



## NAMMCO ANNUAL MEETING 28

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### MEETING OF THE COUNCIL

<b>DOCUMENT 18</b>	<b>PROPOSAL FOR A NORTH ATLANTIC SURVEY OF SELECTED CETACEANS NASS-2024</b>
<b>Submitted by</b>	Secretariat
<b>Action requested</b>	Take note Advise on the funding support available for NASS-2024
<b>Background</b>	<p>Management decisions on cetacean harvests require updated abundance estimates. The series of North Atlantic Sightings Surveys (NASS) has provided NAMMCO with fundamental information and been a flagship effort in the organisation's work to provide sound management advice for human activities impacting cetaceans.</p> <p>The NAMMCO Scientific Committee agrees that coordinating national cetacean survey efforts and covering an area large enough to provide a general view of the whole NAMMCO area, offers the best basis for providing scientific advice on abundance, distribution and trends.</p> <p>This document presents a proposal for the next NASS (NASS-2024) and includes information on objectives, approach, geographical scope, budget and organisation. In addition to national contributions for already planned survey efforts, an additional 9,65 million NOK is required to ensure coherent large-scale area coverage in a coordinated survey.</p>

# PROPOSAL FOR A NORTH ATLANTIC SURVEY OF SELECTED CETACEANS (NASS-2024)

Compiled by the NASS-2024 Scientific Planning Committee (SpC)

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## 1. BACKGROUND

Due to national and international requirements, management decisions on cetacean harvests require scientific advice based on updated abundance estimates. It is generally agreed within the NAMMCO Scientific Committee (SC) that coordinating national efforts towards a synoptic and contiguous survey across the North Atlantic provides the best basis to inform the management of cetacean species in the area. To achieve this it is particularly important that the surveys are coordinated and designed to obtain reliable estimates of the target species (stocks), but still allow for modifications that may be necessary to meet national requirements.

The data gathered in such coordinated cetacean surveys is also useful for detecting trends in distribution and abundance of species for ecosystem monitoring. This does, however, require a very large survey area and a series of surveys spread over time to be successful. Previous large-scale surveys (like TNASS-2015) have proven successful in meeting these objectives, with a long list of estimates now endorsed by the NAMMCO SC and used in stock assessments, as well as estimates published in the scientific literature, e.g. in Volume 11 of the NAMMCO Scientific Publication Series, titled "Sighting surveys in the North Atlantic: 30 years of counting whales".

## 2. OBJECTIVES

The general objective for a survey of selected cetaceans in the North Atlantic is:

*To obtain fully corrected abundance estimates for predefined target species in all areas of importance for management.*

The specific objectives for NASS-2024 are:

*To obtain robust unbiased abundance estimates of*

- i) pilot whales around the Faroe Islands and in the North Atlantic*
- ii) minke whales in West and East Greenland, around Iceland, Jan Mayen, Svalbard and the central Norwegian sea*
- iii) fin whales in the Central North Atlantic (around Iceland, off East Greenland, Faroe Islands and Jan Mayen) and in West Greenland*
- iv) humpback whales in West Greenland*

### 3. APPROACH

1. The NASS-2024 survey is focused on abundance estimates for areas and species where this information is important for providing robust management advice.
2. The following species are identified as primary target species: long-finned pilot whales, common minke whales, fin whales and humpback whales. It is, however, assumed that the survey will also provide robust estimates of blue and sei whales, and to some extent, also larger cetaceans like northern bottlenose whales, sperm whales and killer whales, as well as smaller dolphins and harbour porpoises.
3. The survey should be planned for 2024 to ensure common coordinated efforts and sufficient time for preparations. Effort has been made to coincide with surveys in the Northwest Atlantic, but these areas are tentatively planned for 2027 by national effort. Due to Covid-19 disrupting national monitoring plans, the proposed survey year has been moved from 2023 to 2024.

