

DOGGER BANK BLOG 2026



ITAW Dogger Bank ship survey
April 27th-May 10th, 2026

Leonie Mahlke, TiHo-ITAW



Day 1 – Monday, April 27th

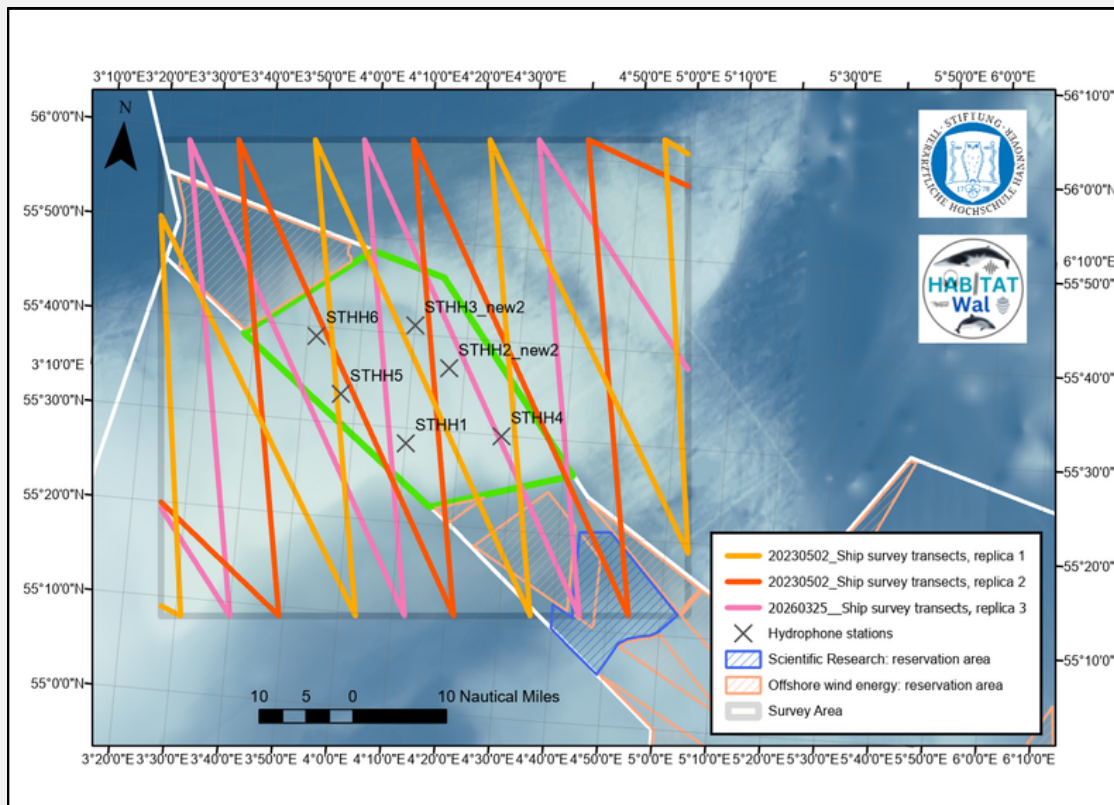
The Arctic Hunter arrived in Büsum around 10:30 on April 27th. After loading all our equipment onto the vessel, we left the harbour at around 12 with the high tide. Onboard were four crew members, the captain, seven marine mammal observers and technicians from the ITAW (Dominik Nachtsheim, Nadya Ramirez Martinez, Patrick Stührk, Helena Eicher, Isabel Avila, Remi Pigeault & Leonie Mahlke), one external marine mammal observer (Nino Pierantonio) and three bird observers from the DDA (Kai Borkenhagen, Lukas Ehmke & Malte Georg).



After the equipment was stowed away and the cabins assigned, it was time for lunch. Afterwards the crew gave us a safety tour across the vessel and explained emergency procedures onboard. While traveling through the Special Area of Conservation Sylt Outer Reef, a small pod of white-beaked dolphins was bow-riding in front of the vessel.

We used the remaining time of the day to talk about an additional project we were going to carry out during this cruise – collecting eDNA samples. The Max-Planck-Institute (MPI) for Marine Microbiology in Bremen provided us with their machine to filter water samples. The plan was to collect samples for the MPI and ITAW around the acoustic stations and in the northern and southern German EEZ framing the Special Area of Conservation Dogger Bank. For the ITAW, we were also planning on collecting samples en route on numerous waypoints along our transect lines.

