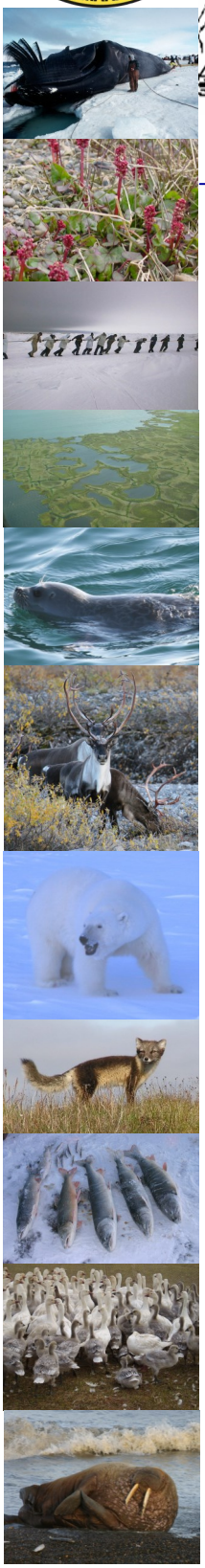
North Slope Borough Department of Wildlife Management

Sketch by Jean Craighead George

SPRING 2018

THE TOWLINE

VOL 10 NO 1



From the Director

The North Slope has been busy with spring whaling and migratory bird hunting! At the date of this printing, seven whales have been landed in Point Hope, three whales in Wainwright and eight in Utqiaġvik. The whalers and hunters have shared their bounty with our communities.

The village of Gambell has also landed three whales since the beginning of 2018. The DWM harvest crews have been very busy. Quyanaq to the whaling captains for allowing us to sample your whales.

We have a few updates on current projects here in this newsletter. You can find many more on our website pages on the NSB website.

As whaling and migratory bird hunting winds down and other subsistence activities are in full swing, keep in mind that we are here to answer any of your questions or concerns about your catch. Please contact us any time about the health of your harvest, whether marine or terrestrial mammal, bird, or fish.

Quyanaq, Taqulik Hepa

INSIDE THIS ISSUE:

Update on IWC Scientific Committee Meetings

The International Whaling Commission's Scientific Committee (IWC SC) met in late April and early May. This was an important meeting regarding bowheads. The SC conducted an **implementation review** and looked at the available data about bowheads to see if there were any possible conservation concerns. This review occurred in anticipation of the request for a bowhead quota renewal at the IWC's September meeting where the Commissioners will make a decision about the quota.

The DWM presented data to the SC on population size and trend, reproduction, survival, satellite tracks, habitat use and health of bowheads and information about the harvest over the past ~40 years. There was a thorough review of the data by the SC. They concluded that the bowhead population is doing well and that the current strike limit of 67 per year would not harm the bowhead population, especially because the population is large, healthy and growing. Additionally, the SC agreed that using up to 33 past unused strikes in a year was also safe, resulting in the possible use of 100 strikes in a year as long as there are past unused strikes available. This conclusion was based on the results of running the Strike Limit Algorithm (SLA), which is a computer program (developed by NSB collaborator Geof Givens and others) that evaluates the possible conservation risk of a requested quota given the size and trend of the whale population.

This is good news and sets the stage for the AEWC's request for a quota renewal at the September meeting. The SC thanked the hunters and NSB scientists and collaborators (Craig George, Robert Suydam, Raphaela Stimmelmayr, Geof Givens, John Bickham, and Amy Baird) for the detailed information about bowhead whales.

Marine Research Award — John Craighead "Craig" George

In February, the Alaska SeaLife Center presented the **Marine Research Award** to DWM Senior Wildlife Biologist Craig George at the annual Alaska Marine Gala held in Anchorage. Craig has lived in Barrow since the late 1970s and has worked and studied wildlife for the NSB since 1981. Working and living in the Arctic and among Iñupiat hunters, Craig has helped establish a meaningful process, combining traditional knowledge and western science, improving our understanding and management of both marine and terrestrial environments.

