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Seals in Greenland

- An important component of culture and economy

The Last Ice Area Project





Report

Seals in Greenland: - An important component of culture and economy.
The Last Ice Area Project.

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Project

This report is part of the WWF project the Last Ice Area.

Front page photo

Ringed seal on sea ice, Scoresbysund//Ittoqqortoormiit, East Greenland.
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Comments to the report from:

KNAPK has commented on the report.

The Greenland Institute of Natural Resources has commented on the first chapter 'The Greenlandic seals'.

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The Last Ice Area

This is one of a series of research resources commissioned by WWF to help inform future management of the area we call “the Last Ice Area”. We call it that because the title refers to the area of summer sea ice in the Arctic that is projected to last. As climate change eats away at the rest of the Arctic’s summer sea ice, climate and ice modelers believe that the ice will remain above Canada’s High Arctic Islands, and above Northern Greenland for many more decades.

Much life has evolved together with the ice. Creatures from tiny single celled animals to seals and walrus, polar bears and whales, depend to some extent on the presence of ice. This means the areas where sea ice remains may become very important to this ice-adapted life in the future. One of my colleagues suggested we should have called the project the *Lasting* Ice Area. I agree, although it’s a bit late to change the name now, that name better conveys what we want to talk about. While much is changing, and is likely to change around the Arctic, this is the place that is likely to change the least. That is also meaningful for the people who live around the fringes of this area – while people in other parts of the Arctic may be forced to change and adapt as summer sea ice shrinks, the people around the Last Ice Area may not have to change as much.

As a conservation organization, WWF does not oppose all change. Our goal is to help maintain important parts of the natural world. These parts are important in their own right, and they are important for people. WWF does not have the power and authority to impose its vision on people. Instead, we try to present evidence through research, and options for management action. It is then up to the relevant authorities as to whether they will take action or not; the communities, the Inuit organizations, and the governments of the Last Ice Area will decide its future fate. We hope you will find the information in this report useful, and that it will help you in making wise decisions about the future of the Last Ice Area.

Clive Tesar, WWF Global Arctic Programme. Last Ice Area lead.

Ilisarititsineq

Siunissami *Last Ice Area-mik* (LIA) taagugaq – imaluunniit Siku Kingulleq pillugu misissuinessap nakkutigineqarnissaanut ikorfartuiniarluni misissuinerit ilaattut misissuineq una WWF-ip aallartippaa. Issittup imartaa aasaanerani sikuuinnartartoq, sivisunerpaamik aannikuunngitsoq misissuinerup taaguuteqaatigaa. Issittup imartaa aasaanerani sikuuinnartartoq silap pissusaata allanngoriartornera peqputigalugu milliartuinnaraluartoq, sikumik silallu pissusaata allanngoriartorneranik misissuinerit naapertorlugit, qeqertat Canadap avannaata kangianittut kiisalu Kalaallit Nunaata avannaata avataat sulii ukiuni qulikkaani arlalinni sikuuinnarallassapput.

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Clive Tesar, WWF Global Arctic Programme. Projektleder Last Ice Area.

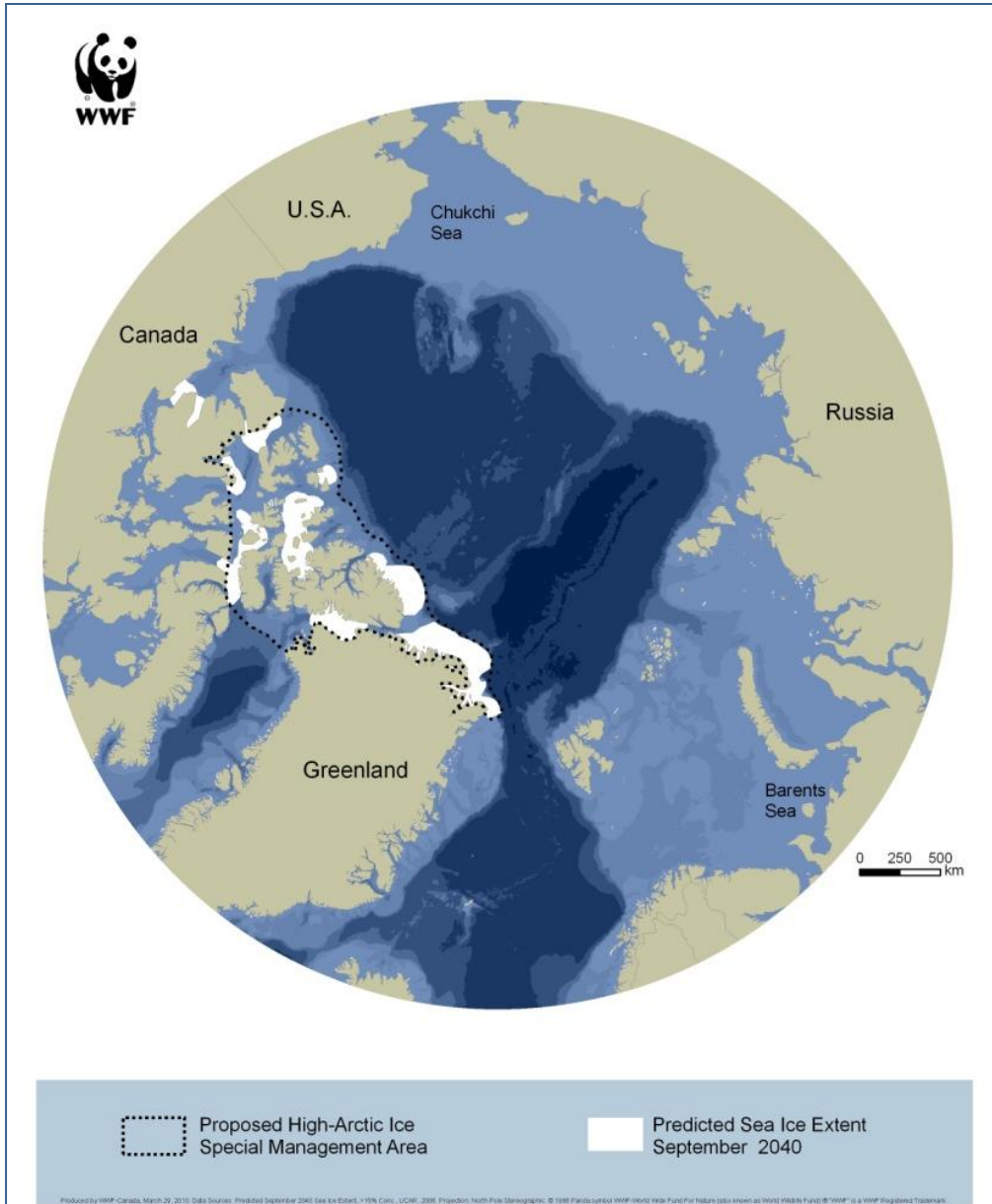
Last Ice Area/Den Sidste Is

Dette studie er et i en række af studier, som WWF har igangsat med det formål at bistå fremtidige forvaltninger af det område, som vi kalder Last Ice Area/Den Sidste Is. Navnet refererer til det område med sommerhavis i Arktis, som beregnes til at bestå længst. I takt med at klimaforandringerne tærer på den resterende sommerhavis i Arktis, forudser is- og klimaberegninger, at denne is fortsat vil eksistere over Canadas nordøstlige øer og over Nordgrønland i mange årtier endnu.

Meget liv har udviklet sig sammen med isen. Fra de mindste encellede organismer til sæler, hvalrosser, isbjørne og hvaler er en hel række skabninger afhængige af tilstedeværelsen af denne is. I fremtiden kan de områder, hvor der stadig findes havis, blive meget vigtige for de dyr, der er tilpasset et liv ved isen. En af mine kolleger foreslog, at vi skulle have kaldt området Lasting Ice Area/Den Blivende Is. Selvom det er for sent at ændre navnet nu, så giver jeg ham ret i at denne titel bedre ville formidle det vi ønsker at tale om. Mens meget er under forandring og sandsynligvis vil ændre sig i Arktis, er dette område det, der formentlig vil ændre sig mindst. Det har også stor betydning for de mennesker, der bor i udkanten af dette område. Mens folk i andre områder af Arktis kan blive tvunget til at ændre og tilpasse sig, i tråd med at sommerhavisen bliver mindre, behøver de mennesker, der lever ved Den Sidste Is måske ikke at ændre deres livsform så meget.

WWF er en natur- og miljøbeskyttelsesorganisation der ikke modsætter sig al forandring. Vi arbejder for at beskytte og bevare natur, og især den natur der er vigtig simpelthen fordi den findes og fordi den er vigtig for mennesker der. WWF har hverken indflydelse eller mandat til at pålægge andre vores vision. I stedet forsøger vi at dokumentere vores holdninger gennem forskning og ved at fremlægge handlingsmuligheder. Det er herefter op til de relevante myndigheder om de vil handle eller ej: lokalsamfund, organisationerne og regeringerne i det område, hvor vi finder Last Ice Area/Den Sidste Is, vil afgøre områdets fremtidige skæbne. Vi håber, at I vil finde rapporten nyttig, og at den vil hjælpe til med at træffe gode beslutninger om fremtiden for Last Ice Area/Den Sidste Is.

Clive Tesar, WWF Global Arctic Programme. Projektleder Last Ice Area.



The dotted line shows the Greenland Last Ice Area. The area includes marine, coastal, and terrestrial regions as well as the Greenland Ice Sheet. There is one town (Qaanaaq), and three settlements (Savissivik, Qeqertat and Siorapaluk) located within the Greenlandic part of the Last Ice Area.

Foreword

Seals are fundamental pieces in the puzzle called Arctic ecology. They fill out a significant role in the ice cold habitats on top of the world, and as such they are essential and irreplaceable as most other species inhabiting these pristine regions. But the seals are also a hunted resource – as they have been for as long as man has lived in the Arctic regions.

Today, as in the past, the majority of people in Greenland live in close connection to the sea and the Arctic nature. They engage in hunting and fishing activities on a regular or daily basis that sustain them and contribute to their income. The traditional way of life of hunting and fishing is thus intertwined with a modern society and economics. But there is more to hunting and fishing than earning money. It is a lifestyle, a culture, a tradition, and it provides local food for the inhabitants in Greenland – hence the seals remain to be an important part of everyday life here.

This report focuses on seals in Greenland, their biology, their dependence on sea ice and the impacts of climate change on seals in the North Atlantic. We place special emphasis on three seal species that are found in the Last Ice Area which are also the most important from a cultural and socioeconomic perspective in Greenland. In words and numbers, we describe the Greenlandic hunt on seals and the negative impacts that the European Union import bans on seal products have had on the Greenlandic hunters and the sealskin business in Greenland.

The purpose of the report is to provide insightful and useful information for its reader either as an information source on seals and seal hunting in Greenland or to facilitate decision-making regarding the Last Ice Area.

