

Halliday WD, Pine MK, Insley SJ (2020) Underwater noise and Arctic marine mammals: review and policy recommendations. *Environmental Reviews* 28: 438-448.

What is the research about?

- The Arctic is undergoing rapid changes, which is allowing for increased ship traffic and industrial development. These human activities can create significant underwater noise, which may impact marine mammals.
- To manage and mitigate the impacts of underwater noise on marine mammals, we must first understand how underwater noise affects these species, and in particular, must understand what activities and noise levels elicit different responses.

What we did:

- We conducted a literature review to examine what is known about the impacts of underwater noise on Arctic marine mammals.

What we found:

- A number of studies have been conducted on underwater noise and bowhead whales, but only a few on beluga, narwhal, and ringed seals, and none on bearded seals or walrus. Most studies focused on the effects of seismic surveys on bowheads.
- Few studies quantified the underwater noise levels when an animal changed its behaviour.
- Some Arctic species appear to be extremely sensitive to underwater noise, showing reactions when the sound would barely be audible.
- Better quantification of the reactions of different Arctic marine mammals to varying levels of underwater noise from different types of noise sources (ships, seismic surveys) is required.

Our recommendations:

- More research on this topic is required, but in the meantime, a precautionary approach should be taken by those trying to manage underwater noise in the Arctic, where they should assume that low levels of noise will elicit responses in Arctic species.

Why is this research relevant to the Inuvialuit people?

- Inuvialuit actively hunt belugas and seals, and should be interested in any human activities that may impact these species.

Was the community involved?

- No