This year, for the visual survey of marine mammals, we planned to conduct three separate sets of equally spaced zigzag transect lines (Replicates 1-3) across the study area. The transects were designed to ensure good coverage of the German Dogger Bank nature reserve, however, the study area also extends beyond national borders into waters of the neighbouring countries for ecological context. The study area was sampled representatively, encompassing both the shallower bank areas and the deeper slope regions. Observations were conducted from the primary platform located above the bridge. We worked in three pairs of observers rotating every hour, plus one additional person being the data recorder.



Day 2 – Tuesday, April 28th

After our first breakfast onboard at 5:45, Helena and Patrick started to deploy our six short-term acoustic devices (SoundTraps) with the help of the Arctic Hunter crew, using the A-frame of the boat for the buoy operations. Along the way, the rest of the marine mammal team collected eDNA samples at three of the six acoustic stations, both for the MPI and for the ITAW. Furthermore, we were discussing and trying different methods of how to collect eDNA samples with Patrick, as we needed a system that allowed us to safely take samples of seawater while the boat is moving and while it is relatively still. In the late afternoon at around 17:00, we started the visual survey. The sea state was at Beaufort 3, with strong winds that caused the wavelets to break into white caps. Isabel briefly saw one minke whale, but generally not many sightings were recorded. We ended the transect at 20:30.



Deployment of acoustic recorders permitted by German Federal Maritime and Hydrographic Agency (No. G22/2026)

Day 3 – Wednesday, April 29th

The survey was started at 6:30 in the morning with winds of Beaufort 2-3. This rather unfavourable sea state remained over the course of the day. During the day, we saw several groups of white-beaked dolphins. Rémi reported 1-2 dolphins out in the distance, clearly visible as they were doing full-body breaching out of the water. Most of the transects today were in the eastern part of the Dogger Bank. We finished the survey in the late evening at 21:00.

ABOUT THE BOAT

The MV Arctic Hunter is a 41 m long boat, which is currently sailing under the flag of Denmark. It is categorized as Oil service/PSV vessel and was built in 1978. Originally being a ferry ship, Captain Henrik bought it in 2014 in Greenland. The sail from Greenland to Denmark took Henrik and his crew of five people 9-10 days. After returning to Denmark, an A-frame was added to the back of the vessel to broaden operational possibilities. Since then, the vessel is chartered through the shipping company OS Energy.



The Arctic Hunter mainly sails in the North and Baltic Sea and operations range from research projects of taking measurements, sampling the seafloor or water, bird- or mammal surveys to buoy maintenance and deployment. One of Captain Henriks favourite trips on the vessel was the Dogger Bank trip with the ITAW in 2024, when the water surface was glassy for days in a row with numerous sightings of marine mammals.

According to the captain, Arctic Hunter is a sturdy and reliable vessel with a great deal of character, even though she is not the newest boat.

Day 4 – Thursday, April 30th

Today's survey started at 6:45 am. In the morning, we encountered winds of Beaufort 2. We came across several gas and oil platforms in the Danish part of the Dogger Bank.



In the afternoon, the weather improved and the wind went down to Beaufort 1 for the duration of two observer shifts. Dominik and Nino managed to record the first harbour porpoise sighting of this year's survey, with more harbour porpoise sightings to follow and eventually a minke whale was sighted as well. In addition, there were four white-beaked dolphins riding in the bow wakes of the vessel in the early evening. Happy faces all around! Remi spotted another minke whale before we stopped the survey at 21:00.

The evening sky had a lot to offer with the sun setting on one side of the vessel and the moon rising on the other. All marine mammal and bird observers were on deck, when Helena flew the drone on a training flight and managed to take some stunning pictures of the vessel in the warm evening light.



Photos taken under research permit issued by German Federal Agency for Nature Conservation (BfN)

Day 5 – Friday, May 1st

Due to high winds, no survey was conducted in the morning (Beaufort 4). The bird observers surveyed despite the strong wind conditions, while we collected eDNA samples in the north and in the south of the Dogger Bank. Unfortunately, we experienced some technical issues with the eDNA machine, so we had to stop sampling for a moment. To make use of the time, we finished the data validations for the previous survey days.

In the afternoon, we started the survey at 16:30, with winds of 2.5 Beaufort. No sightings were recorded until we finished the survey at around 20:45.