### 4. GEOGRAPHICAL COVERAGE

The geographical extent of the planned survey is shown in Figure 1. In addition to areas covered in most previous NASS, the following areas are also considered of primary importance for a NASS-2024 survey:

1. The East Greenland shelf from Cape Farewell to about 80°N, where significant numbers of baleen whales have been detected in NASS-2015.
2. The area between Iceland and Jan Mayen, which is an important area for assessments of Central North Atlantic common minke whales as it represents an important “Small Area” within the “Central Medium Area” (in the RMP terminology). It is also important for monitoring a possible northward shift in cetacean distribution due to climate change (compared to earlier NASS), and could, for example, be the “sink” for minke whales not encountered in recent aerial surveys in Iceland. This area should also be surveyed to ensure a coherent coverage.
3. The area around the Faroe Islands based on ‘home range’ information from ongoing satellite tracking experiments of pilot whales instrumented in the Faroe Islands, which should receive intensified survey coverage.

Areas of secondary importance that would be important to include if possible are:

1. Areas south of the Irminger Sea and generally south of 55°N where sei whales and pilot whales occur.
2. Areas north of 70°N in West Greenland where recent catches of minke whales have been taken.
3. Areas between east Iceland and Norway depending on the Norwegian mosaic survey effort.

Proper coverage of all areas of primary importance will ensure that unbiased estimates are obtained. The use of double-platforms will further reduce the bias of the estimates. Both approaches are critical for achieving a survey that will be of long-term value for the management of whales in the North Atlantic. Coverage of areas of secondary importance will, depending on the applied survey methods, provide additional abundance estimates and data on distributional changes. Combined, such a large-scale survey will be able to detect major shifts in abundance caused by ongoing climatic perturbations in the North Atlantic. Finally, the survey will provide critically important information on several of the non-target species and provide abundance estimates for some of those (i.e., blue whales, sei whales, sperm whales, northern bottlenose whales, killer whales, white-beaked and white-sided dolphins and harbour porpoises). Obtaining robust abundance estimates for harbour porpoises has gained increased economic importance in recent years with new data on by-catch rates required to avoid potential associated sanctions of fish exports to the US.

Minke whales around Greenland provide an example of how the results of large-scale coordinated surveys can be fundamental for the interpretation of observed changes in abundance. A significant decline in abundance of minke whales in coastal areas of West Greenland was detected in the TNASS-2015 but because of the effort of the large-scale survey, East Greenland coastal areas were also covered. A large abundance of minke whales was detected in these areas and the coverage of East Greenland turned out to be of critical importance for the management of minke whales. Without the large-scale area covered, it would have been impossible to conclude if the decline in West Greenland represented a catastrophic drop in population abundance or a shift in distribution, perhaps in response to oceanographic changes. For the NASS-2024 survey, a large-scale coherent area should be covered to ensure the detection of major shifts in the abundance and distribution of cetaceans.

The primary areas of focus for the 2024 survey extends approximately 5,000,000 km<sup>2</sup> (Figure 1).

