# NATIONAL PROGRESS AND DATA REPORTING 2024

# GREENLAND - PROGRESS REPORT ON MARINE MAMMALS 2024

## I INTRODUCTION

Sections II, III and V of this report summarize the research done on pinnipeds and cetaceans in Greenland in 2024 by the Greenland Institute of Natural Resources (GINR), in collaboration with several organizations. Sections IV and VI deal with management issues. The Department of Fisheries and Hunting provided the hunting data.

## II RESEARCH BY SPECIES

### A Species and stocks studied

**Pinnipeds**

- Walrus - Aaveq - *Odobenus rosmarus* – Northern Baffin Bay
- Bearded seal – Ussuk - *Erignathus barbatus* – East and West Greenland
- Ringed seal – Natseq - *Pusa hispida* - West and East Greenland
- Harp seal – Aataaq - *Pagophilus groenlandicus* – West and East Greenland
- Harbour seal – Qasigiaq - *Phoca vitulina* – Southwest Greenland.

**Cetaceans**

- Narwhal – Qilalugaq qernertaq - *Monodon monoceros* - West and East Greenland
- Beluga – Qilalugaq qaqortaq - *Delphinapterus leucas* – West and East Greenland
- Harbour porpoise – Niisa - *Phocoena phocoena* – West Greenland
- Bowhead whale – Arfivik - *Balaena mysticetus* –West and East Greenland
- Humpback whale – Qipoqqaq - *Megaptera novaeangliae* - West and East Greenland
- Fin whale – Tikaagulliusaaq - *Balaenoptera physalus* – West and East Greenland
- Minke whale – Tikaagullik - *Balaenoptera acutorostrata* – West and East Greenland
- White beaked dolphins – Aarluarsuk qaqortumik siggulik - *Lagenorhynchus albirostris* – East Greenland
- Pilot whale – Niisarnaq - *Globicephala melas* – west and East Greenland
- Killer whale – Aarluk - *Orcinus orca* – East and West Greenland
- Sperm whale Kigutilissuaq - *Physeter macrocephalus* – East Greenland.

### B Field work in 2024

**Walrus**

To study the movements of walruses on Northern Baffin Bay on a cost-effective way, hunters from Qaanaaq tagged walruses with Satellite senders for a third consecutive year. This fieldwork was carried out 100 % by local hunters, without participation of GINR staff.

**Seals**

A time-series of ringed seal tagging in Sermilik (Southeast Greenland) and in Kangia (Ilulissat Ice fjord, West Greenland), started in 2012 and finished in 2022. However, analyses continued in 2023 & 2024.

A two-year tagging study of ringed seals in Inglefield Bredning, which started in 2021, continued in 2022 and ended in 2023. The main aim of this work was to obtain oceanographic data for climate analysis. By-product of this study is data on habitat use movements and ecology of seals in the area. Analysis were carried out during 2024.

Two PhD students from the University of Hokkaido finished their studies on the marine ecology of Qaanaaq, including seals and other top predators.
Harbor seals are nearly extinct in most of their original range, despite 15 years of total protection. In 2023, there was an effort. Together with local hunters, to monitor their presence near the community of Qeqertarsuatsiaat, in East Greenland.

**Cetaceans**

The North Atlantic Sighting Survey (NASS) was carried out in East and West Greenland during August and September 2024. As in previous years, this was an aerial, double platform, distance-sampling survey. The target species were minke whales, as well as fin whales and humpback whales, but data was collected on all cetaceans observed.

In 2024, as in previous years, hunters from Qeqertarsuaq collected biopsies of bowhead whales during spring in Disko Bay. Also, like previous years, a telemetry study of bowhead whales in Disko Bay was carried out in May 2024, in close collaboration with local hunters.

A permanent hydrophone connected through a cable to an autonomous station on land was installed off Qeqertarsuaq, in Disko Bay. The hydrophone was meant to record underwater sounds, including bowhead whales and other marine mammals, such as narwhal, beluga and bearded seals year-round, as well as the natural soundscape from sea-ice, icebergs, wave activities, etc, as well as shipping and other sources of anthropogenic noise. It should be possible to listen real time through a website (https://diskolive.com/) due to technical problem, the live feed was not active all year.

