

GREENLAND
PROGRESS REPORT ON MARINE MAMMALS 2017

Greenland Institute of Natural Resources

Catch, by-catch and strandings statistics provided separately by the Ministry of Fisheries,
Hunting and Agriculture

I. INTRODUCTION

This report summarizes the research on pinnipeds and cetaceans done in Greenland in 2017 by The Greenland Institute of Natural Resources (GINR), in collaboration with several organizations.

II RESEARCH 2017

A Species and stocks studied

Pinnipeds

- Walrus *Odobenus rosmarus* – Northern Baffin Bay and East Greenland
- Harbor seal *Phoca vitulina* – Central West and South Greenland
- Bearded seal *Erignathus barbatus* – East Greenland
- Ringed seal *Pusa hispida* - West and East Greenland
- Harp seal *Pagophilus groenlandicus* – West and East Greenland

Cetaceans

- Narwhal *Monodon monoceros* - West and East Greenland
- Beluga *Delphinapterus leucas* –East Greenland
- Harbour porpoise *Phocoena phocoena* – West Greenland
- Bowhead whale *Balaena mysticetus* –West and East Greenland
- Humpback whale *Megaptera novaeangliae* - West and East Greenland
- Fin whale *Balaenoptera physalus* – West and East Greenland
- Minke whale *Balaenoptera acutorostrata* – West and East Greenland
- White beaked dolphins *Lagenorhynchus albirostris* – East Greenland
- Killer whale *Orcinus orca* – East Greenland

B Field work in 2017

Walrus

Work with walrus in 2017 consisted on analyses of telemetry data from the North Water Polynya and aerial survey during spring in Northeast Greenland. The survey targeted also bowhead whales, narwhals and bearded seals. In addition, data on coastal observations of walrus and haul out locations were collected from a sea bird survey using a fixed wing plane in Northeast Greenland. The aerial surveys were part of an environmental study program financed by the oil industry with interest in East Greenland, through the Government of Greenland.

Seals

The time-series of ringed seal tagging in Sermilik (Southeast Greenland) and in Kangia (Jacobshavn Icefjord, West Greenland) continued in 2017. The main aim of this work is to obtain oceanographic data for climate analysis. The study is complemented with data obtained from tags of Greenland halibut. A by-product of this study is data on habitat use, movements and ecology of seals and halibut in the Ilulissat Icefjord, Disko Bay.

As part of the environmental study program financed by the oil industry mentioned above, and in collaboration the Norwegian Marine Research Institute, harp seal pups were tagged with satellite senders in the Greenland Sea in April.

A second project from the same environmental study program, this time in collaboration with the University of Aarhus, consisted of tagging ringed seals in the coastal waters of Northeast Greenland in August.

Cetaceans

Two aerial surveys for cetaceans were carried out in East Greenland in 2017, as part of the environmental study program mentioned above. One was the winter survey in the Northeast Water Polynya, mentioned in the walrus session and the second was a summer survey for cetaceans in the Greenland Sea. In addition, a narwhal survey was repeated in Scoresby Sund during summer, as a survey in 2016 indicated a likely decline in the abundance of this harvested population.

The environmental program of Northeast Greenland covered also a telemetry study of bowhead whales, done in collaboration with the Norwegian Polar Institute (NPI). NPI stood for the field operations.

Target species of other telemetry studies in 2017 were narwhals in East Greenland, as well as fin and minke whales off Maniitsoq, West Greenland and humpback whales in West and East Greenland.

Satellite telemetry of narwhals in East Greenland was complemented with the use of sensors to document feeding events, heart rate and received sound levels to develop techniques for assessing the impact of anthropogenic noise. In East Greenland, telemetry studies in Scoresbysund started in 2010. The 2017 season in Scoresbysund was the most ambitious so far, as it included controlled exposure experiments using a research vessel with a modified seismic air gun in an area with hydrophones moored into the sea floor and instrumented narwhals.

