

NAMMCO



SCIENTIFIC COMMITTEE WORKING GROUP ON COASTAL SEALS

*January 12 2021
Online Meeting*

REPORT



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TABLE OF CONTENTS

Executive Summary	4
1. Welcome from the Chair and Opening Remarks	6
2. Status of Harbour Seal Populations	6
2.1 Norway.....	6
2.2 Greenland.....	9
2.2.1 Greenland catch statistics.....	11
3. Population Modelling for Harbour Seals	12
3.1 Review of current assessment needs.....	13
3.2 Data needed for population modelling.....	13
3.3 New methods and approaches - field collection & analysis.....	13
4. Status of Grey Seal Populations	13
4.1 Norway.....	13
4.2 Faroe Islands.....	15
5. Recommendations	16
5.1 Recommendations for conservation & management.....	16
5.2 Recommendations for research.....	17
6. Any Other Business	17
7. Close of Meeting	17
Appendix 1: Agenda	18
Appendix 2: Participant List	19
Appendix 3: Document List	21

EXECUTIVE SUMMARY

The Coastal Seals Working Group (CSWG) held a short online meeting on January 12th 2021 to review the status of harbour and grey seals in NAMMCO member countries. Participants from Iceland were unable to attend due to illness so the focus was on harbour seals in Norway and Greenland and grey seals in Norway and the Faroe Islands.

Status of Harbour Seals

Norway

Harbour seals were counted at all known haul-out sites from the Swedish border in the south to Troms in the north during the moult from mid-August to early September 2016–2020. The survey cycle will be completed at the end of 2021 when the northernmost areas of Finnmark will be covered. For the area covered during 2016–2020, the counts resulted in a total minimum of 5779 harbour seals. This represents a decrease compared with the 6383 harbour seals counted in the same area from 2011–2015. The largest decreases were in Troms and Nordland, while an increase was observed in the Norwegian Skagerrak. A full population assessment will be performed when the survey cycle is complete. The CSWG agreed that it was important to propose biologically relevant management units as an alternative to the current use of county borders.

Greenland

An overview of new research from tagging studies was presented, together with an evaluation of the status of harbour seals based on known human-induced mortality since the hunting ban in 2010 and an assessment of ongoing threat levels. Errors in the reported catch statistics for harbour seals prior to the ban were also presented and discussed. The conclusion was that harbour seals are severely depleted in most of west Greenland, especially in areas that used to be their stronghold. The information required to monitor the seals and assess trends is only known for three populations. The population in Kangerlussuaq is critically endangered while the populations around Majorariaq and Qeqertat are small (likely less than 100 seals each) but show signs of increase. Most of the southeast coast and some glacier fjords and river systems on the west coast can potentially host undiscovered populations. The CSWG agreed that it was important to investigate the potential presence of as yet unidentified breeding and moulting sites in these areas.

Status of Grey Seals

Norway

Historically, both surveys and model-based assessments had indicated an increasing grey seal population in Norway. However, surveys in Trøndelag and the southern part of Nordland in 2014 and northern Nordland (including Lofoten) in 2015 showed a significant decrease in grey seal pup production. A small reduction was also observed in Troms in 2016, while in Finnmark the numbers were similar to 2006. In 2016, the total number of grey seals in Norway was estimated to be 3850 animals (95% CI: 3504–4196), which was down from 7120 (95% CI: 5710–8540) in 2011. Pup production in Trøndelag and along the mainland coast in Nordland was at the same low level in 2018. However, pup production in Lofoten (Nordland) had almost doubled in 2020 compared to the low level in 2015. The CSWG agreed that it was important to have more accurate and comprehensive information on grey seal by-catch in gillnet fisheries and that it was relevant to review the rates of migration assumed to be occurring from populations in the UK and Russia.

Faroe Islands

During the summers of 2018 and 2019, the Faroe Islands counted grey seals at haulout sites along the coast, which resulted in a total minimum count of 550 animals. A more accurate estimate, corrected for animals missed by the survey, can be achieved through tracking data. Two animals were tagged and tracked in 2020 and there is a plan to increase this up to 10 seals in the coming years. There is also a plan to monitor haul-out and breeding sites by camera to enable comparison with survey data. Catch levels have steadily declined over the last ten years (from as high as 200 animals a year to near zero) following the 2020 law prohibiting the intentional killing of marine mammals around aquaculture

facilities. The CSWG agreed that although further surveys, tagging and monitoring efforts are required, the 2020 ban should allow the population to recover.

Recommendations for Conservation & Management

- Complete an assessment for coastal seals in each of the **NAMMCO member countries** as soon as the necessary data is available (e.g., within the next two years for Norway).
- Discuss the proposal that all catch statistics for harbour seals in **Greenland** be removed from the NAMMCO website due to known errors and a lack of validation.

Recommendations for Research

Harbour seals

- Complete the collection and analysis of DNA samples from harbour seal pups in **Norway** to help determine stock structure and propose more scientifically based management units.
- Enhance efforts to identify new breeding and moulting sites for harbour seals in **Greenland** (particularly in West Greenland) using methods that are most feasible in the different areas.

Grey seals

- Continue the work to provide total summer counts in the **Faroe Islands** and conduct ongoing monitoring of the breeding sites as well as higher resolution tracking of grey seals.
- Re-evaluate the robustness of currently assumed immigration rates of grey seals to **Norway**.
- Support the development of a Europe wide population model for grey seals through data provision and cooperation.