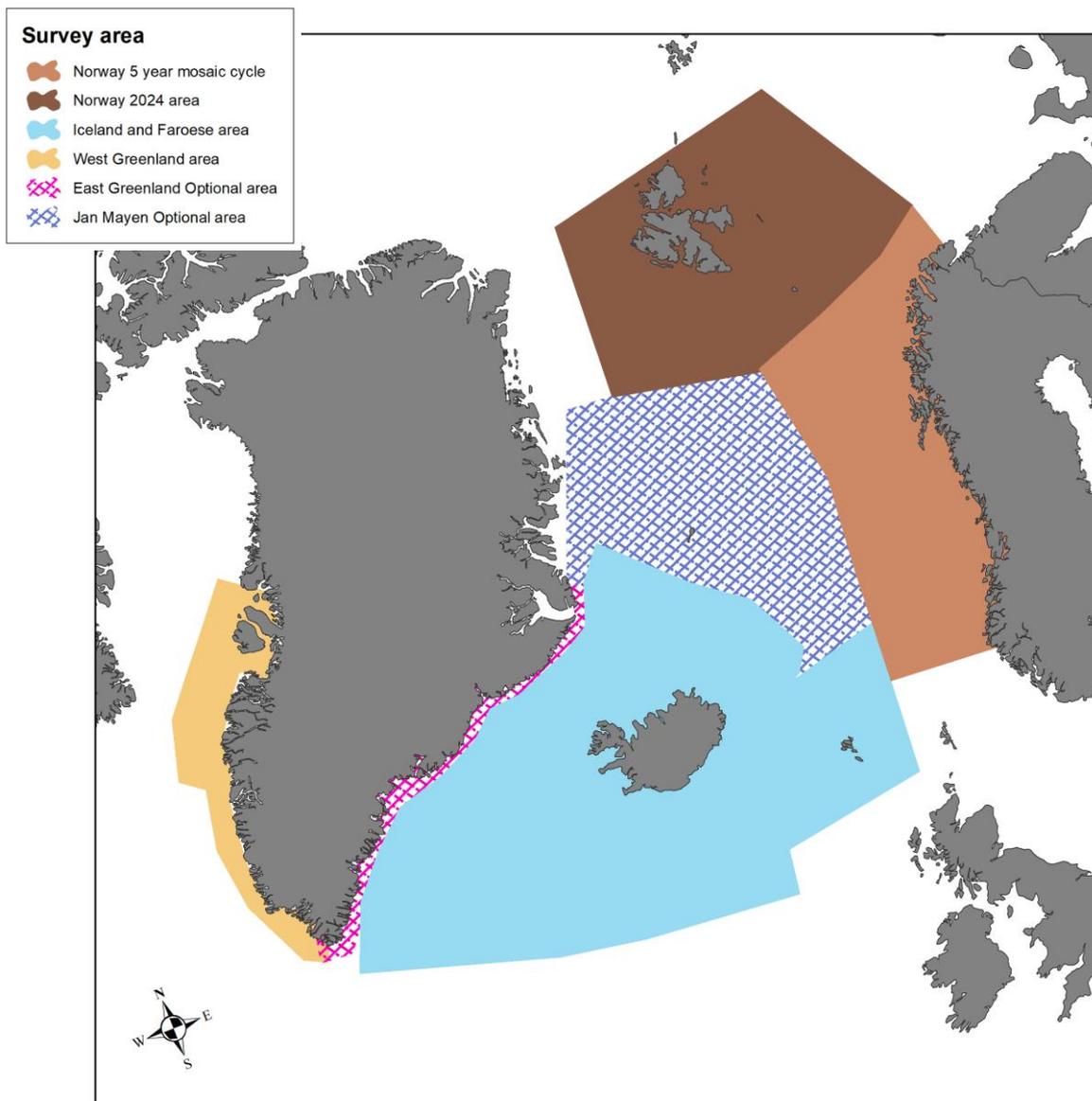


Figure 1. Extension of the proposed NASS-2024 and associated surveys. The size of the areas is estimated to be: 726,044 km<sup>2</sup> for the Jan Mayen area, 1,911,354 km<sup>2</sup> for the Iceland and the Faroe Islands area, 934,722 km<sup>2</sup> for the Norwegian mosaic cycle area, 936,437 km<sup>2</sup> for the Norway area (Svalbard), 225,285 km<sup>2</sup> for the West Greenland area and 233,659 km<sup>2</sup> for the East Greenland area.

## 5. EXISTING SURVEY PLANS FROM MEMBER COUNTRIES

Individual NAMMCO Member Countries plan to conduct local surveys in 2024 and these are generally planned to be similar to those of previous NASS surveys.

**Greenland** plans to conduct an aerial survey of the West Greenland shelf area from Cape Farewell to Uummannaq in August–September 2024. No ship surveys are planned due to a lack of suitable survey ships and unfavourable weather conditions that require large effort during small windows of good survey conditions. Greenlandic scientists will ensure analysis and presentation of the survey results.

**Norway** conducts a series of mosaic surveys covering different parts of the North Atlantic each year. According to the schedule of the mosaic surveys, Norway will cover the area around Svalbard in 2024. Analysis and presentation of the survey results are covered by Norway.

**Faroe Islands** will provide one survey platform (one vessel). Participation by Faroese scientists is included in national budgets as well, and their effort includes planning, execution, and post-processing.

**Iceland** will provide 3–4 survey platforms (2–3 vessels and one aircraft) that will cover the areas traditionally covered by Iceland and Icelandic scientists will participate in survey design, survey execution and analysis, and presentation of results.

