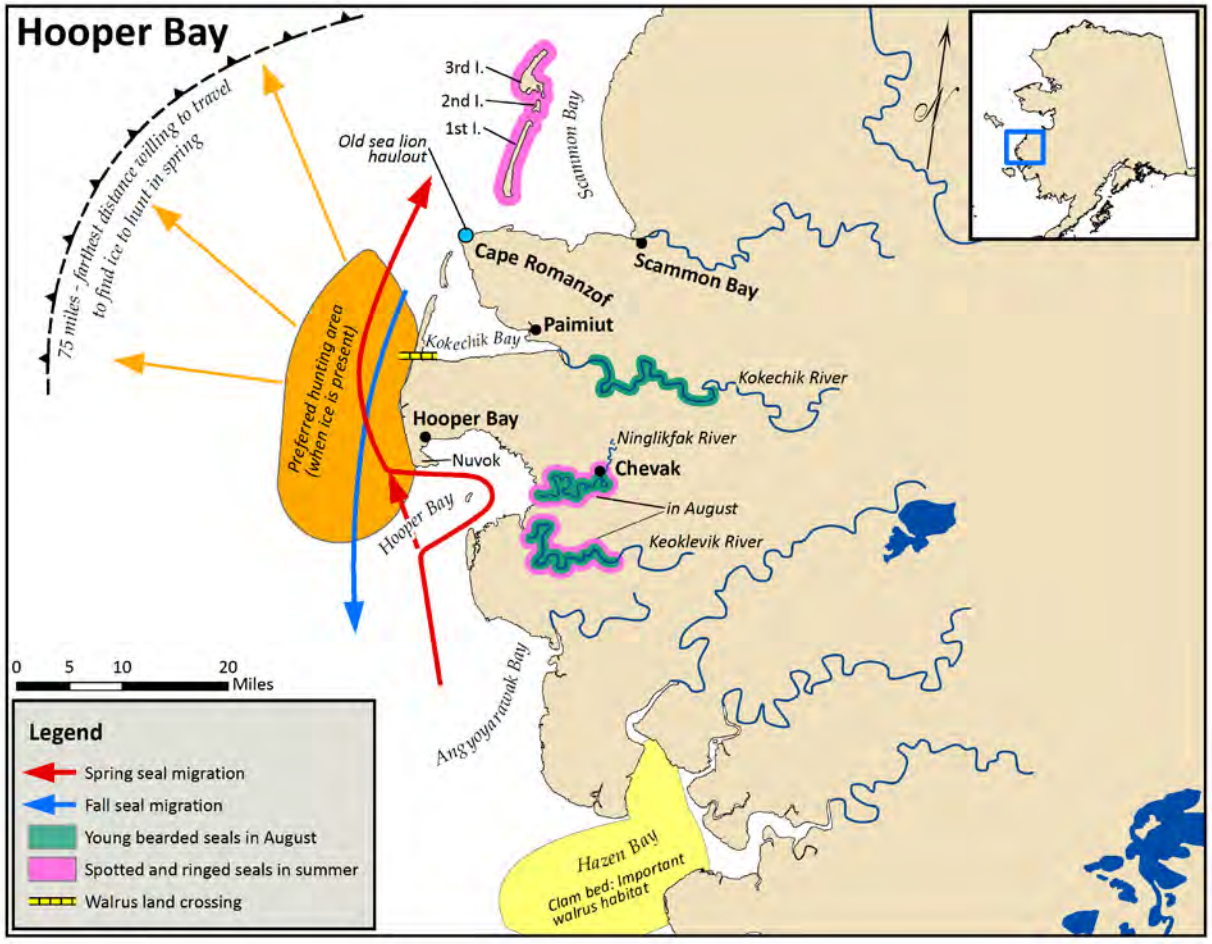
Traditional Knowledge Regarding Marine Mammals near Hooper Bay, Alaska