Underwater moorings recording sounds of narwhals and other acoustic phenomena were deployed by two different teams working in Qaanaaq. One team was from Hokkaido University and the other from GINR's Climate Research Centre, as part of an international collaboration with several partners.

Fieldwork for a PhD done in collaboration between the Faroese Marine Research Institute and GINR was carried out in East Greenland in August, focusing on the ecology of pilot whales, killer whales and dolphins (in East Greenland, white beaked dolphins). Two pilot whales were tagged with remotely deployed satellite transmitters, one of which sent data for nearly two months. Fin whales were also tagged during fieldwork off Tasiilaq. In addition, biopsies from sperm whales, humpback and fin whales were obtained, as well as distribution data and identification pictures of sperm whales, humpback whales and pilot whales.

The University of Aarhus also carried out fieldwork in Tasiilaq, collecting samples from the hunt and interviewing locals.

Collection of identification pictures taken by the public of humpback whale flukes continued throughout 2023.

As every year, hunters sent samples from harvest of large cetaceans: humpback whales, fin whales, bowhead whales and minke whales.

## C Laboratory work in 2024

Laboratory work carried in 2023 included the analysis of stomach samples from seals and narwhals from Qaanaaq (GINR and Hokkaido University), stomach samples from white beaked dolphins in East Greenland (GINR/GCRC & University of Copenhagen), genetic analyses of killer whales from East and West Greenland (University of Trondheim, University of Manitoba and GINR), genetic analyses of bowhead whales from Disko Bay (University of Oslo and GINR), genetic analysis of belugas and narwhals (University of Copenhagen and GINR), chemical analysis on narwhal tusks (multiple locations) and diverse contaminant studies. An international collaboration to look at the genetic population structure of pilot whales and dolphins began in 2024.

Sound recordings from moorings in West and East Greenland were analysed for estimates of background noise and seasonal occurrence of marine mammals, as well as monitoring of seismic exploration and studying different aspects of human disturbance.

**D Other studies in 2024**

A number of desktop studies were carried out during 2024, including analysis of catch statistics for a number of species and analysis of survey data derived from the NASS survey and from earlier surveys. A postdoc on the effects of climate change on the distribution and movements of cetaceans that started in 2022 ended in 2024. Two PhD studies from Hokkaido University, in collaboration with GINR ended in 2024. Two PhD studies, one on narwhal tusks from Copenhagen University and one on pilot whales dolphins and killer whales (mentioned above) from the University of the Faroe Islands, started in 2022 continued in 2024, as did a number of MSc studies.

**E Research results in 2024**

The majority of research results from the fieldwork of 2024 are not available yet.

## III ONGOING (CURRENT) RESEARCH

An automated camera monitoring a potentially newly established walrus terrestrial haul out in Wolstenholme Fjord, Qaanaaq, will be retrieved in summer 2025. We expect that the camera ran out of battery by the end of 2023, but it was not possible to retrieve it in 2024.

Hunters from Qaanaaq will continue efforts to tag walruses during spring and early summer in 2025.

A field season focusing on the ecology of cetaceans off Tasiilaq is planned for august 2025.

The long-term studies of bowhead whales in Disko Bay will also continue. Work in 2025 will focus on the collection of biopsy samples for mark – recapture abundance estimates, and on sound recordings, drone imagery and satellite telemetry.

As in previous years, collection of identification pictures taken by the public of humpback whale flukes and dorsal fins from West and East Greenland will continue.

Acoustic moorings will be deployed by GINR's Climate Research Centre in Qaanaaq in 2025.

Genetic assessment of pilot whales in the North Atlantic will be carried out in 2025 and 2026.

## IV ADVICE GIVEN AND MANAGEMENT MEASURES TAKEN

Advice and quotas for cetaceans and pinnipeds in the calendar year 2024 are summarized in table 1.

