# Written brief to the Senate Fisheries and Oceans Committee on the management and monitoring of seal populations in Iceland

My name is Dr. Sandra M. Granquist. I was requested by senator McPhedran to send in a written brief including a short introduction of me, information on the status of the seal populations in Iceland and about the seal management and research in Iceland. My background is in marine mammal biology and I have a PhD from Stockholm University. I am a senior researcher at the Marine and Freshwater Research Institute in Iceland (MFRI) and head of Seal research department at The Icelandic Seal Center (ISC). I am also the vice chair of the NAMMCO (North Atlantic Marine Mammal Commission) scientific committee. My research is focused on marine mammal population ecology and behaviour. I am the principal investigator of the harbour seal and grey seal population monitoring programs in Iceland since 2008. In this written brief, I will summarize previous and current seal management and seal research in Iceland.

## Management and monitoring of seal populations in Iceland

Two pinniped species breed in Iceland, the harbor seal, and the grey seal. Both populations have been monitored systematically for over 40 years. Regular aerial censuses have been carried out for both the harbor seal population (since 1980) and the grey seal population (since 1982) to estimate population size and monitor trends. The harbor seal population was estimated to be 33.000 animals in 1980 when the monitoring commenced and a sever decline occurred during the first 10 years of the monitoring period, when the population dropped to half of its size. The decline then continued, but at a slower rate and the newest population estimate from 2020 indicates a population size of 10.300 animals[1]. The observed decline puts the population as endangered on the national red list for threatened populations. The grey seal population was estimated to be 9200 animals when monitoring commenced in 1982, and reached its highest in 1990, when the population was estimated to 10.600 animals. The latest estimate from 2017 resulted in a population size of 6300 animals[2]. However a new population estimate is currently underway. Due to the observed decline the grey seal population is currently defined as vulnerable on the national red list for threatened populations. Recent research in Iceland has therefore focused on collecting more information on population demographics and to study factors affecting the population size negatively, with the aim of protecting the population to allow it to grow to sustainable levels.

Historically, harbor seals and grey seals were considered an agricultural resource in Iceland and seal farmers utilized the skin, blubber and meet. With increasing industrialization of Iceland (fishing industry being the most important), sealing decreased in importance, but as the fishing industry grew, a bounty system for hunting seals was introduced. The purpose of the bounty system was to reduce the seal population to minimize the occurrence of the parasite cod worm (anisakis sp.) of which seals are the host. The parasite ends up in the flesh of cod fish which reduces the value of the fish. This bounty system is the main reason for the severe drop of the harbor seal population between 1980 and 1990. In more recent times, the main seal hunting (over 80% of the hunt) occurred around river mouths due to the believe that harbor seals are praying on salmonids, which is an important economic resource for many landowners in Iceland. However, in a few rather recent studies carried out by MFRI and ISC, we found that in many of the river mouths where seal hunt occurred to protect salmon rivers, seals did not prey on salmon, trout or charr[3]. Therefore, this type of culling is not likely to have a positive effect of salmonid harvest and could not be recommended considering the sensitive conservation status of harbor seals in Iceland.

Prior to 2019, there seal hunting was only managed to a minimum extent in Iceland. Landowners had the right to hunt as many animals as they wanted in their own land and there was no compulsory reporting of seal hunting statistics. Due to the sensitive conservation status of seal populations in Iceland, a new seal hunting legislation was enacted in 2019, banning all seal hunt in Icelandic waters. It is however possible to apply for permits/exemptions for traditional hunt for seal farmers that want to utilize seals for own benefits. These hunters are obliged to send in hunting statistics and biological samples for research. Since this new system was enacted, the reported hunting numbers have been low (0-10 individuals of each species). Direct seal hunting is therefore currently not considered to affect the populations.

The largest mortality risk to seals in Icelandic waters today is considered by-catch in fishing gear, mainly lumpsucker fisheries. Models created by experts at MFRI suggest an annual average rate of 990 individual grey seals and 1390 harbor seals. The bycatch is therefore affecting the seal populations, but it is also a problem for fishermen in the small-scale lumpsucker fisheries, causing damages to the fishing gear and costs related to that. The main reason for the bycatch is the co-use of key areas for lumpsucker fisheries and the seal populations. To reduce this problem, attempts have been made with closures of some fishing areas, as well as ADD´s (Acoustic Deterrent Devices) on fishing gear. However, the analyses of these measures have not been finalized.

Some studies on seal diet have been carried out in Icelandic waters, suggesting that seals mainly prey on sand eel, flatfishes, cod fish, capelin, and herring. However, our research focus in Iceland has not been to calculate the amount of fish taken by the seal populations and likelihood of seal predation affecting the fishing industry and human harvest.

Anthropogenic disturbance is a factor that is known to affect both seal populations globally and quite some research efforts have therefore been made to study how to reduce impacts due to a rapidly increasing wildlife tourism in Iceland[4].

To summarize: in short, the reality we are facing in Iceland poses somewhat an opposite situation compared to the circumstances in Canada where the seal populations have been increasing, and where problems with seal-human interactions of a different nature are arising due to this increase. In Iceland, we are studying two populations which have been decreasing in numbers and therefore have sensitive conservation statuses. We are therefore focusing the research around how to reduce anthropogenic effects on the populations to ensure healthy population statuses.

## References


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