Gitte Seeberg, CEO WWF Denmark

English abstract

Within Greenland waters six species of true (or earless) seals can be found. In this report we will describe these six species with emphasis on three 'ice-seals'; the harp seal (*Phoca groenlandica*), the ringed seal (*Pusa hispida*) and the hooded seal (*Cystophora cristata*). These three species are dependent on sea-ice for e.g. reproduction, and they are all found in the Greenland Last Ice Area. They are also essential from a cultural and socioeconomic perspective where they continue to be an important part of the Inuit way of life in all of Greenland.

The harp seal and the ringed seal are the most abundant of the Greenlandic seals with population estimates in the millions, whereas the hooded seal populations estimate is more than half a million individuals. The status of all three species is of *Least Concern* according to the Greenland Red List. Although these species are numerous and in general the populations are thriving (however this does not apply for the decreasing Northeast Atlantic stock of hooded seals), the seals are living in areas where the impacts of climate change are progressing. And the ice-seals will at least to some degree be challenged by the effects of climate change, although the extent is difficult to predict.

In Greenland, as in most other Arctic areas, humans have utilized seals for food, clothes and revenue, and as such the seals are and have been for centuries maybe *the* most vital resource in these often very remotely located communities. The hunt of seals in Greenland is as large as ever with approximately 150,000 animals being caught a year. This hunt is managed by the Government of Greenland based on advice from international organizations, and is regarded as biologically sustainable. Roughly 7,000 Greenlanders have a hunting license (12 % of the total human population in Greenland). Of these, approximately 2,000 have a full time hunting license and 5000 are leisure hunters.

In the Last Ice Area one town and three settlements are located. Here, hunting is the main occupation, and nearly 20 % of the human population (less than 800 people) has a hunting license. Important prey species include seals (ringed seal in particular), beluga whales and narwhals. In Greenland four hunting methods are used for hunting seal.

The seal hunt and the sealskin business in Greenland has been challenged over the past four decades, first by anti-sealing campaigns in the 1970s and 1980s directed against the Canadian harvest of harp seal pups, and later by the European Union's (EU) import bans on seal products. Although the European bans exempted the Inuit subsistence hunt of seals, the bans have resulted in dramatic dives in sales of sealskin from Greenland and hunters, their families and the business are severely affected. Stakeholders want the EU to inform its citizens about the Inuit exemption as a way to reverse the trend positively.

WWF supports the sustainable Inuit hunt of seals in Greenland and call for the EU to address the impacts of their import bans as well as to act in response by informing the European public about the Inuit exemption. With support from the EU, the existing certification label could considered expanded to guarantee e.g. sustainability of the hunt, full utilization of catches and animal welfare to meet increasing demands from conscious consumers in the EU as well as worldwide.

Eqikkagaq

Kalaallit nunaanni puisiviit artit arfiniliupput. Uani taakkua artit arfinillit allaaserivagut, puisit sikumiittartut pingasut pingaartinnerullugit, tassaasut; aataaq (*Phoca Groenlandica*), natseq (*Pusa hispida*) kiisalu natsersuaq (*Cystophora cristata*). Artit taakkua pingasut tamarmik siku pisariaqartippaat soorlu piaqqiornissaminnut, tamarmillu WWF-ip sulinermini Last Ice Area/Sikoqarfik Kingullermik taagugaata ilaani Kalaallit Nunaannut killeqarfiup iluani siumugassaallutik. Puisit suli kalaallit inooriaasaannut ileqqutoqaannullu pingaaruteqarput taamatullu kulturimut inuiaqatigiillu aningaasaqarnerannut pingaaruteqarluinnarlutik.

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Issittumi sumiiffinni amerlanerpaani allanitulli Kalaallit Nunaanni inuit nerisaqarniarlutik, atisassaqarniarlutik isertitaqarniarlutillu puisinik isumalluuteqarnikuupput, ukiunilu hunnorujukkaani ilaatigut sumiiffinni avinngarusimaqisuni najugalinnit pingaaruteqaqisumik isumalluutigineqarnikuullutik. Kalaallit Nunaanni maannakkut aatsaat taama puisinik pisaqartoqartartigaluni ukiumut puisit 150.000-it missaanniittut pisarineqartarput. Kalaallit Nunaanni Naalakkersuisut kattuffinnit nunanit tamaneersunit siunnersorneqartarlutik puisittanik nakkutilliisuupput. Kalaallit 7.000-it missaanniittut piniarnissaminnut akuersisummik allagartaqarput, tassa kalaallit inuiaqatigiit tamarmik 12 procentii. Taakkua 7.000-it akornanni 2.000-it piniarnermik inuussutissarsiutilittut kiisalu 5.000-it sunngiffimminni piniartartutut allagartaqarput.

Sumiiffiup Last Ice Area/Sikoqarfik Kingulliup iluani sisamanik nunaqarfeqarpoq. Taakkunani piniarneq inuussutissarsiutit annersaraat, tamaanilu najugallit tamarmik 800-t inorlugit amerlassusillit 20 procentingajaat piniarnissaminnut allagartaqarput. Puisit (annerusumik natserit), qilalukkat qaqortat (*Delphinapterus leucas*) kiisalu qilalukkat qernertat (*Monodon monoceros*) pingaarnerusutut piniagarineqarput. Puisinniariaatsit sisamat Kalaallit Nunaanni atorneqarput.

Kalaallit Nunaanni puisinniarneq puisillu amiinik tunisassiorneq ukiuni qulikkaani sisamani kingullerni arlaleriarlutik annertuunik unammilligassaqaqarsinneqartarnikuupput. Siullermik 1970-ikkunni 1980-ikkunnilu puisinniarnermik akerliusut paasititsiniaasarnerinit, annerusumik Canadami aataat piaraannik piniarnermut sammisunit, kingusinnerusukkullu Europami Naalagaaffiit Kattuffiata (EU) puisit amiinik taakkungannalu tunisassianik Europamut eqqusseqqusiunnaarnerannit. Naak Kalaallit Nunaanni nunap inoqqaavisa puisittaasa amii europamiut eqqusseqqusiunnaarnerminnut ilanngutinngikkaluaaraat,

taamatut inerteqquteqalernerup kinguneranik kalaallit puisittaasa amiisa nioqqutigineqarnerat apparujussuarnikuuvoq, taamaalillutillu piniartut, taakkua ilaquataat kiisalu puisit amiinik tunisassiorfiit annertuumik eqqorneqarlutik. EU-p inerteqquteqarnermini naggueqatigiit Inuit pisaasa pineqannginnerat, innuttaasunut EU-p paasitsissutiginiassagaa, tamatumangga soqutigisallit, soorlu kalaallit piniartortaasa, Kalaallit Nunaanni Naalakkersuisuisa kiisalu amernik tunisassiorfiit kaammattuutigaat, taamaalilluni eqquinerlunneq aaqqiissutissiiffiginiaqqullugu.

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Resumé

I Grønland findes seks arter af ægte (eller øreløse) sæler. Her beskriver vi disse seks arter, med hovedvægt på tre 'is-sæler'; grønlandssælen (*Phoca Groenlandica*), ringsælen (*Pusa hispida*) og klapmydsen (*Cystophora cristata*). Disse tre arter er alle afhængige af havisen til for eksempel reproduktion, og de er alle at finde i den grønlandske del af det område, som WWF arbejder med under navnet Last Ice Area/Den Sidste is. Sælerne er også afgørende set fra et kulturelt og samfundsøkonomisk perspektiv, hvor de fortsat er en vigtig del af den grønlandske livsførelse og tradition.

Grønlandssælen og ringsælen er de mest talrige af de grønlandske sæler med populationer, der tæller flere millioner individer, mens den samlede klapmyds-bestand er på mere end en halv million sæler. Status for alle tre arter er *Least Concern/Ikke truede* i henhold til den grønlandske rødliste. Men selvom disse sælarter er talrige og generelt trives (gælder dog ikke for den Nordøstatlantiske bestand af klapmyds, som er for nedadgående), så lever sælerne i områder, hvor virkningerne af klimaændringerne er fremskredne. Og is-sælerne vil, i hvert fald til en vis grad, blive udfordret af klimaændringerne, selv om det er vanskeligt at forudsige konsekvensernes omfang.

I Grønland, som i de fleste andre arktiske områder, har mennesket udnyttet sæler til at skaffe mad, tøj, og indtægter og som sådan er og har sælerne i århundreder været den nok mest afgørende ressource i disse ofte fjernt beliggende samfund. Fangsten af sæler i Grønland er i øjeblikket større end nogensinde før med omkring 150.000 nedlagte dyr om året. Fangsten administreres af den grønlandske regering som modtager rådgivning fra internationale organisationer. Cirka 7.000 grønlandere har i dag et jagttegn, hvilket svarer til 12 % af den samlede grønlandske befolkning. Af disse 7.000 har cirka 2.000 et fuldtidsjagttegn og 5.000 er fritidsfangere.

Indenfor området Last Ice Area/Den Sidste Is findes fire bygder. Her er fangst hovederhvervet, og næsten 20 % af områdets samlede befolkning på mindre end 800 personer, har et jagttegn. Vigtige fangsttyr inkluderer bl.a. sæler (ringsæl i særdeleshed), hvidhvaler og narhvaler. Fire jagtmetoder bliver brugt til at fange sæler i Grønland.

Sælfangsten og sælskindsindustrien i Grønland er i løbet af de seneste fire årtier blevet kraftigt udfordret af flere omgange. Først af antisælfangst-kampagnerne i 1970'erne og 1980'erne, der primært var rettet mod den canadiske fangst af grønlandssælernes unger og senere af Den Europæiske Unions (EU) import forbud mod sæl-produkter. Selvom de europæiske forbud fritog fangsten på sæler foretaget af den oprindelige inuit-befolkning i Grønland, så har forbuddene resulteret i dramatiske dyk i salget af de grønlandske sælskind, og fangerne, deres familier, og sælskindsindustrien er hårdt ramt. Interessenterne, herunder de grønlandske fangere, den grønlandske regering og industrien, opfordrer EU til at informere sine borgere om Inuit undtagelsen for på den måde at vende en negativ tendens til en positiv.

WWF støtter bæredygtig fangst af sæler i Grønland, og opfordrer til, at EU adresserer virkningerne af deres importforbud samt at EU handler derefter ved at informere sine borgere om Inuit undtagelsen. Med støtte fra EU, kunne det overvejes om den eksisterende certificeringsordning kan udvides til at garantere f.eks. en bæredygtig

fangst, fuld udnyttelse af byttet samt dyrevelfærd, for at opfylde de stigende krav fra bevidste forbrugere i EU såvel som i resten af verden.

1. The Greenlandic seals

Seals, also called pinnipeds, are a widely distributed and diverse group comprising the families Phocidae (earless or true seals), Otariidae (eared seals, sea lions, and fur seals) and Odobenidae (the walrus). Within Greenlandic waters, six species of true seals can be found: the harp seal (*Phoca groenlandica*), the ringed seal (*Pusa hispida*), the hooded seal (*Cystophora cristata*), the bearded seal (*Erignathus barbatus*), the harbor seal (*Phoca vitulina*) and the grey seal (*Halichoerus grypus*) (however only a rare visitor) (Table 1). The walrus (*Odobenus rosmarus*) is the largest seal species in the Arctic but is not part of the true seals and therefore not described here.