Craig receiving award from co-emcee Jack Black.

His lifetime commitment to this process and learning from Iñupiat hunters and elders has resulted in knowledge being available to make informed decisions about many difficult topics, but especially those related to the ocean. Because of 40+ years of dedicated service, Craig knows more about bowhead whales than any other non-Inuit. His contributions of knowledge and numerous publications have been especially helpful in managing the subsistence hunt of bowhead whales at local, national and international levels. His studies have produced estimates of bowhead population abundance that have been critical for setting sustainable quotas that also meet the nutritional and cultural needs of many subsistence communities. At the International Whaling Commission, the bowhead science program and management of the hunt is recognized as the Gold Standard. This standard was established due to many people, but Craig and his contributions are at the top of that list.

Craig has improved knowledge about many other aspects of the biology of bowheads, including physiology, energetics, foraging, survival, and reproduction. His respectful listening to elders and hunters and the incorporation of that knowledge into his studies has set a standard that will be hard to equal. Because of Craig's commitment we know more about bowhead whales and how they use the ocean than just about any other marine mammal in the world. We are very proud of Craig and his achievements! *Arrigaa*, Craig!

Update on Bowhead Entanglement and Bering Sea Crabbers

Bycatch now poses the single greatest threat to whales worldwide and has already driven the baiji (Chinese river dolphin) to extinction and several others to the brink, including the vaquita porpoise in the Gulf of California. Entanglement of bowhead whales in fishing nets and crab pot gear, called "bycatch" historically, has not been considered a serious problem. Nevertheless, over the past decade on the North Slope, examination of beachcast whales, harvested whales actively carrying fishing gear, and numbers of entanglement scars on both live and harvested whales (found on about 12% of bowhead whales) suggest bycatch is now a problem we cannot ignore.

In that regard, the Alaska Eskimo Whaling Commission and the Bering Sea Crabbers Association have begun a dialog and are now meeting annually with the goal of limiting or reducing bowhead mortality attributed to fishing gear. One challenge to this collaboration is determining from which "side of the Bering Sea" the gear is coming from, Russia or the U.S., although, the only gear recovered to date that was marked did come from the U.S. crab fishery. A large, floating bowhead carcass entangled in lines was recovered by Saint Lawrence Island whalers near their island in 2015. The gear came from pots set in 2012 by the crabber *Saga*, ironically of the "Deadliest Catch" fleet.

How does this affect the bowhead quota? So far, bycatch does not affect the quota but it is very important that entanglement be kept at a low level. This spring the IWC Scientific Committee reviewed new information on bowhead bycatch, primarily from Bering Sea pot fisheries (crab and cod), and agreed that while "*the present level of unintentional human induced mortality is too low to require"* new management strategies, "*the situation should continue to be monitored and evaluated"* at the next quota review which will be in 2024.

As two whales were harvested in the spring of 2017 near Utqiaġvik carrying fishing gear lines, it is important for us to continue to document these occurrences and to continue studying entanglement scars on harvested whales. Please contact Craig George or others at DWM at 852-0350 if you have any questions or concerns. Any fishing gear recovered or photos taken would be extremely helpful in this effort.

Bowhead harvested in 2017 with line wrapped around its flipper and mouth. Whalers followed it as it trailed several hundred feet of line .

Kid's Page

Iñupiaq Matching

Draw a line from the *Iñupiaq* name to the English name for *Fishing Terms*

Aulasaq	Dried Fish
Aulasaun	Fish
Ipiutaq	Fish Eggs
Iqalliaq	Fish Hook
Iqaluk	Fish Net
Iqaluŋniutit	Fish Tail
Kuvraq	Fish Trap
Niksik	Fishing Line
Niksiksuun	Fishing Pole
Papiġuq	Go Fishing
Pivsi	Jig for Fish
Suvak	Jigging Stick

Note: *Iñupiaq* name spellings vary between regions.

