

A Student Guide to

Seal Hunting

and safety (grades 4-6)

Yup'ik Region



Imarpigmiut Ungungssiit Murilkestit

Watchers of the Sea

2007

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Seal Hunting, A Student Guide

Yupik Region

2007

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This project is a cooperative effort of the Ice Seal Committee (ISC), the Imarpigmiut Ungungssiit Murilkestiit (IUM), the Association of Village Council Presidents (AVCP), the Alaska Department of Fish and Game (ADFG), the National Marine Fisheries Service (NMFS), and cooperating villages.

Introduction

Ringed, bearded, spotted, and ribbon seals are the species of Alaska’s seals collectively called “**ice seals**” because they rely on sea ice for feeding, resting, and pupping. Alaska Natives living along the Bering, Chukchi, and Beaufort seas are highly reliant on ice seals for food, equipment, and handicrafts. There are concerns regarding the status, health, and availability of ice seals due to changes occurring in thickness, persistence, and distribution of sea ice.

Ice seals have received little scientific attention compared to other marine animals known to be in decline. Current population estimates for ice seals are not available and not easily attainable due to their wide distribution and the problems related to marine mammal surveys in remote, ice-covered waters. Due to concerns of subsistence hunters, the Ice Seal Working Group, now called Ice Seal Committee (ISC) was formed in October of 2003 to “**ensure the conservation of ice seals and their habitats that sustain Alaska Native cultures**”.

The ISC is made up of one representative from each of the five general regions of Alaska that harvest ice seals (North Slope, Bering Strait, Northwest Arctic, Yukon-Kuskokwim Delta, Bristol Bay). A statewide meeting of the ISC was held in March 2004 to elect officers and discuss priorities. One of their priorities, ***Develop Hunter Education Programs*** is the focus of this student guide and accompanying workbook. A regional meeting of the marine mammal hunting village representatives in the Yukon-Kuskokwim Region (Imarpigmiut Ungungsiit Murilkestit) held in August 2004 also identified a hunter education program for schools as a high priority project.

The material within this guide is culturally and geographically relevant, interdisciplinary, and correlated with the AK State Education Content Standards. We hope that all educators will find this student guide and workbook useful for teaching required skills while recognizing the importance of traditional and cultural activities. Whether it is done as a stand-alone activity or as part of a larger unit is up to each educator. Enjoy this material and learn along with your students. Let them bring the workbook home to answer questions, encourage discussions and get feedback and experiences from their own family members. Invite members of the community knowledgeable in seal hunting to the classroom.

If you use this material please fill out the enclosed evaluation so that we can improve upon it in the future.

Thank you and enjoy the experience.

State Content Standards



Chapter 1 - *Traditional Seal Stories*

English/Language Arts – B1, B2, B3, D1, D2, E1, E2
Science – A3, F1, F2, F3
Geography – A1
Cultural – A2, A3, B1, B2, D5
History – A5, A6, B1b, C2

Chapter 2 - *The Ice Seals*

English/Language Arts – B1, B2, B3, D1, D2, E1, E2
Science – A3, C2, C3, F1, F2, F3, G3
Geography – A1, C3, E1, E2, F3
Cultural – A3, A5, B1, B2, C1, C2, C3, E2
History – A5, A6, B1, B2, C2

Chapter 3 - *Subsistence and Health*

English/Language Arts – B1, B2, B3, D1, D2, E1, E2
Science – A3, B2, E2, E3, F1, F2, F3, G3
Geography – E1, E4
Cultural – A3, A4, B1, B2, C1, C2, C3, D4, D5, E1, E2
History – A5, A6 B1b, C2, C4

Chapter 4 - *Survival*

English/Language Arts – B1, B2, B3, D1, D2, E1, E2
Science – A3, C3, E1, E2, E3, F1, F2, F3, G3
Cultural – A1, A3, A4, A6, B1, B2, B3, B4 C1, C2, C3, D4, D5, D6
History – A5, A6, B1b, B3, C2, C4

Chapter 5 - *Navigation*

English/Language Arts – B1, B2, B3, D1, D2, E1, E2, E4
Science – A3, D2, D3, E1, E2, F3, G3
Geography – B1, C1, C2, E3, E6
Cultural – A1, B1, B2, B3, C1, C2, C3, D4, D5, E4
History – A6, B1b, B3

Chapter 6 - *Weather and Ice*

English/Language Arts – B1, B2, B3, D1, D2, E1, E2
Science – A3, D2, D3, E1, E2, E3, F3, G3
Geography – A1, A5, B1, C1, C2, C3, E3, E6
Cultural – A3, B1, B2, B3, B4, C3, D5, E2
History – A6, B1b

Chapter 7- *Seal Hunting*

English/Language Arts – B1, B2, B3, D1, D2, E1, E2
Science – A3, D2, D3, E1, E2, E3, F3, G3
Geography – B8, C1, C3, E1, E2, E3, E4, F2, F3
Cultural – A1, A3, A4, A5, A6, B1, B2, B3, B4, C1, C2, C3, D4, D5, E2, E4, E5
History – A6, B1b, B3

Chapter 8 - *Uses of Ice Seals*

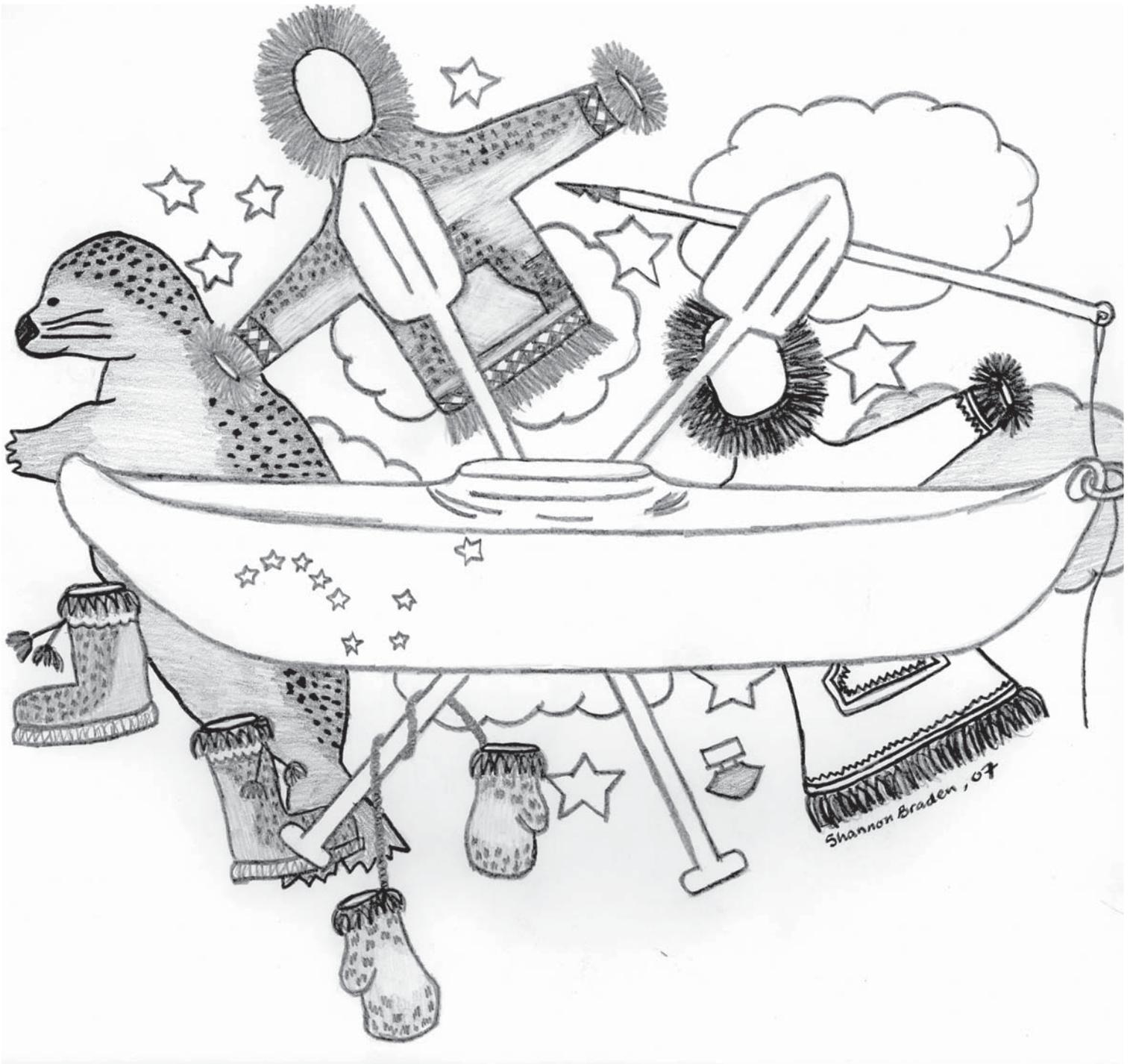
English/Language Arts – B1, B2, B3, D1, D2, E1, E2
Science – A3, C3, F1, F2, F3
Geography – None
Cultural – A1, A3, A5, B1, B2, C1, C2, C3, D4, E4
History – A6, B1b

Chapter 9 - *Water Safety*

English/Language Arts – B1, B2, B3, D1, D2, E1, E2
Science – A3, E3, D3, F1, F3
Geography – E1, E3, E4
Cultural – B1, B2, B3, B4, C1, C3, E2
History – B1b

Chapter 10 - *Conservation & Management*

English/Language Arts – B1, B2, B3, D1, D2, E1, E2
Science – A3, F1, F3
Geography – None
Cultural – A1, A3, A4, B1, B2, B3, C1, C2, C3, D4, E5, E6, E8
History – A6, B2, B3, B1b



Drawing by: Shannon Braden, Toksook Bay

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1. Traditional Seal Stories

Traditional stories are passed down generation to generation. Some are for entertainment, others teach lessons in survival, social expectations, and/or acceptable behavior. Traditional stories are very important for learning valuable lessons about our culture and ways of life, both past and present.

