

ADF&G Report to ISC March 2022

Biomonitoring – Seal samples are collected from the subsistence harvest to monitor body condition, diet, age at maturity, productivity, survival to weaning, and disease. In addition, we contribute samples and data to others for important projects including:

- Monitor for toxic algae from harmful algal blooms (NMFS).
- Investigate the role of spotted seals as predators by identifying and measuring fish otoliths found in their stomachs to determine species and size of fish eaten (NMFS).
- Investigate outbreak of canine distemper in foxes and dogs to see if seals were at risk (UME group).
- Using bearded seal DNA to develop Close-Kin Mark-Recapture methods for an estimate of abundance (independent of aerial surveys). We need more samples from bearded seals (jaws for teeth and muscle) for the next step of this project (NMFS).
- Develop correction factors for aerial surveys using sex and age data (NMFS).
- Investigate polar bear diet, body condition, and productivity (see polar bear presentation at this meeting) (USGS).
- Determine the prevalence of microplastics in spotted seal stomach contents (UAF graduate student).
- Investigate muscle physiology and development (UC San Francisco and UC Santa Cruz graduate students).

Harvest

- Manuscript on trends in harvest for the Y-K Delta region (AVCP) in journal Arctic.
- Proposal (pending) for more harvest monitoring in Hooper Bay, Chevak, Tununak, Togiak, Mekoryuk, Nome, or others as decided by ISC.

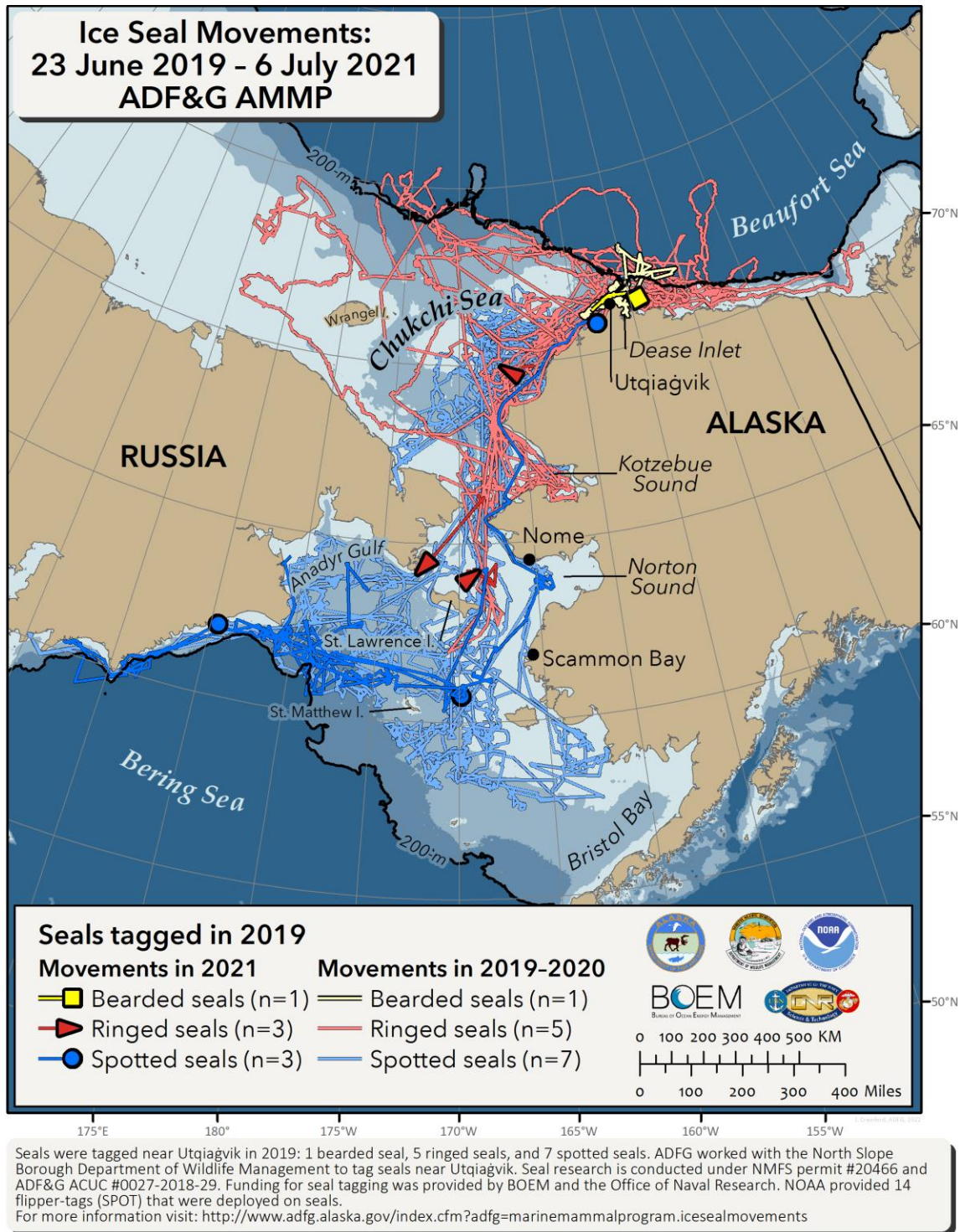
Winter ringed seal density study

- Determine the density of ringed seals within areas of oil and gas interest near Prudhoe Bay using dogs trained to find seal breathing holes and haul-out lairs. The density of seals and snow depth will be compared to a previous study during 1982–1983.

Satellite telemetry (tag data) – No new tags were deployed. We are analyzing existing data and sharing data with other projects.

- Map of 2019 tagged seal movements (most recent; see below).
- Analyzing spotted seal CTD tag data. That is, dive behavior and movements relative to oceanographic data (i.e., temperature and salinity). TEK of fish known to be where and when spotted seals are likely feeding (e.g., Dease Inlet, Kotzebue Sound, Etolin Strait) would greatly improve this project.
- Ringed seal tag data analyzed for movements relative to shipping (NSB).
- Bearded and spotted seal haul-out-data collected during 2009–2020 being used to correct aerial survey data for detectability (NMFS).

- Provided bearded, ringed, and spotted seal movement data from 2007–2020 to Council for Arctic Flora and Fauna (CAFF) to determine marine mammal high use areas in the circumpolar Arctic.
- Ringed seal haul-out-data collected during 2007–2020 being used to determine the timing of ringed seal emergence from lairs to start basking (UW PhD student).



Prepared for Ice Seal Committee March 2022 Meeting. Contact Lori Quakenbush at (907) 459-7214 or lori.quakenbush@alaska.gov with questions.