**Large cetaceans:**

Quotas for large cetaceans are set by the IWC. At the IWC 67 meeting in 2018, the IWC agreed upon quotas and revised carry-over provisions for the new quota block 2019 – 2026. The IWC quotas were implemented in 2023. Greenland have decided only to follow the carry-over provision for minke whales both in West and East Greenland. Carry-over provision for other large whales will be implemented if necessary.

At the IWC 69 meeting in 2024, quotas for 2026 – 2031 were agreed upon, as follows for West Greenland: 164 minke whales, 19 fin whales, 10 humpback whales, and 2 bowhead whales. For East Greenland, 20 yearly strikes were approved.

**Small cetaceans:**

The Government of Greenland sets the quotas for narwhals, with basis on user's knowledge, cultural and meat needs and recommendations from JCNB and NAMMCO. JCNB has not had Commission meeting since 2019. However, the scientific advice for the JCNB/NAMMCO JWG in 2022 was, for the constellation of catches that gives the highest number of narwhals in West Greenland: Smith Sund 38 narwhals, Inglefield Bredning 52, Melville Bay 0, Uummannaq 123 and Disko Bay 54. The reason for a zero advice in Melville Bay is that this is declining stock and a proportion of the narwhals that summer in Melville Bay are caught during winter in Uummannaq and Disko Bay areas.

In 2024, the quota for Etah (Smith Sund) was 15 animals, Qaanaaq (Inglefield Bredning) 88 animals, Melville Bay 110 (15 for Savissivik and 95 for Upernavik), Uummannaq 154 animals and 88 for Disko Bay and the rest of West Greenland.

For belugas in West Greenland, the quotas for 2024 were in accordance with recommendations from 2020 by the Joint Working Group of the Scientific Committees of JCNB NAMMCO and JCNB. The only difference is the management measure taken for Qaanaaq is still in effect, due to overharvest in 2019. The decision to subtract 8 belugas per year until 2029 is still in due.

Furthermore, Government of Greenland has decided not to follow the recommendations regarding no hunting of belugas south of 65° N and seasonal closures in other parts of West Greenland.

For the first time, quotas for belugas in East Greenland were introduced in December 2022, with a technical quota of 30 animals in all for the period 2022-2027.

The Scientific Committee of NAMMCO recommends that belugas in East Greenland remain fully protected, as it is thought that there is insufficient information to perform an assessment, and the few belugas occasionally observed in East Greenland are vagrants from other populations, including the Svalbard population, and remote populations from the Kara and Beaufort Seas. The SC recommends that zero removals should be allowed, in order to allow for the potential establishment of a new population of belugas in East Greenland, and to avoid removing animals that have potentially originated from the small and protected Svalbard stock. In response to observations by hunters of large groups of belugas in East Greenland, the Government of Greenland granted a total quota of 30 belugas, to be taken between December 2022 and 2027.

Regarding harbour porpoises, quota advice was received from NAMMCO in 2021, 1.869 landed harbour porpoises. This is yet to be followed.

There are catches without quotas for pilot whale, harbour porpoise, white-sided dolphins, and white-beaked dolphins, as there was no advice in 2024 from NAMMCO nor the Greenland Institute of Natural Resources on quotas.

In 2013, NAMMCO recommended that Greenland should take a closer look at the accuracy of catch data for harbour porpoises and killer whales. This work has not been completed due to lack of resources. Furthermore, NAMMCO has noted that killer whales should be included in existing mandatory reporting schemes, and advice Greenland to regulate the hunt and restrict quotas in a precautionary way. An executive order for small cetaceans is still underway.

**Pinnipeds:**
Walrus quotas are given by the Government of Greenland, and in 2024, as in previous years, followed the advice from NAMMCO. An executive order on walrus was introduced in 2022. Changes include hunting all year, protection of haul outs, new management areas and protection of adult females in East Greenland removed.