A brief outline of a Seal Story.....as told by Monica Shelden

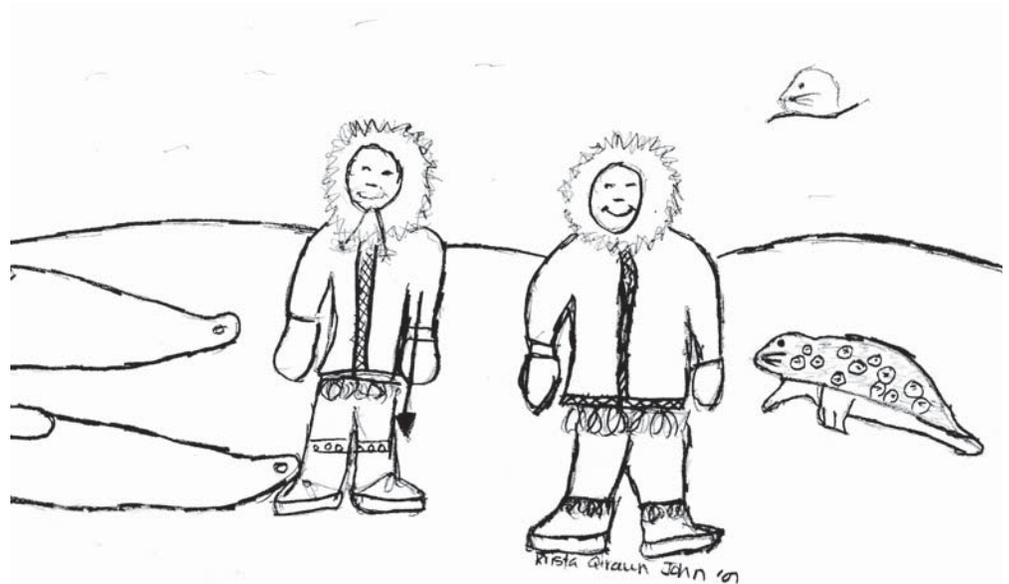
During the times when the Eskimo tribes warred against each other, there came a time in the spring when food became scarce and people starved. At this time of the year, the hunters always looked to the sea for an indication of open water in the sea ice. Open water above the sea ice is always dark on the horizon.

In a village in the Yukon Delta, a hunter came out one morning to search the horizon and saw an indication of open sea amid the ice. He told the others in his village, and got ready to travel out to the sea ice to hunt for a seal.

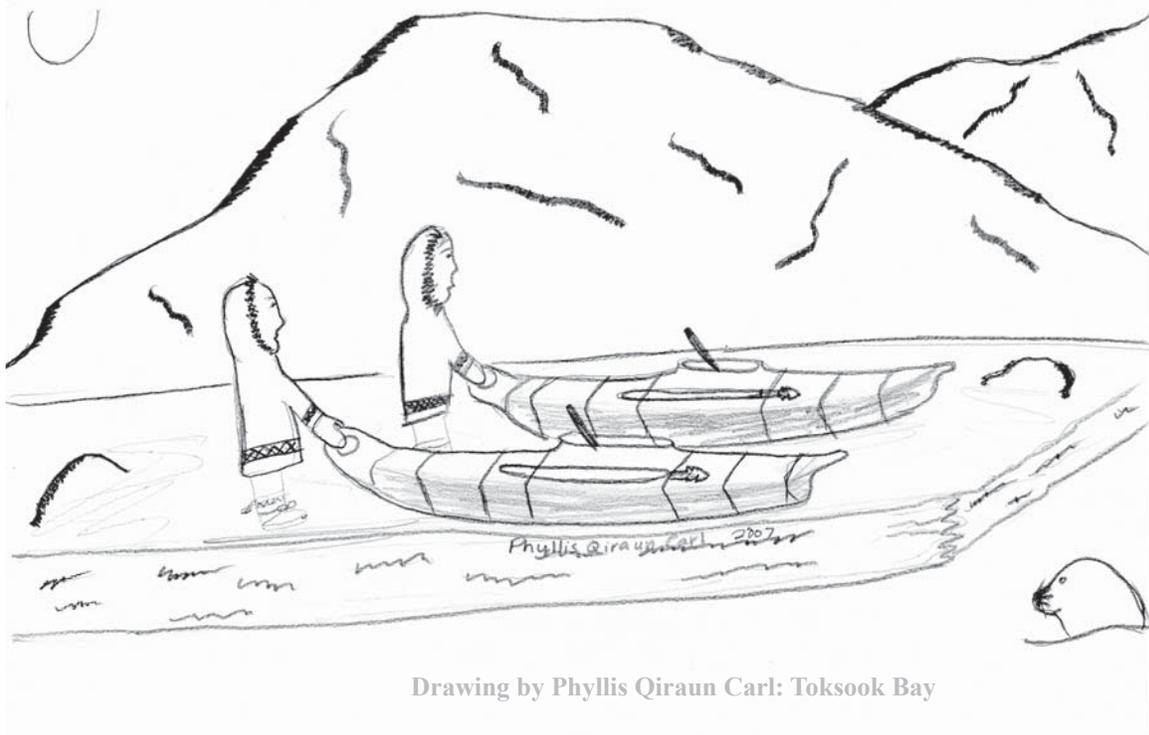
In the days before commercial goods were available, spring was usually a time when food was scarce. The

dried fish was consumed by this time, and small animals and fish that were available in the winter were not easy to catch. During this time food was so meager that the hunter's family had to eat their raingear that was made of salmon skins. So that the hunter would have some strength to hunt, his wife had saved a couple of slices of dried fish when their supply had run low. Only when he was just about to leave did his wife give him the two slices saying, "Please, I pray that you do not return empty handed as our village is starving." His wife's request was a strong motivation.

The hunter placed his kayak in his sled along with his hunting equipment and walked towards the open sea ice. Unbeknownst to him, another hunter was also walking to the open sea ice from another



Drawing by Krista Quiraun John: Toksook Bay



Drawing by Phyllis Qiraun Carl: Toksook Bay

direction. The two hunters were from different warring tribes and were mortal enemies. The tribe of the other hunter was also starving this winter. His tribes' dogs had starved to death and the only thing he brought along for sustenance was the skull of a dog.

As the hunter neared the opening on the ice, he began to crawl towards it on his belly. As he did, he saw something dark also heading to the opening. He took a better look and recognized him by his clothing that he was from the enemy tribe. He thought about his starving village and decided to try for a seal that had come up to lie on the ice. As the two hunters came to the opening, they were both careful to stay on the opposite sides of the opening. Neither man wanted the other to get close but both wanted the seal. When one of the men threw his harpoon to the seal so did the other, then the seal was caught. They both cautiously approached the seal. As they butchered the seal they were also careful to stay on opposite sides.

The man from the Yukon said to the other that his village was starving and that it was very important for him to bring some meat and blubber. The other replied that it was the same in his village. They talked for a bit and shared the dried fish, which allowed them to begin to trust each other. The other man suggested they split the seal exactly in half. The other agreed and said that in better times he would always be welcome in his house. If he should come to the village, he would know which house to go to because when he got home he would place a staff which a white rabbit skin would be tied at the top end. The other agreed and said he also would do the same so that he would know which house to go. This story extends to the time when there was peace between the two tribes and the two became fast friends.

2. *The Ice Seals*

Ice is very important to our seals. Ice offers shelter from the weather, protection from predators, transportation if the ice is drifting, a clean place to give birth, molt, and breed, and a food supply nearby. No wonder they live around the ice.

Seals are curious and wary. When hauled out on the ice, most raise their heads every 20 seconds or so to look around for predators. They rapidly enter the water when they detect an approaching human or polar bear.

There are four species of seals in our area. They all live in areas of seasonal sea ice and rely on ice for their survival. We will look more closely at each seal but first lets look at what all of these seals have in common.

Breeding- All seals breed on the ice during the spring.

Pupping- All female seals give birth to one pup on the ice before they breed in the spring. The mother will only stay with her pup for several weeks and then the pup is on its own.

Molting- Seals grow a new coat every spring. During May they spend long periods hauled out on the ice “basking” in the sun.

Predators- In addition to humans, predators of seals include polar bears, foxes, walruses, dogs, wolves, wolverines, killer whales and ravens. Ravens, foxes and wolverines can only kill pups

Food- Each species of seal has its own special diet, but they all eat a variety of fish and other sea creatures such as shrimp, clams, crabs, and krill.

Age/ maturity- It takes several years before seals reach adulthood. This varies slightly with different seals and between males and females. Seals can live to be in their twenties.

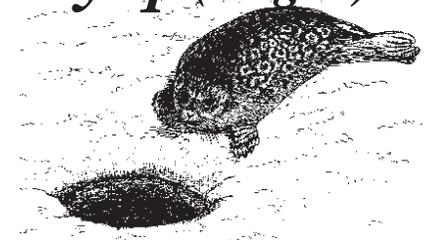
Maklak (bearded)



Issuriq (spotted)



Nayiq (ringed)



Qasrulek (ribbon)



Special Adaptations to Marine Environment

Size and Shape

- A streamlined shape for swimming (shaped like a torpedo).
- Limbs reduced and modified into flippers -hind limbs are not used for walking.
- Male sex organs are contained inside the body.
- No external ear structure.

Temperature Regulation

Water conducts heat out of the body 25 times faster than air. How do seals retain body heat?

- Thick blubber.
- Large body size.
- Reduced limbs (arms/legs).



Breathing/ Diving

- Can restrict blood flow to other tissues during diving thus conserving oxygen.
- Can slow heartbeat to conserve oxygen.
- Have muscles that can handle large lactic acid loads.
- Have increased oxygen in the blood.
- Have increased blood volume compared with other terrestrial mammals.

Senses

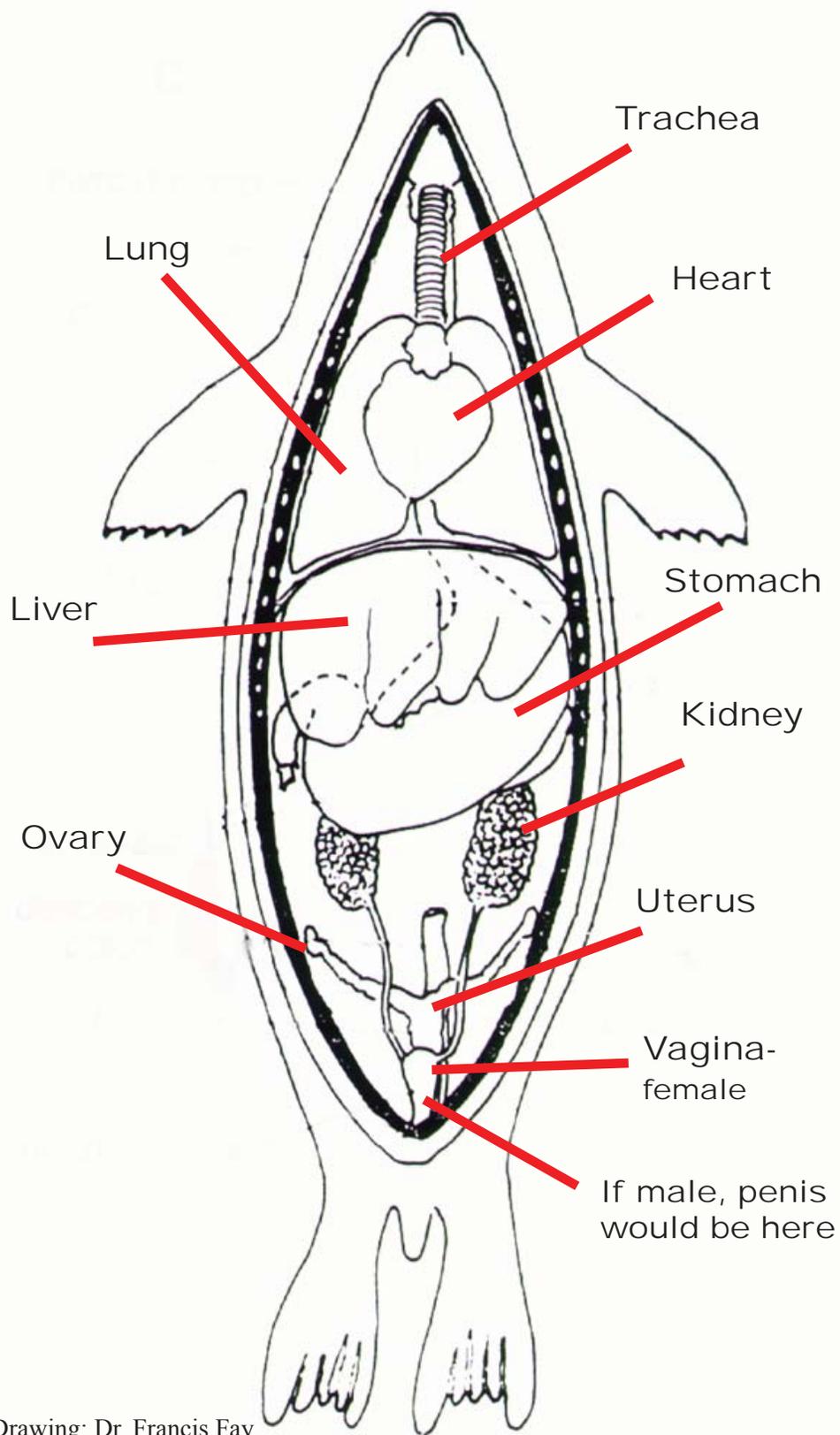
- Greatly enlarged eyes to help them see in low light condition underwater.
- Specially designed inner ears allow better hearing underwater than in the air.
- Sensitive facial whiskers.