MAIN REPORT

1. WELCOME FROM THE CHAIR AND OPENING REMARKS

The Chair of the NAMMCO Scientific Committee's Working Group on Coastal Seals (CSWG), Kjell Nilssen, welcomed participants to the online meeting and invited a brief round of introductions (see participant list in Appendix 2). The group was reminded of the terms of reference for the CSWG:

- 1) *Assess the status of harbour and grey seal populations in NAMMCO countries and adjacent waters.*
- 2) *Assess the status of population modelling for harbour seals.*
- 3) *Review new research on ecology and telemetry*
- 4) *Review by-catch issues in NAMMCO countries*

It was noted that the focus of this meeting would be on the first two items. Given some of the limitations associated with online meetings, reviewing the status of harbour and grey seal populations in NAMMCO member countries was prioritised. Apologies from participants from Iceland due to illness were conveyed by the Chair, and it was noted that a review of the status of coastal seals in Iceland would therefore be postponed to a later date.

The agenda (see Appendix 1) was adopted with only a slight change in the order of items to group all discussions related to harbour seals together.

The NAMMCO Scientific Secretary, Fern Wickson, was appointed as rapporteur for the meeting.

2. STATUS OF HARBOUR SEAL POPULATIONS

2.1 NORWAY

Kjell Nilssen presented Working Paper 10: *Status of harbour seals in Norway 2020* and noted that catch statistics for both harbour and grey seals in Norway were provided in Working Paper 06.

Presenter Summary of Working Paper 10

Harbour seals were counted at all known haul-out sites during the moult from mid-August to early September 2016–2020, from the Swedish border in the south to the Troms area in the north (Figure 1). All areas where harbour seal moulting colonies occur were covered. The northernmost areas in Finnmark will be covered in August 2021. It was aimed to cover each locality 3 times on independent days during low tide (± 2 hours) and in good weather conditions (wind speed < 10 m/s and without rain). However, some areas were only counted twice due to poor weather conditions. Drones were mainly used for taking vertical photos, but boat-based camera (with zoom) and visual counts (using binoculars) were also carried out. The Hvaler area (at the Swedish border) was photographed from a fixed-wing aircraft.

The counts resulted in a total minimum of 5779 harbour seals from the Swedish border to the northern Troms area during 2016–2020. This result represents a decrease compared with the 6383 harbour seals counted in the same areas in 2011–2015 (see Figure 2). In Nordland county, where harbour seals are most abundant in Norway, the number of seals was significantly lower in 2016–2020, approximately 63% of the counts in 2011–2015. In Troms, the harbour seal number was approximately 77% of the counts in 2011–2015. In contrast, harbour seal numbers in the Norwegian Skagerrak has increased by approximately 30% during the same period. In the other counties along the coast, minor variations in harbour seal numbers have been observed over the last twenty years.

Table 1. Numbers of harbour seals along the Norwegian coast based on aerial photo surveys and visual counts from boats and land. In West-Finnmark, where 395 harbour seals were counted in 2013, no surveys were carried out in the first two survey periods. In Vestfold, Telemark and Aust-Agder only one survey was done. Vest-Agder was partly surveyed in 2006. The target level of approximately 7000 harbour seals was set by the Norwegian Parliament in 2010.

County	Target level	1996-1999	2003-2006	2011-2015	2016-2020
Østfold	270	289	266	230	337
Vestfold	60	61	7	183	292
Telemark	45	-	45	148	175
Aust-Agder		0	10	39	41
Vest-Agder		0	0	0	35
Rogaland	480	513	360	481	411
Hordaland				6	-
Sogn & Fjordane	670	714	325	659*	620*
Møre & Romsdal	1000	1072	477	689	634
Sør-Trøndelag	1200	1296	1527	556	790
Nord-Trøndelag	170	173	138	100	124
Nordland	2000	2129	2466	2510	1568
Troms	520	557	727	986	760
Finnmark	900	661	357	981	-
Total	7000	7465	6705	7568 (6587**)	5787**

*Includes 119 and 69 harbour seals in Sognefjord and Nordfjord, respectively, in 2014 and 61 and 30 in 2016. Surveys in 2011-2015 consist of 2-3 counts on independent days in each area, except for Agder, Telemark and Vestfold, which were counted one time. In 2016-2020, all areas were counted 3 times, except for the counties Østfold and Agder. Highest total number in each area was summarised to total numbers in each county. **Not including Finnmark.

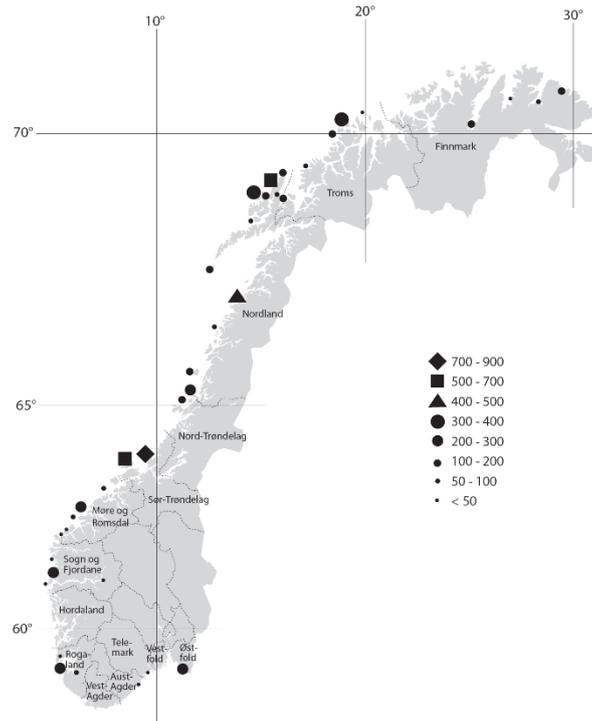


Figure 1. Harbour seal abundance along the Norwegian coast in 2011–2015 with the borders and names of the previous counties indicated.