Reference: Iñupiatun Uqaluit Taniktun Sivuniŋit. 2014. Compiled by Edna Ahgeak MacLean.

Iqaluk Facts

Did you know that?

- Tittaliq, or burbot, are the ONLY freshwater cod in North America.
- The largest lake trout can reach 120 pounds in the Great Lakes. The largest lake trout on the North Slope weighed in at 26 pounds, taken from the Mayuaqgiaq River, although larger have probably been caught.
- Iqalusaaq, or least cisco, can have a freshwater only form, an anadromous (migrating to ocean and back) form, and there is a dwarf form found in Teshekpuk Lake that matures at 6" total length.
- Chum are the second largest salmon, second only to chinook or kings.
- Arctic cod can make drumming sounds and grunts with their swim bladder.
- The freezing point of freshwater is 0°C or 32°F and the freezing point of sea water is near –1.8°C or about 28°F. Fish have "anti-freeze" proteins in their bodies that protect them from freezing at these low temperatures by lowering the freezing point of their blood.

Iqaluk

Do you know the names for these Fish on the North Slope?

a) *Iñupiaq* name b) English name

1a _____ 1b _____

2a _____ 2b _____

3a _____ 3b _____

4a _____ 4b _____

5a _____ 5b _____

Check our website for the correct answers! Go to www.north-slope.org/departments/wildlife-management/dwm_newsletters

Alaska Nannut Co-Management Council (ANCC) Upcoming Meetings


Photo: Andy Von Duyke

The newly formed Alaska Nannut Co-Management Council (ANCC) is conducting meetings in Alaskan coastal villages during the next few months. This will be a chance for the ANCC to introduce itself, provide updates on polar bear issues, and answer questions and concerns from community members and hunters. Villages in the Kawerak and Maniilaq regions will be visited as well as the North Slope region. The US Fish and Wildlife Service (USFWS) will also be in attendance.

The interim executive director for the ANCC, Katya Wassillie from White Mountain, will be present at the meetings along with the treasurer, Rose Panik of Wainwright, and the local village representative. Representatives, appointed by their tribal councils, from the North Slope region include: Charlie Brower, Native Village of Barrow; Edward Rexford, Sr., Native Village of Kaktovik; Eli Nukapigak, Native Village of Nuiqsut; Rex Tuzroyluk, Jr., Native Village of Point Hope; Warren Lampe, Sr., Native Village of Point Lay; and Rose Panik, Village of Wainwright. The dates for the North Slope meetings are:

June 14, 3:30 pm, Harold Kaveolook School
June 16, noon, Point Lay Community Center
June 18, 1:00 pm, Nuiqsut Community Center
June 20, 10:00 am, Wainwright City Building
June 21, 1:00 pm, Qalgi Center, Point Hope
June, date-time-place TBD, Utqiaġvik

In 2000, the U.S. and Russia, along with the former Alaska Nanuuq Commission, signed a treaty to manage Alaska-Chukotka (Chukchi Sea) polar bears through a bilateral agreement. In late February 2018, the U.S.-Russia Scientific Working Group met to discuss scientific issues associated with Chukchi Sea polar bears. The NSB-DWM, regional advisor to the ANCC, participated in this meeting to provide scientific and traditional knowledge expertise in working with polar bear subsistence communities in northern and western Alaska.

This Scientific Working Group workshop was significant because the group:

1) is finalizing a new sub-population estimate,
2) is creating a boundary analysis tool, and
3) created a harvest risk assessment model to be used to assess risk of various harvest strategies.

To provide input into these studies, the DWM collaborated with Stephen Braund and his team, who have done traditional knowledge (TEK) studies for AEWC in the past. In January 2018, Braund's team conducted TEK research on polar bears of the Chukchi Sea. Braund and the DWM worked with hunters from the villages of Point Hope, Point Lay, Wainwright and Barrow. We hope to expand this work, as it was well received by the U.S.-Russia Scientific Working Group and will be very useful to the models developed to estimate the Chukchi subpopulation.