Harbour seals and grey seals are still protected, and there are no quotas for other seal species: ring seals, harp seals, hooded seals and bearded seals, as there is no advice on quotas from NAMMCO. However, all catches including struck and lost must be reported annually.

It should be noted that Government of Greenland has implemented a digital reporting system, which also will include catches of marine mammals in quota system (narwhal, beluga, large whales, walrus and polar bears). The system is already in use for caribou and musk oxen catches. The system will enable the Department of Fisheries and Hunting to obtain catch data sooner that the old system.

Narwhal and beluga are the next species to be prepared in 2025 and hopefully implemented in 2026.

Table 1: Overview of management advice per stock and the quota or other management measures used in 2023.

| Species - stock | Advisor | Advice in 2024 | Management measure 2024 |
|---|---|---|---|
| Harbour seal | NAMMCO | Total protection | Protected since 2010 |
| Grey seal | NAMMCO | Total protection | Protected since 2010 |
| Harp seal | ICES/NAFO/NAMMCO | No concern | No catch limit |
| Hooded seal | ICES/NAFO/NAMMCO | No concern | No catch limit |
| Ringed seal | ICES/NAFO/NAMMCO | No concern | No catch limit |
| Bearded seal | ICES/NAFO/NAMMCO | No concern | No catch limit |
| Walrus - Baffin Bay | NAMMCO | 79 landed animals | Quota of 79 |
| Walrus - Davis Strait / Baffin Island | NAMMCO | 74 landed animals | Quota of 74 |
| Walrus - East Greenland | NAMMCO | 17 landed animals | Quota of 17 |
| Beluga - West Greenland | JCNB & NAMMCO | 265 landed animals. Protection south of 65°N. | Quota of 265, hunting still allowed south 65°N. |
| Beluga - East Greenland | NAMMCO | 0 catches | Technical quota of 30 in all from December 2022 including 2027 (7 left in 2024). |
| Beluga - Qaanaaq | JCNB & NAMMCO | 37 landed animals | 29 allowed takes, due to overharvest in 2019. |
| Narwhal - Etah | JCNB & NAMMCO | 38 landed animals | Quota of 15 |
| Narwhal - Inglefield Bredning | JCNB & NAMMCO | 52-55 landed animals | Quota of 98 |
| Narwhal - Melville Bay | JCNB & NAMMCO | 0-24 catches | Quota of 110 |
| Narwhal - Uummannaq | JCNB & NAMMCO | 0-123 landed animals | Quota of 154 |
| Narwhal - Disko Bay (West Greenland) | JCNB & NAMMCO | 0-54 landed animals | Quota of 88[i] |
| Narwhal - Ittoqqortoormiit | NAMMCO | 0 catches | Quota of 17 |
| Narwhal - Kangerlussuaq | NAMMCO | 0 catches | Quota of 16 |
| Narwhal - Tasiilaq | NAMMCO | 0 catches | Quota of 8 |
| Bowhead whale – West Greenland / Arctic Canada | IWC | 5 removals acceptable | Quota of 2 |
| Humpback whale – West Greenland | IWC | 10 removals acceptable | Quota of 10 |

[i] The quota in the Disko Bay area was 85, and the remaining 3 were allocated to West and Southwest Greenland.

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|---|---|---|---|
| Fin whale – West Greenland | IWC | 19 removals acceptable | Quota of 19 |
| Minke whale – West Greenland | IWC | 164 removals acceptable | Quota of 164 |
| Minke whale – East Greenland | IWC | 20 removals acceptable | Quota of 20 |

## V PUBLICATIONS AND DOCUMENTS (INCOMPLETE)

**Peer reviewed**


Chambault P, Teilmann J, Tervo O, Sinding MHS, Heide-Jørgensen MP (2024) The nightscape of the Arctic winter shapes the diving behavior of a marine predator. Scientific Reports 14:1

Chosson V, Wyss V, Jann B, Wenzel FW, Sigurðsson GM, Simon M, Hansen RG, Jones LS (2024) First documented movement of a humpback whale between the Cape Verde Islands and West Greenland. Ecol Evol 14:e11152