In this chapter we will introduce the Greenlandic seals but place special emphasis on three species of ‘ice-seals’; namely those that are dependent on sea-ice for reproduction, those that are found in the Greenland Last Ice Area (Table 2) and those that are the most abundant in Greenland. These three species are also the most essential, seen from a socioeconomic perspective, as still today they form the economic backbone for many hunters and their families (Government of Greenland 2012a).

The three species are:

- The harp seal
- The ringed seal
- The hooded seal

English	Latin	Greenlandic	Danish
Harp seal	<i>Phoca groenlandica</i>	Aataaq	Grønlandssæl
Ringed seal	<i>Pusa hispida</i>	Natseq	Ringsæl
Hooded seal	<i>Cystophora cristata</i>	Natsersuaq	Klapmyds
Bearded seal	<i>Erignathus barbatus</i>	Ussuk	Remmesæl
Harbour seal	<i>Phoca vitulina</i>	Qasigiaq	Spættet sæl
Grey seal	<i>Halichoerus grypus</i>	Sigguttooq	Gråsæl

Table 1. Seal names of the six true seal (Phocidae) species that can be found in Greenlandic waters in English, Latin, Greenlandic and Danish.

The harp seal

The harp seal is a medium-sized seal inhabiting the North Atlantic and Arctic Oceans from Russia in the east to Newfoundland and the Gulf of St. Lawrence, Canada, in the west (Fig. 1). The harp seal is found all along the Greenland coast except in the fast ice in the far north of Greenland. Its range includes parts of the Last Ice Area.

There are three populations of harp seals; one in the Barents Sea that reproduces in the “East Ice” in the White sea, Russia, one off the coast of East Greenland that breeds in “the West Ice” near Jan Mayen, and one in the northwest Atlantic off the east coast of Canada that breeds at two locations; off the coast of Newfoundland and Labrador and in the Gulf of St. Lawrence (Fig. 1). The total worldwide population of harp seals is estimated to be at around 10-11 million animals¹ (DFO 2012) (Table 2). Of these, approximately eight-nine million seals belong to the population off the east coast of Canada alone (Fig. 1) (DFO 2012).



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The harp seal is a highly gregarious and a migratory species that live in close association with pack ice. In late February to mid-late March, the females congregate in four specific pupping areas (Fig. 1). Here, on the pack ice, they give birth to a single pup. Newborns and young pups are known as ‘whitecoats’ due to their characteristic white pelt, which they shed within the first 3 – 5 weeks (Lavigne and Kovacs 1988). Transition to the adult pelt starts at the onset of sexual maturity at approximately five years of age. The pups lack the thick insulating blubber layer when born, however they quickly gain weight. During an only 12 days nursing period they deposit a five cm thick blubber layer, and go from a body

¹ <http://www.natur.gl/en/birds-and-mammals/marine-mammals/harp-seal/>

weight of about 11 kg to 36 kg (more than two kg per day). Weaning is abrupt and the female will engage in mating immediately hereafter. The fertilized egg is however not implanted before July/August (called delayed implantation), after which embryonic development begins. The weaned pups stay up to six weeks on the ice; after this period they enter water and starts feeding on their own.

After the mating season is over, the seals gather together in large concentrations to undergo their annual moult, after which they migrate to feeding areas in Arctic or Subarctic waters to the north. The first seals arrive in West Greenland from the breeding and moulting grounds in mid-May.

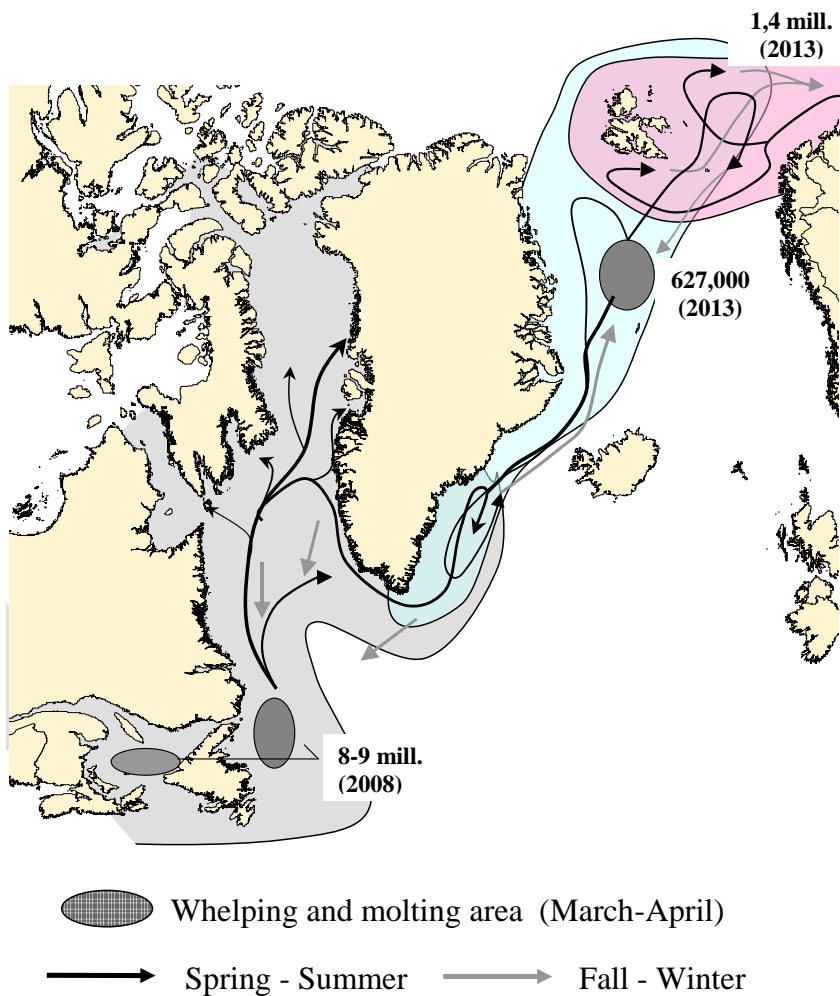


Fig. 1. Harp seal distribution, migration and approximate population numbers (in 2011) on breeding and moulting sites. Source: Greenland Institute of Natural Resources, www.natur.gl.

Along the West Greenland coast, the harp seal forage mainly on capelin (*Mallotus villosus*; commonly referred to as *ammusat* in Greenland), krill and other small fish, while on the fishing banks in the open water areas the sand lance (family Ammodytidae) is an important food item. In Northwest Greenland (north of the settlement of Upernavik at 72° W, 78° N), harp seal forage mainly on polar cod (family Gadidae) and parathemisto (an amphipod that lives in the surface water). According to local knowledge, harp seals in East

Greenland forage on halibut, Greenland Cod (*Gadus ogac*), Atlantic cod (*Gadus morhua*) and capelin.

The ringed seal

The ringed seal is the smallest of the Greenlandic seal species (Table 2). Ringed seals have a circumpolar distribution, with a range that more or less includes all of the Last Ice Area. However, the ringed seal is restricted by the thick multiyear ice in parts of the Arctic Ocean and North of Baffin Island, where they are not able to create and maintain breathing holes in the sea ice (Rosing-Asvid 2010).

Ringed seals are divided into five subspecies (Fig. 2). The Arctic ringed seals (*Pusa hispida hispida*) are widely distributed in the Arctic and subarctic regions and are by far the largest group, with estimated population numbers of about five million. Approximately one million seals of the subspecies *Pusa hispida ochotensis* occupy the Sea of Okhotsk. The three southern subspecies, of which two, *P. h. ladogensis* and *P. h. saimensis*, live in large fresh water lakes, and the third, *P. h. botnica*, inhabits parts of the Baltic Sea and the adjacent Gulfs of Bothnia, Finland and Riga, constitutes a total population size of about 10.000 animals (Rosing-Asvid 2010).



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Like the harp seal, the ringed seal depends on sea ice for reproduction (Table 2). Shore-fast ice is considered to be the most important habitat for pupping, but in some areas the pack ice is also important. A single pup is born per female. Pups are born in spring (March and April) in small caves, also called lairs, build in the snow on the sea ice or in ice ridges. These

lairs are extremely important for neonatal survival as well as for providing a shelter for the adult ringed seal in winter. Each female builds several lairs so that she and her pup can switch between lairs if one is destroyed by predators². The principal predator is the polar bear (*Ursus maritimus*) but also the polar fox (*Alopex lagopus*) predate on ringed seals in coastal areas. At birth, pups are approximately 60 cm long and weigh about 4.5 kg. Lactation lasts an average of 39 days and pups are weaned at approximately 20 kg (Lydersen and Kovacs 1999). Mating takes place towards the end of the lactation period or immediately hereafter, similar to other phocid seals. Moulting occurs from mid-May to mid-July. The seals spend time hauled out (= rests) on the sea ice and feeding is at a minimum in this period.

Ringed seals in Greenland feed mainly on polar cod (*Boreogadus saida*) and Greenland cod, capelin, krill and parathemisto, but ringed seals also eat a variety of other smaller fish, crustaceans and cephalopods, which can be important food items in some regions of their range, at least seasonally³ (Rosing-Asvid 2010).



Fig. 2. Ringed seal subspecies distribution. Source: Greenland Institute of Natural Resources, www.natur.gl.

² <http://www.iucnredlist.org/details/41672/0>

³ <http://www.natur.gl/en/birds-and-mammals/marine-mammals/ringed-seal/>

The hooded seal

The hooded seal is one of the larger species of seals (Table 2). Distribution of hooded seals includes high latitudes of the North Atlantic, and seasonally they are found in the Arctic Ocean and the North Sea of the Northeast Atlantic (Fig. 3). Hooded seals are found in parts of the Last Ice Area range. Hooded seals have been known to wander extensively, and have been recorded in Portugal, the Canary Islands, the Caribbean, southern California and the eastern Beaufort Sea. The worldwide population is estimated at approximately 680,000 animals.



Photo: Aqqalu Rosing-Asvid/the Greenland Institute of Natural Resources.

Hooded seals are ice-associated and depend on offshore pack ice for breeding (Table 2). There are four major pupping areas: Gulf of St. Lawrence, north of Newfoundland, the Davis Strait and in the Greenland Sea near Jan Mayen (Fig. 3) (Asvid-Rosing 2010). Hooded seals give birth in March and April to a single pup. At birth, the pup is about one meter in length and weighs about 24 kg. The pups gain weight faster than any other mammal in the world. Lactation lasts as short as four days and the pup gains no less than seven kg a day (Kovacs 2002). Immediately after weaning the female will mate again, leaving the pup to survive on its own. The thick layer of blubber helps the pup survive while practicing fishing, swimming and diving. The pups stay close to the area where they were born, but after a few weeks most of them take off and swim to the field ice off East Greenland where they grow into adults.