How do they live without fresh water?

- Special segmented kidneys eliminate salt and concentrate urine.
- Fresh water is produced from the fish they eat.
- Fresh water is produced from breaking down (metabolizing) their own blubber.

* Information on this page taken from "The Pinnipeds", Marianne Riedman 1990

Seal Anatomy- with intestines removed



Drawing: Dr. Francis Fay

Ringed Seal- *Nayiq*

Ringed seals are the smallest, most common and wide spread seals in the Arctic. Adults in Alaska rarely exceed 5 feet long and 150 pounds. The color of ringed seals varies, but the basic pattern is a gray back with black spots ringed with light marks and a light belly. The seal gets its name from these markings. Ringed seals are adapted to living under solid fast ice and build lairs under the ice and snow for giving birth and resting.

Food and Feeding: Ringed seals eat a variety of small invertebrates and fish. The particular species eaten depends on availability, depth of water, and distance from shore. In Alaska waters, the important food species are arctic cod, krill, shrimps, and other crustaceans.

Ice Types: The smallest of our seals is typically found in some of the thickest ice. Ringed seals keep breathing holes open by scratching the ice with their strong claws. Females give birth to a single, fuzzy, white-coated pup in snow dens on either landfast or drifting pack ice during March and April.

Behavior: The average weight of pups at birth is 10 pounds. Females nurse pups for about two months and during that time the pup doubles its birth weight.



Unique Facts: Ringed seals are the only seals that build a lair under the snow (snowcave) for giving birth and for resting.

Migration and Distribution

Ringed seals live around sea ice; however, some ringed seals are seen during ice-free periods in the Bering and Chukchi seas. Seals appear at various coastal locations with the formation of shorefast ice in the fall. They disappear in the spring with the ice breakup. Seals wintering in the Bering Sea probably summer in the northern Chukchi Sea or Arctic Ocean. Ringed seals do not haul out on land unless they are sick or injured.

Map based on data from "Guide to Marine Mammals of Alaska", Kate Wynne, 1997.

Modified from the Wildlife Notebook Series, Alaska Department of Fish and Game, Text: Thomas J. Eley Jr.- Revised 1994.

Spotted Seal- *Issuriq*

Spotted seals are common in the Bering sea during ice-free seasons. They are medium size compared to our other seals, roughly the size of ribbon seals, larger than ringed seals, and smaller than bearded seals. Most mature adults weigh between 180 to 240 pounds. Grown seals are between 56 to 67 inches long. The snout of spotted seals is somewhat elongated, resembling that of dogs.

Food and Feeding: Spotted seals eat many types of fish as well as octopus and a variety of shrimps. Pups feed primarily on small shrimps. Along the coast these seals feed on herring, capelin, saffron cod, some salmon (especially in lagoons and river mouths) and smelt.

Ice Types: Likely to be found on the southern edge of the ice pack near the open ocean.



Behavior: Spotted seals are wary and difficult to approach. They form large aggregations on the ice and at certain locations on lands. Spotted seals do not seem to be very vocal except when in molting groups on the ice. When encountered in such groups, they make a variety of sounds describable as growls, barks, moans, and roars.

Unique Facts: Spotted seals often rest in groups on sandy beaches of islands during the summer (haul outs).



Migration and Distribution

By March-April spotted seals are found mostly in the ice front at or near the southern ice margin. In May-June they rest and molt on the receding and melting pack ice, forming large concentrations on the various ice remnants that persist. Their movements are mostly northward and toward the coast. By late summer-early autumn they are found along the entire northwestern coast of Alaska. In fall and early winter they move southward and away from the coast just before and during freeze-up.

Winter Range Summer Range

Map based on data from "Guide to Marine Mammals of Alaska", Kate Wynne, 1997. Text Modified from the Wildlife Notebook Series, Alaska Department of Fish and Game, Text: Thomas J. Eley Jr.- Revised 1994.

Bearded Seal - *Tungunquk, Maklak*

Bearded seals are the largest seal in Alaska. They may weigh more than 750 pounds. From nose to tip of tail (not including hind flippers), adults average almost 8 feet! Unlike other Alaska seals, adults have neither spots nor bands. They have long whiskers, square fore-flippers and small head relative to body size compared to other seals.

Food and Feeding: Bearded seals eat a wide variety of animals found in and on the rich bottom of the shallow seas. Their main food items are sculpin, flatfish, crabs, shrimp, clams and snails.

Ice Types: Broken pack ice

Behavior: Bearded seals vary in their alertness or wariness depending upon the time of year. In the spring when they are basking on the ice, they frequently show little concern of a boat or human. They have good vision and hearing. During winter hunts on the ice, the slightest sound of a hunter will cause a seal to flee amidst a mighty splash of water. During April, adult male bearded seals begin underwater “singing” to attract mates. The song is a complex whistle, parts of which are audible to humans. Hunters are sometimes guided to a seal by its whistle.

Unique Facts: Older bearded seals have worn down teeth because they get sand from the bottom mixed in with their food. They also have a thicker skin than the other seals.



Migration and Distribution



Bearded seals are usually solitary animals. They make seasonal migrations as they follow the movement of sea ice. In late winter, when ice occupies a large area of the northern seas, bearded seals are widely dispersed. During their northward spring migration through the constricted waters of Bering Strait and during late summer when sea ice has receded to the Arctic Ocean they are more concentrated. Adult bearded seals are almost always associated with ice, but young seals sometimes remain in ice-free areas where they frequent bays and estuaries.

 Summer Range  Winter Range

Map based on data from “Guide to Marine Mammals of Alaska”, Kate Wynne, 1997.

Text adapted from : John J. Burns Revised and reprinted 1994- Alaska Wildlife Notebook Series

Ribbon Seal- *Qasrulek*

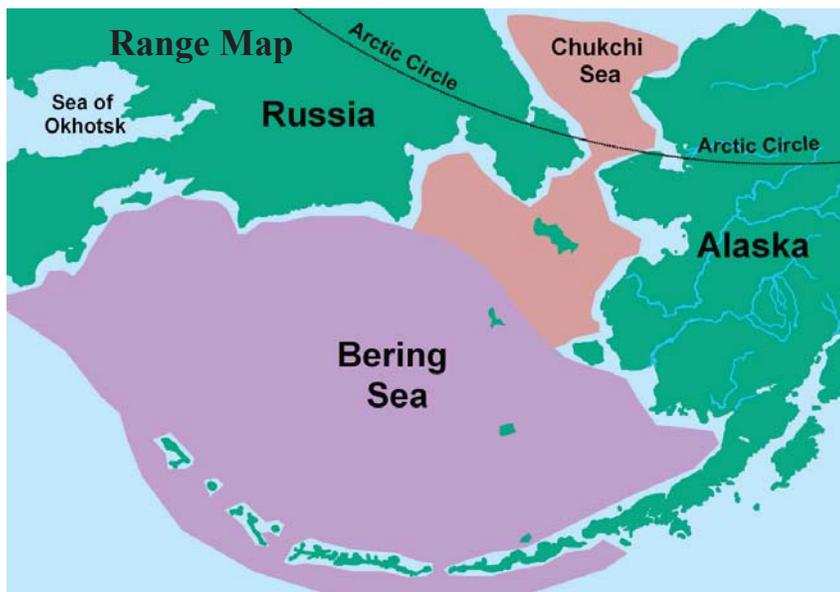
Ribbon seals are our most “mysterious” seal because they are not commonly seen. They are smaller than bearded seals and larger than ringed seals. Average length is about 58 inches and average weight is 154 pounds. The first-year coat does not show “ribbons”. Until they molt at age 1, they are blue-black above and silver-gray below. By age 4, the light colored “ribbons” develop. The background color in males is almost black. In females, the background is a lighter brown.

Food and Feeding: Their main prey is fish and their favorite is pollock. Other food are eelpouts, capelin, halibut, pricklebacks, cod, herring and sandlance. Foods other than fishes include squids, shrimps, mysids, and crabs.

Ice Types: Ribbon seals are found on old pack ice in the spring, but they can also spend much time at sea not near any ice during the summer.

Behavior: Ribbon seals are surprisingly tolerant of boats and humans. They often rest on the ice away from water and for considerable periods of time without lifting their heads to look around. They tend to be solitary, though many will occur loosely scattered at good sites.

Unique Facts: They are the deepest diver of all our seals. They can dive to a depth of over 1000 feet.



Migration and Distribution

Ribbon seals are found mainly in the ice front of the Bering Sea pack during late winter and spring. As sea ice recedes northward and melts in May and June, ribbon seals use the shrinking ice remnants, mainly in the central Bering Sea. When that ice disappears, they live in the open sea. Most of them probably remain in the Bering Sea during the open water period.

3. Subsistence and Health

The active lifestyle of food gathering and eating healthy, natural, unprocessed foods is good for your health. People in this area have been hunting seals and other animals and fish for thousands of years. Wild animals are a very healthy food. They are unprocessed, organic, and contain less contaminants and chemicals than commercially produced food.

When people harvested and ate only wild foods they were focused. Days and even months prior they would prepare for hunting: carving wood for kayaks, sleds, and hunting implements; the women sewing hunting clothing, materials and other items needed for hunting.

When you hunt and gather your own food you are also exercising. That means hunting and gathering is good for your body and your mind.

The mental and social aspect of subsistence hunting and fishing is also important to health. As Albert Simon from Paimut says, “It makes life meaningful to be able to go out and provide food for your family.” and Fritz Charles says that “seal hunting is important mentally because it cleanses your mind and gives you time to think thoughts over; what you’ve accomplished in life and other important matters.”