Dolman SJ, Hodgings NK, Ugarte F (2024) A review of small cetacean hunts in Greenland. Marine Policy 170:

Garroway CJ, de Greef E, Lefort KJ,,Thorstensen MJ, Foote AD, Matthews CJD, Higdon JW, Kucheravy CE, Petersen SD, Rosing-Asvid A, Ugarte F, Dietz R, Ferguson SH (2024) Climate change introduces threatened killer whale populations and conservation challenges to the Arctic. Global change biology 30:Issue 6

Hague, E.L., W.D. Halliday, J. Dawson, S.H. Ferguson, M.P. Heide-Jørgensen, N. Serra Sogas, K. Gormley, B.G. Young,L.H. McWhinnie. (2024) Not all maps are equal: Evaluating approaches for mapping vessel collision risk to large baleen whales. . J Appl Ecol. 00:1–18.:

Hansen, R.G., D. Borchers, M.P. Heide-Jørgensen. (2024) Abundance and distribution of narwhals (Monodon monoceros) on the summering grounds in Greenland between 2007 and 2019. Frontiers in Marine Science 11:1294262

Heide-Jørgensen, M.P., J.E. Box, R.G. Hansen, M. Jakobsson (2024) Evidence of a narwhal (Monodon monoceros) summer ground in Nares Strait. Polar Research 43:9860

Laidre KL, Zahn MJ, Simon M, Ladegaard M, Stafford KM, Philips E, Moon T, Stern HL, Cohen B (2024) Narwhal (Monodon Monoceros) Associations with Greenland Summer Meltwater Release. Ecosphere 15:10

Land-Miller H, Roos AM, Simon M, Dietz R, Sonne C, Pedro S, Rosing-Asvid A, Rigét F, McKinney MA (2024) Comparison of feeding niches between Arctic and northward-moving sub-Arctic marine mammals in Greenland. Mar Ecol Prog Ser 728:161-182

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Marchon TMJ, Rasmussen MH, Basran CJ, Whittaker M, Bertulli CG, Harlow C, Lott R, Boisseau O, Gendron F, Guo L, Hudson T, Jónsson H, Kershaw A, Kinni J, Lionnet LAMG, Louis M, Messina M, Michel H, Neubarth BK, Ovide BG, Podt AE, Rempel JN, Ryan C, Savage E, Scott J, Smit R, Verdaat H, Vignisson SR, Samarra FIP (2024) Geographical movements, site fidelity and connectivity of killer whales within and outside herring grounds in Icelandic coastal waters. Marine Biology 171:30

Marques CS, Marques DA, Blackwell SB, Heide-Jørgensen MP, Malinka CE, and Marques TA (2024) Narwhal (Monodon monoceros) echolocation click rates to support cue counting passive acoustic density estimation. J. Acoust. Soc. Am. 155:891-900

Moon TA, Cohen B, Black T, Laidre KL, Stern H, Joughin I (2024) Characterizing Southeast Greenland fjord surface ice and freshwater flux to support biological applications. The Cryosphere 18:4845-4872

Napoli C, Hirtle N, Stepanuk J, Christiansen F, Heywood EI, Grove TJ, Stoller A, Dodds F, Glarou M, Rasmussen MH, Lonati GL, Davies KTA, Videsen S, Simon MJ, Boye TK, Zoidis A, Todd SK, Thorne LH (2024) Drone-based photogrammetry reveals differences in humpback whale body condition and mass across North Atlantic foraging grounds. Front Mar Sci 11:1336455

Ngo, M. C., Ditlevsen, S. & Heide-Jørgensen, M. P (2024) Bowhead whales spend more time in waters with colder sea surface temperatures. NAMMCO Scientific Publications, 13:

Pedersen AF, Dietz R, Sonne C, Letcher RJ, Roos AM, Simon M, Rosing-Asvid R, Ferguson SH, KcKinney MA (2024) Feeding and biological differences induce wide variation in legacy persistent organic pollutant concentrations among toothed whales and polar bear in the Arctic,. Sci Total Environ 908:168158