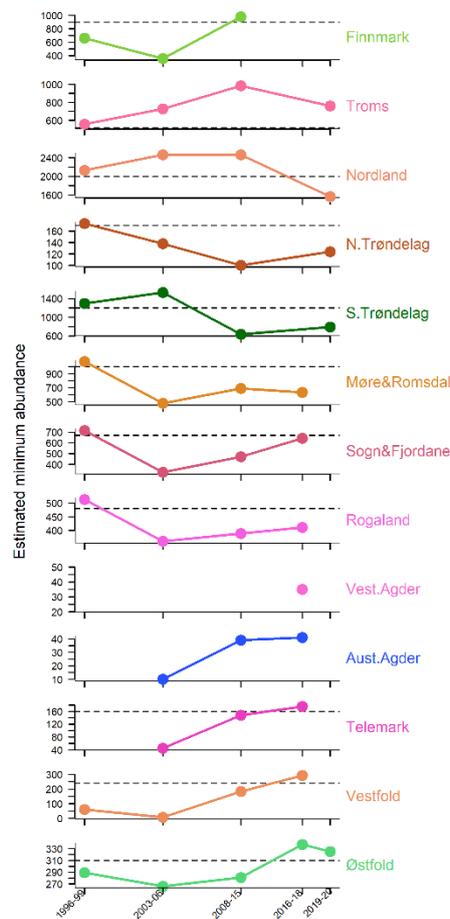


Figure 2. Harbour seal numbers in each county along the Norwegian coast in 1996–2020. The dotted horizontal line represents the target minimum population size in each county.

Discussion

The use of county boundaries to determine management units was discussed. It was noted that although county-based management units may be practical, particularly when the assignment and monitoring of hunting quota takes place at this level, such an approach is not necessarily biologically representative or relevant and it is therefore important to consider alternatives. Although a clear means to determine biologically relevant management units is not currently available, there is an ongoing investigation into whether DNA analysis can reveal a stock structure that may be used to determine alternative borders for management areas. The CSWG agreed that genetic analysis of harbour seals along the Norwegian coast to help clarify stock structure and inform the proposal of more biologically relevant management units was important and **recommended** that this work continue.

It was clarified that although the survey takes place over a 5-year period, the count is done around the same time of year each year (from 10 August to early September). Given that the survey is conducted during the moult, whether the timing of this could be different along the long coastline of Norway was discussed. The group was informed that although this had not been analysed as such, there was no evidence to support different timings for the moult along the coastline, although some changes in haulout behaviour had been noted in the north.

The possibility that there were additional haulout sites not being surveyed was also discussed. The group was informed that although this was not expected as moult sites had been relatively consistent over the years and the coverage of the survey was relatively comprehensive, it was possible that there had been some changes connected to fish farming in some areas and that parts of the north may be difficult to survey with 100% coverage. It was also noted that although there may be some variation in exactly where in a particular archipelago the seals haulout from year to year, this should not affect the count as the area is first surveyed by boat and then the drone launched to cover the areas being used that year. It was also noted that the use of drones was a new addition to the survey methods in recent years and there was still some level of experimentation taking place to identify the ideal flying height at which the seals are visible but not disturbed.

The CSWG was informed that in addition to the survey work presented, tagging has also been performed in recent years, with around 5 tags successfully deployed in both 2019 and 2020. The specific intention of this work has been to investigate potential interactions between harbour seals and cod fisheries. Unfortunately, however, the tags used are of a new type and seem to have some technical issues (e.g., submitting a lot of information when the animals are hauled out but little when in the water). There are therefore plans to obtain and deploy new tags when the technical issues have been solved.

2.2 GREENLAND

Aqqalu Rosing-Asvid presented Working Paper 5: *Status of harbour seals in Greenland 2020*.

Presenter Summary of Working Paper 5

The aim of this working paper was to compile current knowledge about harbour seals in Greenland.

The Greenland coastline has been divided into nine tentative management zones (see Figure 3) and available information from each zone (typically information from the literature, from interviews of hunters, and field research by the author) is described in the working paper. For each area, a summary of known human induced mortality since the hunting ban (in 2010) and an assessment of the threat-level induced by this mortality (illegal hunt, unintended hunt (shot in the belief that it was another seal species) and from by-catch in nets) is also provided.

The overall status is that harbour seals are severely depleted in most of west Greenland, especially in areas that used to be their stronghold. Basic information needed to monitor the seals, like the location of the breeding and the moulting sites and indications of trend in numbers, is only known for three populations. One population (Kangerlussuaq - West Greenland) only has a few seals left and is critically

endangered. The other two populations are centred around Majorariaq in Southwest Greenland and Qeqertat on the east coast near Cape Farewell. These are small populations (probably less than 100 seals each) but they show signs of increase. In addition to these populations are areas (like most of the southeast coast and some glacier fjords and river systems on the west coast), which can potentially host undiscovered populations of harbour seals. A few harbour seals are regularly seen in areas far from the known breeding and moulting sites and that gives reason to believe that more populations will be established or already exist in areas that are difficult to access or for other reasons are rarely visited by humans.

