station!

The original plan was for Ole to stay on Ella Ø for another couple of weeks, but when an opportunity arose to return home as early as 5 August, he decided instead to leave with Tommy and Kristoffer. That same afternoon, the "Tilvera" departed with most of the CIFAR team on board, bound for Kap Hedlund, where they would be based on the ship for the following few weeks.

Back at Ella Ø, there was plenty to get on with in the weeks that followed, including the daily station duties (including emptying the toilet bags), clearing up, and taking inventory of Nanok's equipment. Over the years, Nanok has built up a substantial stock of equipment, but as with everything else, there is a need from time to time to have a thorough clear-out, disposing of and sending home old equipment that is no longer

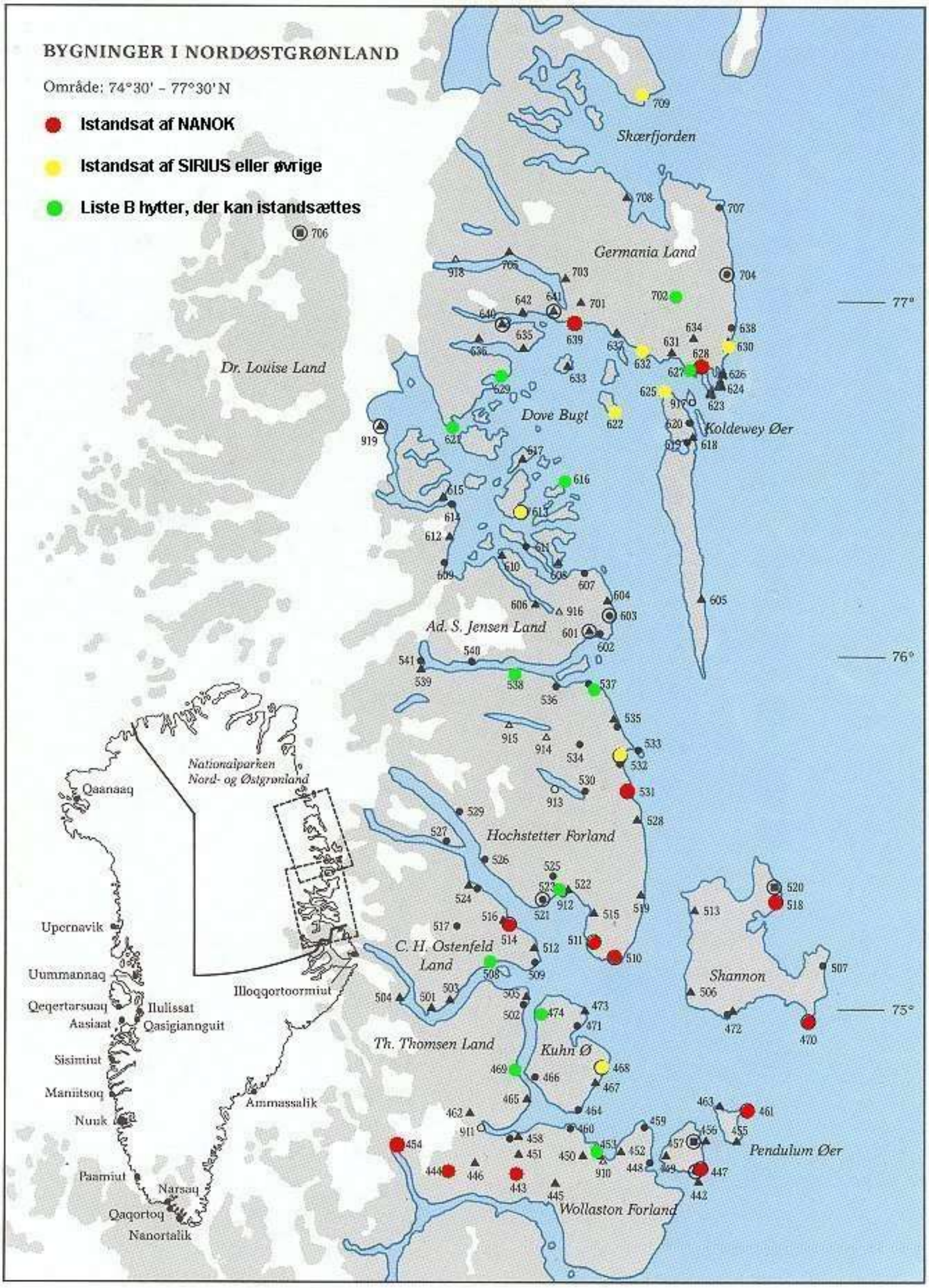
Left: GEUS' base camp at Ella Ø Station. Right: Transporting fuel drums with the Weidemann.

being used but is simply taking up scarce storage space.
On 10 August, the Royal Arctic Line (RAL) supply ship “Malik Arctica” arrived with a further 52 drums of fuel for GEUS, so once again there was a need for the Weidemann for transporting.
The CIFAR field teams were constantly in need of boat transport, and as there were not enough boat operators available, they needed a helping hand. This meant a full day on the water on 14 August, taking two biologists almost 80 km into Dickson Fjord, where they were due to carry out measurements. However, we were stopped by dense pack ice about three or four kilometres short of the Hisinger glacier front. While working further into the fjord, we also witnessed a large rockfall. Fortunately, it turned out to be no more than an avalanche of loose rocks, but it was an impressive sight, nonetheless. See photo later in this report.
In the days that followed, the station work continued, along with transporting cargo for the GEUS and CIFAR groups and preparing the station for winter. On 20 August, it was finally time for me to head home as well.
Thank you to everyone who visited Nanok Station Ella Ø during this period, and a special thanks to Sirius for being such good neighbours. It has been a great pleasure for this former Sirius man to experience.