For the second time in a three year series, a narwhal tagging project was carried out in Kangerlussuaq fjord, East Greenland in August 2017.

As in previous years, the long-term studies of bowhead whales in Disko Bay for 2017 focused on testing technology for combining satellite telemetry and recording sounds on the surface of whale bodies, in order to better understand the effect of sound from seismic air guns. In addition, oceanographic tags that record temperature, salinity, depth and position are under development.

Collection of identification pictures taken by the public of humpback whales flukes and dorsal fins from West Greenland continued throughout 2017. In Nuuk, fieldwork on humpback whales in 2016 included photo-identification, biopsy sampling and satellite telemetry.

Studies of large whales in Tasiilaq, Southeast Greenland, carried out the Climate Research Centre in Greenland, continued in 2017. Methods include photo identification, biopsy darting, satellite telemetry, passive acoustic monitoring, on-whale tagging for videofilming feeding events, oceanographic measurements, distribution of potential prey and analysis of diverse samples from harvested animals. Necropsies in 2017 included minke whales, white beaked dolphins and killer whales.

The Danish Centre for Energy and Environment (DCE), University of Aarhus, maintains a database with observations collected by dedicated marine mammal and sea bird observers on board vessels carrying out seismic surveys under licences provided by the Bureau of Minerals and Petroleum.

C Laboratory work in 2017

Laboratory work carried out in 2017 included the analysis of stomach samples from seals and fish in Nuuk, as well as genetic analyses of bowhead whales at the University of Oslo and genetic analyses of harbor porpoise.

Sound recordings from moorings in West and East Greenland are being analyzed for estimates of background noise and seasonal occurrence of cetaceans and bearded seals, as well as monitoring of seismic exploration.

D Other studies in 2017

A number of desktop studies were carried out during 2017, including analysis of catch statistics for a number of species and assessments of narwhal and beluga for scientific working groups under NAMMCO/JCNB and of large whales for the IWC.

E Research results in 2017

The majority of research results from the fieldwork of 2017 are not available yet.

III ONGOING RESEARCH IN 2018

The time-series of ringed seal tagging in Sermilik (Southeast Greenland) and in Kangia (Jacobshavn Icefjord, West Greenland) continued in 2018.

Marine mammal surveys planned for 2018 include a survey for walrus in the Northwater Polynya in Northwest Greenland, with belugas, narwhals and bearded seals as secondary targets, and a narwhal survey in Northeast Greenland. The survey in Northeast Greenland will

focus in Dove Bay and the surrounding waters, as the survey in 2017 showed that this is an important area for narwhals.

In order to understand the stock delineation and to obtain complementary data for abundance estimates, GINR runs a series of satellite telemetry studies. Among large whales, tagging efforts will focus on fin and minke whales in Maniitsoq, West Greenland.

There are plans to start a collaborative study between GINR and the Icelandic Marine and Fresh Water Institute for tagging humpback whales offshore in the Denmark Strait, from and Icelandic vessel surveying pelagic fisheries.

The long-term studies of bowhead whales in Disko Bay will also continue. Work in 2018 will focus in the collection of biopsy samples for mark – recapture abundance estimates.

Telemetry studies of narwhals in Scoresbysund, East Greenland, started in 2010. Plans for 2018 include a second round of controlled exposure experiments to quantify the reaction of narwhals to seismic guns and the noise of ship’s engines.

For the last time in a three-year series, a narwhal-tagging project is planned in Kangerlussuaq fjord, East Greenland in August 2018.

Studies of large whales in Tasiilaq, Southeast Greenland, carried out by the Climate Research Centre (GCRC) at GINR will continue in 2018.

As in previous years, collection of identification pictures taken by the public of humpback whales flukes and dorsal fins from West Greenland will continue. In Nuuk, fieldwork on humpback whales includes photo-identification, biopsy sampling and satellite telemetry. This work is coordinated by the GCRC.