Traditional Knowledge Regarding Marine Mammals near Hooper Bay, Alaska

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Introduction

Seals, walrus, and beluga whales are important for subsistence harvests by Yup'ik hunters from Hooper Bay, Alaska. These animals are also iconic Arctic marine mammals at risk from climate change. Industrial activity in the Bering and Chukchi seas, coastal development in the Norton Sound region, and shipping through Bering Strait are additional potential stressors to these marine mammals. The study of the distribution, behavior, and movements of marine mammals is an important contribution to monitoring the effects of a changing environment and the potential effects of industrial activity. Placing satellite transmitters on seals, walrus, beluga whales, and other species provides detailed information about the movements, habitat use, and behavior of some individual animals. Satellite telemetry studies, however are limited in the number of individuals per species that can be instrumented, therefore it is difficult to know how well tagged animal movements and behavior represent the population as a whole. Documenting traditional knowledge about timing of migration, behavior, and the age classes of marine mammals at specific locations through interviews with residents of coastal communities provides important context in which to interpret the satellite telemetry studies as well as providing contemporaneous and historical information about general patterns in marine mammal distribution, movement, and behavior that complement the science greatly. The integration of these two different but equally important types of information provides a broader more comprehensive overview of how Arctic marine mammals and hunters operate in their environment and how changes in the environment are influential.

This report summarizes information gathered from interviews held in Hooper Bay with hunters and other knowledgeable residents in January 2017. This traditional knowledge project used the same approach that the Native Village of Savoonga used when documenting traditional knowledge about bowhead whales on St. Lawrence Island (Noongwook et al. 2007).

Methods

We used the semi-directive interview method, in which the interviewers raise a number of topics with the person being interviewed, but do not rely solely on a formal list of questions (Huntington 1998). Instead, the interview is closer to a discussion or conversation, proceeding in directions determined by the person being interviewed, reflecting that person's knowledge, associations made between animals and the environment, and so on. The interviewers use a list of topics of interest to raise additional points for discussion, but do not curtail discussion of additional topics introduced by the person being interviewed.

In Hooper Bay, we interviewed 11 persons, five individually and six in one group. The interviewees were Albert Simon, Albert Simon II, John Lake, and eight others who wished to remain anonymous. The interviews were conducted on January 9, 2017 in the homes of interviewees and at the Sea Lion corporation apartments.

The topics of interest identified by the research team in advance of the interviewers were:

Seasonal patterns of distribution of ice seals, walruses, and beluga whales
Haulouts on land
Use of rivers
Feeding patterns and prey
Impacts from climate change and hunter responses to those changes
Parts of marine mammals that people eat
Information about other marine mammals
Information about other aspects of the environment and people

Table 1. List of Yup'ik, English, and scientific names of marine mammals mentioned in this report.

	Yup'ik name	English name	Scientific name
	Maklak	bearded seal	*Erignathus barbatus*
	Maklagaq	young bearded seal	*Erignathus barbatus*
	Issuriq	spotted seal	*Phoca largha*
	Nayiq	ringed seal	*Phoca* or *Pusa hispida*
	Qaygulek	ribbon seal	*Histriophoca fasciata*
	Kaugpak	Pacific walrus	*Odobenus rosmarus*
	Uinaq	Steller sea lion	*Eumetopias jubatus*
	Cituaq	beluga whale	*Delphinapterus leucas*

The results are presented under different headings, reflecting the actual information collected and the fact that some of the subjects blend together, especially changes seen over time in regard to all of the topics. The interviewers were Henry Huntington and Mark Nelson. Lori Quakenbush is the project leader.

Ringed Seals

Ringed seals are found in the Hooper Bay area from fall to spring when sea ice is present. They are abundant in the area during this period. Today there seems to be fewer ringed seals in the Hooper Bay area, perhaps because of the changes in ice conditions, drawing the seals to the ice edge farther away. A few individuals may be found in the area in summer, sometimes these are young ringed seals in rivers, but the majority head north with the ice. Occasionally a ringed seal pup will be seen on the beach in summer. Ringed seals return when there is ice, the timing of which depends on the weather but may be in December or January. Even with changes in sea ice, seals of all kinds remain abundant. The coast is their highway.