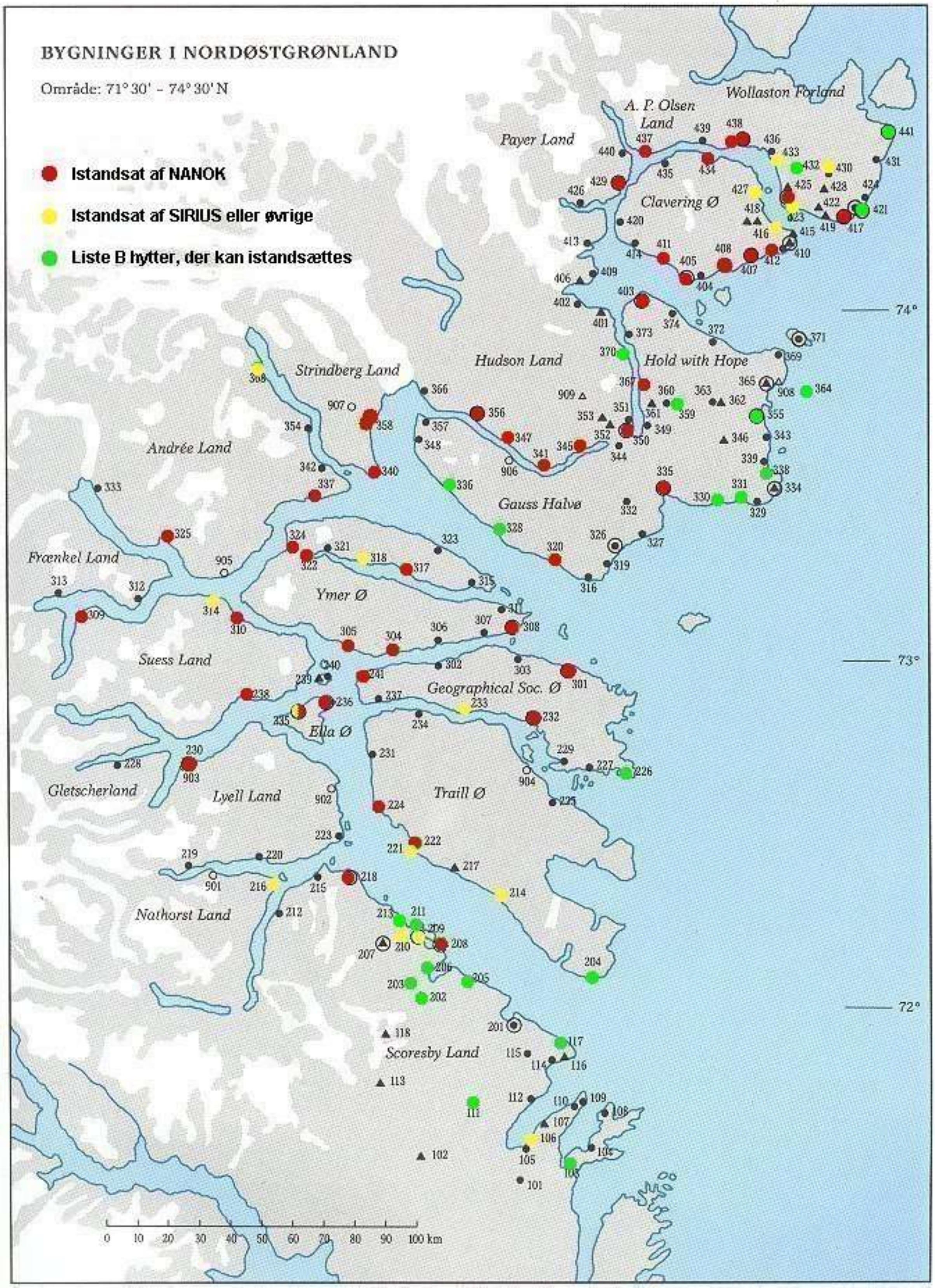
Peter Schmidt Mikkelsen (Sirius ’77)

Musk ox calf.

Arctic hare leveret.



The map shows the maintenance status of the old huts, houses, and stations in North-East Greenland. Locations marked in red or yellow can be expected to be in somewhat usable condition. Other locations, however, cannot be expected to be serviceable. Locations marked in green are other List-B huts that Nanok may renovate and maintain in the coming years.



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Field Report for the Research Teams 2026

Tasks / Contents

The research teams carried out the following tasks:

- Servicing and deploying GIOS systems
- Deploy measuring instruments on land, in rivers and at sea
- Measure runoff from land and glaciers, and oceanographic conditions from the Greenland Ice Sheet and fjords to the coast and offshore waters
- Measure organism distributions (DNA) across land, rivers, fjords and the sea
- Measure phyto- and zooplankton from the coast to the open sea
- Measure primary production and bacterial production
- Collect fish tissue and otoliths
- Pack up and enjoy good company with Nanok, the Tårnuglerne and Sirius.