Day 6 – Saturday, May 2nd

We started the survey at approximately 6:30 in rather windy conditions (Beaufort 3). Unfortunately, no sightings were recorded until 13:00, when rain set in. We paused the survey for 40 min, warmed up with tea and started the next transect line. After resuming the survey, we noticed the arrival of a new visitor. A kestrel had landed on the railing of the primary platform. The animal seemed tired after being at sea for who-knows how long, fluffed up his plumage and changed his resting spot a few times. After sightings of plastic and other marine debris, we were still determined to encounter some marine mammals and our wish was granted – Isabel spotted around six white-beaked dolphins, a rather big pod size compared to what we usually observe in the North Sea. The pod changed directions several times, making it harder to follow them visually. End of the survey was at 21:00.



ABOUT THE BIRDS

The bird observers from the DDA conducted their survey from one side of the bridge, using binoculars to identify birds.

Stay tuned for the bird sighting results, that will be published by the DDA team!

(<https://www.dda-web.de/monitoring/seevogelmonitoring/fahrtberichte>)

We also enjoyed the birds and managed to take some photos.





Day 7 – Sunday, May 3rd

We started the visual survey at 6:40 in flat seas and surrounded by fog – what a bummer. We were greeted by the falcon, who rose up into the air and left the vessel soon after. Unfortunately, the flat conditions didn't last long, and so we had to trade the fog for increasing wind speeds up to Beaufort 4. Over the course of the day, wind varied between 3 and 4 Beaufort. Gannets and fulmars were flying overhead, carried by the wind wakes and gliding just above the water surface. Based on the bird's feeding behaviour, one could assume that this was a productive area. Unfortunately, no sightings were recorded until the early afternoon, when Nadya and Leonie spotted a young grey seal, whose head was popping out of the water 200 m in front of the boat. We were approaching a foggy wall again, but this time, it consisted of rain. It started as a drizzle but soon became light rain. We covered the bird box, in which the data recorder was seated with the laptop, and continued to survey. Apart from the rain, sighting conditions seemed to improve, but no sightings followed. We stopped the survey at 16:00.



Day 8 – Monday, May 4th

After a bumpy night we woke up to a 2 m swell in the morning. The weather did not allow for a survey, so most of us used the time to rest. At 11 am, the weather had calmed down and Nadya decided to start the survey in the most eastern part of the study area, going southwards, to have wind and swell at our backs.

Sighting conditions improved and after lunch Isabel spotted the first marine mammals during her observer shift. She reported two minke whales, but she also saw multiple splashes in the far distance. Soon they were identified as killer whales, due to their long dorsal fins and visible blows. This is the second time we have been recording killer whales in the Dogger Bank area after the first sighting in 2025.

The area seemed to be rich in food, with birds feeding all around us. We decided to stop the visual survey for a moment to undertake further behavioural investigations of the minke and killer whales and take drone footage. More minke whales appeared around the vessel and we found ourselves in the middle of three potentially feeding minke whales.

Suddenly and out of nowhere, three white-beaked dolphins appeared and passed the vessel. We lost the killer whales for a moment, but then Dominik resighted them. We decided to further approach the killer whales for photo ID purposes. There were five killer whales in total, one large male, one female with a calf and two females or young males. They were hunting an adult grey seal, and we observed them chasing and ramming it. The grey seal was trying to stay at the surface to breathe, but the killer whales were relentless and pulled it down to deeper waters and further away from the vessel. The bird observes discovered an oil slick in the water.

In the meantime, Helena had started the drone to get some images of the killer whales from above, which was not an easy task given the prevailing swell. We also decided to take an eDNA sample in this area. On the transit back to the transect, Helena yet reported another minke whale. We continued the survey until 21:00.





Photos taken under research permit issued by German Federal Agency for Nature Conservation (BfN)

Day 9 – Tuesday, May 5th

We started the survey at 6:40 in very calm seas, likely the flattest we encountered during this year's survey. Today was the day of the minke whale and the grey seal, as we reported several sightings of both species. In addition, Dominik recorded a rather rare sighting of a sea turtle, our first sighting recorded in the Dogger Bank area. We also noticed a lot of marine debris (mostly plastic) in the water. Moreover, we watched a fishing vessel actively trawling while we were in the Dutch part of the Dogger Bank. End of transect was at 21:00.



Day 10 – Wednesday, May 6th

Today we had very high winds (Beaufort 5) and surveying in these conditions does not make a lot of sense, since most of the species we study here only surface quickly and shortly, they do not have very visible blows and display hardly any surface behaviours (such as breaching). Instead, we collected more eDNA samples in the northern part of the German Dogger Bank, just above the marine protected area. The rest of the day was spent reviewing the eDNA data, resting and preparing for the next days of data collection. In the evening, we also conducted the data validation of the previous survey day.