Seal hunting is also important because it brings people in the community together, to share and celebrate. This is especially



Albert and Martha Simon, Hooper Bay

Photo: Lori Quakenbush



Drawing by Christine Maayugaq Francis: Toksook Bay

important today when people are spending more and more time inside their own houses watching TV or playing video games. What was once the center of the community for survival purposes remains socially important. Hunting seals and other animals provides people and the community a connection to each other and an identity as Yupik people.

People who don't hunt or prepare foods anymore may lose contact with their culture and suffer from depression, which in turn may be related to an increase in suicide and substance abuse.

'We never needed a word for subsistence' - by Sue 'Ainana' Steinacher

Some people might think that subsistence is just about hunting and gathering food for personal use – but it's so much more than that.

Subsistence is about our identity - our villages are located where they are because of their closeness to the wild foods our people have always hunted and gathered.

Subsistence is about learning – watching over-and-over as the experienced hands of adults and Elders show us how to shoot a seal, cut a salmon, sew a skin, pluck a goose.

Subsistence is about learning patience – as we wait for the seasons to turn, the seas to calm, the ice to open, the weather to clear, and the game to present itself.

Subsistence is about self-reliance – it teaches us to take responsibility for ourselves by taking responsibility for the food we eat.

Subsistence is about belonging – our hunting and fishing camps bring generations of family members closer together through the cooperative and communal endeavors of gathering wild foods.

Subsistence is about family – it binds us to those who teach us how to hunt and prepare our food, and to those we will someday teach.

Subsistence is about community – as we share what we catch and gather and prepare with other members of our village and region.

Subsistence is about nourishing our bodies – our Native foods are grown with Nature's blessings of sunshine, warmth, clean air and clean water, and not pesticides and chemicals.

Subsistence is about nourishing our families – passing knowledge from generation to generation of how to preserve and prepare the foods we catch and gather, so that we can all sit down together and share food from our hands and hearts.

Subsistence is about nourishing our spirit – because it gives us all these gifts.

Subsistence isn't about our lifestyle – it *is* our life. It is how we mark the passing of the seasons by the animals we hunt and the plants and berries we gather, and how we mark the passing of childhood into adulthood by when we shoot our first seal, or learn to cut and hang a seal. We never needed a word for subsistence because it just was – and as long as we continue to hunt and gather and prepare and share our Native foods, it still is.

Did you know ?

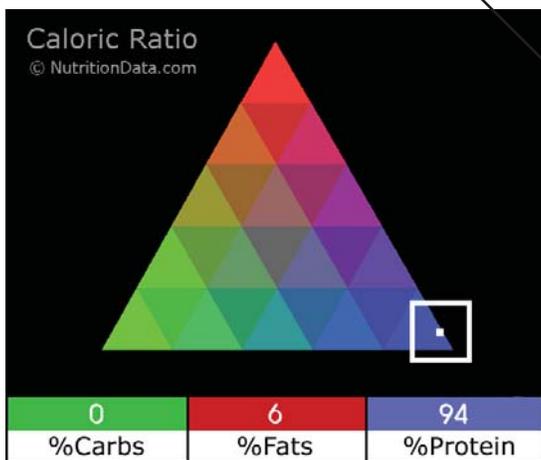
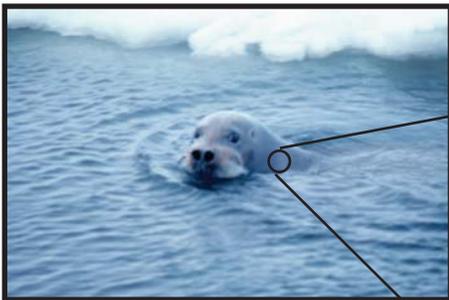
Seal meat, oil and organs are an excellent source of protein, vitamins and minerals, especially iron and phosphorus.

Seal meat is also low in saturated fat, cholesterol and sodium.

* Seal meat eaten raw, frozen, boiled, dried or aged (fermented), is an excellent source of protein. We need protein to build and repair our muscles, skin and blood. Protein also helps us fight sickness.

Seal liver and blubber are excellent sources of vitamin A. Vitamin A is needed for healthy skin, bones and teeth. It also helps our body fight sickness.

Most parts of the seal are excellent sources of iron. Iron helps make healthy blood that flows through our bodies giving us energy and making us grow. Healthy blood keeps us from getting tired. *



Seal, Bearded, meat, air-dried

| Amount Per Serving | |
|--|---------------------------|
| Calories | 99 |
| Calories from Fat | 6 |
| % Daily Value* | |
| Total Fat | 1g |
| Saturated Fat | 0g |
| Trans Fat | |
| Cholesterol | 0% |
| Sodium | 0% |
| Total Carbohydrate | 0g |
| Dietary Fiber | 0g |
| Sugars | 0g |
| Protein | 23g |
| Vitamin A | 7% |
| Vitamin C | 0% |
| Calcium | 0% |
| Iron | 78% |
| *Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs: | |
| | Calories 2,000 2,500 |
| Total Fat | Less than 65g 80g |
| Sat Fat | Less than 20g 25g |
| Cholesterol | Less than 300mg 300mg |
| Sodium | Less than 2,400mg 2,400mg |
| Total Carbohydrate | 300g 375g |
| Fiber | 25g 30g |
| Calories per gram: | |
| Fat | 9 |
| Carbohydrate | 4 |
| Protein | 4 |
| NutritionData.com | |

Okay, seals don't have nutrition labels on them but, if you look up the nutritional value of seals and compared them to commercially raised meat you would find that seals are higher in protein and lower in saturated fat.

* Based on the Nutrition Fact Sheet Series (Inuit Traditional Foods): Produced by Baffin, Inuvik, Keewatin and Kitikmeot Health Boards, in conjunction with the Community health programs, Department of Health and Social Services, GNWT. Prototype developed by Dene Nation and Mackenzie Regional Health Services. March 1996

4. Survival

*“Fearless hunters face hardship because they take risk”
-experienced seal hunter*

If you are afraid of the sea, you have no business being there. Fear causes bad decisions, bad decisions quickly create disaster. Disaster affects a multitude of people. Respect, not fear, is what you need. Respect allows you to prepare for all that the sea may present you with.

Hunting seals can be a dangerous. You must be prepared for many different situations, bad weather, getting stuck out, and accidents. One of the best ways to avoid a bad situation is to not get into one. Many hunters say, **“Don’t take chances out there”**. The more you know about the ice and the weather, and yourself, the less likely you are to get in a bad situation.

If something happens, however, you should know how to survive. In the old days, hunters who went out did not have the modern equipment of today. They had no snowmachines, no GPS, and no CB radio’s. They relied on experience and knowledge to keep them out of trouble and their skills to help them survive if they did get into trouble. They learned this from accompanying experienced hunters and paying close attention.

Unexpected things can happen even to skilled and knowledgeable people; an ice floe can break free sending hunters floating off-shore, the weather can change, the wind can shift, a snowmachine can break down, among many other possibilities.



Drawing: Naomi Nasgwaq John, Toksook Bay

What can you do if something happens?

Shelters are very important because you must have a way of getting out of the wind and the rain or snow to conserve warmth. Shelters can be constructed in many ways. It depends on what materials are available.



If there is snow, then a snow cave may be constructed. If there is a deep snow drift you may be able to dig into it and make a den inside for yourself. Snow is a good insulator and inside the cave will be much warmer than outside. If there is not a lot of snow you can pile the snow into a big mound and after a couple of hours start digging a cave into the pile. Sit on something that pads you from the cold ground.

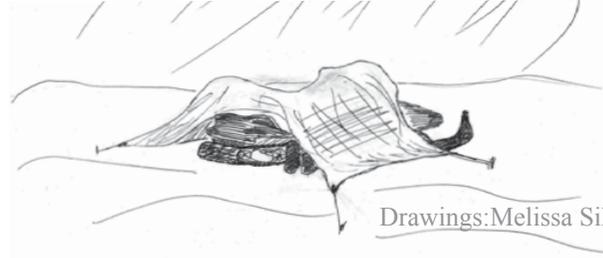
Snow is a great insulator- that’s why animals and people live under the snow.

Snow Shelter Tips

- If the snow is hard-packed then try and find a mouse hole to start digging into.
- Lay body to body to stay warm
- Make sure you keep an air hole in the roof of a snow cave or snow shelter.

You can also make a shelter from a tarp (always carry a tarp with you). Bury one end of the tarp under the snow, tie one end to your snowmachine. If the tarp is big enough cover your snowmachine with the tarp and secure the edges under the snow with snow or stakes.

**You should carry a canvas tarp!!
Plastic tarps create condensation which
can freeze a person's clothing which is
dangerous.**



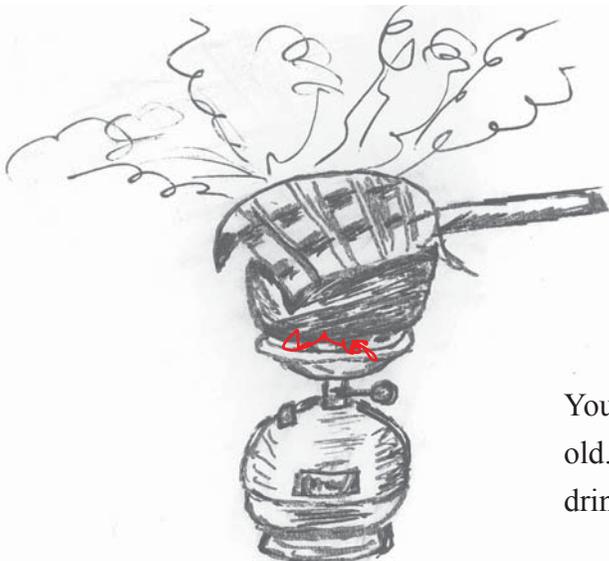
Drawings:Melissa Sikes

*Here is a simple way to make a shelter
with a tarp and your snowmachine.*

Water - is very important. You can only live for a few days without water - you can live a long time without food. When you are out hunting you should carry extra water with you. You should also have a small stove and a pot along to melt snow or ice.

What if there is only salt water around?

You can boil the salt water in a pot with a rag over the top pot. The steam will soak the rag and you can then drink the water that is soaking the rag!



Drawings:Melissa Sikes



Photo: Lori Quakenbush

*Two hunters drink from the freshwater
on top of the ice*

You can also get freshwater from sea ice that is over one year old. Melted snow on top of a floe is fresh and you can drink it.

Keeping Warm

When Charlie Brown from Eek was a kid, he got wet in his parka from sweating and then got cold. His grandfather told him to stuff dried grass in his parka. He did this and warmed up. The grass absorbed the sweat and provided insulation.

Another hunter tells the story of a night spent on the sea ice with his son. He made a bed out of king eiders and says it was the most comfortable night he has spent in the outdoors.



Before there was plastic rain suits and rubber boots, hunters all wore caribou and seal skin parkas and pants, waterproof mukluks and jacket covers made from seal intestine. Even bird skin parkas were worn. The old way of dress is still arguably the best, but not many people wear skins anymore. They are insulative, renewable, warm and waterproof, but they also need a lot of maintenance and mending.