Participants in this year's CIFAR research activities in NE Greenland

- Andreas Kjær Didriksen (CIFAR, Aarhus University)
- Anton Homilius (CIFAR, Aarhus University)
- Egon Randa Frandsen (CIFAR, Aarhus University)
- Eugenio Ruiz Casaillo (CIFAR, Aarhus University)
- Dorte Søgaard (CIFAR, Aarhus University)
- Fleur Rooijakkers (CIFAR, Aarhus University)
- Jakob Breinholt Kjær (CIFAR, Aarhus University)
- Jonathan Christensen (CIFAR, Aarhus University)
- Jürgen Zier (VLIZ, Belgium)
- Mads Reinholdt Jensen (Tromsø University)
- Meret Nia Jucker (CIFAR, Aarhus University)
- Nanna Kåstrup Müller (CIFAR, Aarhus University)
- Nicklas Lyngholm Brusgaard (CIFAR, Aarhus University)
- Peter Grønkjær (CIFAR, Aarhus University)
- Ryan James Felton (CIFAR, Aarhus University)
- Simon Bahrndorff (Aalborg University)
- Simon Kortegaard (Mopa Boats, Vilsund)
- Søren Rysgaard (CIFAR, Aarhus University)

Departure from Húsavík aboard 'Tilvera'.

Center for Ice-Free Arctic Research (CIFAR)

CIFAR is a new project funded by the Danish National Research Foundation and expects to conduct extensive research activities in East Greenland over the next ten years. In CIFAR, researchers in oceanography, glaciology, limnology and biology collaborate to investigate the consequences of melting ice and increased freshwater inflow to the Arctic. Ice is the most characteristic feature of the Arctic, but summers with little or no sea ice are now expected to become the norm across large parts of the Arctic Ocean. At the same time, the ocean is gradually becoming fresher because of melting sea ice and glaciers, increased precipitation and greater runoff from land. These changes are expected to have far-reaching consequences for marine ecosystems and may also affect the global climate, sea level and ocean currents. Despite the rapid pace of change, fundamental observations of how increased freshwater inflow alters the marine environment are still lacking, limiting our ability to understand and predict the consequences of ongoing climate change. CIFAR therefore investigates how changes in ice cover and freshwater inflow affect the ocean's physical and chemical properties, marine ecosystems and regional ocean currents.

Logistics and Sampling

The basic idea behind the sampling during CIFAR's summer field campaign was to investigate how freshwater from the Greenland Ice Sheet mixes through the fjords and continues towards the coast and the open sea. Freshwater inflow to the fjords affects how the water mixes farther out along the coast. We therefore established a detailed observation network in Dickson Fjord, Röhss Fjord and Rhedin Fjord, all of which connect to Kempe Fjord, which in turn connects to Kong Oscar Fjord. Within a relatively small area, this allows us to collect measurements from (a) a fjord where the glacier terminates directly in the fjord (Dickson Fjord - a marine-terminating glacier), (b) a fjord where the glaciers have retreated onto land (Rhedin Fjord - land-terminating glaciers), and (c) a fjord where most of the runoff comes from a catchment that is not directly connected to the Greenland Ice Sheet (Röhss Fjord). Considerable mixing of freshwater and seawater occurs both where freshwater enters via rivers and mixes at the surface and where glaciers discharge meltwater below the sea surface. Further mixing occurs where the different fjord branches meet and at submarine sills. We also observed numerous eddies in the fjords, which may contribute to mixing the water masses. Finally, wind, tides and internal waves also influence the mixing.

Søren and Fleur travelled to Iceland a few days before departure to ensure that all the cargo reached Húsavík. Some of the equipment had been sent from Aarhus University, while other equipment, which had been used during a campaign in South Greenland in the spring, had gone missing. Once it was finally located, it was sent directly from Narsaq in South Greenland to Húsavík. The cargo was released in Húsavík and loaded aboard the schooner 'Tilvera'. The equipment was sorted on the quay in Húsavík under a large tarpaulin, as the weather suddenly shifted to torrential rain after a month of dry conditions. Nevertheless, everything made it aboard. That same afternoon, 12 researchers arrived by air in Akureyri to sail aboard 'Tilvera' from Húsavík to Ella Ø. Although it was quite windy, sampling from the vessel was successfully carried out en route from Húsavík to Kong Oscar Fjord. Meanwhile, Søren drove the additional equipment from South Greenland that was not needed for the summer field campaign to Akureyri and then to Reykjavík, where he met Egon, Simon, Nicklas and Jürgen. The following day they flew to Constable Point, arriving at the coast in full sunshine and temperatures of 20 degrees Celsius. From there, they continued by Twin Otter to Mestersvig, where Simon and Søren disembarked. Egon, Nicklas and Jürgen continued to Ella Ø. In Mestersvig, a Mopa boat was prepared so that cargo and equipment sent by air (Norlandair and C-130) or by ship from Nuuk (with GEUS) could be transported out to 'Tilvera' when the vessel arrived. There was also time to deploy a marine subsurface buoy. Meanwhile, Egon, Nicklas and Jürgen prepared the Mopa boats and equipment and serviced the GIOS measuring systems on Ella Ø.