Other work on marine mammals carried out by the GCRC include the establishment of a network of acoustic and oceanographic moorings and a pilot study to monitor narwhals and glacier fronts with automated cameras.

IV ADVICE GIVEN AND MANAGEMENT MEASURES TAKEN

Advice and quotas for cetaceans and pinnipeds in the calendar year 2017 are summarized in table 1.

Table 1. Overview of management advice per stock and the quota or other management measures used in 2017

Species - stock	Advisor	Advice in 2017	Management measure 2017
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
Walrus - Baffin Bay	NAMMCO	85 landed animals	Quota of 85
Walrus - Davis Strait / Baffin Island	NAMMCO	100 or less removals	Quota of 69
Walrus - East Greenland	NAMMCO	20 or less removals	Quota of 18
Beluga - West Greenland	JCNB & NAMMCO	320 landed animals. Protection south of 65°N	Quota of 320, of which 20 are allocated south of 65°N
Beluga - Qaanaaq	JCNB & NAMMCO	Catch of 20 acceptable	Quota of 20
Narwhal - Etah	JCNB & NAMMCO	5 landed animals	Quota of 5
Narwhal - Inglefield Bredning	JCNB & NAMMCO	98 landed animals	Quota of 98
Narwhal - Melville Bay	JCNB & NAMMCO	70 landed animals	Quota of 80
Narwhal - Uummannaq	JCNB & NAMMCO	154 landed animals	Quota of 154
Narwhal - Disko Bay area	JCNB & NAMMCO	97 landed animals	Quota of 97 ¹
Narwhals - Ittoqqortoormiit	JCNB & NAMMCO	50 landed animals	Quota of 58
Narwhal - Tasiilaq	JCNB & NAMMCO	16 landed animals	Quota of 40
Bowhead whale – West Greenland / Arctic Canada	IWC	5 removals acceptable	Quota of 2
Humpback whale – West Greenland	IWC	10 removals acceptable	Quota of 10

¹ The quota in the Disko Bay area is 91, and the remaining 6 are allocated to Southwest Greenland

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	12 removals acceptable	Quota of 12

Quotas for large whales are set by the IWC. On its meeting in 2014, the IWC agreed upon quotas for the remaining years of the block period 2015 – 2018. The IWC quotas were implemented.

With the exemption of narwhals in Melville Bay and East Greenland, the quotas in 2017 were in accordance with biological advice. The quota for Melville Bay was of 80 animals. In addition to this quota, hunters from Upernavik could take 20 narwhals south in Ummannaq. At the moment of writing this report, it was not clear if the 93 narwhals reported taken in Melville Bay in 2017 included any of the 20 narwhals allocated to Ummannaq. However, it seems like catches in Melville Bay during the past several years have consequently been higher than the advice. Surveys from 2007, 2012 and 2014 indicate that the summering stock of narwhals in Melville Bay is relatively small and the level of catches poses a risk of decline higher than recommended by NAMMCO and JCNB.

The quota for narwhals in East Greenland were higher than the advice. For Ittoqqortoormiit, the quota was 58 animals and the advice 50, while in Tasiilaq the quota was of 40, while the advice was 16. The official NAMMCO advice in 2017 was as recommended by the JCNB/NAMMCO JWG in 2015. The JWG met again in spring 2017 and concluded that narwhals in East Greenland were declining, recommending a reduction of catches to 10 narwhals in Ittoqqortoormiit, 10 in Kangerlussuaq fjord (north of Tasiilaq) and zero south of Kangerlussuaq. This advice was corroborated by NAMMCO SC in November 2017. In 2017, 91 narwhals were reported caught in East Greenland. The statistics presented so far do not separate between Ittoqqortoormiit and Tasiilaq, but it is clear that there is a strong mismatch between the advice of the scientific committee and the level of catches. It is highly probable that the catch of narwhals in East Greenland is not sustainable.

In 2013, NAMMCO recommended that Greenland should take a closer look at the accuracy of catch data for harbor porpoises and killer whales. This work has not been completed.

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