Always dress in layers so that you can put on and take off clothes as you heat up and cool down. It is important not to sweat when it is cold because your sweat will make wet and then cold.

Carry an extra set of clothing in case you get wet. Wet clothes are very dangerous because they are poor at insulating you and rob your body of heat very fast. If you get wet you should change clothes immediately.

If you need to keep warm you can also stuff dead grasses in your jacket and pants. The grasses will help insulate you. That is how people used to line their mukluks in the old days before felt liners.

Hypothermia...occurs when the temperature of the body drops below the level required to function

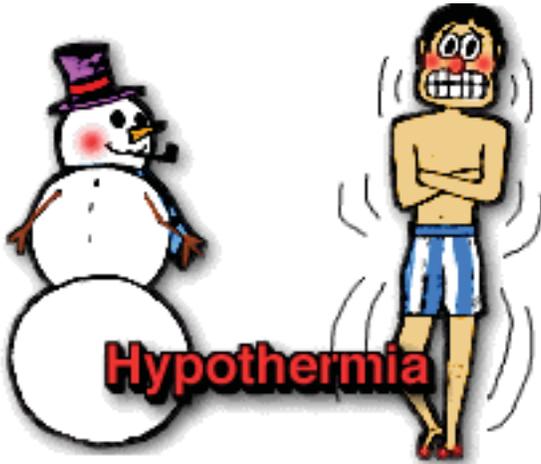
Be Careful With Cotton Clothes and Plastic Raingear !

Wool and fleece are better to wear than cotton. They keep insulating even when wet and dry very quickly. Once cotton gets wet it robs your body of heat and takes a long time to dry out. There is a reason for the popular saying, "cotton kills".

Be careful when wearing plastic raingear. It keeps the rain out but it also traps condensation and can make you wet from the inside. The moisture can freeze and cause hypothermia.

normally (our normal temperature is about 98.6 degrees Fahrenheit). If not treated, hypothermia can lead to death. It normally happens when someone gets too cold.

When someone becomes hypothermic they start to shiver, their hands become numb, breathing becomes quick and shallow, they can get goose bumps, and they may be confused and lose coordination. The worse it gets, the more obvious the symptoms are until they have difficulty speaking and their lips, ears, fingers and toes become blue, and they are unable to function normally.



To treat hypothermia you must warm the person. Get the person out of the wind (inside if possible) and cover them with blankets. Use a blanket, tarp or pad to provide insulation from the cold ground. Cover the person's head and neck to help retain body heat. Once inside, remove any wet or constricting clothes and replace them with dry clothing. Warm the person. If necessary, use your own body heat to help warm them. If the person is alert and can easily swallow, give them warm, sweetened, nonalcoholic fluids to aid the warming. Stay with the person until medical help arrives.

TIPS:

- Take seal oil along and drink it after you fall in the water.
- Eat dried salmon eggs to help prevent hypothermia.
- Nelson Island people take fermented herring to provide warmth.

Be Prepared ! - Pack a survival kit and take it with you, even on short trips. Many people have been stuck out unexpectedly. Items you should always take with you include:

- VHF radio
- CB, check in every hour
- signal flares
- lighter
- tarp
- flashlight
- shovel
- water
- small gas or primus stove for water
- extra warm clothes for cold weather
- food
- horn or whistle
- extra rope
- mirror

5. Navigation

“What do you have in your boat? You think you are coming right back but maybe you’re not.”

- experienced seal hunter

Getting lost is possible even if you are prepared. You should always carry a map and compass, and a GPS and extra batteries and know how to use them. You should carry a VHF radio for emergencies, and you should tell someone where you are going.



If you get lost, or if your boat or snowmachine breaks down, stay where you are and build a shelter for warmth. People will come and find you only when they know you are overdue. If you wander too far from where you said you would be, it will be difficult for them to find you and you may waste energy and get tired, wet, and cold. Old hunters are experienced and patient. They can wait out a storm and travel when it is safe.

Experienced hunters know the the land and sea. That is the best way to stay found; to learn from the experienced hunters in your community. They know landscape features, which way the wind blows at certain times of the year and you can still learn this information if you hunt with experienced hunters. Some of the major features to learn about are:

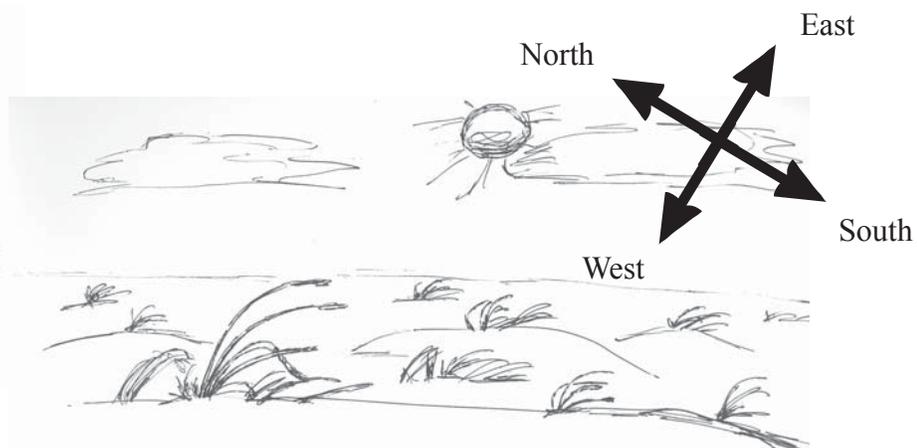
Pressure ridges can be in the same location every year due to shallow areas in the sea. If you know where they are and what direction they run, you can use them as a landmark to find your way home.



The prevailing wind usually blows the grass over in the direction it travels. If the you know the direction of the prevailing wind you can find out directions. For example, if grass is bent over where the prevailing wind is from the north then the grass is bending to the south. If you face the wind direction, west will be to your left and east to your right.

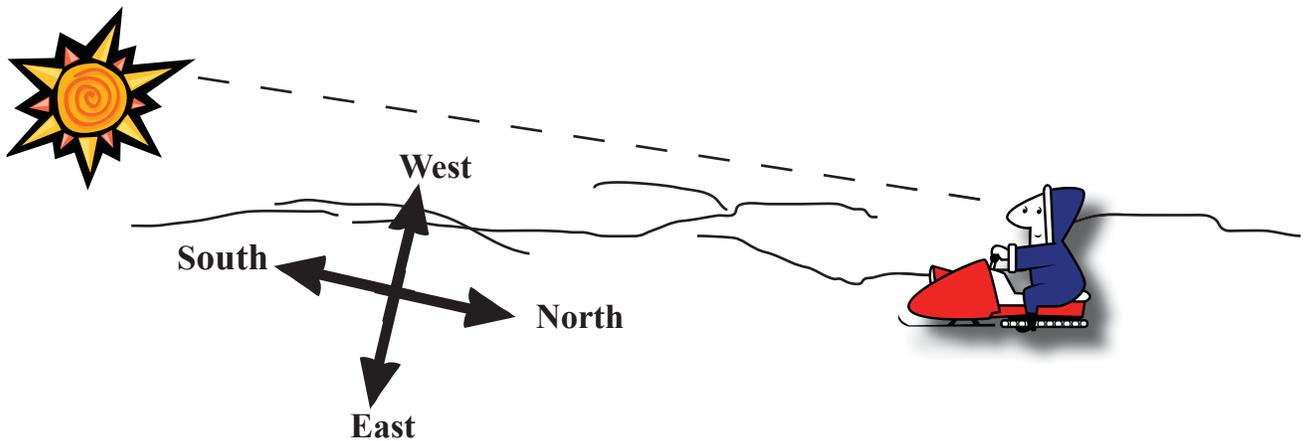
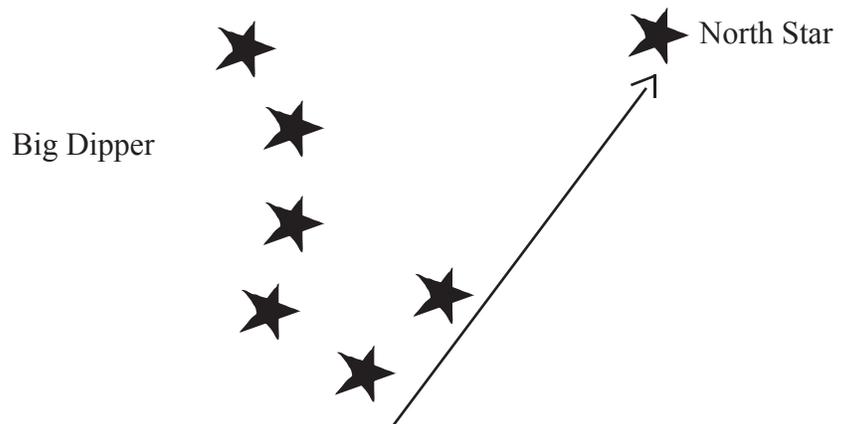


Drawings:Melissa Sikes



The Stars can tell you a lot about direction if you know what to look for. Study the constellations (formations of stars) in our area. For example if you know the Big Dipper you can find the North Star. If you see the North Star you know that direction is North.

The Sun can also provide you with knowledge of direction if you have a watch. You can tell direction if you know what **solar noon** is for your area. At solar noon, the sun is **due south** and a shadow is pointing due north. Solar north is determined by your longitude. In Hooper Bay, for example, solar noon is right around 1:00 p.m. During the summer daylight savings time you have to add an hour to that, making it 2:00 p.m.



Keep your GPS running in the cold:

- In order to keep your GPS running in the cold so that the batteries don't die, you should keep it in your inside pocket to keep it warm.
- GPS's, when turned on and when you are not moving, give false readings- After turning on GPS, walk in one direction and it will show you the direction you are heading.
- Put your GPS on a neck strap and keep it inside your coat to keep it, and the batteries warm.

Do

- Tell someone where you are going
- Bring the proper gear
- Hunt with at least one other person
- Check the weather
- Always look back to see where you came from

Don't

- Leave emergency gear at home
- Hunt alone
- Take chances

6. Weather and Ice

Always look outside and learn if the weather will be safe and favorable for travelling and hunting. If a storm is coming you shouldn't go out. The first questions everyone must ask themselves before they go hunting is:

Are the conditions safe for me to go hunting? A smart hunter knows when to go and when to be patient and wait for better conditions.

Weather

The best way to understand the weather is to learn from people experienced in the outdoors. But here is some basic information to get you started.

Most storms that cause blizzard/white out conditions along the Y-K Delta originate in the North Pacific and then move northward through the Bering Sea. Typically, the winds will pick up from the east or northeast, if there is loose snow on the ground there may be some blowing snow.

If the storms come from the Bering Sea how can the winds come from the east or northeast?

If there is a low pressure system in the Bering Sea, winds will be coming from high pressure areas in the North to fill in the Low in the Bering Sea. And, the winds around a low pressure system rotate in a counter clockwise direction. So, as the low pressure system approaches from the south, the winds will be blowing from the east or northeast.