After loading the final equipment aboard 'Tilvera' in Mestersvig, everyone met on Ella Ø, where all the cargo was taken ashore by barge and sorted for the groups and locations where it would be used. Some researchers worked from the Ny Hedlund cabin at the head of Kempe Fjord, which Nanok had built in advance, while others worked from Fjøset on Ella Ø. The rest lived and worked aboard 'Tilvera', which was anchored off Cape Hedlund. Egon and Jürgen also travelled to Daneborg to service the GIOS measuring systems

Left: Four pallets of cargo are loaded aboard 'Tilvera' in Mestersvig. Right: Simon and Søren deploy a subsurface buoy near Mestersvig.

Sampling en route aboard 'Tilvera' - Jonathan and Anton at the hydrographic winch.

there. At the same time as the activities in the Ella Ø fjord systems, colleagues collected samples from the Greenland Institute of Natural Resources research vessel 'Tarajoq' on the shelf off Scoresby Sound, in Kong Oscar Fjord and off Young Sound. Finally, Wieters' group deployed two underwater gliders that carried out oceanographic transect measurements in the same area. The combined dataset will substantially improve the data available for an area where observations have so far been sparse. Another important objective of the expedition was to train the next generation of researchers. PhD students and postdocs therefore had an opportunity to experience Northeast Greenland at close quarters while gaining practical experience of fieldwork under Arctic conditions.

Left: New weather station at Rhedin Fjord. Center: The Ny Hedlund cabin was used extensively. Here Ryan is setting up filtration equipment. Right: Collecting stream samples at Narhvalsund.

The different teams

Meteorology and remote sensing

A new GIOS-lite station was installed at the northern tip of Cape Hedlund. It will form part of a network of existing stations that transmit live data, including stations at Dickson Fjord, Ella Ø and Sverresborg. This makes it possible to compare meteorological conditions across the entire fjord system and to see how differences in factors such as topography affect weather conditions. The location was chosen because the area is considered to be influenced by weather conditions from all three inner fjords (Rhedin, Röhss and Dickson), as well as Kempe Fjord. This provides insight into the meteorological influence on the mixing of water masses in these fjords. Continuous wind measurements will also be combined with drifter locations to investigate the extent to which wind and tides affect the movement of water masses at depths of 5 and 40 meters. Alongside the weather stations, we use remote-sensing data from thermal, optical and radar satellite observations to investigate iceberg movement, variations in fjord surface temperatures, the detection of subglacial discharge plumes, water-surface elevation and circulation structures in the fjords. Among other sources, we will use the student-developed DISCO-2 satellite, which carries both optical and thermal cameras, together with other remote-sensing products such as Landsat, Sentinel, Planet Labs and SWOT.

Streams and runoff from land

To determine runoff from land to the coast, we collected water samples from the Röhss River to measure dissolved organic matter, inorganic carbon, nutrients, water isotopes, turbidity and alkalinity. Along with the water samples, we measured the river's discharge so that we could determine the total runoff from land into Röhss Fjord. We did the same in the Rhedin River, but because we could not reach the river by boat, we flew there by helicopter and collected the same samples. However, we were unable to measure the discharge directly in the river because we could not cross it. Instead, we used a drone boat equipped with an ADCP current meter to measure the volume of water flowing into the Rhedin river mouth. We also used the helicopter to collect samples along the Röhss River, from the glacier terminus down to the river mouth, to investigate how nutrient levels change from where the glacier meets the fjord. Finally, we collected water samples and discharge measurements from 21 streams around Ella Ø to investigate which terrestrial factors affect nutrient runoff.

Collecting stream samples in Rhedin Fjord.

Measuring discharge from Rhedin Fjord using an unmanned surface vessel equipped with an ADCP.

Left: Map of the innermost stations. Yellow pins indicate standard stations. Red and blue stars indicate subsurface buoys. Orange stars indicate weather stations.

Fleur prepares one of the current meters (ADCPs) for our 400-meter-long subsurface buoy. The twelve-person barracks can be used for many purposes.

Physical and chemical oceanography

At all standard stations, a range of samples was collected, and measurements were made of parameters including light, salinity, temperature, turbidity, dissolved organic matter, nutrients, alkalinity, dissolved inorganic carbon, oxygen, and isotopes in H_2O and DNA. Samples were also collected from icebergs in the fjords. The measurements will be used to describe the vertical and horizontal distribution of the water masses. In brief, the water column can be divided into three layers. The upper layer, which extends to a depth of approximately 5-10 meters, consists of relatively warm water influenced by contact with the atmosphere. At the same time, it is fresher because of runoff from land. Beneath it is a cold-water layer from approximately 10 to 200 meters, with temperatures below 0 degrees Celsius and a salinity of around 32 g/L. This layer is known as Polar Water. Beneath the Polar Water is a warmer (>1 degree Celsius), more saline layer with a salinity of around 34.8 g/L. This water originates in the Atlantic Ocean and has circulated around the Arctic Ocean, gradually cooling. Water density depends on both temperature and salinity. As the saline Atlantic water cools and mixes with the cold Polar water, its density increases, causing it to sink. This is important for understanding how much dense water is transported southwards in the deeper layers. Denmark Strait is a key area for this sinking of dense water. To understand how deep-water formation is regulated, it is therefore important to understand the sources of freshwater and how it mixes with seawater. The water masses also change over the course of the year. Very few winter measurements exist. We plan to return next winter and repeat all the measurements. Last year, we showed that it was also possible to collect samples under winter conditions - see the previous 2025 Nanok report. We also deployed several subsurface buoys during the summer fieldwork. Year-round buoys are now located in Dickson Fjord, Röhss Fjord, Rhedin Fjord, Kempe Fjord and Kong Oscar Fjord. We also deployed several drifters in different sections of the fjord system to describe the overall current patterns. The drifters were positioned at depths of 5 and 40 meters.