ABOUT THE ENVIRONMENTAL DNA

Every marine organism leaves traces of itself in the water, for example in form of tiny fragments of cells, tissues, fluids, and excrement containing its DNA. Known as environmental DNA, or eDNA, this genetic footprint can be collected with something as simple as a bucket of seawater. eDNA is increasingly being used to detect the presence of species and to assess biodiversity. Analyses of eDNA offer a highly sensitive, rapid, and cost-effective method to detect the presence of species and assess aquatic communities and biodiversity.

As part of a collaboration, the Max Planck Institute for Marine Microbiology provided us with their eDNA filtration device (MOLECOL). For the MPI, the plan was to collect samples in the southern and northern part of the Dogger Bank area (outside the marine protected area), as well as in the vicinity of the acoustic stations. One sample consisted of three sub-samples (A, B, C). For the HABITATWal project, we collected samples at the acoustic stations, in the North and the South, as well as along the transect lines. The Max-Planck Institute is interested in analysing bacteria found in the water samples, while the ITAW is analysing metazoa (multicellular animals). For the bacteria samples we used 0.2 μm polycarbonat filter, for the metazoa 0.45 μm cellulose acetat filter.



Day 11 – Thursday, May 7th

We started the survey at 6:30 in beautiful flat conditions. Throughout the day, winds were very low and Beaufort varied between 0.5 and 2. The swell persisted and varied in height from below 1 m to below 2 m. On several occasions, sighting conditions were considered excellent. Therefore, we were hoping for more harbour porpoise sightings, as we had only recorded six sightings during this year's survey so far. Sightings of grey seals and a minke whale were recorded. When we got closer to the slopes of the Dogger Bank, sightings of harbour porpoises fortunately increased and we were able to count at least seven animals within one hour. We reached the end of this transect line at around 18:30. The remaining transects were too far away in the east to continue the survey today. We started making our way towards one of the acoustic stations we planned to retrieve the next day. Along the way, the bird observers spotted splashes in the distance and soon a pod of at least ten white-beaked dolphins approached the vessel. The captain stopped the engines, and Helena got the drone up into the air to collect some footage of the dolphins. Afterwards we continued our journey east, collected another eDNA sample and validated the data gathered during the day.



ABOUT THE DRONE & PHOTOGRAMMETRY

One of the future goals of using the drone in terms of marine mammal research is applying the technique of photogrammetry. Photogrammetry is a non-invasive way to obtain marine mammal measurements through photographs and requires the use of scale ($= \text{distance/focal length}$) to determine the real size of the images.

Photogrammetry can provide data on length, growth, and body condition to further understand the health of individual whales and dolphins. Images can also be used to identify individual animals for mark/recapture studies or to estimate cetacean abundance and their pod structures. In marine mammal research, drones are increasingly being used to collect samples of the whale's spout. This method can give valuable insight into the genetics, DNA, hormones and microbiomes of whales.

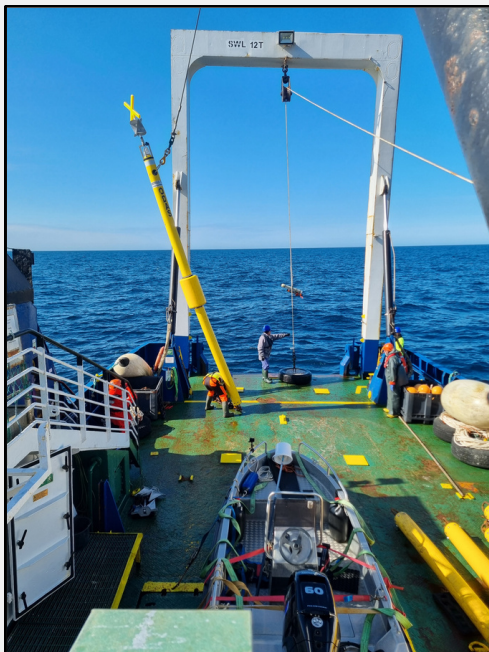


Day 12 – Friday, May 8th

After arriving at the location of acoustic station STHH1, we started to collect eDNA water samples at 6:30 am, before the station was retrieved from Helena, Patrick and the Arctic Hunter crew. The process of retrieving the six stations and collecting the remaining three eDNA samples went smoothly and by 11 it was all finished.