One hunter once found a seal lying on an ice floe on its back, with its stomach open, perhaps killed by a polar bear.

Ringed seals eat herring in May. Their faces may be covered with herring eggs. Ringed and spotted seals seem to have similar diets.

Mostly it is hard to tell what ringed seals are doing just by watching them on the surface. They just pop up out of nowhere, with little indication of where they have been or what they have been doing.

Ringed seal skins can be blown up like a balloon and dried. They are used for the upper parts of mukluks (boots). There are several styles of mukluks, including ones for casual wear around the village, knee-high ones for going on the tundra, and thigh-high ones for cold weather. Ringed seal skins can also be used to make pokes, for storing fish and other foods. To store fish, the fish are put into the poke, and then seal oil is added to preserve the fish. After the fish are eaten and the oil is drained out, the skin can then be used to make watertight hip boots. Ringed seal skin is also used as rope, for lashing bearded seal skin boat covers to the boat frame, or making sleds or harpoons.

Seal meat can be dried on a rack outside and eaten like jerky. It is good when dipped in seal oil. Seal oil is also good to eat with vegetables gathered from the tundra in spring. The head, flippers, and tail of seals can be aged and eaten.

Male seals during the rut smell like gasoline. Their blubber can be used, but not the meat.

Sick seals have been seen occasionally, but most seals are healthy. Sick seals have boils on their skin and black fur. This is a relatively new phenomenon, seen in the past dozen or so years among ringed and spotted seals. One diseased seal, with pustules along its lungs and heart, was cut open and left on the beach, but even ravens and gulls would not eat it. Sometimes seals are seen with hair rubbed off, but this is thought to be caused by them hauling out and resting on ice.