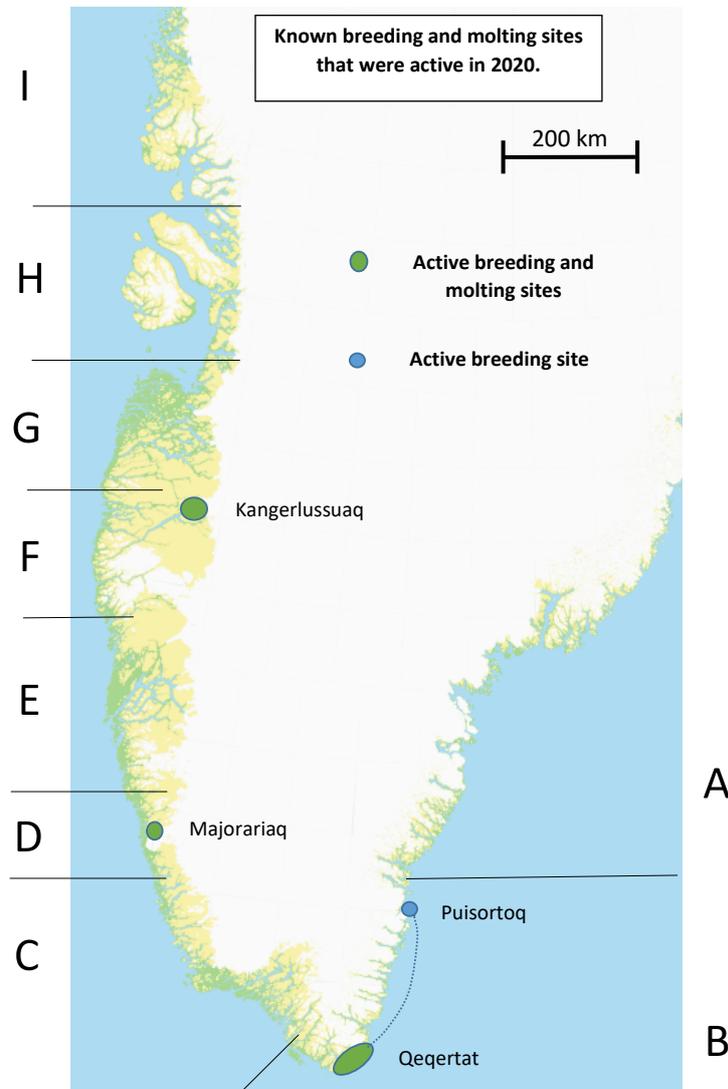


Figure 3. Preliminary harbour seal management boundaries in Greenland (A-I) and the known breeding and moulting sites active in 2020.

Discussion

The working paper presented telemetry studies from southeast Greenland performed on seals from the same moulting site. Some seals gave birth close to the moulting site, but others swam about 250 km northward along the Greenland east coast to give birth at a location called Puisortoq (see Figure 3). The CSWG was asked whether this behaviour had been documented elsewhere. It was reported that such behaviour had not been seen in tagged seals from Norway or the UK. Long excursions by harbour seals had been documented in the UK, but this was not for breeding purposes.

The patterns of dive and haulout behaviour presented in the working paper as indicators of when females are giving birth were noted as similar to those seen in work done in the Orkney Islands on a

smaller sample size. Although confirmation of these patterns from existing tag data in Norway was not possible due to a focus on tagging immature seals, recent tags have been deployed on adults and therefore could be analysed for similar patterns in around 12 months time. The CSWG agreed that it was reasonable that dive and haulout behaviour signatures could be read to indicate dates of parturition.

It was noted that a total abundance estimate for all areas combined was not provided as there was evidence to suggest the presence of as yet unidentified moulting and breeding sites. That is, seals were seen in areas in winter without being able to determine where they were breeding and moulting. It was highlighted that there are many potential areas for such sites around Greenland that are very difficult or impossible to access at the relevant time of year. Possible ways to identify such sites was then discussed. It was noted that conducting aerial surveys is problematic because harbour seals can be so well camouflaged amongst the rocks. Using infrared cameras during aerial surveys was noted as challenged by the fact that there can also be ringed seals in the same areas and it would be hard to distinguish the two species. It was also noted that it may be difficult to mobilise resources for a survey when hunting is not currently permitted. An alternative approach to identifying sites (which are in use) is to conduct interviews with local hunters and follow up on their leads, e.g., by investigating areas on foot or in boats where and when possible. It was noted that although telemetry studies may also provide relevant information, but since the populations are very small and were hunted until very recently, it may be important to wait until there has been a population increase before nets are deployed to catch harbour seals and apply tags. Despite the challenges involved, the CSWG agreed that identifying moulting and breeding sites was important to determine the status of the population and **recommended** that this be carried out using methods that are appropriate to the areas.

Given that there has been a ban on hunting in place since 2010 and there does not seem to be significant recovery of the populations, the group discussed other potential causes of mortality. As noted in the working paper, this includes accidental hunting (i.e., the possibility that hunters take harbour seals for being another seal species), and by-catch in the nets used to hunt char, lumpfish or ringed seals. The fact that the skins of harbour seals have traditionally been used in the national costume creates some pressure to hunt them despite the ban, although the observation of pups on previously popular hunting grounds as late as August indicates that most hunters are respecting the ban. It was noted that an increase in the number and geographic range of harbour seals in Svalbard due to increasing temperatures has been observed, and a similar increase may also be seen in Greenland in the future now that the hunt is banned.

2.2.1 Greenland catch statistics

Aqqalu Rosing-Asvid presented Working Paper 06: *A note on the Greenland harbour seal catch statistics.*

Presenter Summary of Working Paper 6

A new way of collecting catch statistics was introduced in Greenland in 1993. Both professional hunters and part time hunters had to note their catches by month in a table. The reported catches for harbour seals, resulted in figures that were many times higher than the figures obtained in the old system.