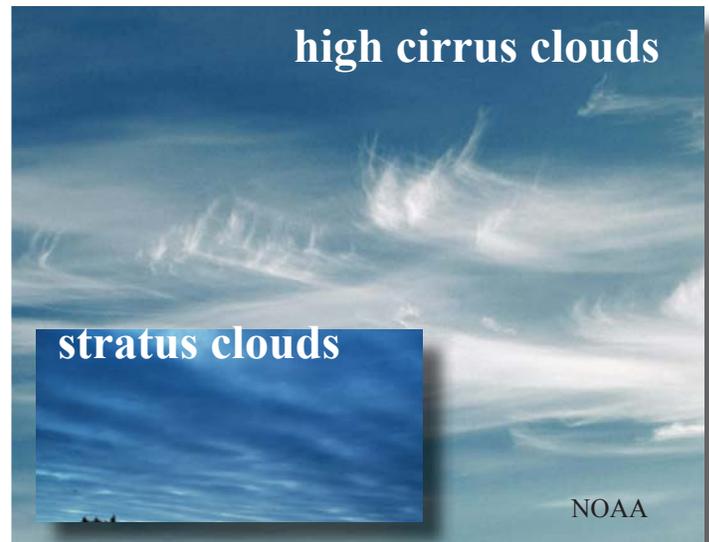


- A low pressure system generally means bad, stormy weather. So if the barometer is dropping prepare for bad, stormy weather.
- A high pressure system generally means good, clear, calm weather.

If it is clear and a storm is coming, there will be an increase in **high cirrus clouds**, then mid level **alto stratus clouds**, and then eventually **lower stratus clouds** and snowfall.

Often times in our area there are clouds so its not always clear before a storm. Meanwhile the winds may still be increasing from the east-northeast, and once it begins to snow this is when the blizzard conditions may begin.

If the temperature is at freezing or warmer, the snow is often too wet to blow so it can be really windy but it's unlikely that there will be enough blowing snow to create whiteout or blizzard conditions.



Wind

If the winds blow all the ice away as it breaks off from the shore there may be poor hunting because the seals will stay with the ice. If an onshore wind pushes the ice together and up against the land, then the leads will close and hunting will also be poor.

Ice

First of all, ice is very important to seals. The ice offers them shelter from the weather, protection from most predators that can kill them, transportation if the ice is drifting, a clean place to give birth, molt, and breed, and a food supply nearby. No wonder they live around the ice.



Ice conditions play an important role in hunter success and safety. Ice conditions must be right to find seals and also for your safety.

You can judge ice condition from a long distance if you know what to look for. It may save you from travelling a long distance just to find out that the hunting condition is no good.

For example, you can look in the distance towards the ocean and if there is a low cloud cover the ocean, ice, and land will be reflected in the sky. Open water and bare land appear as dark areas in the sky. Snow covered land and ice are white and don't show in the clouds. So, if the sky is all white to the horizon, then the ice has blown in and there is no open water or lead. If there is black in the sky then there is open water.

There are many different forms of ice that you should know about. You can not learn all about ice from a book so it is best to learn about ice from an experienced person who has spent a lot of time on the ice. Here are a couple major forms of ice:

Shorefast Ice: shorefast ice is formed each year and is attached to shore. It is the most stable ice but it can break off in some wind and current conditions and it can be crunched up by pack ice pushing in from the sea.



Pancake Ice: Is young ice cakes that are not stuck together and not safe to walk on but you may be able to boat through them.

Ice floes: Are bigger and thicker than pancake ice but they have cracks between them.



Needle Ice: ice that has rotted and not safe to travel on. It breaks apart easily in skinny columns, hence the name needle ice.

Pressure ridges: ridges of ice that are formed when intense pressure from winds and other ice cause the ice to buckle. Pressure ridges can be 100 feet high.

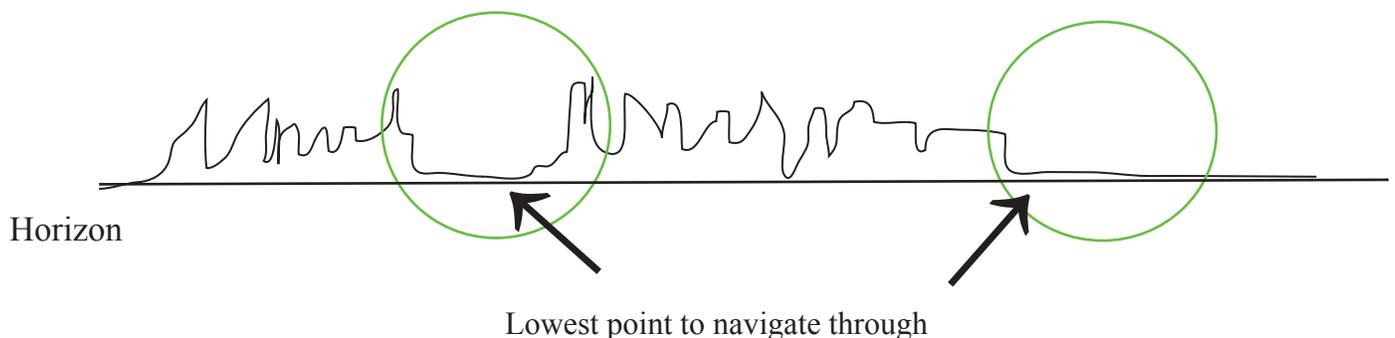


ICE TIPS

You need to carry an ice tester/ poker along with you so you can test ice before and while walking on it. It is also good for pushing ice away from your boat.

If you are hampered by ice you have to be able to thread your way through the ice, but you need to pick the lowest point of the ice build up by looking at the horizon.

In this picture the best choice is the route on the right as there is less chance of your boat being crushed by ice.



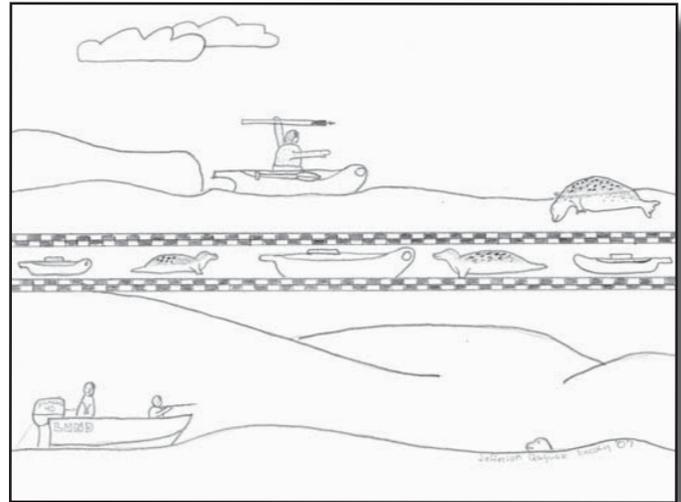
7. Seal Hunting

When faced with an unaccustomed situation, I can think back to stories of how one overcame their particular adversity. Then I can apply the same to the particular situation I am faced with even though I may not have experienced it. - *experienced hunter*

It is still best to learn by observing skilled hunters. They have been hunting seals a long time and have learned from others who have hunted for a long time. You can avoid many mistakes, accidents, and improper techniques if you learn from them.

The second best way to learn is by asking and listening.

Seals provide you with food and other items and hunting them properly is showing them respect.



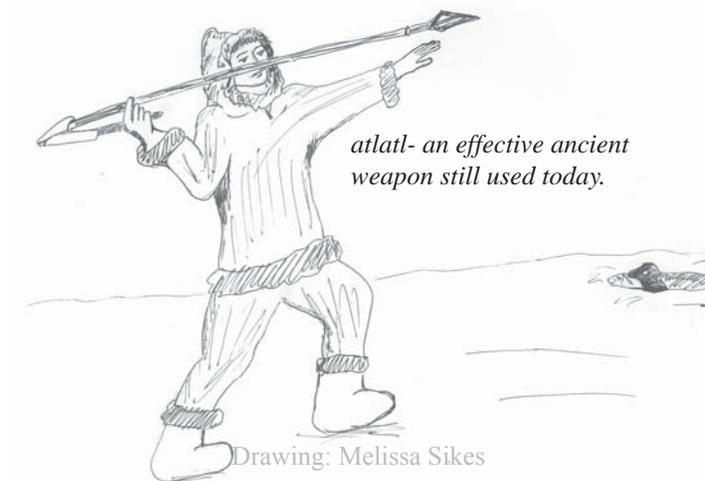
Drawing by Jefferson Qaguak Lincoln: Toksook Bay

What was seal hunting like in the old days?

Hunting seals today is different than it used to be but there is also much the same. Today we use snowmachines, boats with motors and rifles. Our ancestors did not have these items to hunt seals with. They hunted seals on foot, with dogs, or from a kayak. Kayaks were made from drift wood and seal skins. Arrows and harpoons were made of wood and stone.

People travelled a lot to follow the animals and pick various plants and berries. Our ancestors were very tough and relied on their hunting skills and incredible knowledge of the environment for survival.

For weapons they used an atlatl (a long arrow thrown with a stick for more power and distance), bow and arrows, spear, or harpoon. They made ropes out of seal hide and use this to tie to the harpoon tip so the seal could not get away. Many of these tools and techniques are still used today because they are effective.



atlatl- an effective ancient weapon still used today.

Drawing: Melissa Sikes

Today, seals are mostly hunted with rifles and harpoons. We use boats and snowmachines, radios and GPS. But even with these modern tools seal hunting still requires knowledge and skill to be successful and safe.