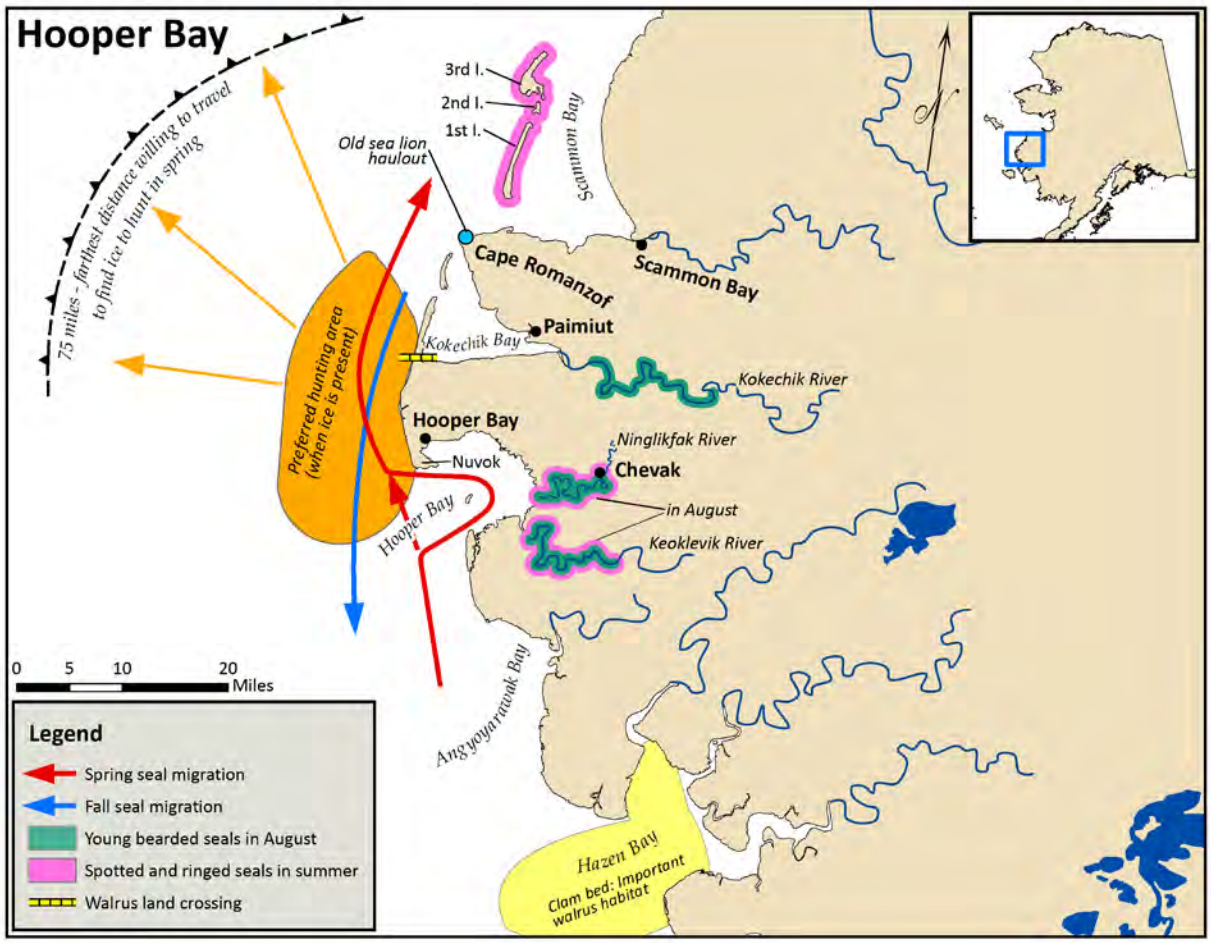

Figure 1. Movements and behavior of seals, walrus, and whales as described during traditional knowledge interviews, January 2017.

<u>Spotted Seals</u>

Spotted seals used to arrive in abundance in April following the beach, going after fish, probably tomcod (i.e., saffron cod) on their way north, but now they are found all winter long, whenever there is open water. . Most spotted seals head north by early to mid-May, with the sea ice, but some stay into June, often in rivers. There are many spotted seals on the three islands off Scammon Bay in summer, so many that they can be smelled from a distance. In fall, most spotted seals in the Hooper Bay area are subadults.

Spotted seals eat tomcod and smelt in late winter and early spring. There are lots of seals when there are lots of fish. In May, they eat herring and their faces can be covered with herring eggs. Spotted seal stomachs can also have clams in them. Feeding seals stay in one area, whereas migrating seals are heading in the direction of migration. The surfacing behavior is the same, however. Winter spotted seals are tasty, but spring spotted seals have a strong smell and flavor. Spotted seal skins are used for making hats and gloves.

Bearded Seals

Bearded seals typically arrive in large numbers in late March, remaining abundant through April and into May, as long as there is ice. In recent years, they have been arriving earlier, sometimes in February. Mothers with pups are slower when migrating. Some bearded seals may be found in the area all winter. Pregnant bearded seals have been taken in January. After the ice leaves, some juvenile bearded seals will stay in the area, going up rivers after fish such as whitefish, at times far up the rivers in late summer and are seen when people travel to pick berries (Figure 1). A few bearded seals stay in the area in summer, and are occasionally caught in salmon nets. In fall, most bearded seals in the Hooper Bay area are subadults or young of the year. One hunter took a pregnant bearded seal once in November.

Bearded seal stomachs have clams and shrimp and some small fish. In spring, bearded seal males will dive and call to the females. The calls can be heard by people on the surface of the water. Younger bearded seals are better than adults at hiding from hunters in broken ice, with only their nose out of water. Older seals are not afraid of hunters, don't hide as well, and are easier to find and hunt.