The new system seems to include errors, which simply relate to people writing the catches in a wrong row. This argument is supported by the fact that catches became exceptionally high during the years 2003-5 when harbour seals was placed in the table in between ringed seals and harp seals (species that are caught in high numbers by many hunters). This increased the number of errors, especially in areas where catches of these species are high, for instance in Upernavik and Tasiilaq. When harbor seal catches were placed in between the narwhal and the killer whale in 2006, the reported catches in Upernavik dropped from 252 harbor seals in 2004 to one in 2006 and in Tasiilaq the drop was from 143 to zero, which fits the expectations from these two areas. These examples show that data prior to 2006 are very misleading, but there are also marked errors in the years after 2006. Many of the people that had reported catches of harbor seals were contacted and the majority of the harbor seal catches after 2006 also turned out to be due to errors. Some Danes for instance thought that the seals that

they had caught were harbour seals, but these turned out to be young harp seals (in Danish a harbour seal is called “a spotted seal” and young harp seals are spotted).

These kinds of error are likely to also affect other species. However, reporting +/- a few hundred seals hardly has any impact on, for example, ringed or harp seal statistics, because many thousands of these seals are caught and reported every year, while for a species that is caught in low numbers it becomes very misleading. It is therefore suggested that the harbor seal catch statistics are removed from the NAMMCO website.

Discussion

It was noted that the catch statistics currently displayed on the NAMMCO website for harbour seals do not contain numbers for the years 2002–2005 (the years with very high catches). It was also noted that it is no longer possible to report harbour seal catches in Greenland as they have been removed from the reporting form since 2016. Any by-catch in fishing nets is also unlikely to be reported. When it was permitted to hunt harbour seals, about 25% of the catch in the Kangerlussuaq area was taken in char nets (according to interviews with hunters about past catches). Char fishermen state that harbour seal by-catch in their nets is no longer an issue though, most likely due to the reduction in the number of seals in the area.

The CSWG noted the significant errors in the reported catch statistics for harbour seals and the request from Greenland that they be removed from the NAMMCO website. The CSWG **recommended** that this request and its potential implications be discussed by the Scientific and Management Committees of NAMMCO.

3. POPULATION MODELLING FOR HARBOUR SEALS

A presentation was given by Douglas Sigourney on “Application of a Bayesian hierarchical model to estimate trends in Atlantic harbor seal (*Phoca vitulina vitulina*)”.

Presenter Summary

We investigated trends in harbour seal (*Phoca vitulina vitulina*) abundance using aerial survey data collected between 1993 to 2018 in Maine. We used a hierarchical Bayesian framework which allowed us to account for missing data both within and between years with survey data. Our model included environmental covariates to account for differences in seal counts and auxiliary information on seal haul-out behaviour to adjust for the proportion of seals not hauled out under ideal conditions. Estimated trends suggested an initial increase in both seal pups and non-pups until approximately 2001. For seal pups this increase was significant early on as evidenced by posterior distributions of 8-year moving averages of percent change in abundance. Changes in abundance of both pups and non-pups were negative although not significant after 2001. Combined with historical data, the trend in abundance of harbour seals appears to have been positive during the late 20th century after the passage of the Marine Mammal Protection Act in 1972, but has been zero or negative since the early 2000s.

Discussion

The group was informed that there was one year with multiple surveys/counts (2001) with an aim to understand the pupping season better by surveying both early and late in the season. It was noted that it was not possible to use these surveys to account for observer error in the model and a decision had been made to use the survey with the highest count in the model. It was, however, agreed that observation error could be an important factor to include in the future.

It was noted that whether pupping is happening in new sites outside the survey areas remains a question as reconnaissance flights are not currently performed to be able to assess this. The CSWG discussed whether it would be possible to include a number of surveys during the pupping season, to stage pups and thereby have a better estimate of the total number of pups born. It was noted that this would be challenging in the US due to the large survey area (with up to a thousand ledges involved)

and the requirement for multiple good weather days. It was clarified that both pups and adults are counted during the pupping season and that it could be possible to select a particular area and monitor it over time to give a better sense of peak pupping time. This would help provide information on whether pupping may be shifting to an earlier time period.

3.1 REVIEW OF CURRENT ASSESSMENT NEEDS

Discussion of this item was postponed to a future meeting due to time restrictions and a decision to prioritise assessing the status of harbour and grey seals in NAMMCO countries during this meeting.

3.2 DATA NEEDED FOR POPULATION MODELLING

Discussion of this item was postponed to a future meeting due to time restrictions and the decision to prioritise assessing the status of harbour and grey seals in NAMMCO countries during this meeting.

3.3 NEW METHODS AND APPROACHES - FIELD COLLECTION & ANALYSIS

Discussion of this item was postponed to a future meeting due to time restrictions and the decision to prioritise assessing the status of harbour and grey seals in NAMMCO countries during this meeting.

4. STATUS OF GREY SEAL POPULATIONS

4.1 NORWAY

Kjell Nilssen presented Working Document 08: *Status of grey seals in Norway 2020*.

Presenter Summary

Assessments covering the grey seals along the Norwegian coast from Froan (Trøndelag) in south to Finnmark in north started in 1996. Since 2001-2003 all areas, including the small breeding colony in Rogaland, were covered (Figure 4). The grey seal abundance in Norway increased in all areas until 2006-2008, when the total annual pup production was estimated to be 1275 pups (Table 2). Model runs conducted in 2011 indicated an increase in abundance of the total Norwegian grey seal population during the last 30-years, suggesting a total of 7120 (5710–8540) animals (1+). New surveys in Trøndelag and in the southern part of Nordland in 2014 and northern Nordland (including Lofoten) in 2015 showed a significant decrease in the grey seal pup production (Figure 5). A small reduction was also observed in Troms in 2016 but in Finnmark the numbers were almost equal with the result in 2006. The total number of grey seals in Norway was estimated to be 3850 animals (95% CI: 3504–4196) in 2016. Pup production in Trøndelag and along the mainland coast in Nordland was at the same low level in 2018. However, pup production in Lofoten (Nordland) was almost doubled in 2020 compared with the low level in 2015.