Left: Meret and Fleur travelling at full speed on a Mopa boat on their way to a new sampling station. Right: 'Tilvera' anchored off Cape Hedlund. The schooner served as a base for the studies at the head of the fjords - a wonderful platform with excellent food prepared by the Italian chef Giulio and good company from Heimir and Belen.

Left: A drifter in Kong Oscar Fjord passes an ice floe with a bearded seal.

GIOS monitoring stations

We serviced the GIOS monitoring stations on Ella Ø and in Daneborg - both the large, advanced container systems and the smaller GIOS-lite systems located throughout the fjords. There are now two large GIOS stations on Ella Ø, one on the coast and one at Ulvedal Lake. Simon was responsible for inspecting the terrestrial instruments, and it was decided to dismantle all of Toke's camera systems in the area and move them to South Greenland, where there are fewer polar bears. The bears have been hard on the camera systems.

DNA

Environmental DNA (eDNA) samples were collected at all the inner stations in the fjord system for several purposes. As part of a project funded by the Aage V. Jensen Foundations, we collected more than 200 samples to investigate fish community composition in surface waters, at a depth of 75 meters and down to 500 meters (the maximum capacity of our winch). We used an 8-liter Niskin bottle to collect approximately 6 liters of water from each depth (see photo), using the winch on the Mopa boats - an activity that also helped keep us warm. We also collected air controls and brought Milli-Q water as an additional precaution to ensure that the DNA signals from the water masses of the fjord system were authentic. We set up a filtration station outside the Cape Hedlund cabin, where a generator supplied electricity to our peristaltic pump. Two-thirds of the samples were filtered at Cape Hedlund, while the final third was filtered in Fjøset on Ella Ø. After a typical day in the field, 10-liter containers holding water collected from the different depths were brought back to the filtration station, and the evenings were spent filtering the many liters of water through 0.22µm Sterivex filters. In brief, the purpose of these samples is to compare fish DNA from the summer months with samples to be collected during the next winter campaign, to gain a better understanding of which fish remain throughout the winter and which migrate away.

Dinner and good company aboard 'Tilvera'.

Water is hauled up from a depth of half a kilometer for fish DNA analysis. Mads and Meret in action.

We also want to investigate the fish's ability to cross the various sills in the fjord system and determine whether they form a barrier to any bottom-associated fish species. Furthermore, we intend to use the same water samples to investigate zooplankton composition from DNA in the water masses to get a first glimpse of potential food resources for fish in the area.

Alongside the fish and zooplankton samples, we collected microbial DNA at six depths at all stations (1 m, 5 m, 30 m, 75 m, 125 m and 250 m). For each sample, 200 mL of water was manually filtered through a 0.22 µm Sterivex filter using 50 mL syringes, after which the DNA was preserved in Longmire's buffer. The aim is to identify the different water masses from their microbial DNA composition (bacteria, archaea and microbial eukaryotes) and to map the microbial communities - which form the ecological food base - across the different fjord systems. This information will also be compared with water-isotope data and used as a tracer of the different water masses. In addition, the experience gained from this sampling will be used to optimize the eDNA collection protocol with a view to developing a simple, robust setup that is easy to operate under difficult field conditions.

Phytoplankton, primary production and bacterial turnover

During the summer fieldwork, Nanna and Dorte were based on Ella Ø, where they lived and set up a temporary laboratory in the historic Fjøset building. Here, seawater samples from the different fjord stations were filtered and processed, the photosynthetic activity of phytoplankton was measured, and samples were prepared for subsequent laboratory analyses in Denmark.

The temporary laboratory, both inside and outside the historic Fjøset building on Ella Ø. The excellent facilities provided an ideal base for filtration, measurements and sample processing throughout the fieldwork.

Nanna deploys incubation bottles to measure primary production in the fjord. The bottles are attached to a line with floats so that they remain suspended in the water column under in situ conditions and can be used to determine phytoplankton primary production.