Hooded seals moult in June-July, with each breeding stock congregating at a separate traditional site. Seals breeding at the three breeding sites west of Greenland gather in the

field ice near Ammassalik to moult, whereas seals from the breeding site off North-east Greenland will moult in a nearby area (Fig. 3).

Hooded seals are capable divers. Most dives are from 100-600 meters in depth and last 5-25 minutes but they can dive to below 1500 meters and stay down for an hour (Andersen et al. 2009). Hooded seals feed on species of fish and invertebrates that occur throughout the water column. Typical prey is Greenland halibut, cod, redfishes (*Sebastes* spp.), sand eels, herring, capelin, squid (e.g. *Gonatus fabricii*), and shrimp (Kovacs 2002).

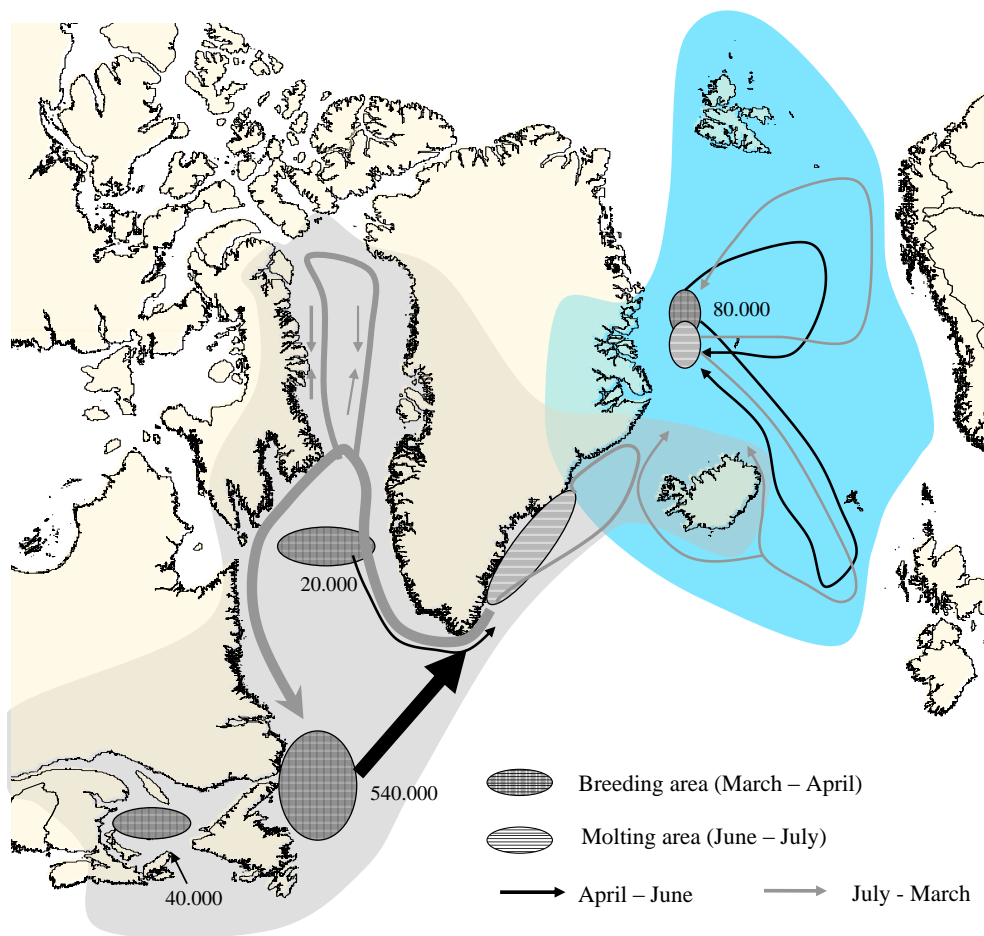


Fig. 3. Hooded seal distribution and numbers. Reproductive areas used in March and April are illustrated by squared ovals. Moulting areas used in June and July are illustrated by lined ovals. Source: Greenland Institute of Natural Resources, www.natur.gl.

The bearded, harbor, and grey seals

The bearded seal is, together with the hooded seal, the largest of the northern phocid seals (Table 2). The bearded seal has a circumpolar distribution inhabited by two subspecies; *Erignathus barbatus barbatus* and *E.b. nauticus*. The former is found in Greenlandic waters and are distributed throughout the Last Ice Area. The entire world population is estimated at 750.000 animals, with two thirds belonging to *E.b. nauticus* and one third to *E. b. barbatus* (Rosing-Asvid 2010). The bearded seal gives birth to a single pup in April – May. Bearded seal pups are born on small floes of annual ice and swim within hours of birth (Kovacs et al. 1996). The pup lactates for approximately 24 days and in this period it begins to find food for itself. Around the time of weaning, the female mates again. The male bearded seal sings to attract females and to defend his territory. Bearded seals are mainly found in areas with sea ice. They are typically solitary animals that occur at quite low densities (Bengtson et al. 2005). They are benthic feeders and live mostly in coastal areas or in waters overlying the continental shelf. They feed on a variety of fish, crustaceans and benthic prey, e.g. bristle worms and sea slugs.



Harbour seals, also known as common seals, are one of the most widespread of the pinnipeds. World-wide population of harbor seals is estimated at 350,000 – 500,000 animals⁴, whereas probably only a few hundred animals remains in Greenlandic waters⁵. They inhabit coastal waters of the Northern Hemisphere, from temperate to Polar Regions. Five subspecies of the harbor seal are recognized. Harbour seals in Greenland are restricted to the subarctic zone and therefore not found in the Last Ice Area. Harbour seals give birth and lactate on land. They are not dependent on sea ice for reproduction, moulting, and resting, which occurs on land. Harbour seals eat a variety of fish, cephalopods and crustaceans. In Greenland the Arctic char (*Salvelinus alpinus*) is an important food item. The harbour seal is totally protected in Greenland⁶.

⁴ <http://www.iucnredlist.org/details/17013/0>

⁵ <http://www.natur.gl/en/birds-and-mammals/marine-mammals/common-seal/>

⁶ Selvstyrets bekendtgørelse nr. 16 af 12. november 2010 om beskyttelse og fangst af sæler

Only very few sightings of **grey seals** in Greenlandic waters has been reported, and only for the past four years (since 2009)⁷. It is currently not known how many grey seals there are in Greenlandic waters, and whether they breed or if a population could even be established. The grey seal is, as the harbor seal, totally protected in Greenland.



Seals on the Red List

Status of the six seal species found in Greenland from the International Union for Conservation of Nature (IUCN) Red List of Threatened Species⁸ and the Greenlandic Red List (2007) is listed in table 2.

The IUCN Red List status of five of the six seal species is of *Least Concern*, which means that these species are not threatened. The status of the sixth species, the hooded seal, is *Vulnerable*. The reason for this classification is that the Northeast Atlantic stock of hooded seals has declined dramatically over the last five decades, the reason for this is unknown (IUCN 2008). The Northwest Atlantic stock of hooded seal is currently stable or increasing modestly, and the populations in Greenlandic waters are stable and numerous, why the status of the hooded seal in Greenland is of *Least Concern*, according to the Greenlandic Red List (Boertmann 2007).

The bearded seal and the harbor seal in Greenlandic waters are categorized as *Data Deficient* and *Critically Endangered*, respectively (Boertmann 2007). The bearded seal is widely distributed but not very numerous, and there is little data on population size and trends for this species, whereas the population of harbor seal in Greenland is an isolated stock which has experienced a severe population decline within the past 50 years. As a result, the Greenland Government prohibited all hunt of harbor seals in Greenland in

⁷ <http://www.natur.gl/en/birds-and-mammals/marine-mammals/grey-seal/first-record-of-the-grey-seal-from-greenland/>

⁸ <http://www.iucnredlist.org/search>

2010⁹. The grey seal is only a rare visitor in Greenlandic waters and is not described in the Greenlandic Red List, like the harbor seal, the grey seal is fully protected in Greenland.

Seal species	Max body length (cm)	Max body weight (kg)	World population numbers	Ice-dependent reproduction	LIA range	Status, IUCN Redlist	Status, Greenlandic red list 2007
Harp	165-200	200	10-11 mill	yes	yes	Least concern	Least concern
Ringed	110-180	50-110	6-7 mill	yes	yes	Least concern	Least concern
Hooded	200-260	300-450	680.000	yes	yes ^b	Vulnerable	Least concern
Bearded	230-250	400	750.000	yes	yes	Least concern	Data deficient
Harbor	150-190 ^a	65-170	600.000	No	No	Least concern	Critically endangered
Grey	180-225 ^a	150-400 ^a	450.000	No	No	Least concern	-

^a Body length and weight varies among populations.

^b Hooded seals are only distributed in the southern part of LIA in the Baffin Bay.

Table 2. Max body length (cm), max body weight (kg), approximate world population numbers, and population status from the International Union for Conservation of Nature (IUCN) and from the Greenland Red List. Female seals are generally smaller and weigh less than males. Both female and male body weight varies considerably throughout the year. Sources: Greenland Institute of Natural Resources (www.natur.gl) and Encyclopedia of Marine Mammals (2002).

⁹ Selvstyrets bekendtgørelse nr. 16 af 12. november 2010 om beskyttelse og fangst af sæler.

2. Seals in a changing world

Arctic ice-seals rely on sea ice as a platform for hauling out, whelping, and moulting, as well as for sub-ice foraging (Laidre et al. 2008). The ice-breeding seals are critically dependent on stable pack ice, at least until pups have weaned and completed their post-weaning fast and transition to pelagic feeding (Stirling 2005). Reduced sea ice availability and stability in whelping areas may cause neonatal mortality, changes in food availability for pups, and increased risk of diseases due to crowding on whelping patches (In Laidre et al. 2008).

Two fundamentally different nursing strategies are exhibited by the ice-breeding phocid seals (Lydersen and Kovacs 1999). Harp and hooded seals form dense congregations in pupping areas and have very short lactation periods, while ringed and bearded seals pup at low densities over large areas, and females lactate for a longer period. Reduction in the amount and stability of pack ice in pupping habitat will therefore be more deleterious for harp and hooded seals than bearded or ringed seals (Laidre et al. 2008). The weaned seal pups of all four species require a period where sea ice remains stable so they can rest upon it and possibly hunt from it. This period must be long enough to survive the phase where they fast and learn to hunt independently, even if they have sufficient fat stores at the time of weaning (Stirling 2005). The stability of sea ice is especially important for harp and hooded seal pups that whelp in large numbers at high density and with a high degree of site fidelity to traditional and critical whelping locations.



Harp seal, suckling pup. Gulf of St. Lawrence, Canada. © Martin Harvey / WWF-Canon.