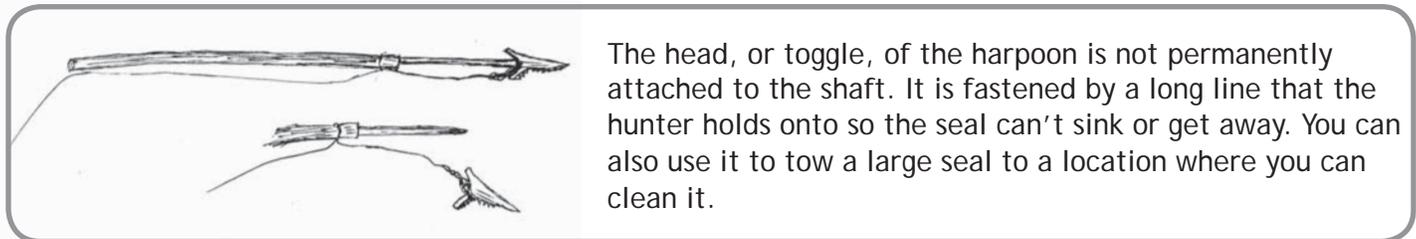
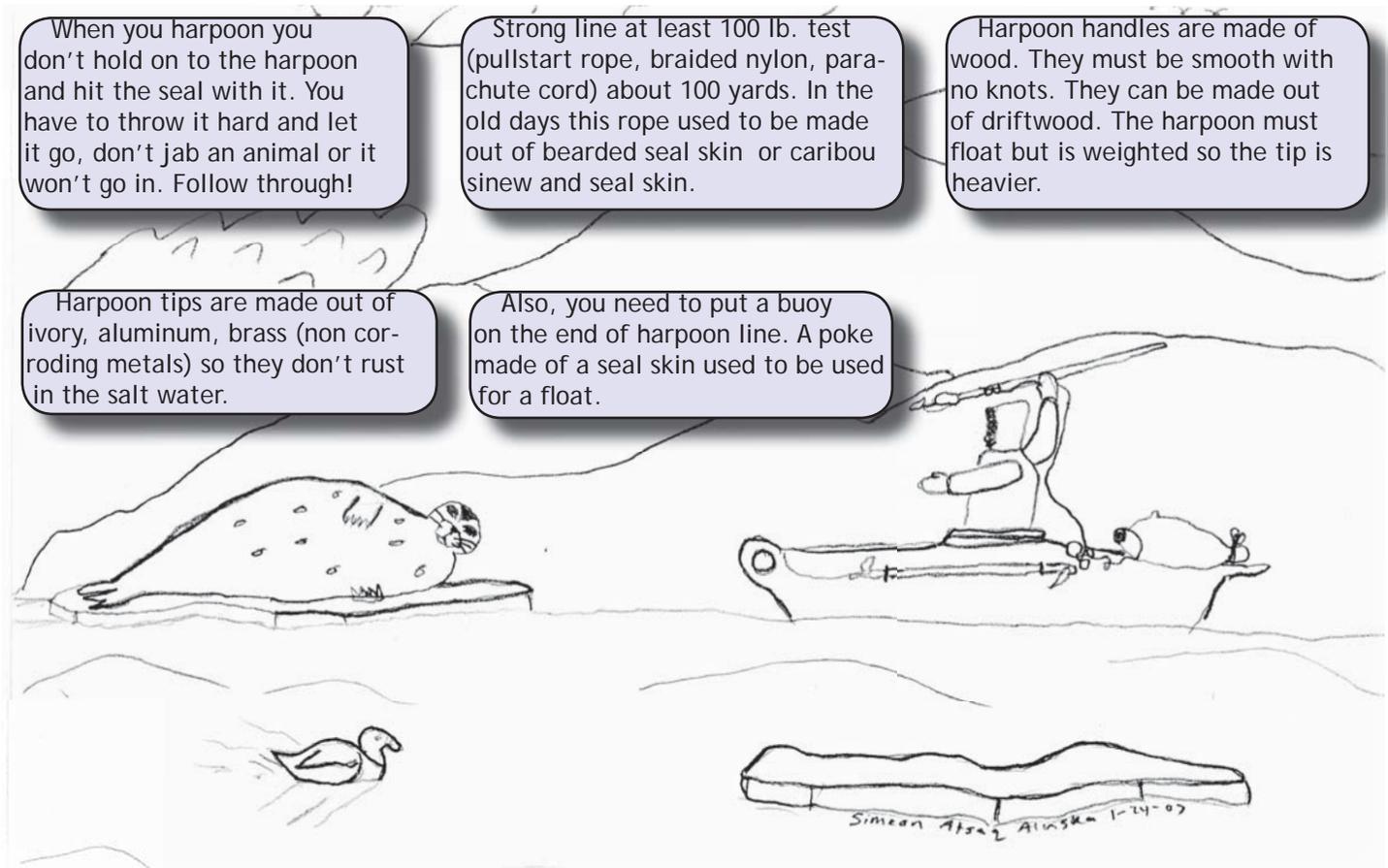
Rifles

What caliber rifle should you use?

Most hunters agree that a .222 or .223 caliber with a solid point bullet is best. For a bearded seal use something bigger such as a .243 or a 30/06 caliber rifle. The important thing is to be a good shot. The more accurate you are the less chance you have of wounding an animal that can get away. Some hunters use smaller caliber rifles in summer and fall (when seals are more likely to sink) so the bullet doesn't kill the seal immediately. An instant kill would mean a dead seal, but it would sink before it could be retrieved.

Harpoons - you've gotta use them!

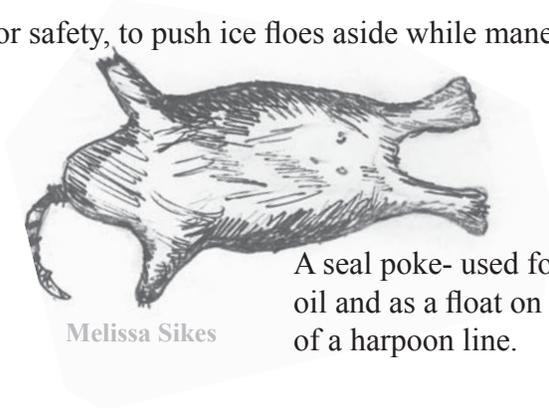
A harpoon and poke (buoy) have been used for thousands of years and are still an important tool. Harpoons are important because you need a harpoon to secure a seal before it sinks. Seals are more likely to sink in spring or summer when their blubber is thin. Seals hunted in fresh water rivers and bays may also sink because the water is not as salty as the open ocean. Things float better in saltier water.



Other Equipment

You need other equipment to be successful and safe as well. This includes:

- An ice poker (ayaruq)- it is used to test the ice for safety, to push ice floes aside while maneuvering the boat.
- Gaff (napuin)- every hunter has to have a gaff.
- Knives and a sharpener
- Binoculars
- Floatation device (PFD's)



A seal poke- used for storing oil and as a float on the end of a harpoon line.

Hunting Methods

Open water

During open water periods when hunting seals from a boat, the most common strategy is to chase the seal and each time you see it surface to take a breath, shoot at it. This will tire the seal because it can't get enough air and eventually gets tired and has to surface for a while because it is out of breath. This allows for a better killing shot. Once the seal is shot the boat races over to the seal and someone harpoons the seal before it sinks. This is important, especially in rivers and bays where the water is not as salty as the open ocean. Seals will sink if the water is not salty enough so hunters must harpoon them quickly.



Another method for hunting seals in the water is to have the boat driver speed toward the seal while a hunter with a rifle sits in the bow. When close enough to the seal the hunter tries to shoot the seal. If he hits the seal he puts the rifle down and grabs the harpoon. The boat driver is still speeding toward the seal and the hunter now thrusts the harpoon into the seal before it sinks.

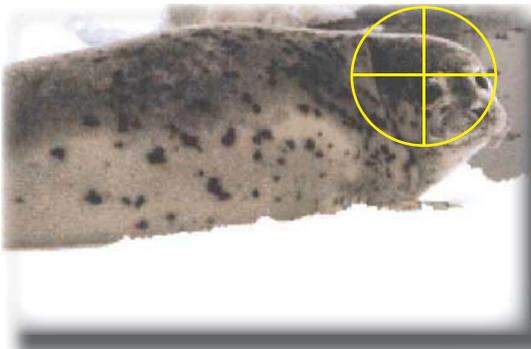
From the Ice

When the ice is in, there are different ways of seal hunting.

One way is to hunt from the shore ice and look for seals on the ice floes or in the leads. You can shoot seals from the shore ice but you need a boat or kayak to retrieve them unless there is a strong onshore wind blowing that will bring the seal to you. If it is a bearded seal you must be able to harpoon it as soon as you shoot it.

If there is loose pack ice, the other method is to go look for seals in a boat. By driving around the ice floes and looking for seals you can cover a lot of area. You should also climb up on big ice floes and survey the ice and water for seals through your binoculars. If you see any seals in the distance then you can get back into the boat and go after them and use the ice floes for cover.

Shot Placement



Now that you know what caliber rifles are best, the next thing to know is where to hit a seal so that you are sure to get the animal. This may be different under different circumstances and for different animals, so you must pay attention.

If the seal is on the ice, especially near a breathing hole then you want to kill it instantly so it can not go into the hole and under the ice, and be lost.

In this case you want to hit it in the head as shown in the picture above. This should leave the seal laying right where it was. You should still get to the seal as quickly as possible because it may still slide into the hole.

If it is possible that the seal can sink, such as a bearded seal or other seals in fresh water bays, then you don't want to kill the seal with the shot. You need to get to the seal and harpoon it. In this case you should try and 'nick' the seal.

The Yupik word for this, Englutruatuk, means "almost miss".

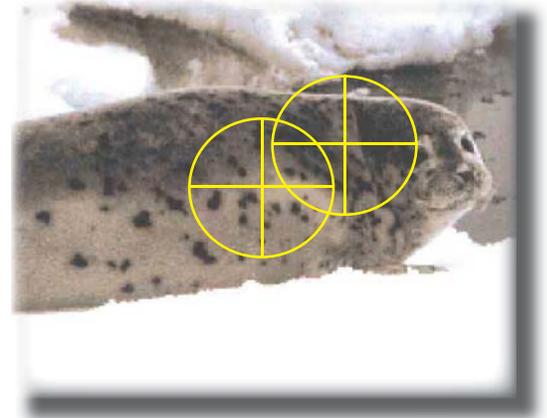
(Other words for this include: Inlutruartaa- 'miss it so close' and Elukugaa- 'hits it with a nick'.) This way the seal will not die and

sink but it will be wounded and stay at the surface, giving you a chance to boat up and harpoon it. In these situations some hunters even sight in their rifle to be a few inches to the left so when they aim at the head it will hit, but not kill the animal.

Hunters say that if you watch a bearded seal on the surface wait until it breathes in before shooting. This is the time to shoot because that big gulp of air that will keep them afloat for a few seconds and give you time to harpoon them.

Other important information

- Check bearded seals to make sure they are dead otherwise they can seriously injure you.
- In extremely cold weather (when engines do not work very well) it is best to hunt from the ice with a kayak or canoe to travel in and retrieve the seals.
- Sometimes you can attract a seal by scraping the ice with a hard object so they think there is another seal nearby.

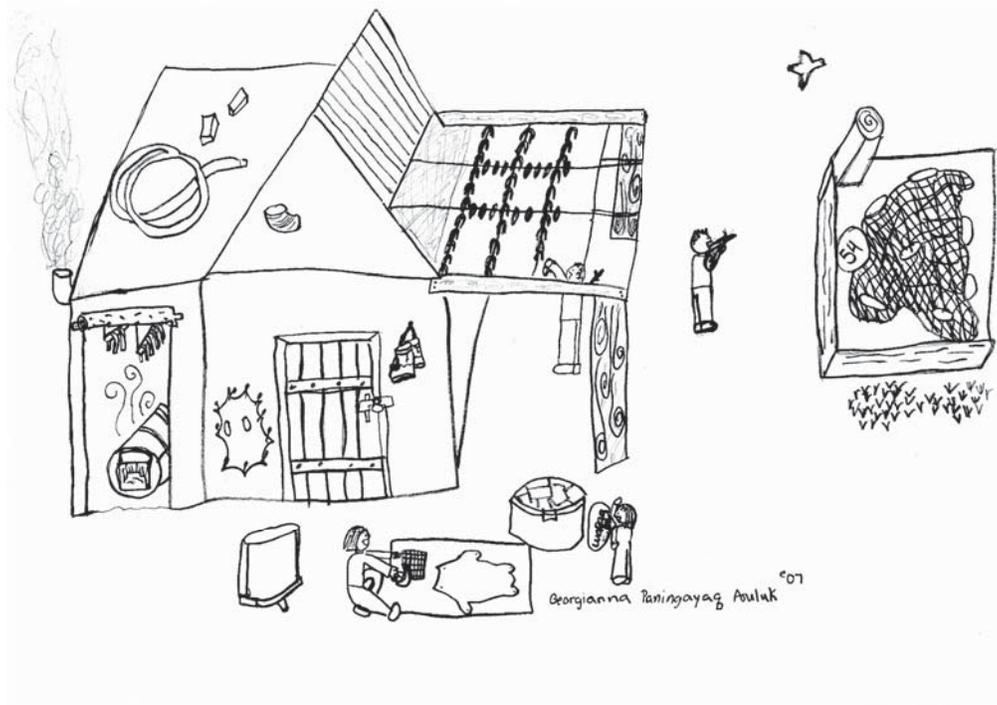


Seal Hunting by the Season Summary

Winter

Ice begins to form and open water begins to get farther from shore and seals move farther from land to remain in ice free waters. Ringed and bearded seals will also begin to create and maintain breathing holes which they will use throughout the winter.