Using Ella Ø as our base, we sampled along a gradient extending from the areas strongly affected by freshwater and land at the river mouths in Rhedin Fjord and Röhss Fjord to areas influenced by a marine-terminating glacier in Dickson Fjord. The work focused particularly on phytoplankton, primary production and bacterial turnover. At the stations, we measured phytoplankton biomass (chlorophyll a), primary production and photosynthetic activity, as well as bacterial production. Furthermore, samples were collected for microscopic identification of algal species composition and abundance. A central focus is the importance of mixotrophic algae, which combines autotrophy and heterotrophy. They can both produce organic carbon through photosynthesis and take up organic matter or ingest food particles, such as bacteria and small phytoplankton species. This flexible nutritional strategy can give mixotrophic organisms an advantage under conditions with low concentrations of inorganic nutrients and/or low light. We will therefore investigate how the relationship between autotrophic primary production, bacterial heterotrophic activity and mixotrophy changes along the gradient from fjords influenced by rivers and land to fjords influenced by marine-terminating glaciers. Freshwater input from rivers and land-terminating glaciers reduces the salinity of surface waters and may increase stratification in the water column. At the same time, sediment and dissolved organic matter supplied from land can reduce light penetration. Stronger stratification may also restrict the vertical transport of nutrients from deeper layers to the photic zone, thereby changing the growth conditions for phytoplankton. Under these more nutrient-poor conditions, mixotrophic algae may potentially play a greater ecological role.

This is particularly relevant as Arctic glaciers continue to retreat. Over time, more marine-terminating glaciers are expected to retreat onto land, changing both the sources of freshwater and the transport of nutrients into the fjords. Through subglacial freshwater discharge, marine-terminating glaciers can generate mixing and transport nutrient-rich deep water towards the photic zone. When a glacier retreats from the fjord and becomes land-terminating, this direct connection between the glacier and the marine environment is weakened. This may alter primary production, microbial activity and the composition of the plankton community, with consequences for the Arctic marine food web.

Zooplankton and fish biology

Jonathan and Peter collected zooplankton at the standard stations using a plankton net with a mesh size of 200 micrometers and a 60-centimeter opening. The net was lowered to a depth of 250 meters and towed at 1.5 knots behind the Buster dinghy, while being hauled towards the surface at short intervals. The mounted mini-CTD showed that this method gave the net a good profile through the water. At the same time as the zooplankton sampling, 3-10 water samples were collected at all standard stations, evenly distributed across the depths, to determine carbon isotope ratios.

This method also made it easier to haul in the net, as the resistance of the water while the boat was moving lifted it towards the surface. The zooplankton samples were preserved in Lugol's solution for species identification and isotope analysis in Aarhus. Additional samples were preserved in 96% ethanol for DNA analysis. The samples contained a surprisingly high biomass, particularly of arrow worms and copepods, although a few fish larvae and pteropods were also observed. We were also responsible for collecting fish to analyze their feeding biology and metabolism. For this purpose, we had brought

Peter and Jonathan in the fishing boat. It was great to borrow Nanok's Buster boat, as it was easier to use when handling nets and fishing.

two 6-meter-high and two 1.5-meter-high survey gillnets. The nets were primarily set as floating gillnets using additional buoyancy, but most of the catches at the shallower stations nevertheless consisted of shorthorn sculpin. The nets were usually set in the evening and checked again the following morning. Fishing took place at Cape Hedlund, Röhss Fjord, Rhedin Fjord and Ella Ø, while it was impossible to set nets in Dickson Fjord because of the masses of ice. This was supplemented by some rather unsuccessful rod fishing. In total, we caught shorthorn sculpin, longhorn sculpin, Arctic char, sand eel, capelin and the northernmost recorded herring caught on Greenland's east coast. In addition, one or two sculpin species have yet to be identified. In Aarhus, stomach contents will be analyzed to determine the diet composition of the different species. Muscle samples will be analyzed for stable carbon and nitrogen isotopes to establish the species' relative positions in the food web. The otoliths will be used to investigate fish metabolism using a new isotope-based technique.

Special events

Solar eclipse

The solar eclipse began around 17:20 on 12 August. The previous day had been eventful. After a long day's work, the wind suddenly picked

All hands on deck to watch the total solar eclipse from Rhedin Fjord.


Left: The 'Student Glacier' in Dickson Fjord is re-establishing itself after the 2023 rockslide. Right: One of several rockfalls on 14th August here in Dickson Fjord.

up with powerful gusts. All the boats had to be rescued when their anchors failed to hold. Around midnight, we therefore moved from Cape Hedlund to the other side of the mountain to find shelter from the wind in Kempe Fjord. We found a lovely spot in Rhedin Fjord and anchored there. Everyone moved their sampling program to Rhedin Fjord, where we needed to sample anyway. It was wonderful to have such a flexible and decisive group of researchers. After a productive day's work, everyone gathered on deck, and the weather cleared so that we could see the solar eclipse.

Rockfalls

On 14 August, we travelled into Dickson Fjord to retrieve seismic instruments and inspect the weather station, camera systems and underwater instruments. We passed the 'Student Glacier', where the mountain collapsed in 2023, as described in the 2023 Nanok report. The glacier is moving again over the old glacier. It is still black, indicating that a substantial amount of material is still making its way down into the fjord and that the entire formation is probably still a little porous. We retrieved the instruments, downloaded data from the camera and weather station, and serviced the subsurface buoy, saving its data as well. Another team conducted hydrographic measurements on the way out. Suddenly, it sounded like a thunderstorm. We realised that rocks from the mountainside - slightly farther into Dickson Fjord than the site of the 2023 rockslide - had begun to fall from an elevation of approximately 800 meters. Events then unfolded rapidly. The initial rockfall triggered several more slides that ended in the fjord. Fortunately, we stayed in deep water, so we did not feel the wave that the slides must have caused. The other research teams also observed rockfalls in Röhss Fjord, Rhedin Fjord and at Bastionen the same day.