The harp, ringed, hooded, and bearded seal have been estimated to be highly sensitive to changes in sea ice according to a sensitivity index for Arctic marine mammals (Laidre et al. 2008). The purpose of the index was to quantify the sensitivity of Arctic marine mammals to climate-induced habitat change. Laidre et al. (2008) found that the narwhal (*Monodon monoceros*), the polar bear (*Ursus Maritimus*) and the hooded seal were the three most sensitive Arctic marine mammal species, primarily due to reliance on sea ice and specialized feeding. The least sensitive species were the ringed and bearded seal, mainly due to large circumpolar distributions, large population sizes, and flexible habitat requirements.

But also ringed seals are very dependent on sea ice, and several studies have demonstrated demographic sensitivity of ringed seals to changes in sea ice conditions or habitat. Reproductive failures, reduced reproduction and reduced pup survival of ringed seals have been associated with both severe ice conditions and with a general warming trend, decreased snow depth and changes in the timing of breakup of sea ice. These events clearly demonstrate the sensitivity of ringed seals to changes in their sea ice habitat (Laidre et al. 2008, Stirling and Smith 2004, Ferguson et al. 2005, Stirling 2005). The ringed seal populations are also influenced by prey availability as well as predation from mainly polar bears and hunting by man. In warm years, the ringed seal pups are more exposed to predation from polar bears due to higher density of lairs on lesser available sea ice and less strong lairs because of less snow and periods of thaw that will destroy lairs and expose the pups (Hezel et al. 2012, Rosing-Asvid 2010). In the 1920'ies, coinciding with a warming trend, Arctic cod and other ringed seal prey items receded northward. Also the ringed seal retracted northward which could have been a result of both the change in sea ice habitat and the availability of their preferred prey items (Laidre et al. 2008).



Model of a ringed seal lair on the sea ice from the Natural History Museum in Copenhagen, Denmark. Photo: Aqqalu Rosing-Asvid/the Greenland Institute of Natural Resources.

It is for certain that the ice-seals will be challenged to some degree by the effects of climate change, e.g. reduction in sea ice availability. And changes affecting seals will also affect a large range of other Arctic species as well as people living in the Arctic areas. Several studies over the years have demonstrated the negative consequences of climate change on Arctic species such as polar bear¹⁰ and the Pacific walrus. Besides being a platform for foraging, reproduction and resting for some marine mammals, sea ice is also an essential habitat for the Arctic primary producers (sea-ice algae and sub-ice phytoplankton) of which zooplankton are dependent and thereby the rest of the Arctic food web. Sea-ice also acts as both a platform and as a barrier for animal migration and mixing. Reduced sea-ice will increase genetic isolation among some terrestrial populations but enhance genetic mixing for species of marine mammals. Also, hybridization among species and pathogen transmission (of e.g. the lethal phocine distemper virus) will probably be the result of lesser summer sea-ice in the Arctic (see review by Post et al. 2013).

The reduced sea-ice combined with earlier spring break-up and later autumn freeze will facilitate industrial development and extend the season for shipping in the Arctic regions. Increased human activity in formerly remote Arctic oceans will lead to enhanced ocean noise when more and larger ships enter these pristine waters or oil- and gas exploration bangs away for weeks and month during seismic surveys. The consequences of such activities on marine life are not yet fully understood nor suitably explored, and more investigations and large-scale science projects are needed to extensively map the impacts of such activities. The Arctic countries as well as the industry have a responsibility to make sure that the damage to wildlife and ecosystems remains at a minimum despite the search for new economic profit.

The seals are and will remain an important part of Arctic ecology and ecosystems. But seals are also and have always been a vital source of food, clothes and income for the people inhabiting the Arctic regions. Seal hunting and seal management in Greenland is described in the next chapters.

¹⁰ <http://www.iucnredlist.org/details/22823/0>

3. Seals as a hunted resource

For millennia seals have been vital for the survival and welfare of Inuit people in Greenland as well as in other parts of the Arctic region. Essential products from seals included meat for consumption for humans and for dogs, skins for clothing and fuel in the form of blubber for lamps. As such seals formed the basis of the Greenlandic households. But seal products were also used to produce other equally important items such as tools, kayaks and tents, and they were used for decoration and jewelry. Hence, all parts of the seal were being utilized, and seals were thus the backbone of Inuit culture and everyday life.

Today, the seal continues to form the commercial basis for many people in Greenland, and the seal hunt is larger than ever with approximately 150,000 animals a year being caught (Rosing-Asvid 2010). The seal hunt provides an important income for the approximately two thousand full time hunters in Greenland both as a means of trade in sealskin and for consumption. Seals are also subject to game hunting from parts of the 5000 leisure hunters in Greenland. Hence, seal hunting remains a central traditional, cultural and economic part of the Greenlandic people and their identity.

Seal management

To secure and maintain sustainable hunting levels, management based on solid scientific advice is required. Harp and hooded seals in the Arctic are managed by the individual Arctic countries upon advice on sustainable utilization from a joint working group under the International Council for the Exploration of the Sea and the Northwest Atlantic Fisheries Organization (ICES/NAFO). The working group consists of researchers from Norway, Canada, Greenland and Russia¹¹. Greenland and Canada have no bilateral management agreements regarding shared populations of harp and hooded seal but meet regularly to discuss common species such as seals and fish. In Canada, quotas on these two seal species are set from a unilateral decision from Canada, although quotas are set upon advice from ICES/NAFO. In Greenland, there are no quotas on harp and hooded seals but the hunt is considered as being sustainable (Government of Greenland 2012a).

Also the hunt of ringed seal in Greenland is unlimited, and no international governing body regulates the harvest of ringed seals. Advice on sustainable hunting and management of ringed seals lies with the North Atlantic Marine Mammal Commission (NAMMCO)¹². As is the case with the harp and hooded seal hunt, the hunt of ringed seals in Greenland is considered sustainable (Government of Greenland 2012a).

¹¹ <http://www.natur.gl/>

¹² <http://www.natur.gl/en/birds-and-mammals/marine-mammals/ringed-seal/>

The Greenlandic seal harvest – in numbers

In Greenland there are no hunting quotas on harp, ringed, hooded and bearded seals, while harbor and grey seals are fully protected. Hunting licenses are used to control the harvest of seals, and hunters are bound to submit a catch report annually to the Government of Greenland, Ministry of Fisheries, Hunting, and Agriculture. This reporting system makes it possible to monitor and evaluate catch levels of the different species of seals at a local as well as national level (Government of Greenland 2012a).

Seals can be hunted at any time of the year. For the years 1995 – 2010, the mean catch of harp, ringed and hooded seals in Greenland was 81.016, 78.512 and 5.437 animals, respectively, which sums up to a total mean catch of 162,185 seals (Fig. 4).

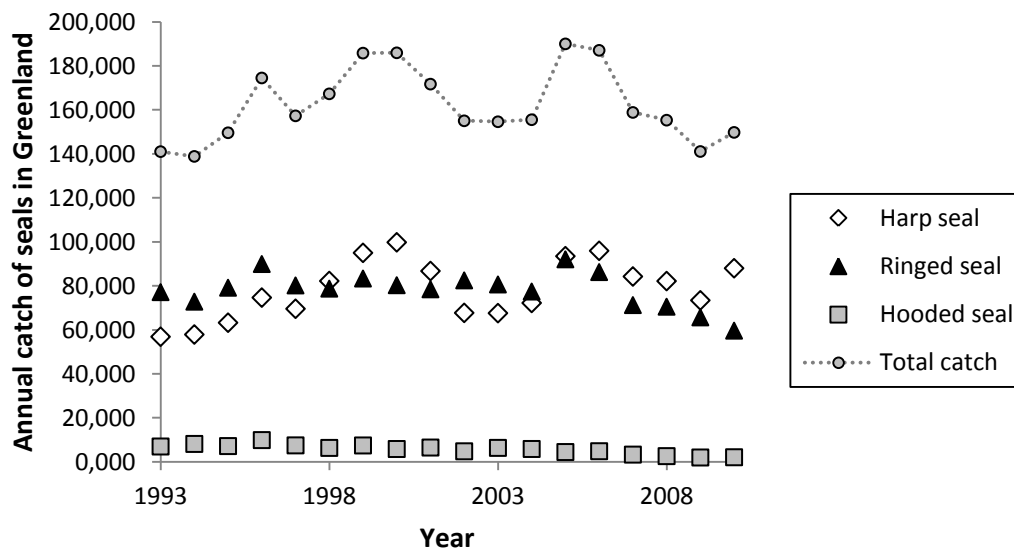


Fig. 4. Annual catch of harp, ringed and hooded seals in Greenland from 1993-2010. Mean catch of the three species for the period was 162,185 animals. Data extracted from Government of Greenland 2012a&b.

The harp and ringed seal are by far the most important seals in Greenland from a hunting and socioeconomic perspective. In the years 2009 and 2010 (most recent data available), the catch of these two species made up 98 % of the total catch of seals in Greenland (Government of Greenland 2012). Mean catch of harp, ringed and hooded seals per hunter is roughly 23 á year, however most seals are caught by full time hunters, at least this is true for the ringed seals.

The harbor seal and the grey seal have been totally protected in all of Greenland since November 2010¹³. This hunting ban will be maintained until the biological advice shows that the populations can sustain a hunt. Lactating females and their pups are likewise protected as is pups with lanugo hair ('white-coats'). This protection applies for all the Greenlandic seal species.

Greenlandic hunters – in numbers

All engaged in hunting in Greenland must have a valid hunting license. There are two types of licenses: a full time license or a leisure license. Being a full time hunter requires that at least 50 % of your income comes from hunting. Full time hunters can be licensed to hunt species like baleen whales and polar bears that leisure hunters are not allowed to hunt. Since 2009 only full time hunters qualify to sell sealskins to the tannery Great Greenland A/S (Government of Greenland 2012a). The Ministry of Fisheries, Hunting and Agriculture administrates and manages nearly all aspects of hunting and fishing in Greenland, including management of hunting quotas, issuance of licenses and permits and trading subsidies for sealskins¹⁴. To obtain a hunting license in Greenland you will have to apply for one of the two specific licenses and pay a small amount annually to the Greenland Government. The age limit is 12 years to obtain a hunting license. No tests or training in hunting theory or hunting skills are required to obtain a hunting license in Greenland. Hunting skills are often passed on from father to son.

In 2011¹⁵ a total of 7,033 hunting licenses were issued in Greenland, of which 2,060 were full time licenses and 4,973 leisure licenses. The number of full time hunters has been fairly stable at around 2000 while the number of leisure hunters in 2011 was the lowest since 2007. In the years 2007 – 2010 there were between 5000 – 6000 leisure hunters in Greenland. The youngest age groups that are represented in the statistics are the 12-14 year-olds. In 2011, 33 of the 12-14 year-olds were given a hunting license; of these one was registered as a full time hunter (Government of Greenland 2012b).