Pedersen AF, Bayen S, Liu L, Dietz R, Sonne C, Rosing-Asvid A, Ferguson SH, McKinney MA (2024) Nontarget and suspect screening reveals the presence of multiple plastic-related compounds in polar bear, killer whale, narwhal and long-finned pilot whale blubber from East Greenland. Environmental Pollution 357:

Podolskiy EA, Teilmann J, Heide-Jørgensen MP (2024) Synchronization of bowhead whales. Phys. Rev. Research 6:33174

Schiott S, Holland DM, Holland D, Rysgaard S, Rosing-Asvid A (2024) The diet and diving behaviour of the ringed seal (Pusa hispida) in Kangia (Ilulissat Icefjord), Greenland. Polar biology

Skovrind M, Louis M, Ferguson S, Glazov DM, Litovka DI, Loseto LL, Meschersky IG, Miller MM, Postma LD, Rozhnov VV, Scott M, Westbury MV, Szpak P, Friesen TM, Lorenzen ED (2024) Elucidating the sustainability of 700 y of Inuvialuit beluga whale hunting in the Mackenzie River Delta, Northwest Territories, Canada. Proc. Natl. Acad. Sci. U.S.A. 121:e2405993121

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Suárez-Menéndez M, Bérubé M, Bachmann L, Best P, Davison N, Heide-Jørgensen MP, Lesage V, Oostinga T, Prieto R, Ramp C, Robbins J, Sears R, Silva MA, ten Doeschate MTI, Tollis M, Vermeulen E, Víkingsson GA, Wiig Ø, Palsbøll PJ (2024) Baleen whale microsatellite panel for individual identification and parentage

Witting, L. (2024) Population dynamic life history models of the birds and mammals of the world. Ecological Informatics 80:102492

Zahn MJ, Ladegaard M, Simon M, Stafford KM, Sakai T, Laidre KL (2024) Accurate species classification of Arctic toothed whale echolocation clicks using one-third octave ratios. J Acoust Soc Am 4:155

Zahn MJ, Laidre KL, Simon M, Stafford KM, Wood M, Willis JK, Phillips EM, Fenty I (2024) Consistent seasonal hydrography from moorings at Northwest Greenland glacier fronts. J Geophys Res: Oceans 129:e2024JC021046

**Meeting documents**

Louis M, Garde E, Kovacs KM, Lydersen C, Heide-Jørgensen MP, Lorenzen ED (2024) SC/31/GENWG/04 Fine-scale genetic structure of narwhals in East Greenland, 9-10 October. NAMMCO.

**Reports and other written documents**

Murphy S, Tuytens K, Tervo O (2024) Scoping study on potential actions for large whale protection.. OSPAR Commission Biodiversity and Ecosystems Series 61 pp. Simon, M (2024) Moderne forskning på traditionel vis. Geografisk orientering marts, Populærartikel

Hansen RG, Ugarte F (2024) Høringssvar angående forslag om bekendtgørelse om beskyttelse og fangst af hvid- og narhvaler. Nuuk, Rådgivningsdokument

Witting L, Ugarte F, Heide-Jørgensen MP (2024) Høringssvar: Kvoter for hvidhvaler og narhvaler for 2025. Nuuk, Rådgivningsdokument

## VI APPENDIX 1 – DATA REPORTING TO NAMMCO COMMITTEES

### a. Short narrative

Hunting data for narwhals, belugas, walrus and large cetaceans are collected through mandatory catch reporting. The catch reports include biological information on the catches such as species, sex, length, presence of foetus and stomach content. Area of catch, hunting methods and time of death are also collected.

In other small cetaceans such as pilot whale, harbour porpoise, white-sided and white-beaked dolphins and killer whales, yearly reporting of catch numbers are collected. There is currently no mandatory reporting scheme in this moment in time. The same for seals.

**b. Fill in Excel spreadsheet**

SC has agreed on new Management Areas, described in the excel sheet, to be used in the reporting of catches of seals and whales.