We started the last remaining part of replicate 3 at 13:30 with winds around Beaufort 2. Sightings of harbour porpoises were recorded. Soon, sighting conditions became more difficult due to the interaction of swell and wind, which generated chaotic wave patterns and small breaking crests. During the final three hours of the whole survey plan, sighting conditions improved again, and the sea surface was flat, silky, and shimmering with a silvery glow. All marine mammal observers gathered on the primary platform to take in the atmosphere of our last survey day. During their last rotation, each of the observer pairs recorded several sightings and species. Leonie and Nadya saw several minke whales and some dolphins. Rémi and Isabel spotted a couple of minke whales and porpoises, and finally Dominik and Nino got what we colloquially called a ‘porpoise soup’, several sightings of porpoises very close to each other in space and time. Nino also discovered a pod of white-beaked dolphins in the distance and soon after, at around 20:30, we finished our last shift.

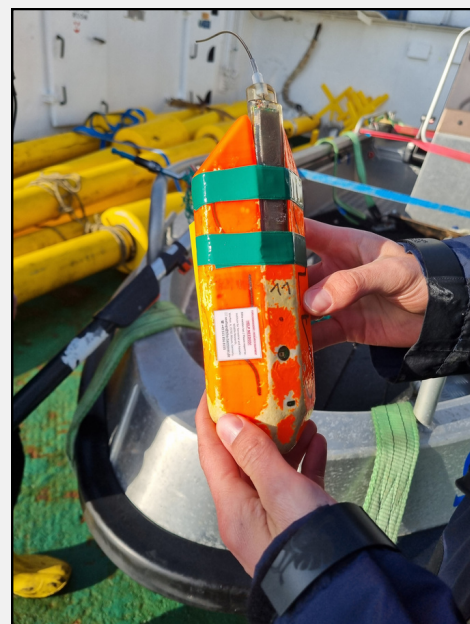
What an accomplishment – we could cover all of the three transect replicates that we set out to do and hence collected 50% more effort than in the previous year. Later that evening, as the sun was setting, another pod of white-beaked dolphins was spotted by the bird observers. For one last time of this trip, we watched dolphins riding in the bow waves of the Arctic Hunter.



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Day 13 – Saturday, May 9th

Overnight, the vessel started to make its way back towards the coast until we reached a position west of Helgoland. At 6:30 we gathered on deck to have all eyes on the water. Our mission was to find and retrieve a lost tracking device (CATSCam), that had been attached to a harbour seal in the beginning of April and then detached and drifted offshore. In a lucky coincidence, the device was drifting right through our path back home to Büsum. After receiving the first signals of the device through a specially designed antenna, it took us approximately two hours to locate the CATSCam and successfully retrieve it. Afterwards, we started the data validation process of the previous day. Our final stop was in St. Peter-Ording, where one acoustic station was deployed as part of another ITAW research project.



Day 14 – Sunday, May 10th

After 14 days at sea, the Arctic Hunter arrived in Büsum at around 6:50 am.

Conclusion

On this year's Dogger Bank survey, we encountered more challenging weather and sighting conditions than in the previous year. Despite the weather, we completed all three replicate transect sets on ten days of surveying. The daily survey effort varied considerably depending on weather conditions. Incorporating eDNA sampling into the schedule required additional planning, but thanks to the great support of Helena and Patrick, this was successfully achieved. Launching the drone provided valuable insights and a different perspective into the behavioural observations, which we hope to continue in future surveys.

This was the second Dogger Bank trip on the Arctic Hunter, so captain and crew, as well as vessel facilities were familiar and much appreciated. Unfortunately, the survey could only be conducted from the primary platform, as the Arctic Hunter does not provide a separate tracker platform (higher platform than the primary), which we had hoped to use as well.

Once again, we observed the industrial use of the Dogger Bank area, particularly through gas and oil platforms, vessel activity and actively trawling fishing vessels.

ABOUT OUR SIGHTINGS



During the 2026 survey, we recorded sightings of harbour porpoises (*Phocoena phocoena*), minke whales (*Balaenoptera acutorostrata*), white-beaked dolphins (*Lagenorhynchus albirostris*), killer whales (*Orcinus orca*), grey seals (*Halichoerus grypus*) and a sea turtle (potentially a loggerhead turtle). Furthermore, there were also a few unidentified sightings of marine mammals, as well as sightings of platforms, other vessels (mainly cargo, fishing & service vessels), fishing gear (pot traps) and marine debris.

OUTTAKES



AI-generated image for the Arctic Hunter crew