Wildlife

A wide variety of wildlife was observed during this year's field campaign. Several whales were seen during the voyage from Húsavík to Kong Oscar Fjord. Polar bears were also observed at Nyhavn during cargo transport; a female with two cubs was seen in Narhvalsund while a drifter buoy was being deployed; another was seen at Röhss during sampling from a river; and one was observed on Ella Ø. There, Mads managed to collect a sample of polar bear faeces for DNA analysis.

In addition, we saw countless muskoxen, Arctic hares, ptarmigans, geese, waders, ravens, gulls, eiders, great northern divers, skuas, terns, seals, Arctic char, sculpins, polar cod, capelin and a single herring.

Egon packs the final Mopa boat and ATV into the containers at Nyhavn.

Wildlife: Bearded seal in Kong Oscar Fjord. Arctic hares at Cape Hedlund. Muskoxen with calf at Cape Hedlund. Polar bear on Ella Ø.

The journey home

After completing the sampling, 'Tilvera' moved to Ella Ø. All the cargo was sorted there according to the different routes home. One consignment was to travel aboard 'Tulu' (GEUS's vessel), another was to be returned from Ella Ø by Royal Arctic Line the following summer, and a third was to travel aboard 'Tilvera' to Mestersvig and continue from there by C-130. Egon and Søren went ahead to prepare for transporting the cargo from 'Tilvera' to Nyhavn. We have an ATV and trailer there, so five pallets of equipment could be ferried ashore by Mopa boat and driven to Mestersvig. In Mestersvig, the cargo was once again sorted, registered and packed onto aircraft pallets. The frozen samples were collected late one night by the Greenland Institute of Natural Resources research vessel 'Tarajoq' as it headed back towards Iceland. It was fortunate as 'Tilvera' had run out of coffee, so we were able to replenish the coffee supply from 'Tarajoq'. The remaining frozen samples and water samples were transported to Iceland by Twin Otter. 'Tilvera' then sailed to Scoresby Sound to find shelter before a low-pressure system passed through. Everyone therefore had an opportunity to visit the town. Egon and Søren were picked up in Mestersvig by Twin Otter on 27 August after packing up and servicing the final Mopa boat. Everyone met at Constable Point and flew back together after a successful field campaign in which all the planned samples were collected.

Acknowledgements

Many thanks for the good company on the coast again this year. Special thanks to Nanok, the crew of 'Tilvera', the Owls and the cook in Mestersvig, the Sirius team on Ella Ø, and the Arctic Command.

Søren Rysgaard, Professor and Center Director, Center for Ice-Free Arctic Research (CIFAR), Aarhus University.

Fieldwork Report from Ella Ø – GEUS Geological Fieldwork, Summer 2026.

During the summer of 2026 (August 1 – September 5), the Geological Survey of Denmark and Greenland (GEUS), in collaboration with the Government of Greenland, conducted fieldwork in the area surrounding Ymer Ø and Gauss Halvø, using Ella Ø as the base camp.

The objective was geological mapping of the area; the fieldwork was carried out by seven teams of two—14 people in total—deployed to various field camps across the region.

The original plan was to establish a base camp on Ella Ø, and two large, expensive tents had been purchased for this purpose prior to departure, ensuring that field teams could be brought back to base camp for shelter if necessary. A base camp was deemed particularly essential for the beginning and end of the field season.

However, since we had the vessel M/S ”Tulu” and the onshore facility "Ørnereden" at our disposal, we quickly decided against erecting a tent-based base camp. GEUS had previously experienced an incident where base camp tents were blown away by the wind and into the sea, so the fact that we did not need to pitch the tents came as a great relief.

The excellent facilities at Ørnereden and aboard M/S ”Tulu” meant that setting up a tent camp made no sense. Consequently, Ørnereden served as our onshore base camp, while M/S ”Tulu” acted as our base camp on the water.

For many of our participants - especially the younger members - the opportunity to experience the sense of history within the well-preserved Ørnereden was a major highlight. Sitting at the table by the window, gazing out at the same view

View from ”Ørnereden”.

Lauge Koch saw while leading the Three-Year Expedition in 1931–1934, gave the younger members a real thrill—you could sense that great ideas had been conceived there.

That is why our younger participants, in particular, chose to spend the night at ”Ørnereden” whenever the opportunity arose. We later learned from the Sirius Patrol that they were very pleased we hadn't set up a base camp on Ella Island, opting instead to use the existing infrastructure.

We would like to extend a huge thank you to Nanok for allowing us to use ”Ørnereden”- a magnificent and well-preserved piece of expedition history that the association can be proud of.

As for the two expensive tents we purchased, they will likely come in handy at a GEUS summer party sometime down the line.

Thomas Varming
Expedition Leader for the 2026 fieldwork
GEUS, Nuuk

”Ørnereden” (The Eagle's Nest) at Nanok Ella Ø Station.

About Nanok

Nordøstgrønlandsk Kompagni Nanok is a private, non-profit organisation founded in 1992 upon the former *Østgrønlandsk Fangstkompagni Nanok A/S*, founded in 1929.