In the Last Ice Area, only one town and a few residential settlements are found (Fig. 5). Qaanaaq (77° N, 69° W) at the mouth of Inglefield Bredning is the largest one with 656 inhabitants (Table 3). The total human population is 782 individuals¹⁶ divided between one town, Qaanaaq, and three settlements, previously four (Table 3). In 2011 144 inhabitants in the Qaanaaq area were registered as hunters, where 78 were full time hunters and 66 leisure hunters (Government of Greenland 2012b).

¹³ Selvstyrets bekendtgørelse nr. 16 af 12. november 2010 om beskyttelse og fangst af sæler.

¹⁴ <http://naalakkersuisut.gl/da/Naalakkersuisut/Departementer/Fiskeri-Fangst-og-Landbrug/Fangst-og-jagtafdelingen>.

¹⁵ Latest available numbers.

¹⁶ Numbers are from February 2013: <http://www.qaasuitsup.gl/>



Fig. 5. The town Qaanaaq and the settlements Siorapaluk, Savissivik, Qeqertat and Moriusaq located in the Greenland part of the Last Ice Area.

Settlements and inhabitants in LIA (West Greenland)	
Qaanaaq	656
Siorapaluk	53
Savissivik	44
Qeqertat	29
Moriusaq	0
Total	782

Table 3. One town, Qaanaaq, and three settlements (previously four but Moriusaq is now depopulated) in the LIA (Northwest Greenland) and number of inhabitants.

Source: <http://www.qaasuitsup.gl/> (of November 2013).

The Qaasuitsup Kommunia, where Qaanaaq is located in the far north, is the world largest spatial municipality. It stretches more than 1,600 km from just above the Arctic Circle (66.56°) to 81° N covering an area of more than 660.000 km². A little less than 18,000 people inhabit the area. The largest industry here is, without comparison, the fishing industry; although activities involving mining and oil- and gas exploration are on-going and might take the lead as the largest source for employment and income in this remote area in the future¹⁷. In Qaanaaq, and the other smaller settlements in the area, hunting is still the largest profession (Jensen et al. 2003). In 2009 and 2010, Qaanaaq was the management area with the third highest catch numbers, after Upernavik and Nuuk. The most important prey species in Qaanaaq are seals (ringed seal in particular), beluga whale (*Delphinapterus leucas*) and narwhal (*Monodon monoceros*) but also walrus, polar bear, musk oxen (*Ovibos moschatus*), and reindeer (*Rangifer tarandus*) are essential prey species for the people here. Other catches include birds and fish e.g. little auks (*Alle alle*) and Greenland halibut (*Reinhardtius hippoglossoides*).

¹⁷ http://www.qaasuitsup.gl/~media/Files/Om-komunen/Fakta-om-kommunen/Qaasuitsup_KommuniaPraesentationDK.ashx



Dinghy and two kayaks at the waterfront in Qaanaaq, Inglefield Bredning. Photo: Eva Garde.

How to hunt a seal in Greenland...

In Greenland, there are four traditional ways to hunt seals (Government of Greenland 2012a):

- Open water hunt from dinghies
- Hunting on the ice
- Hunting from the ice edge
- Hunting using nets

Open water hunting from open dinghies and small boats using riffles are often a one-man activity (Fig. 6). It is performed in the summer period or when sea ice cover permits sailing. This type of hunting requires experience and good hunting skills. Harp seals are exclusively hunted from boats with riffles. The risk of striking and losing the targeted seal during this kind of hunting is present, but the rate of struck-and-lost¹⁸ depends on the time of year and the salinity of surface water. The loss rate is highest in May and June, where up to one third of harp seals may be lost, depending on hunter experience (Government of Greenland 2012a). In this period harp seals are lean after having lost a fair share of their body weight during annual moult. With no pronounced blubber layer, the seals are prone to sink before the hunter can reach them and haul them into the boat. In autumn, when the majority of harp seal hunting takes place and when the fat reserves have been reinstalled, the loss rate is significantly reduced. Localities and time of year are also a factor, as salinity in the water tends to keep animals floating for a longer time than in areas with fresh water. In winter, when salinity is high and the seals have thick layers of blubber, the struck-and-lost rate is at the lowest.

¹⁸ Struck and lost is defined as animals being killed or fatally wounded but not recovered by hunters.

Hunting on the ice is performed during spring when sea ice is still stable and when ringed seals haul out near their breathing holes. This kind of hunting is done using a white piece of canvas that the hunter hides behind as he slowly crawls toward the seal until he has reached an appropriate shooting distance. He will try to hit the seal with a deadly shot, preferable in the head, as the seal will be lost to him if it reaches the breathing hole.

Hunting from the ice edge takes place during springtime and mainly ringed seals are the targets. The hunter will bring a kayak or a small boat on his dog sledge to haul up the seal when shot.

Hunting seals using nets under the sea ice is common in Greenland where no other hunting methods are possible during the months of winter darkness (in the north this period extends from October to March). Especially ringed seals are taken using this method. Nets are most widely used in northern Greenland, where darkness rules for months and ice conditions favors this type of hunting (Fig. 6). In some municipalities about two thirds of total ringed seal catch is constituted by the use of nets. Setting and tending to the nets is influenced by the duration and stability of fast ice cover, amount of snow, and wind speed.



Seal hunting on sea ice, Scoresbysund/Ittoqqortoormiit, East Greenland. © Carsten Egevang/ARC-PIC.COM.

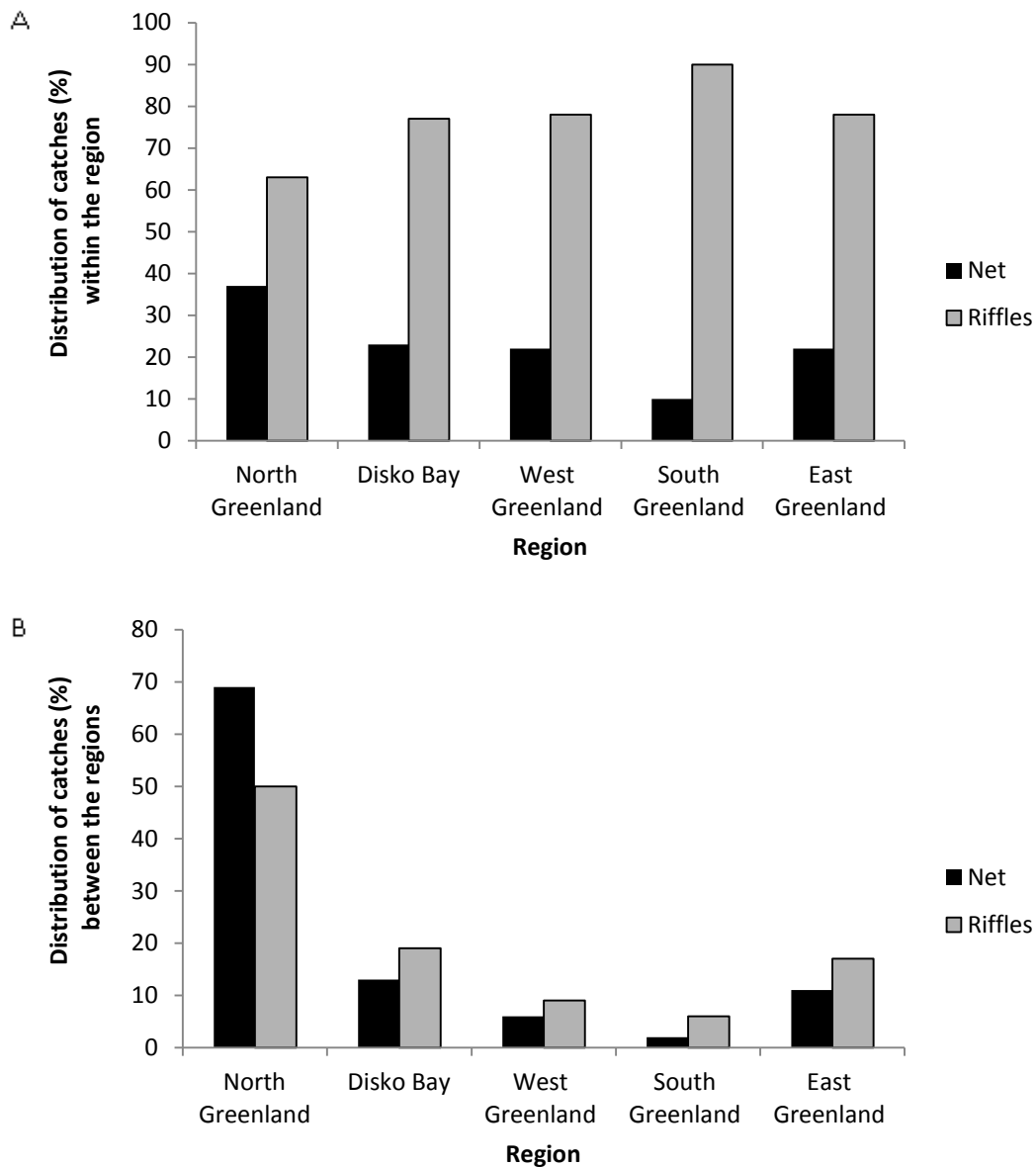


Fig. 6. Distribution in percentage (%) of ringed seals catches using nets and riffles within (A) and between (B) the Greenlandic regions (year 1993-2009). Data retrieved from Government of Greenland 2012.

There are several different hunting methods used to catch seals in the Arctic that all depend on the specific conditions that characterize each hunting location (NAMMCO 2004). These include the species of seal hunted, weather and ice conditions, the time of year and whether daylight or polar darkness rules. A set of recommendations was put down at a NAMMCO workshop in Denmark in 2004 where experts and stakeholders met to discuss hunting methods for seals and walrus (NAMMCO 2004). Recommendations included: *hunter training* to e.g. reduce suffering of animals and minimize struck-and-lost-rates, in particular training of inexperienced hunters was recommended and that such training should be a continuous process for all hunters in general; *better estimates of*

struck-and-lost numbers and a recognition of that reduced struck-and-lost numbers would benefit hunters because of potential higher catches, less unnecessary suffering to animals and better public image; *minimization of animal suffering* through minimizing killing times and avoid letting injured animals escape; *technical innovation* into developing new equipment and hunting techniques; *objective studies on terminal ballistics of various calibre and bullet types* in the hunting should be carried out; *full utilization of catches* and *hunter safety* (NAMMCO 2004).

In Denmark Animal welfare organizations¹⁹ have criticized Greenland for its use of nets in the Greenlandic seal hunt. The animals are simply taking too long time to die, they say²⁰.

In 2009, a NAMMCO Expert Group met in Copenhagen, Denmark, to discuss best practices in the hunting and killing of seals which was followed by a report (NAMMCO 2009). The Expert Group also discussed netting of seals, and noted that this is an important and widely used form of subsistence hunting in areas where there are no other alternatives during certain periods of the year. The group further noted that limited data restricted an assessment of the extent of suffering experienced by the seals or the cause of death using this hunting method, and that factual information was required to explain the process of dying under such conditions. However, seals adaptations to diving do imply that seals caught in nets may survive for prolonged periods before unconsciousness and death ensues, although documentation is limited (NAMMCO 2009).