Bearded seal skins are used for the soles of mukluks (boots). These skins can also be used for kayak covers and skin boat covers. The skins are sewn together with sinew from beluga whales. Yellow moss is soaked in seal oil and used as caulk on the seams. A hole in a skin boat can be easily repaired at sea by using seal oil to join the skins back together. Bearded seal flippers, tail, and head can be aged in summer and eaten. Bearded seal intestines are rinsed, cooked, and eaten. The stomach can be dried out and inflated and used for storage, for seal oil or for berries and other things. The intestinal lining of bearded seals can be used to make raincoats or to make windows for old-style houses. People eat the kidneys, liver, heart, lungs, and other organs of bearded seals. These can be eaten raw or cooked. A bearded seal swimming in the sea is ready to eat as soon as it is harvested.

Walrus

Walrus are typically seen in spring, often in Hazen Bay where clams are abundant (Figure 1). The clams can be seen by river mouths when the tide is out. Walrus can also be seen on thick sea ice when it is present in spring, but this is less common now than it used to be. When west or northwest winds would bring thick sea ice to Hooper Bay, up to 50 walrus might be seen on a single floe, depressing the ice low enough to make it appear the walrus were lying on the water. A walrus was once seen on the beach in May, but this was unusual. Adults are not seen on land, only on ice and in the water. Young walrus have been taken in fall and in December near Hooper Bay, but this was very unusual. These days, walrus can sometimes be seen even in mid-winter, which never used to happen.

The elders say walrus used to take a shortcut overland at the base of the spit going to Kokechik Bay (Figure 1). The sandbars across the mouth of the bay used to be larger and formed a more complete barrier.

Beluga Whales

Beluga whales arrive in April and May, migrating north. They may pass by or come into the bay in the fall on their southern migration. They do not come into the bay as frequently as in the past,

but when fish are available they will come into Hooper Bay feeding. In the fall of 2016, belugas were seen approaching the bay but then turning away, likely due to the presence of barges and the commotion associated with construction on the runway, which is near the shore. Belugas are regarded as sensitive to noise and disturbance. Belugas were seen in the area in January 2016, a time of year when they never used to be seen here.

Belugas commonly had their young in Hooper Bay, but have switched to having young in Kokechik Bay to avoid the barge and other boat traffic. Lately, belugas seem to come by during times of high wind and waves, making it difficult to hunt them. Beluga meat, skin, and organs can be stored and prepared in various ways: dried, aged, fresh.

Other Marine Mammal Species

Ribbon seals are sometimes seen in fall and winter near Hooper Bay. They make good seal oil, but the meat is strong and bloody tasting.

Sea lions were common in the area until the 1970s and early 1980s. Hooper Bay's village corporation is named the Sea Lion Corporation. From the 1980s until recent years, however, sea lions were seen infrequently, usually by Cape Romanzof, where six or eight sea lions may haul out at a time, high on the rocks (Figure 1). In the past few years, sea lions seem to be returning in greater numbers, though they remain uncommon. They are typically seen in spring and summer, not so often in the fall. People would occasionally hunt sea lions in the 1970s—the meat is excellent—but they have not been hunted since the sea lion population declined.

Killer whales are seen in the Hooper Bay area. They have been seen hunting beluga whales, which swim close to shore to try to avoid the killer whales. Killer whales were once seen hunting a gray whale, which swam close to a hunter's boat in an apparent attempt to avoid the killer whales. Hunters know not to try to harm killer whales, because the killer whales will remember the individual who harmed them and seek them out, even years later.

Gray whales and occasionally bowhead whales are seen off Hooper Bay in spring, typically 15 or more miles offshore, migrating to the north. Minke whales have been seen in May near Hooper Bay. A humpback whale was seen in the area for the first time in the summer of 2016. Pilot whales were seen in the area for the first time a few years ago. Hooper Bay is along a whale migration path so many species are observed throughout the year.

