

Update to the Ice Seal Committee

North Slope Borough – Ice Seal Research Program

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Introduction

It has been several years since my last update to the Ice Seal Committee (ISC) on the work by the North Slope Borough (NSB) Ice Seal Research Program. This update is intended to:

1. Provide a little background information to the newest members of the ISC; who may not realize that the ISC Executive Manager is also a seal biologist.
2. Ask the ISC for their continued support for the tagging program at NSB, and to specifically request approval for a small-scale ice seal tagging effort over the next four years.

Background

The NSB Ice Seal Research Program started in 2010, and I have been involved since 2013 as a wildlife biologist and principal investigator. Throughout this time, ice seal research at the NSB received ISC support.

Much of this work has focused on capturing ringed, spotted, and bearded seals and fitting them with satellite transmitters (hereafter ‘tags’). Tags provide data on seal movements, diving behavior, and haul-out timing-locations-duration.

NSB primarily has used two types of tags:

- **SPLASH tags** are glued to the seal’s fur on its back between the shoulder blades; remaining attached until shed by the seal when it molts its fur in the spring (~ 9-10 months, depending on when the tag was applied).
- **SPOT tags** are permanently attached to the seal’s hind flipper. At NSB, these are not deployed often, but can be useful at times for “special” seals (e.g., bearded seals¹), where longer-term information is desired.

Most recent Tagging Activities

Over the past four years, a total of 11 ice seals (9 spotted, 1 ringed, and 1 bearded) have been tagged. Seven of these seals (all spotted) were captured in 2024. These seven seals’ tags have been transmitting their locations and other data since July 2024.

Tag data has been used to generate and map-sets that illustrate the seals’ movements throughout the Beaufort, Chukchi, and Bering Seas. These map-sets are shared with a large and growing list of interested recipients (n ≈ 250)². The last map can be accessed at:

https://www.iceseals.org/files/ugd/bc4c23_ebb24130dd6c4eb2bf6a1234ad488349.pdf

Importance of the Research

The info obtained from tagged ice seals has been quite useful and valuable. Altogether, the data has and is being used to gain insights into ice seal biology. This knowledge is essential for informing management decisions, which ensure that healthy, abundant ice seal populations remain available to meet the subsistence and cultural needs of Alaska Natives – *THE* fundamental purpose of the ISC.

¹ On the North Slope of Alaska, and across the state, bearded seals (particularly adults) have been difficult to capture.

² If you would like to receive seal maps, please contact me (andrew.vonduyke@north-slope.org).

Examples of work from the NSB Ice Seal Research Program are throughout the 2025 Ice Seal Research Plan...

Basic biology of ice seals

Olnes et al. 2020. <https://doi.org/10.1007/s00300-020-02710-6>
 Von Duyke et al. 2020. <https://doi.org/10.1002/ece3.6302>
 Von Duyke et al. *In prep.* Spotted seal spatial ecology.

Correction factors for ice seal aerial survey abundance estimation

London et al. 2024. <https://peerj.com/articles/18160/>
 Lindsay et al. *In revision.* Ringed seal lair emergence & haul-out behavior.

Ice seal habitat use

Citta et al. 2018. <https://doi.org/10.1016/j.dsr2.2018.02.006>
 Hamilton et al. 2022. <https://doi.org/10.1111/ddi.13543>
 Fournet et al. *In prep.* Bearded seal acoustics.

Integrate Science and Indigenous Knowledge meaningfully

Gryba et al. 2021. <https://doi.org/10.1139/as-2020-0052>
 Gryba et al. 2024. <https://doi.org/10.1101/2023.09.07.556613>

Large-scale ice seal ecology

Gryba et al. 2019. <https://doi.org/10.3354/meps13145>
 Olnes et al. 2021. <https://doi.org/10.3354/meps13609>
 Boveng et al. *In revision.* Bearded and ringed seal abundance & distribution.
 Boveng et al. *In prep.* Trophic roles of Ice Seals.

Ice seals and vessel traffic interactions

Hauser et al. *In prep.* Ringed seal exposure to vessel traffic in the Pacific Arctic

Investigate & apply new technologies to ice seal research

Davidson et al. 2020. <https://doi.org/10.1126/science.abb7080>
 Hauser & Von Duyke. 2023. Evaluating Novel Assessment Approaches for Coastal Ice Seal Haulout Areas and Behavior [Link](#)
 Connor et al. 2025. POSTER - Exploring novel technologies to assess spotted seal terrestrial ecology [Link](#)

Summary

- The ice seal tagging program at NSB has had far-reaching and positive impacts that benefit research, seals, and subsistence.
- Outcomes have added to the overall understanding of ice seals and valuable for informing managers.
- Good management decisions ensuring that ice seal populations remain healthy, abundant, and available for cultural and subsistence needs.
- No other ice seal tagging programs are currently active in the Alaskan Arctic.

REQUEST TO THE ICE SEAL COMMITTEE

I would like to request that the Ice Seal Committee reaffirm its support for the NSB’s Ice Seal Research Program, and ask for approval of upcoming tagging efforts in the next 4 years...specifically:

- Tag ~ 5 seals per year (~ 20 total), focusing on bearded and ringed seals.
- Tags to be used are glue-on SPLASH tags and (under special circumstances) SPOT tags.
- As always, our work would be in coordination with, and dependent upon local Alaska Native seal hunters.
- Research outcomes will be applied to ensuring that ice seals remain healthy, abundant, and available for cultural and subsistence use.