Table 2. Grey seal pup production estimates along the Norwegian coast. Annual average number in Sør-Trøndelag county in 1979-1989.

	1979-1993	1996	1998	2001	2003	2006	2007	2008	2014	2015	2016	2017	2018	2020
Lista-Stad				30	35			43				35		
S-Trøndelag	200-230	262		283			189		77				60	
N-Trøndelag	47		64	82			135		47				47	
Nordland S			224	265			308		128				94	
Nordland N					166			179		80			82	
Lofoten								139		66				121
Troms						76					65			
Finnmark			119	141	143	207				206				

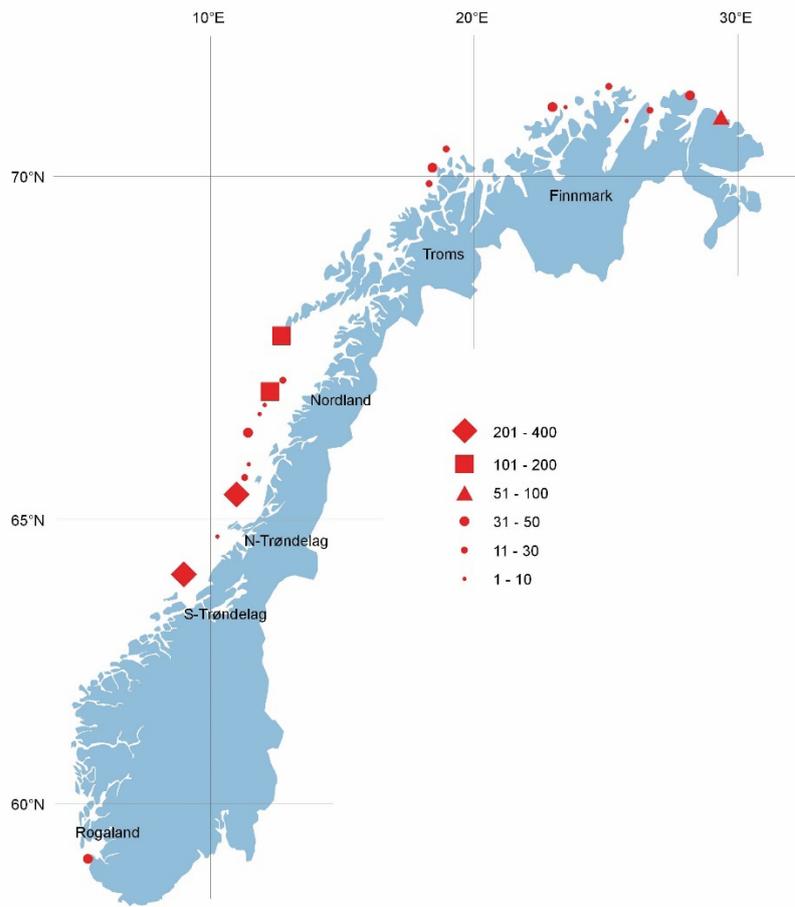


Figure 4. Grey seal breeding colonies in Norway

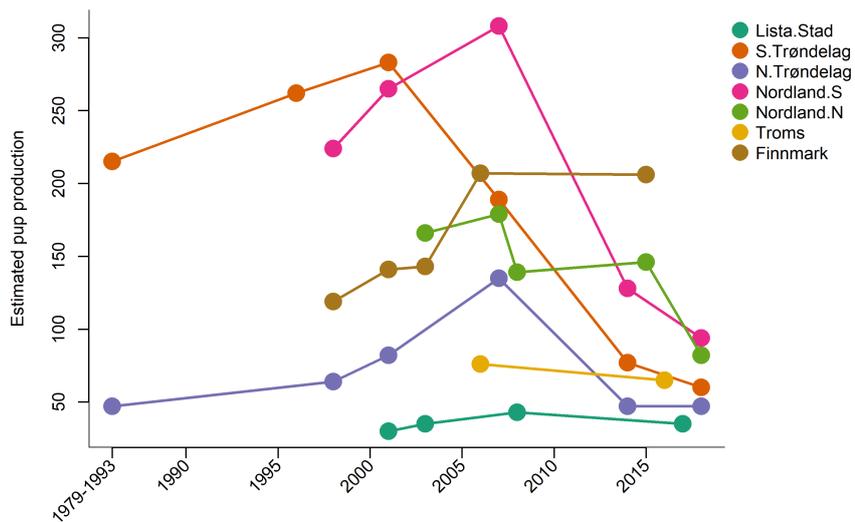


Figure 5. Grey seal pup production in each county along the Norwegian coast in 1979-2018.

Discussion

The proposal in the working paper that by-catch may be a key factor contributing to the apparent population decreases in Trøndelag and Nordland was discussed. It was highlighted that the decline is assumed to be primarily linked to the monkfish fishery, which was permitted to use 1000 gillnets (around 27km of nets) until 2010. The significant role of by-catch was also suggested from the tagging studies with 5 pups in which all were by-caught, as well as from the reports of the coastal reference fleet which indicate a high level of pup by-catch. The potential for fisheries reducing the prey available for the seals was discussed as a possible alternative explanation for the observed decline. It was reported that the evidence for this was not strong since the grey seal diet in the area is primarily cod and other codfishes, which are abundant along the coast. During the period of decline, there was also a lot of herring in the area over winter. This meant that the decline did not seem to be linked to a lack of prey.