During the winter, seals are hunted mostly from leads that form at the edge of the shorefast ice or from a boat in the leads and ice floes. The most common seals caught in the winter are ringed and spotted.



Drawing by: Georgianna Paningayaq Asuluk: Toksook Bay

Spring

In April and May, large cracks begin to develop in the ice. This happens because of tides and wind and temperature changes. In spring, hunters focus on finding seals that are hauled out and basking on the ice. This is a very productive time for hunters to hunt seals.

The most common seals caught in the spring are bearded and ringed with some spotted.

Summer (the later half of June through the middle of August)

Summer is the hardest time to successfully hunt seals because they are scattered throughout the coastal waters and are farther from shore. Hunters still occasionally kill seals in the summer time because they are always prepared for the opportunity of seeing a seal.

At this time of year seals are usually chased with a boat to get them tired. It is common to use a rifle or shotgun to repeatedly scare the seal underwater so it runs out of breath and gets tired. Then it is easier to harpoon or shoot.

In summertime you must harpoon seals quickly or they will sink.



Drawing by: Mikey Aussunaq Lincoln: Toksook Bay

Fall

This is a productive time of year. Seals are moving and hunters catch all the species of seals.

Mostly bearded at first which are moving close to the shore and bays, and later ringed and even spotted and ribbon seals are commonly caught.

Lots of people are out hunting in the fall. It is an important time because it provides food that can be relied upon during the winter.

The most common seals caught in the winter are bearded and ringed.

8. Uses of Ice Seals

Today seals are mostly used for their meat, fur, and oil; however, they have many other uses as well. Below is a review of the most common uses of the different seals.



Drawing by: Patrice Uquviar Carl: Toksook Bay

It is important to note that everyone has their own preference for what seals they like. Like most things, different people have different tastes. Even in a small region there is variation. For example some people like the meat of young bearded seal the best while other like the meat of spotted seal best. Some people don't eat ribbon seal while others do.

Tungunquk, Maklak - Bearded Seal:

- Most important seal for food and oil
- Meat is dried
- Skin used for the bottom of mukluks
- Harpoon rope made from hide
- Other line made from hide

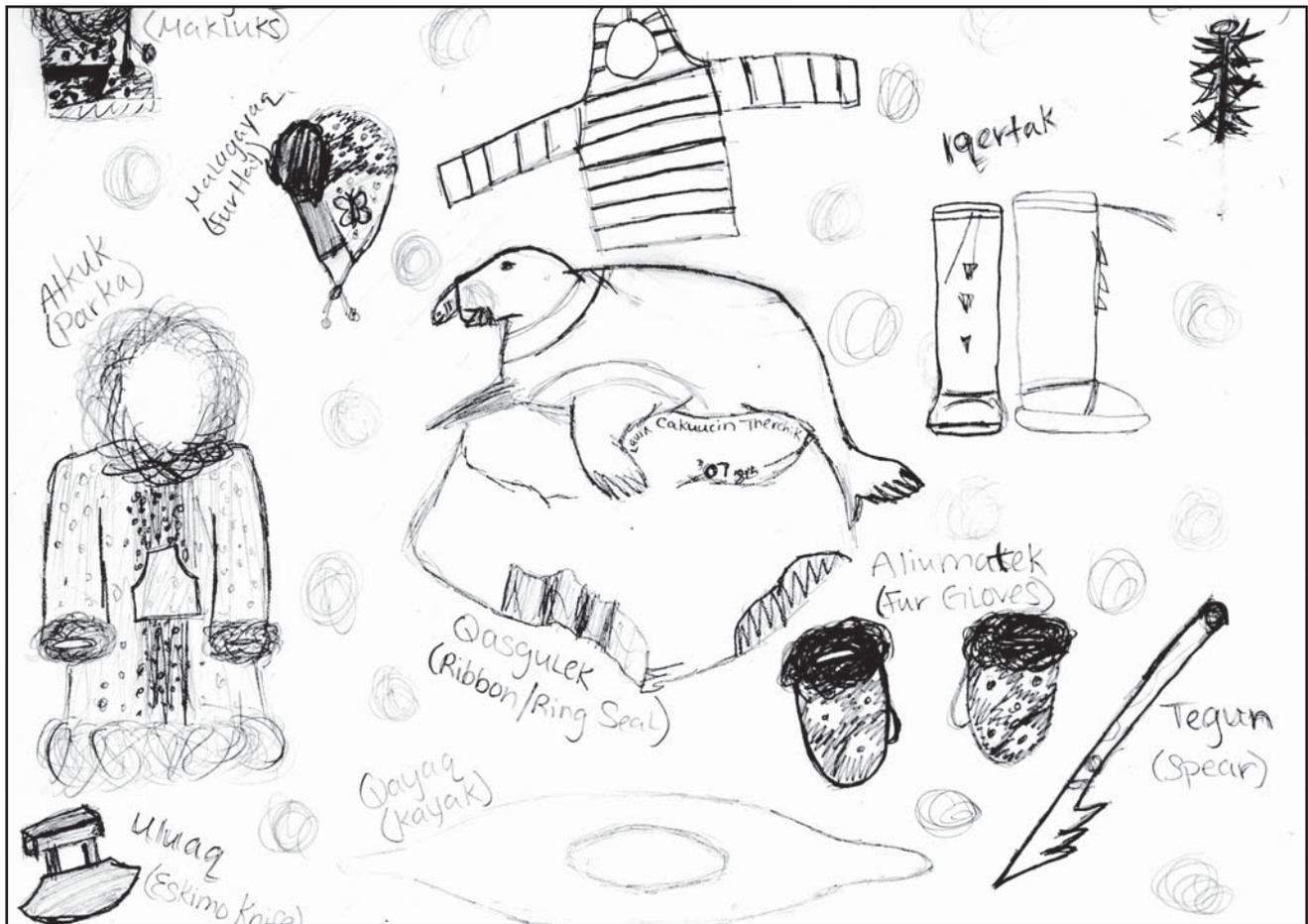
Nayiq- Ringed Seal:

- Oil ,food, clothes
- First dance mat
- Ceremonial use
- Containers for seal oil and fish (poke)
- Artwork/handicraft



Photo: Katie Curtis

Mary and Charlie Lincoln from Toksook Bay- Mary with seal skin mittens and hat.



Drawing by Laura Cakuucin Therchik: Toksook Bay

Issuriq - Spotted Seal :

- Food, oil, clothes
- Handicrafts



Qasrulek- Ribbon Seal:

Lots of people think that the meat is too bloody for eating but others do eat it. It is definitely not hunted as much as the other seals partly because it is not as common.

- Food
- Clothing
- Handicrafts
- Some people use the meat for dog food, or they used to when dogs were used more for hunting .



9. Water Safety

Seal hunting is done on the ice and water often in cold temperatures. Ice and water can be dangerous and hunters must always be aware of their actions. You must be careful not just for your own safety but for the safety of your hunting partners and other who may be hunting around you.

All experienced hunters know that water safety is important. When you are going onto the water always:

- Wear a life jacket
- Tell someone where you are going
- Check the weather
- Carry emergency gear
- Carry survival gear including
 - Marine signal flares
 - Strobe light
 - Engine tool kit
- Don't take chances
- Take a radio



Albert Simon in Hooper Bay with a young bearded seal

Your Boat

Most hunters use an 18 foot V bottom Lund or boat with a 40 h.p. motor or higher. In winter when it is too cold for motors to run, we also use canoes and kayaks to get the seals.

When operating your outboard in cold weather; when stopping on an ice flow, tilt your motor without shutting it down, then rev the engine a few times to get the water out of the intake tubes so it will not freeze and seize the engine.

Important safety information about boating and seal hunting.

- Always be prepared for the unexpected.
- Travel within sight of others so that if you do get into trouble others are there to assist you.

Operating around other boats.

- When shooting a seal always aim in the direction where there are no boats! Bullets bounce off of water and can travel for a long way.

Tide and Current

- Know when the tides are turning. Some inlets and bays get clogged when the tide comes back in. Also waves get bigger when the tide comes back in.

10. Conservation and Management

Conservation of any resource is very important. Conservation means using something in a wise manner. When it comes to animals, it means to catch only what you and your people need so that some animals will be left to reproduce and provide more animals that will be available in the future.

The traditional method of conservation by our people includes:

- Hunt enough, not more. Take just what you need.
 - What you need (your limit) depends on the size of your family. The bigger your family, the more game you need.
 - Just take what you need. Share - even if you overharvest, you can still give it to folks that need it.
 - Hunting in the fall when it is colder keeps meat fresh longer.
 - One experienced hunter says, “I go out when I’m hungry and get what I need and pass it out when I have more than I need. Share it.”
-

There are a couple of other things that you should know about the management of marine mammals because it affects many aspects of your seal hunting. Marine mammals are all managed by the federal government. This is different than moose or caribou which are managed by the state.

The Marine Mammal Protection Act was passed by the U.S. Congress in 1972 to protect Marine Mammals. At one time the commercial harvest of marine mammals destroyed many populations of whales, seals, and sea otters. The Marine Mammal Protection Act stopped all commercial hunting of marine mammals in the United States. Now marine mammals can only be hunted by coastal Alaska Natives. No hunting license is required and there are no seasons or bag limits for hunting marine mammals, however, hunting can not be done in a wasteful manner.

The Alaska Native Organization involved with seal management is the **Ice Seal Committee**, which is sponsored by the **Alaska Nanuq Commission**. To learn about the Ice Seal Committee check out their website to learn how they are co-managing Alaska’s seals and polar bears in the North and Northwest.

<http://www.nanuq.info/index.html>

The federal government agencies that manage marine mammals in the U.S. vary depending on the animals. For example:

Whales, sea lions and seals are managed by the **National Marine Fisheries Service**.

<http://www.fakr.noaa.gov/protectedresources/default.htm>

Polar bears, walruses, and sea otters are managed by the **U.S. Fish and Wildlife Service**.

<http://alaska.fws.gov/fisheries/mmm/index.htm>