## 6. BUDGET

Based on experience from past surveys, the SpC has estimated the costs for a large-scale survey to be in the magnitude of ~37 million NOK, including national post-survey analysis and presentations of results. In comparison, the total cost of the TNASS-15 survey was 43,5 million NOK, when corrected for inflation to 2020. National funding contributions in terms of already planned survey effort, including ship-time, are expected to cover about 27,5 million NOK (see Table 1) and an additional 9,65 million NOK is therefore needed to ensure coherent survey coverage.

For the target species chosen for NASS-2024, it is desirable to have a large and coherent survey coverage. The expenses for a large-scale survey cannot solely be covered by current national budgets and it is unlikely that funding for such an effort can be secured from scientific funding agencies. Partial funding of the survey could cause gaps in coverage that will leave areas without data that cannot be included in the abundance estimates and will also reduce the options for detecting shifts in abundance between areas. This scenario will eventually hamper the assessment of whale stocks. Thus, the NAMMCO NASS-2024 SpC seeks advice from the Council on possible avenues for ensuring sufficient funding of the survey.

Table 1: Overview of survey expenses covered by National Institutions for a NASS2024:

Country	Contribution	Costs NOK (mill.)
Greenland	Survey platform (Twin Otter aircraft with survey crew)	4.0
Greenland	Preparation, analysis and presentation in subsequent years	1.0
Iceland	Survey platform (Two large survey vessel, aircraft and crew)	8.0
Iceland	Preparation, analysis and presentation in subsequent years	2.0
Norway	Survey platform (One large survey vessel for 8 weeks with crew)	8.0
Norway	Preparation, analysis and presentation in subsequent years	2.0
Faroe Islands	Survey platform (One large survey vessel for 4 weeks with crew)	2.0
Faroe Islands	Preparation, analysis and presentation in subsequent years	0.5
<b>Total</b>		<b>27.5 mill</b>

Table 2: Overview of budget for the NAMMCO part of NASS-2024:

Year	Notes below	Activities within NAMMCO	Costs NOK
2021		Meeting, development & co-ordination	300 000
2022		Meeting, development & co-ordination	300 000
2023		Meeting	50 000
2024	1	East Greenland coastal area	1 700 000
	2	Jan Mayen area	5 000 000
	3	Increased Faroe Island area	500 000
	4	Satellite tagging	1 500 000
	5	Abundance estimation of non-target species	350 000
2025		Meetings and publication of results	300 000
<b>Total</b>			<b>10 000 000</b>

1. The plan for the increased survey coverage of potential pilot whale habitat is to base the design of survey strata on information on habitat delineation of whales tracked by satellite; this will ensure that areas with the highest abundance are covered and that the survey can be intensified in this area. This survey design should enable robust estimation of pilot whale abundance from an area where the hunt is recruited and with low variance on the relevant abundance estimates.
2. The plan for the coverage of the Jan Mayen area is to conduct a ship-based survey with the methods used in the Norwegian mosaic survey design to ensure that this important area is covered simultaneously with Icelandic coastal areas and areas in the Norwegian Sea.
3. The East Greenland coastal area was covered in the previous NASS-2015. This survey revealed large abundances of minke, fin and humpback whales in this area and it remains an important area for these species. Covering this area in the same way as the surveys in West Greenland would ensure comparable estimates of abundance.
4. There is currently a proposal for a coordinated satellite tracking project by the NAMMCO SC (“the super-tag project”) under review by the NAMMCO Council. If this project is approved, dedicating ship-time to satellite tagging should be an option. All expenses except ship time would then be covered by the satellite tagging project.
5. Abundance estimates could be developed for non-target species for Norway and Iceland. This would require an estimated 350,000 NOK to cover 6 months of salary.

## 7. ORGANISATION OF THE NASS2024

NASS-2024 will be organised by a Scientific Steering Committee (StC) appointed by the Council with members from the Scientific Committee. The StC will operate on funding provided by the Council, which will be made available to national research agencies after an application procedure. The StC will monitor developments concerning methodology and data quality requirements in other organisations that use systematic survey data for management (e.g. the IWC SC).