The CSWG was informed that Øigard attempted to estimate the number of seals taken in gillnet fisheries and explore whether this could explain the decline. However, by-catch data including information on seal species, the proportion of pups vs adults, and the sex of animals taken in gillnets was lacking and this made it difficult to draw a conclusion. The ongoing challenges associated with including by-catch data in the model, particularly due to the current lack of confidence in accurate species identification in the coastal reference fleet, was noted and the plan to improve this through remote electronic monitoring explained. The group was also informed that although there had been no attempt to refit the Øigard 2012 population model with the additional catch data available after the observed decline, there was an intention to do this when the current survey cycle is complete at the end of 2021.

The assumption that there is a high level of migration from populations in the UK and Russia in certain areas was discussed. The group was informed that the migration percentage had been proposed based on the results of tagging studies in the UK and Russia, as well as on the lack of an observed significant impact on the populations from the hunt. It was also noted that although the percentage rates seem to be high in the southwest of Norway, since there are not a lot of seals in that area (in the order of a couple of hundred), the total number of migrating animals is not particularly high. It was also noted that the animals migrating in and available to hunters are not breeding in Norway and therefore there remains a “Norwegian” population despite the high levels of migration proposed. The CSWG **recommended** that it would be relevant to review and re-evaluate the accuracy of the proposed migration rates based on new data and analytical approaches.

The CSWG was informed of plans currently underway to expand grey seal population modelling to a Europe wide scale so as to be able to account for and include migration between the different populations. The CSWG agreed that it was relevant to follow these efforts and **recommended** that the group support the work in terms of providing data, joining the collaboration etc.

4.2 FAROE ISLANDS

Bjarni Mikkelsen presented Working Document 04: *Status of grey seals in the Faroe Islands 2020*.

Presenter Summary

This working document provides a brief update of the research activities performed on grey seals in the Faroe Islands, to follow up on recommendations from the last meeting of the NAMMCO Coastal Seals Working Group in 2016. The most significant effort has been on obtaining total counts of grey seals along the coast, based on counts at haul-out sites, during summer in 2018 and 2019. Additional efforts include tracking of two animals in 2020, update of the catch statistics up to the end of 2019, and visits to a breeding site in 2020.

The Faroese grey seal stock has now been counted, for the first time ever, to number a minimum of 550 animals. Harvest levels have steadily declined from as high as 200 animals a year, to nearly zero mortality, due to a new law, prohibiting the intentional killing of marine mammals around fish farms

(Figure 6). The plan is to repeat the count on a regular basis to follow the development of the stock. A more accurate estimate, corrected for the unknown proportion of animals not present and thus missed by the survey, can be achieved from tracking, and analysis of existing tracking data. The plan is to track up to 10 seals in the coming years. There is also a plan to monitoring haul-out sites by camera to investigate haul-out behavior and the variation in the number of animals present at haul-out sites. Furthermore, there is a plan to monitor some of the largest breeding sites around in the islands, by camera, for a minimum pup count, and compare to the total count in summer.

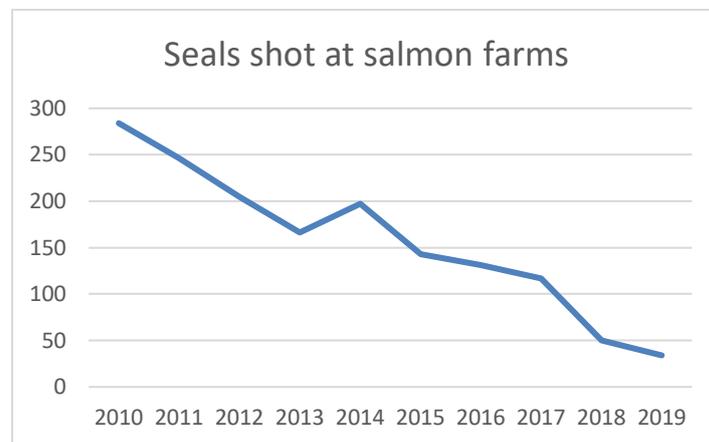


Figure 6. Number of seals shot at salmon farms in the Faroe Islands from 2010-2019.

Discussion

It was clarified that there is not a sufficiently long time series of counts from good weather survey days to be able to say that the population is increasing. A population trend should be able to be determined if the situation continues to be monitored over the coming years. The current ban on culling around fish farms after over 10 years with a high number of seals shot on such sites, is however assumed to allow the population to recover. It is also assumed that the original population must have been considerable to have supported the high harvest rates. The timing of the cull towards the end of the year probably also lead to a high level of pups and young animals being taken, and to a lesser extent the viable component of the population.

The group discussed whether there was the potential for any migration to the Faroes from UK grey seal populations. It was noted that tagging research in the UK showed a few animals travelling north of the Shetland Islands and although one was documented travelling to the Faroe Islands, it did not stay. This suggests that there is the potential for contact between the UK and Faroes populations. It was, however, emphasised that in general, grey seals are thought to roam while young but become more settled and return to their breeding site as they mature. This means that although there may be some contact between the populations, inter-breeding seems unlikely.

