



Sharks and Shark predation on Ice Seals and Sea Lions: Preliminary results from the Bering Strait and the North Slope regions, Alaska



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Documentation of sharks within the Bering Strait region and North Slope Borough coastline is limited. We report on historic and recent stranding data, aerial survey sightings and bycatch of cold adapted sharks such as Pacific sleeper shark (*Somniosus pacificus*) and salmon shark (*Lamna ditropis*) in the Bering Strait, Chukchi Sea and Beaufort Sea regions. Additionally we present preliminary forensic evidence of shark inflicted wounds (e.g. flipper amputations, skin lacerations, circular bite wounds etc.) in ice-associated seals.

Table 1. Shark sightings, strandings, and bycatch information for the North Slope and Bering Strait region, Alaska 1950-2017.

| Year | Location | Comment |
|------|-----------------|---------------------------------------------------------------------------------------------|
| 1950 | Wainwright | Shark seen from landfast ice, swam along the ice edge, as large as an umiaq |
| 1998 | Point Hope | 7 foot pacific sleeper shark found dead |
| 2001 | Point Barrow | Shark seen; had a small fin on its back |
| 2007 | Teller | Sleeper shark, dead stranded |
| 2010 | Gambell | Large shark attacking sea lion |
| 2011 | Point Lay | Shark, dead stranded |
| 2013 | Ledyard Bay | Shark near shore; swishing tail movement |
| 2014 | Lavrentiya (RU) | Salmon shark caught in gillnet |
| 2014 | Shishmaref | Sleeper shark, harvested |
| 2014 | Eulen (RU) | Salmon shark caught in gillnet |
| 2017 | Gambell | Salmon shark caught in gillnet |
| 2017 | Shishmaref | Sleeper shark, dead stranded |
| 2017 | Cross Island | Sleeper shark swimming near shore leaving trail in sediment ; ~5 ft, swishing tail movement |



Left: Rear flipper amputation in a subadult bearded seal.

Below: Rear flipper amputation on an adult spotted (A) and ringed seal (B).



Northern Shark and Pinniped Interaction

We speculate ocean temperature rise, reduced sea ice coverage, and associated movements of prey species (e.g. fish, marine mammals, etc.) are resulting in increased exposure of northern shark species to pinniped. Research on shark distribution, stock structure, and interaction with northern pinnipeds in northern and western Alaska is needed.

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