Nanok's mission is to contribute *to disseminate knowledge of North-East Greenland and its cultural history and to contribute to securing the cultural monuments and buildings in the area*, a.o.

Nanok consists of a private band of six persons, the Board. These are Peter Schmidt Mikkelsen (managing director), Jesper Mølbæk Stentoft, Tommy Pedersen, Søren Rysgaard, Hasse Staunstrup and Torben Jeppesen. In addition to the above-mentioned, a number of private individuals actively participate in Nanok's work. All work in Nanok is voluntary and unpaid.

Each summer Nanok dispatches a field team of typically 6-10 participants divided into 2-3 teams who work in North-East Greenland for 3-5 weeks. The results of this work are documented and published in a field report. The expedition participants are chosen by the Board. In the years 1991-2026, a total of 227 Nanok'ers – or more than 75 individuals – have been dispatched to North-East Greenland.

To perform its tasks Nanok controls a considerable amount of expedition assets. Nanok has a land area allocation on Ella Ø but possesses no property in Greenland.

Nanok's work is sponsored by the Aage V. Jensens Fonde.

Among Nanok's many good collaboration partners and supporters are: Norlandair, Arctic Research Centre, Arctic Science Partnership, Greenland Self Government, The Greenland National Museum & Archive, Greenland Institute of Natural Resources, Arctic Command, the Sirius Sledge Patrol, Defence Guard Mestersvig, Station and Patrol Service Greenland, Royal Arctic Line, and Tusass A/S.

Since 1991 Nanok has renovated and maintained more than 60 culture historical buildings. For this work Nanok has gained considerable recognition and support from the Greenland Self Government, a.o. Since 2010 Nanok has had a formal cooperative agreement with The Greenland National Museum & Archive in Nuuk.

In the years 2003-2007, encouraged by the Greenland Self Government at the time, Nanok developed a new, unique structural survey of all culture historical huts and stations in North-East Greenland. Extensive data from these surveys, incl. photos and GPS positions, is published in "North-East Greenland 1908-60. The Trapper Era – and its traces today" (Mikkelsen 2019).

You can experience a range of the old North-East Greenlandic huts in Google Street View via a link from http://www.xsirius.dk/

List of North-East Greenland stations and huts renovated by Nanok 1991–2026:

Nr.	Navn	Istandsat år	Nr.	Navn	Istandsat år
201	Antarctichavn	2001 (knust 2002)	356	Hoelsbu	1999, 2000, 2021, 2023
208-2	Hamna	2020	358-2	Nordfjordhuset	2019
209-2	Nyhavn	2007	358-3	Strindberghuset	2013
216	Kap Mæchel hytten	2024	367-2	Mellemhuset	2010
218	Kap Peterséns	1998, 2024	403	Krogness	2010
224-2	Kongeborgen	2001	405	Eskimonæs	1998
222	Holm Bugt hytten	2001	407	Elvsborg	2007-2008
230-3	Ny Hedlund	2026	408	Dødemandsbugten	2013-2014
232	Sverresborg	2014, 2024	411-2	Norma hytta	2010
235	Ørnereden, Ella Ø	2015-2019	412	Dahl Skær hytten	2010
235	Tolvmandsbarakken	2015-2019	417	Kap Herschell	2002, 2025
235	Fjøset, Ella Ø	2022	425	Sandodden/Karina	1994, 2007, 2009, 2020
236	Maristua	2008, 2023	429	Moskusheimen	1994, 2025
238	Mineralbukta	2010	434	Leirvågen	2008, 2025
241	Svedenborg	2011, 2023	438-2	Zackenberg	1991-1992
301	Laplace	2009, 2023	438-4	Fiskerhytten	2008, 2025
304	Arentz hytten	2008, 2023	437	Bjørnnesstua	2008, 2025
305	Namdalshytten	2010, 2023	443	Blæsenborghytten	2017
308	Kap Humboldt	1997, 2023	444	Antonsens hytte	2017
309	Rendalshytten	2010	447	Germaniahavn	1999
310	Bjørnheimen	2008, 2023	454	Fjordbotten	2013
317	Brøggers hytte	2012, 2023	461	Bass Rock	2019
320	Smedal	2012, 2023	470	Kap Philip Broke	2022
322	Noa Sø hytten	2008, 2023	510	Hochstetter	1996, 1998
324	Varghytten	2002, 2007, 2023	511	Kulhus	2022
325	Renbugthytten	2010, 2023	514	Ny Jonsbu	1995
335	Myggbukta	1999, 2002, 2011, 2023	518	Alabamahuset	2016
337	Ragnhilds-hytten	2008	531	Ottostrand	2009
340	Kap Ovibos hytten	2000, 2007, 2012, 2023	628-1	Villaen, Danmarkshavn	2017
341	Halle	2011, 2023	639-1	Hvalrosodden	2019
345	Bråstad	2011, 2023	639-2	Alwin Pedersens hus	2019
347	Petrahytten	2011	---	Kap Moltke /Brønlundhus	2001
350	Loch Fyne	1993, 2007			

Source regarding hut numbers and names: Peter Schmidt Mikkelsen: *North-East Greenland 1908-60. The trapper era.* Xsirius Books 2019.