The group was informed that it is difficult to determine how many breeding sites there are in the Faroe Islands due to a high proportion of grey seals using caves for breeding, which makes breeding sites difficult to observe. It was also noted that to date, no survey has had the specific goal of identifying breeding sites. Remote camera monitoring of known breeding sites is possible though and there is an aim in the coming years to identify the best candidate sites for ongoing monitoring. It is thought that it might be possible to monitor up to 30% of the breeding activity in this way.

5. RECOMMENDATIONS

5.1 RECOMMENDATIONS FOR CONSERVATION & MANAGEMENT

- Complete an assessment for coastal seals in each of the NAMMCO member countries as soon as the necessary data is available (e.g., within the next two years for Norway).

- Discuss the proposal that all catch statistics for harbour seals in Greenland be removed from the NAMMCO website due to known errors and a lack of validation.

5.2 RECOMMENDATIONS FOR RESEARCH

Harbour seals

- Complete the collection and analysis of DNA samples from harbour seal pups in **Norway** to help determine stock structure and propose more scientifically based management units.
- Enhance efforts to identify new breeding and moulting sites for harbour seals in **Greenland** (particularly in West Greenland) using methods that are most feasible in the different areas, including interviews with local hunters, follow up explorations on foot or with drones etc. In some cases, tagging studies may be used to identify new moulting and breeding sites.

Grey seals

- Continue the work to provide total summer counts in the **Faroe Islands** and conduct ongoing monitoring of the breeding sites as well as higher resolution tracking of grey seals.
- Re-evaluate the robustness of currently assumed immigration rates of grey seals to **Norway** (e.g., by reviewing recent literature and the telemetry data from the UK and Russia, performing DNA analysis on pups, sensitivity testing).
- Support the development of a Europe wide population model for grey seals through data provision and cooperation.

6. ANY OTHER BUSINESS

The CSWG was informed that during the NAMMCO-ICES expert workshop on seal modelling (WKSEALS), held in 2020, it was recommended that a seal modelling community encompassing both coastal and ice-breeding species be established. This was proposed as a valuable way to enhance knowledge exchange and learning across the communities and strengthen the work being done on seal population modelling in general. The CSWG noted that some of its members participated in working groups and modelling efforts across coastal and ice-breeding seals and viewed this as an important way to continue building bridges between the communities.

7. CLOSE OF MEETING

The Chair closed the meeting at 18:02 on 12th January. A draft report was circulated to the group for comments and revisions on January 14th. A final draft was circulated on January 19th and adopted on January 20th 2021.

APPENDIX 1: AGENDA**NAMMCO SCIENTIFIC COMMITTEE****COASTAL SEALS WORKING GROUP**

12 January 2021, 14:00–18:00 CET, Online Zoom Meeting

AGENDA

- 1. CHAIRMAN WELCOME AND OPENING REMARKS**
 - 1.1. Welcome and logistics
 - 1.2. Review of terms of reference
 - 1.3. Review of available documents and reports
 - 1.4. Appointment of rapporteurs
 - 1.5. Adoption of agenda
- 2. STATUS OF HARBOUR SEAL POPULATIONS in NAMMCO MEMBER COUNTRIES**
 - 2.1. Norway
 - 2.2. Greenland
- 3. DATA COLLECTION TO INFORM POPULATION MODELING FOR HARBOUR SEALS**
 - 3.1. Review of current assessment methods
 - 3.2. Data needed for population modelling
 - 3.3. New methods & approaches - field collection & analysis
- 4. STATUS OF GREY SEAL POPULATIONS in NAMMCO MEMBER COUNTRIES**
 - 4.1. Norway
 - 4.2. Faroe Islands
- 5. RECOMMENDATIONS**
 - 5.1. For conservation & management
 - 5.2. For research
- 6. ANY OTHER BUSINESS**

APPENDIX 2: PARTICIPANT LIST**NAMMCO SCIENTIFIC COMMITTEE****Coastal Seals Working Group***January 12 2021, 14:00–18:00 CET, Online Zoom Meeting***LIST OF PARTICIPANTS****Markus Ahola (Invited expert)**

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APPENDIX 3: DOCUMENT LIST**NAMMCO SCIENTIFIC COMMITTEE****Coastal Seals Working Group***January 12 2021, 14:00–18:00 CET, Online Zoom Meeting***LIST OF DOCUMENTS****Working Documents**

Doc. No.	Title	Agenda item
SC/27/CSWG/01	Draft Agenda	1
SC/27/CSWG/02	Participant List	1
SC/27/CSWG/03	Document List	1
SC/27/CSWG/04	Status Report: Faroe Islands - Grey seals	3.3
SC/27/CSWG/05	Status Report: Greenland - Harbour seals	2.3
SC/27/CSWG/06	Note on Greenland harbour seal catch statistics	2.3
SC/27/CSWG/07	Ideas/information on harbour seal data collection from Aqqalu Rosing-Asvid (Greenland)	4
SC/27/CSWG/08	Status Report: Norway - Grey seals	3.2
SC/27/CSWG/09	Norwegian catch statistics for grey and harbour seals	2.2, 3.2
SC/27/CSWG/10	Status Report: Norway - Harbour seals	2.2
SC/27/CSWG/11	Status Report: Canada - Grey seals	

For Information Documents

Doc. No.	Title	Agenda item
SC/27/CSWG/FI01	Report of the NAMMCO Working Group on Coastal Seals (2016).	1
SC/27/CSWG/FI02	Rosing-Asvid, A., Teilmann, J., Olsen, M. T., & Dietz, R. (2020). Deep diving harbor seals (<i>Phoca vitulina</i>) in South Greenland: movements, diving, haul-out and breeding activities described by telemetry. <i>Polar Biology</i> , 1-10.	2.3, 4