Net hunting in Greenland is most often conducted in the northern parts (Fig. 6), where lack of daylight for periods of the year excludes the use of rifles for seal hunting, and therefore necessitates the use of nets. The Organization of Fishermen and Hunters in Greenland (KNAPK) strongly points out that net hunting is the only method that can be used for seal hunting in the dark winter months²¹. A beneficial outcome of net hunting is that seals caught in nets are rarely lost, and the struck-and-lost rate is therefore at an absolute minimum.

However, although the seal hunt currently is as large as ever in Greenland, hunting seal is not an economically viable way of life and subsidy is being provided the hunters (Government of Greenland 2012a). The next chapter is focusing on the drop in the Greenlandic trade in sealskin and the challenges of a broken business to rise from the fall.

¹⁹ Dyrenes Beskyttelse og Selskab for Bevarelse af Havpattedyr

²⁰ <http://www.knr.gl/kl/node/60923>

²¹ <http://sermitsiaq.ag/wwf-stoetter-groenlandsk-saelfangst>

4. The fall of an ancient profession

Since world market prices on sealskin collapsed as a result of the anti-sealing campaigns in the 1970s and 1980s (Box 1), the Government of Greenland has seen it necessary to subsidize the Greenlandic trade in sealskin. Hunting seals is no longer an economically viable way of living for the Greenlandic hunters without a subsidy, and the Government of Greenland uses millions of Danish Kroner annually to subsidize the trade in sealskin (Government of Greenland 2012a). The majority of sealskins are sold by the hunters to Great Greenland A/S, and hunters are paid 200 - 300 DKK per skin they sell (data from the years 2005 – 2010) (Government of Greenland 2011). Since 2006 the trade in sealskin from Greenland has dropped 90 % (Fig. 7a). The market value of sealskin has decreased from approximately 60 million DKK in 2006 to less than six million DKK in 2010 (Fig. 7b). In 2004 the average value per skin was 393 DKK, in 2006 the value had increased to 656 DKK, but in 2010 upon implementation of the EU import ban of 2009, the value dropped significantly to 249 DKK.

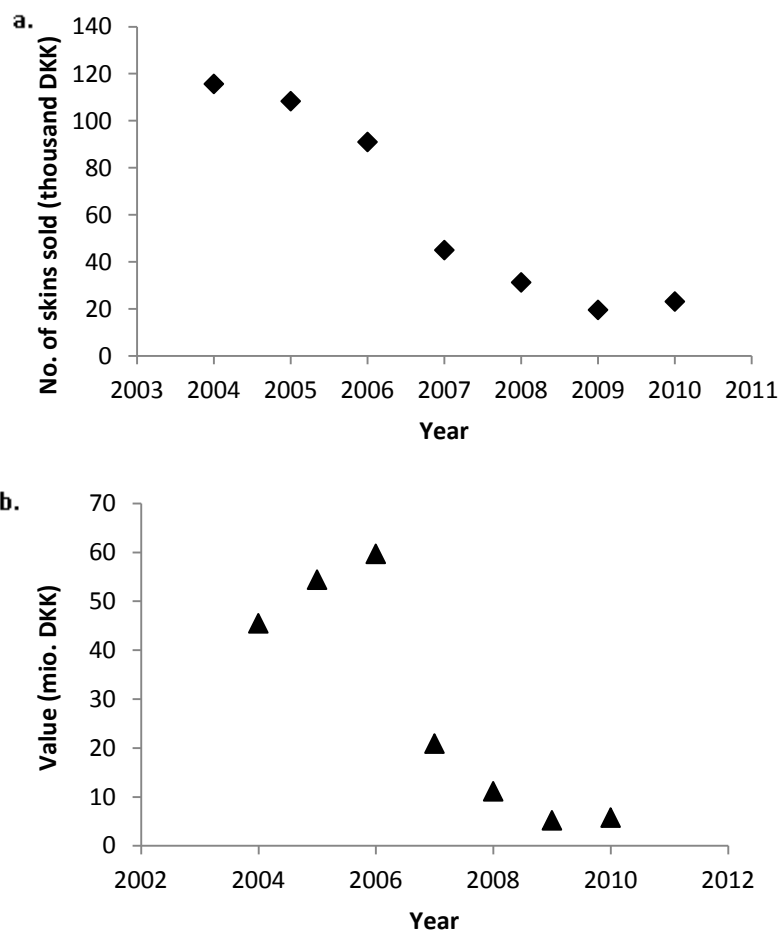


Fig. 7. Number of sealskins sold in Greenland in the years 2004 – 2010 (a), and the market value in million DKK. of these skins traded in the same period (b). Data retrieved from the Government of Greenland 2011.

In 2006 the EU Parliament put forward a request for the EU commission to ban all seal products into the EU (cap. 5). Before this initiative the EU was a significant trade market for Greenlandic sealskin but as a consequence of the initiative sales dropped significantly, and today Great Greenland aims for the Asian market (Government of Greenland 2011).

In Greenland discussions about the future of the sealskin business has focused on the poor economic outcome of the seal harvest, as the difference between market value of skins and government subsidies is now close to zero or even negative. But the consequences of a lower or complete cancellation of subsidies are grim for small communities where trade in seal is one of the few economic activities the population can engage in. The social consequences of reduced or no subsidy and closure of local trade stations may well increase the dependence of social security services or even migration from the smaller settlements to the cities²².

The considerable dive in traded skins was mainly caused by anti-sealing campaigns, and the EU import ban of 2009²³ of all seal products into the European Union and its subsequent implementation in 2010²⁴. Even though the import ban still allows Inuit communities to trade their sealskins on the European markets, most consumers are not familiar with this exemption to the ban, and several department stores (e.g. the Danish Magasin Du Nord owned by British Debenhams) have completely stopped their trade in sealskin products due to the EU ban and decreasing demand.

Inuit Sila - the Greenlandic pro-sealing campaign

As a response to the European seal ban policy and years of anti-sealing campaigns; the Greenlandic campaign Inuit Sila²⁵ was started in 2012. The campaign is by and for the Greenlandic hunters and supports the hunters and their families in more than 60 Greenlandic settlements. The main goal of the campaign is to raise awareness of the sustainable hunt of seal conducted by the Inuit peoples, and to draw attention to the negative impacts of the EU import ban on seal products.

On May 1st 2012 the campaign initiated a demonstration in the streets of Copenhagen, Denmark, hosted by the KNAPK. The purpose of the demonstration was to raise awareness of the effects of the EU regulation and to voice the need for an information campaign on sealskin. The Inuit campaign is announced to continue until fair conditions for the Greenlandic hunters have been achieved.

²² <http://www.eu-oplysningen.dk/upload/application/pdf/7bb8988c/2008KOM0469svar1.pdf>

²³ Regulation (EC) No 1007/2009 of The European Parliament and of the Council of 16 September 2009 on trade in seal products.

²⁴ Commission Regulation (EU) No 737/2010 of 10 August 2010 laying down detailed rules for the implementation of Regulation (EC) No 1007/2009 of the European Parliament and of the Council on trade in seal products.

²⁵ <http://www.inuitsila.org/>

Box 1

The 1970's and 1980's anti-sealing campaigns

Greenpeace, the International Fund for Animal Welfare (IFAW), and other animal welfare organizations were the first to actively campaign against the Canadian commercial sealing in the 1970s and 1980s. Campaigns were started as a response to Canada's many years of sealing using clubs and hakapiks directed towards harp seal pups ('white-coats' or 'baby seals') on the breeding grounds of Newfoundland and Labrador. The campaigns were not aimed at the Greenlandic seal hunt, but the consequences were as severe.

The organizations protested against what they perceived as a cruel and brutal slaughter of baby seals only for the purpose of selling their white pelts for luxury products (Ifaw.org). The campaigns and their direct actions included forcing sealing ships to a halt by standing on the sea ice in front of their path, physically removing seal pups away from the sealers, and spray paint baby seals to render pelts worthless. Also, celebrities like Bridget Bardot advocated against sealing.

The campaigns created a lot of attention from media and the public worldwide. In 1983, as a result of the campaigns and public pressure against sealing, the Council of Ministers of the European Economic Community (EEC) approved a directive banning the import of skins of harp seal pups. This ban destroyed the market for not only the commercial sealing industry, but the Inuit trade in sealskin as well.

Since then, several animal welfare groups such as the IFAW (IFAW 2009) and the People for the Ethical Treatment of Animals (PETA) have taken the lead in continuing anti-sealing campaigns.



A Greenpeace activist sprays a seal with harmless dye to render its pelt worthless to commercial hunters in 1982.
<http://www.greenpeace.org>

And according to KNAPK the campaign seems to be working as planned (interview with KNAPK in Nuuk, June 2013). Since the campaign started people know more about seals and how and why seals are a hunted resource in Greenland, but KNAPK will not settle with the Danes. Yet another demonstration, similar to the 2012 demonstration in Copenhagen, is under preparation to take place in a so far unknown European capital to raise further awareness in Europe. The campaign also aims at turning an unfortunate situation where Greenlandic hunters can barely sell their sealskin because of bans and misunderstanding from consumers about seals and seal hunting, into a positive one. KNAPK want to promote the Greenlandic seal hunt as sustainable as well as essential for the Greenlandic culture and livelihoods of hunters and their families.

And the Greenlandic sealskins are now certified. In April 2013 the EU Commission recognized the Greenland Ministry of Fisheries, Hunting and Agriculture as the issuing authority attesting certificates for the placing on the EU market of seals products deriving from Inuit hunts^{26, 27}. The certificate states that; 'Sealskins used in products with these tags are from a sustainable Inuit source and imported to EU from Greenland according to regulations'. Skins and products can also be traced back to its origin using a control number²⁸.

But, according to the Inuit Sila homepage, the majority of people, at least in Denmark, are unaware of the Inuit exemption as well as of the certification mark, and consumers are still reluctant to buy Greenlandic sealskin²⁹.

Also Great Greenland A/S³⁰, that buy skins from Greenlandic hunters under a service agreement with the Government of Greenland, actively promotes the Greenlandic seal by attracting famous and modern designers like the Danish designer Benedicte Utzon³¹. She created the applauded 2013 collection that at the Copenhagen Fashion Week was accompanied by photos of Greenlandic wildlife and traditional lifestyle by photographer Carsten Egevang³².

Great Greenland A/S also has new environmental beneficial initiatives under way. New technologies at the Great Greenland tannery ensure, according to the Great Greenland homepage³³, that there is no wastage of contaminated water or other things that can

²⁶ http://ec.europa.eu/environment/biodiversity/animal_welfare/seals/pdf/2013_2277_en.pdf

²⁷ Implementation of the Inuit exemption became fully operational in Greenland in April 2013, following the adoption of the Commission Decision C(2013) 9453 of 25 April 2013 recognizing the Greenland Ministry of Fisheries, Hunting and Agriculture for the purposes of Article 6 of Commission Regulation (EU) No 737/2010 of 10 August 2010 laying down detailed rules for the implementation of Regulation (EC) No 1007/2009 of the European Parliament and of the Council on trade in seal products.

