

Insley SJ, Tauzer LM, Halliday WD, Illasiak J, Green R, Kudlak A, Kuptana J (in press) Ringed seal diet and condition in the Amundsen Gulf region, eastern Beaufort Sea. *Arctic*.

What is the research about?

- The Arctic marine environment is changing rapidly due to climate change, and these physical changes are leading to subsequent changes in species occurrence and abundance
- Studying resident predators, such as ringed seals (*Pusa hispida*), present an opportunity to track changes in prey species in this region, while simultaneously tracking the health and condition of these predators while their diet changes

What we did:

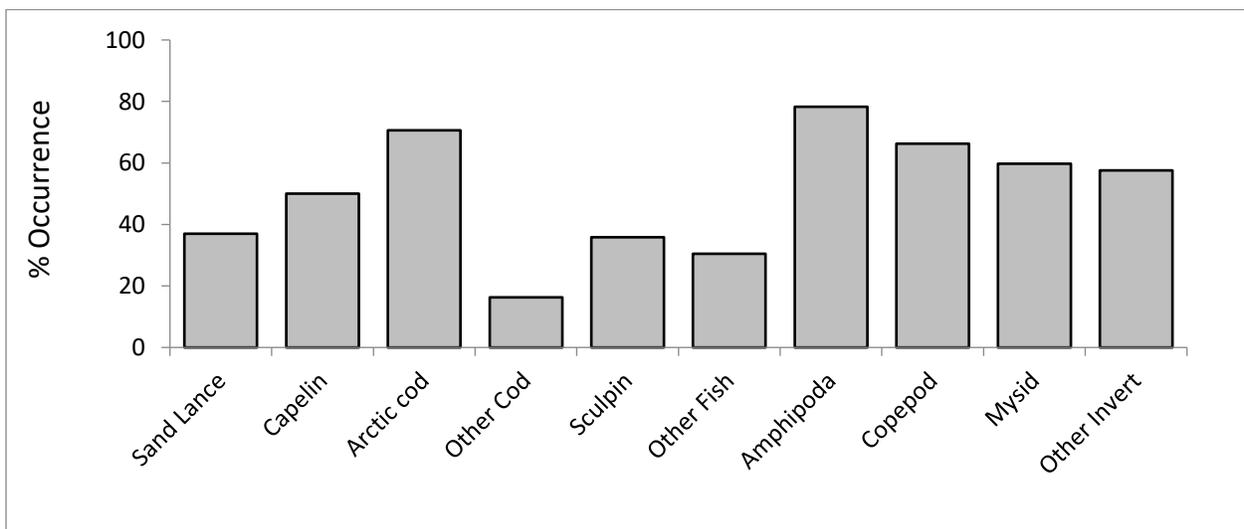
- We collected stomachs of ringed seals harvested in the communities of Paulatuk, Sachs Harbour, and Ulukhaktok between 2015 and 2018, and also took morphometric measurements of the harvested seals.
- We analyzed the prey content of all stomachs, identifying stomach contents to species when possible.

What we found:

- Seals harvested in the autumn had the fullest stomachs compared to seals harvest in other months
- 93 different prey species were identified, 17 fishes and 76 invertebrates. Arctic cod (*Boreogadus saida*), capelin (*Mallotus villosus*), sand lance (*Ammodytes haxaperus*), and hyperiid amphipods (*Themisto* spp.) were the most common prey species.
- Seals had the highest body condition (thickest blubber) during the autumn and winter
- Compared to the 1980's, seal diets had more subarctic species such as sandlance and capelin

Key result:

This figure shows the percent occurrence of different prey items found in ringed seal stomachs, showing clear peaks for Arctic cod over other fishes, and amphipods over other invertebrates. Capelin and sand lance, two fish species that were not historically part of ringed seal diet, do show up in large quantities at some sites.



Our recommendations:

- Continue research on harvested seals in the ISR, in particular, monitoring the prey consumption of both ringed seals and bearded seals.

Why is this research relevant to the Inuvialuit people?

- This research demonstrates that harvested seals can be used to track changes in the diet of seals, and shows a signal of the changing food web in this region.
- Tracking changes in the health of these seals as they change their diet in response to the changing food web will allow for a better understanding of the impacts of climate change on these seals, which are so important to Inuvialuit people.

Was the community involved?

- Yes. This work was based on seal harvesting by hunters in Paulatuk, Sachs Harbour, and Ulukhaktok. J. Illasiak, R. Green, A. Kudlak, and J. Kuptana were all directly involved in managing the collection of seal stomachs and measurements of seals in these communities, and are all co-authors on this study.