The new sub-population estimate, boundary analysis, and harvest risk assessment are important to inform the co-management agreement that the newly formed ANCC is developing. There will be a U.S.-Russia Bilateral Commission meeting in Egvekinot, Chukotka, in July 2018.

Caribou Subsistence Harvest Surveys on the North Slope

In January 2017 DWM staff attended the Alaska Board of Game (BOG) meeting to testify on the impact of declining caribou populations on the North Slope and possible regulations. The BOG eventually passed a regulation that requires caribou hunters to buy a license and report their harvest to the Alaska Department of Fish & Game (ADF&G). We held community meetings to ask hunters about the new regulations. After guidance and approval of the hunters, we decided to conduct our own caribou harvest surveys.

Last summer and fall, we asked hunters in all 8 North Slope villages how many caribou were harvested in 2016. We also asked how many were male and female, the general location of the hunts and body condition of the caribou. Harvest data from 2016 are now being analyzed and an estimate should be available soon. Results from our surveys will be compared with the estimated harvest numbers from ADF&G.

We also intend to collect data for 2017. DWM employees will again visit all North Slope communities in the coming months to ask about caribou harvests for that year. In the meantime, caribou numbers on the North Slope appear to be increasing. This is good news but it is important that we continue to document the harvest of caribou and other subsistence species for the North Slope. Please contact us if you have any more questions or concerns about these issues.

Passive Acoustic Survey of Bowhead Whales

The NSB-DWM has conducted acoustic surveys in most years since 1984. The acoustic data have been used to locate whales and make call counts through the spring migration and was used for abundance estimation.

Acoustic information can also be used to examine changes in the spring migration including a) documenting the beginning and end of the migration based on first and last dates of calls recorded, b) estimating the number of "singers" and distinct songs by year, c) measuring the total "acoustic energy" as an index of the numbers of whales, and d) determining if other whales are present in the lead (for example, gray and killer whales).

We are also trying to determine if counting bowhead calls might provide a useful "population index" of migrating bowhead whales. Starting in 2015, working with Kate Stafford of University of Washington, we have been putting out a single hydrophone recorder off the shorefast ice west of Utqiaġvik. We are still analyzing acoustic data from 1984 to the present to determine if it is correlated with population abundance. During the spring 2016 bowhead whale migration near Utqiaġvik, we put a hydrophone off the lead edge in mid-April. The instrument recorded continuously underwater for 2.5 months. The instrument package consists of about 80 pounds of anchoring material, a recovery mechanism, a hydrophone, and one 14" subsurface float. The instrument itself makes no noise. A hydrophone package was deployed directly into the lead in early April of 2018 and will be retrieved sometime in July.

Craig George, Kate Stafford and Billy Adams deploying hydrophone package off lead edge in late March 2018.

Deployment Team: Craig, Bobby Sarren, Kate and Billy

To deploy the mooring, we either chop holes through thin ice near the lead edge, or drop it directly into the lead. The mooring is deployed by lowering the anchor using a rope. Upon recovery of the acoustic recorder, the data is downloaded. From these data, hourly occurrences of bowhead whales, bearded seals and beluga whales can be determined. Hours with bowhead whale signals will be examined in detail to determine sound counts. The number of sounds per hour will be used to compare with past sound counts based on a review of past reports. This data analysis is ongoing and reports are pending. Bowhead sound/song files are available on the DWM website and available for distribution to anyone interested by contacting us at 852-0350.