²⁸ <http://www.euprovenance.eu/default.asp>

²⁹ www.inuitsila.org/

³⁰ <http://www.greatgreenland.com/>

³¹ <http://www.b.dk/mode/saeler-paa-den-smarte-maade>

³² <http://www.youtube.com/watch?v=j1X9nMEiI2Y>

³³ http://www.greatgreenland.com/index.php?option=com_content&view=article&id=139&Itemid=652&lang=en

harm the nature. A new vegetable tanning technique has also been developed, although production is still at a trial stage.

Today Great Greenland A/S is the only company that legally sells sealskin from Greenland for production. The reason is that Great Greenland A/S guarantees that skins originate from Inuit hunting and therefore meets the Inuit exemption, allowing indigenous people from the Arctic to trade sealskin on the European market. Great Greenland A/S sells skins to the Danish North Atlantic Fur Group that trade skins to the international markets including EU. According to the North Atlantic Fur Group (interview September 2013) costumers, consumers and even some customs officers are unaware of the legality of the Greenlandic sealskins and therefore North Atlantic Fur Group calls for specific information campaigns to draw attention to their product in the EU as well as the rest of the world.

In October 2013 a new cooperation agreement was signed between Great Greenland A/S and Kopenhagen Fur, the largest fur auction house in the world. With this agreement the hope and expectations is to increase sales and re-establish sealskin as a coveted item on the world's catwalks^{34, 35}.

In the next chapter we look into the European bans in seal products and the causal reasons for these bans.

5. Banning the seals

In 1983 the first import ban on sealskin into the EU was finalized³⁶. This restrictive ban included only skins from 'white-coat' pups of harp and hooded seals. The ban went into force as a result of the massive anti-sealskin campaigns conducted by animal welfare organizations in the 1970s and 1980s against Canadian sealing operations (Box 1). Although the directive was meant to 'only apply to products not resulting from traditional hunting by the Inuit people'³⁷, the impact on the Greenlandic sealskin business was severe, and the value of sealskins dropped significantly. As a consequence, the Greenlandic subsistence hunting on seal has been heavily subsidized since then (Government of Greenland 2012a).

³⁴ http://naalakkersuisut.gl/da/Naalakkersuisut/Pressemeddelelser/2013/10/kopenhagen_fur

³⁵ <http://www.kopenhagenfur.com/da/nyheder/2013/oktober-2013/den-groenlandske-sael-tilbage-paa-catwalken>

³⁶ Council Directive 83/129/EEC (European Economic Community) of 28 March 1983 concerning the importation into Member States of skins of certain seal pups and products derived therefrom.

³⁷ Article 3.

More than 20 years after, in 2006, the Written Declaration 0038/2006³⁸ from the European Parliament was put forward, requesting the EU Commission to draft yet another regulation, this time to ban all seal products. Two years later, in 2008, the EU Commission decided to put forward a proposal to the EU Parliament to ban import, transit and export of seal products from Europe³⁹. In 2009, an EU directive concerning trade in seal products was adopted⁴⁰, which entered into force on August 10th 2010⁴¹.

A total import ban on commercial seal products into the EU was now a reality. The regulations include an Inuit exemption, as was also the case with the 1983 directive, which essentially gives the Inuit people monopoly on the European sealskin market. But the exemption is not well-known to the public and the impact of the ban has been devastating, undermining the entire market for sealskin products – not only the intended products stemming from commercial sealing.

The regulations of 2009 are primarily based on animal welfare issues revolving around the Canadian hunt of harp seal on whelping grounds and the hunting methods used rather than concerns regarding the sustainability of the hunt: 'The hunting of seals has led to expressions of serious concerns by members of the public and governments sensitive to animal welfare considerations due to the pain, distress, fear and other forms of suffering which the killing and skinning of seals, as they are most frequently performed, cause to those animals'⁴².

The 2009 EU regulation was never intended to hurt the Greenlandic hunters and the sealskin business in Greenland; however lessons learned from previous regulations testify that the EU could have prepared better for the consequences of its regulations. The following text is included in the regulation of 2009: 'The fundamental economic and social interests of Inuit communities engaged in the hunting of seals as a means to ensure their subsistence should not be adversely affected. (...) Placing on the market of seal products which result from hunts traditionally conducted by Inuit and other indigenous communities and which contribute to their subsistence should be allowed'. (...) In particular the Commission should be empowered to define the conditions for the placing on the market of seal products which result from hunts traditionally conducted by Inuit and other indigenous communities and contribute to their subsistence'.

³⁸ <http://www.scribd.com/doc/85014109/Written-declaration-on-banning-seal-products-in-the-European-Union>

³⁹ EU Commission proposal of 23 July 2008.

http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008PC04_69:EN:NOT

⁴⁰ Regulation (EC) No 1007/2009 of The European Parliament and of the Council of 16 September 2009 on trade in seal products.

⁴¹ Commission Regulation (EU) No 737/2010 of 10 August 2010 laying down detailed rules for the implementation of Regulation (EC) No 1007/2009 of the European Parliament and of the Council on trade in seal products.

⁴² Regulation (EC) No 1007/2009 of The European Parliament and of the Council of 16 September 2009 on trade in seal products.

Also the Kingdom of Denmark (Denmark, Greenland, and the Faroe Islands) declare in Strategy for the Arctic 2011-2020⁴³ to engage to '(...) work for the Arctic indigenous peoples' right to conduct hunting and to sell products from seal hunting, as long as it is based on sustainable principles'⁴⁴.

In February 2012, The European Bureau for Conservation and Development invited Greenlandic and Canadian stakeholders to an open hearing held in the European Parliament in Brussels, Belgium, to discuss the EU seal ban and its consequences. Here, head of Great Greenland A/S Lars Berg stressed that sales had fallen significantly with serious consequences on the company's financial situation, and as a consequence staff numbers had fallen by almost 90 %. Furthermore, Greenland now have 290,000 sealskins in stock as a result of decreasing sales – a stock so large that it outnumbers demands for many years to come. Ane Hansen, former Minister for Fisheries, Hunting and Agriculture, Government of Greenland, put forward a suggestion that the EU should act in order to support Greenland in establishing an information campaign so that people can understand what the exemption for Inuit means and to prevent future spreading of the ban policy⁴⁵. A sentiment she also emphasized in the report 'Management and utilization of seals in Greenland' (Government of Greenland 2012a). Leif Fontaine, then Chairman for KNAPK, also emphasized that 'The EU should take measures to mitigate the negative economic impacts of the ban on indigenous people and should provide a fair and equitable compensation to hunters for the difficulties they are facing because of EU decisions'. There has been no follow-up, following the workshop in the European Parliament.

So what exactly has the EU done to inform the general public about the Inuit exemption? Not much it seems – at least there have been no official information campaigns or other large-scale initiatives to inform about the trade in seal products from the Inuit hunt. According to the Directorate-General for Environment at the EU Commission, the Commission has to be extremely careful in communicating about the trade in seal products and sealskin as everything they say can be used in the ongoing dispute between Canada versus the EU at the World Trade Organization (WTO) regarding the EU import ban on seal products⁴⁶. In November 2013, a WTO dispute settlement panel determined that the EU seal regime was justifiable. The panel did, however, also conclude that the Inuit exemption was applied in a way which is not consistent with WTO rules. The panel ruling is expected to be appealed.

Regulations and relevant documents regarding the EU bans and trade in seal products can be found on the commission's website⁴⁷.

⁴³ <http://oceansnorth.org/resources/kingdom-denmark-strategy-arctic-2011%E2%80%932020>

⁴⁴ http://ec.europa.eu/enterprise/policies/raw-materials/files/docs/mss-denmark_en.pdf

⁴⁵ <http://ebcd.org/pdf/en/166-Report.pdf>

⁴⁶ http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds400_e.htm

⁴⁷ http://ec.europa.eu/environment/biodiversity/animal_welfare/seals/seal_hunting.htm

6. Summary: Seals ahead....

Harp, ringed, hooded and bearded seals are found in the Last Ice Area. They are ice-seals; they need sea ice as a platform for whelping, raising their pups and resting. With retreating Arctic summer sea ice it will become increasingly important to treasure the Arctic regions where summer sea ice prevails and thereby safeguard the species depending on it.

Models have shown that by year 2040 summer sea ice in Greenland and Canada will be restricted to the Last Ice Area⁴⁸. WWF is working towards a management plan for this biologically important region by bringing decision makers and stakeholders together for constructive discussions about the future of the Last Ice Area. Only through action can we ensure that areas of lasting summer sea ice will remain available for both animals and humans in a climate changed Arctic.

But while the Arctic is facing an uncertain future in which the impacts of climate change are difficult to predict, the majority of seal populations in the North Atlantic sector are abundant and thriving. Despite climate change, these populations are likely to continue to be a hunted resource for the Inuit people in the Arctic regions for many years to come. WWF recognizes and support the Inuit hunt of seals in Greenland as long as it is sustainable and the hunt is based on solid biological advice in collaboration with international bodies like ICES and NAFO.

Regardless of the sustainability of the Greenlandic seal hunting and the Inuit exemption allowing Greenlandic sealskin and other products to be sold on the European market, the hunters and the sealskin business in Greenland are still marked by the EU bans. Although the sale has shown a slight increase in the last few years, there is still a long way to go before subsidy of sealskin from the Government of Greenland is no longer needed.

Recommendations

- The EU must take responsibility for the unintended but very negative side effects that the import ban has had on large parts of the inhabitants of Greenland.
- The EU should address the impacts of the import ban on seal products on the Greenlandic people and the Greenlandic sealskin business, and act in response by informing the European public about the Inuit exemption.
- The EU should support and cooperate with Greenland to inform about how to understand the ban and the Inuit exemption and to mitigate additional ban policies in non-EU countries.
- The EU should cover the costs of establishing a potential working group consisting of stakeholders, e.g. officials from the Government of Greenland, EU officials, the Greenlandic sealskin business and consumers, with the purpose of evaluating the

⁴⁸ http://wwf.panda.org/what_we_do/where_we_work/arctic/last_ice_area/

existing certification system on sealskin from Greenland with respect to costs, control, administration, etc.

- In continuation hereof, the working group could consider an expansion of the existing certification label or the development of a new certification program for products of the sustainable Greenlandic hunt of seals, perhaps drawing inspiration from MSC, the certification program for sustainable seafood. Such a certification could include and guarantee sustainable hunting levels, best practices into hunting methods, full utilization of catches, low struck-and-lost rates, animal welfare, and hunter experience, expertise and security, and as such be a way forward to meet the increasing demands from conscious consumers in the EU as well as worldwide. The EU should cover the costs of such a certification program.

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