Other Information

Sea ice is thinner and breaks up more quickly than it used to. There used to be solid ice for the middle months of winter, but now there is thin ice and there is more open water. It is hard to travel on the thin ice, whereas people used to go out by dog team or snowmachine to reach the ice edge. There is not much pack ice in the area any more. There is now little or no shorefast ice in winter, whereas there used to be extensive shorefast ice that hunters could use for traveling to the ice edge. Without the shorefast ice, launching boats directly from shore can be hazardous because of waves breaking in the nearshore shallows. In the deeper water at the edge of shorefast ice, the waves do not break in this way, so the hazard is much lower. There are fewer northwest winds, which used to bring the big, thick ice floes in along with the marine mammals. It is easier

to hunt when there is ice, and thick ice provides a place to cut up larger seals. There are still plenty of seals, but hunters have to travel farther and look harder to find them.

There used to be more snow in Hooper Bay, creating deep drifts. Winters used to be colder. There used to be no flooding in winter, but a lack ice and strong winds have created high winter floods in recent years.

The weather has changed, making hunting harder and more dangerous. River mouths may be open during winter, and on the beach an ice ledge can form, making it difficult or impossible to get down to the beach in places. Even when there are plenty of seals on the ice, hunters may not be able to get to them.

Storms now are more persistent than they used to be, and there are more windy days and fewer calm days. More southeast winds bring more periods of high water and flooding. There is more east wind than there used to be, and less south wind.

There has been less driftwood in recent years, perhaps because the Yukon River does not flood as often in the Interior. Those floods carry many trees away down the river, bringing them to the coast.

The lakes where Hooper Bay residents get freshwater are drying out. Perhaps this is because of changing permafrost.

Moose are more common in the area than before, coming every summer. Black bears can be found in the mountains, in spring and especially in fall. One hunter said an elder had told him that strange animals would come to the area, and after that, there would be nothing, which is a scary prospect. There are sometimes swans in the area in November. Bees and ladybugs are now common in summer, and new insects such as hornets are arriving.

Salmon are coming in earlier. Fewer came in last summer than usual, but overall the salmon remain abundant. Even king salmon are plentiful, despite problems on the Kuskokwim and Yukon Rivers. In May, the north wind brings in the king salmon. There are more halibut, and also salmon sharks, which were not seen before. Someone found a small stingray (probably a skate) on the beach. Overall, the fish supply is abundant. Fishermen sometimes see fish that have been wounded by seals. Some smelt have been seen with boils, scars, and black spots, which appears to be new in the past 15 or so years.

The rapid retreat of sea ice in spring means hunters have a shorter period for hunting ice-associated marine mammals such as seals and walrus. It is important to take advantage of the opportunities to hunt when they happen, since they are so brief these days. Larger boats and more powerful motors mean they can go farther offshore to find ice and animals, as much as 60 miles from land, but this entails considerable risk and expense, as well as much disappointment if no marine mammals can be found. The problem is not a shortage of animals—there are still plenty of seals and other marine mammals and the animals are healthy. The problem is getting to them, either because they are far away or because ice conditions are not favorable for hunting or traveling.

The lessons of the elders are important ones, reflecting the skills and values that allowed people to survive and thrive in this region for countless generations. Hunting comes from necessity not recreation. Successful hunters should share with those in need, especially elders who can no longer hunt for themselves. While the connection to the land is weakening as people rely more and more on the store and other outside sources of the things they need, it is still essential to pass on to one's children the essential values of respect and sharing. Hunters used to prepare extensively before going out, to be ready for any situation. Ammunition was scarce and expensive, so hunters had to be sure of their shot and be sure they could retrieve an animal they shot. They were prepared to be patient, to wait all day for a seal. They were not greedy and did not get excited, but stayed calm and relaxed. They placed safety first. Today, many hunters go out without emergency gear and without making these kinds of physical and mental preparations.

Acknowledgements
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