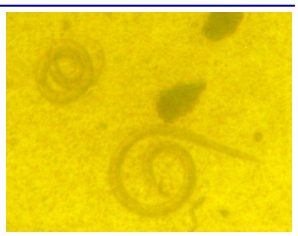
Trichinella, Walrus and More

Trichinella, a nematode that forms cysts in the muscle, is an important marine mammal parasite. The most recent confirmed multi-person outbreak occurred in Alaska on Saint Lawrence Island in 2016 and was related to consumption of undercooked walrus meat. According to the State of Alaska Division of Public Health (DPH) (dhss.alaska.gov/dph/Epi), the most common symptoms include severe muscle aches and joint pain, usually beginning 2-6 weeks after ingestion. Early symptoms occur in 1-2 days and include nausea, diarrhea, vomiting, fatigue, fever and abdominal pain. Contact your health provider if you have symptoms.

DWM has begun monitoring for trichinella and preliminary findings, based on testing of samples collected in Barrow between 2008-2016, include:

-No trichinella larvae were detected in meat samples of 78 ice seals or 14 walrus.

-However, 3 of 4 polar bears sampled tested positive for trichinella.



Trichinella larvae under the microscope (10x magnification)

Climate related sea ice and ocean temperature changes, shifting foraging ecology may be setting the stage for increased rates of trichinella in subsistence-harvested marine mammals. The role and identification of intermediate and final hosts that make up the Arctic life cycle of trichinella are not well understood; however, the DWM continues to monitor for occurrence.

Our findings confirm that incidences remain extremely low among marine mammals form the Bering Stait, Chukchi Sea and Beaufort Sea despite the recent outbreak on St. Lawrence Island. For food safety, recommendations from DPH are to COOK walrus and polar bear meat well (up to 160°F) which will kill the parasite and prevent infection. The parasite can survive freezing, smoking and drying.

If you have any questions or concerns, please contact Raphaela Stimmelmayr at DWM at 852-0350.

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We thank the NSB Assembly and Mayor Brower for their continued support. ***Quyanaqpak!***

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DWM Fulbright Scholars

Nicole Kanayurak, working with subsistence policy for NSB-DWM, and Todd Sformo, NSB-DWM biologist, were selected to be a part of the Fulbright Scholars Arctic Initiative. "The Fulbright Arctic Initiative will bring together a network of scholars, professionals and researchers from the eight Arctic countries...the Initiative will create a network to stimulate international scientific collaboration on Arctic issues while increasing mutual understanding between people of the United States and the people of other countries."

Nicole will work with the team on methods of promoting sustainable economies in the Arctic. She will look into how the newly installed telecommunications infrastructure on the North Slope could foster food security into the future. Now that the infrastructure is in place, we can begin to think about how our communities can utilize this advanced technology in innovative ways. Nicole will learn about the tools Iceland has developed through telecommunications to improve food access. She is excited to learn from others across the Arctic on what they have done to improve access to resources and how we may create sustainable food systems in our communities that works for us.

Todd's project for the Fulbright Arctic Initiative will focus on Arctic food security, specifically the monitoring of Aanaakliq, broad whitefish for the newly emerging infection, saprolegniosis, that is a concern of subsistence fishermen on the North Slope. Nuiqsut residents have asked what is causing saprolegniosis in Aanaakliq, what is the growth rate of the fungus, and whether this infection will worsen in a warming climate. Since recent studies identify a worldwide increase in fungal and fungal-like infections in animals and plants, research conducted now will improve our understanding of the cause, answer concerns of the community, and initiate a protocol for monitoring mold/fungal infections in the Arctic. This work will be conducted with William Hintz and Paul de la Bastide of the Hintz Lab, University of Victoria, Canada, to estimate growth rate of *Saprolegnia parasitica* at Arctic temperature and salinity levels.

Nicole and Todd will have the opportunity for collaboration with scholars from other circumpolar countries during the Fulbright Arctic Initiative meetings to discuss health care, climate change impacts to the environment and subsistence activities, as well as other emerging circumpolar issues that could affect food security on the North Slope.

Todd Sformo and Nicole Kanayurak carrying out bowhead subsistence harvest sampling for DWM near Utqiaġvik in April 2018.