

Arctic Wildlife

Introduction.....	2
Arctic Char - Iqaluk (tariurmiutaq).....	3
Arctic Char and Nutrition.....	3
Beluga - qilalugaq (qaulutaq).....	5
Beluga Whale and Nutrition.....	5
Spring Ecological Patterns.....	6
Summer Ecological Patterns.....	9
Fall Ecological Patterns.....	11
Winter Ecological Patterns.....	12
Caribou - Tuktu.....	13
Caribou and Nutrition.....	13
Inuit Knowledge of the Qikiqtaaluk Caribou.....	15
Feeding Areas.....	16
Seasonal Migration.....	17
Local Movements.....	17
Population Cycles.....	18
An Inuit Hunter's Story.....	19
Peary Caribou- Tuktu.....	20
Musk ox - Umingmak.....	21
Musk Ox and Nutrition.....	21
Narwhal -Tuugalik.....	23
Narwhal and Nutrition.....	23
Narwhals, Killer Whales and Ice.....	25
Polar Bear - Nanuq.....	27
Polar Bear and Nutrition.....	27
Polar Bear Distribution and Movement in North Qikiqtaaluk.....	28
Ringed Seal - Natsiq.....	30
Seal and Nutrition.....	30
Seal: A Primary Food Source.....	32
Walrus - Aiviq.....	33
Walrus and Nutrition.....	34
What we know about Walrus:.....	34
Bowhead Whale - Arviq.....	36

Introduction

For more than four thousand years, Inuit have occupied the vast land, marine waters and islands which stretch from the Mackenzie Delta in the west to the Labrador coast in the east, and from the southern reaches of Hudson Bay to the High Arctic islands in the north. Inuit call this large and diverse geographic region home, but it is also known as the Arctic. Here, based on a unique adaptation to the climate, landscapes, seascapes and ecological systems our culture has developed, our history has unfolded, and our healthy diet has been maintained.

There are over 36 different mammals that live in the arctic environment, 17 of which are marine species. This document provides a general overview of some land and sea animals that make up a large portion of the Inuit diet. Not included are the myriad of other species of plants and animals that Inuit use, such as geese, ducks, rabbits, ptarmigan, swans, halibut, clams, mussels, cod, berries and seaweed. These species are no less important and are key elements of the traditional diet, particularly during the transitional periods of ice freeze-up and break-up when other food sources are difficult to access.

The availability of animals and birds still dictates our seasonal activities of hunting and fishing in order to ensure a well-balanced and nutritious diet. This annual cycle is evident in our land use and dietary patterns: from hunting seal, narwhal and walrus at the ice edge in spring, to fishing for arctic char in lakes and picking berries during the brief summer months, to hunting geese and particularly caribou in the fall when their hides are perfect for clothing and their bodies rich with nutritious fat, to hunting polar bear on the winter pack ice and seal at their breathing holes during the long winter. Our life follows this seasonal variation for we have learned from and lived with the rich bounty that the arctic provides.

Arctic Char - Iqaluk (tariurmiutaq)



Arctic char, the most northern freshwater fish, has been an important and healthy food resource to Inuit for centuries. Char is eaten raw, frozen, dried, smoked, aged or cooked. The meat, head and eggs are excellent sources of protein and Vitamin B. Dried char contains omega-3 fatty acids which helps prevent heart disease. The skin and head of char provide a unique source of calcium. The greatest concentration of calcium is absorbed into the body when the soft bones are consumed. Arctic char not only provide the nutrients to repair tissues but also to help in the development and growth of body tissues and muscles, while continually fighting off infections in the body. Highly nutritious, abundant, cheap and relatively easy to catch, the arctic char is indispensable to the Inuit lifestyle. In some instances, skins from char were made into waterproof coats for kayakers, the bones of char were made into sewing needles along with pouches that carried the sewing equipment. There are two subgroups of

arctic char: a sea-run group; and a freshwater or land-locked group, both of which belong to the salmon family. Since the late 1940's arctic char has been caught commercially and shipped southwards and has become a gourmet restaurant item in many large North American cities.

Arctic Char and Nutrition

Arctic char is the most northern freshwater fish and a favourite food of our people. Char meat, head and eggs are excellent sources of protein and B vitamins. Dried char contains omega-3 fatty acids which help prevent heart disease. The skin and head of char provide a source of calcium, especially when the soft bones are eaten.

What we know about Arctic Char:

Arctic char is one of the best game fish in the world. Sport fishing brings many tourists to the North and provides northerners with jobs as fishing guides and outfitters. Char is also fished commercially, creating local jobs; drying, smoking and canning char for non-local markets. Char is eaten raw, frozen, dried, aged or cooked.

Nutritional Value of Arctic Char				
Body Part	Meat	Skin	Head	Eggs
Excellent source (supplies 25% or more of daily need)	Protein, Iron	Protein, Iron, Calcium, Fat	Protein, B Vitamins	Protein, Vitamin C, Fat, Iron, B Vitamins
Good source (supplies 15-24% of daily need)	B Vitamins		Calcium	
Fair source (supplies 5-14% of daily need)	Vitamin C		Vitamin A, Fat, Iron	Calcium

Did you know:

Char meat, skin and eggs are excellent sources of protein. We need protein to build and repair our muscles, skin and blood. Protein also helps us fight sickness.

Dried char meat and char skin 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.

Dried char meat is a good source of omega-3 fatty acids, which help protect against heart disease and may help prevent cancer.

Char skin and heads are a good source of calcium. We need calcium for strong bones and teeth.

Prepare foods safely!

Many Inuit people eat their fish raw or raw-frozen and must be careful with its storage and preparation to avoid food carried illness. Some fish may carry worms that can be harmful to humans. These worms are killed by freezing the fish for 24 hours or cooking the fish before eating it. It is best to keep fatty fish such as char and trout frozen for only 2 months. Fresh fish will stay safe in the refrigerator 1 to 2 days before spoiling.

Healthy eating!

Bake char steaks and serve then with rice, peas and a glass of milk or unsweetened juice for a healthy meal. Dried fish is a great snack when traveling on the land.

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

Beluga - qilalugaq (qaulutaq)

The Beluga whale is an important food item in many Inuit communities. Maktaaq, (the thick skin and thin layer of blubber of whales) is a traditional delicacy in the arctic. It contains zinc, retinol and other essential nutrients but is especially rich in Vitamin C which is why Inuit never suffered from scurvy.



European whalers, by contrast, suffered from this affliction because they did not include maktaaq in their diet while in the north. The dark red meat of whales is eaten as nikkuk (dried), frozen, raw or cooked. Beluga was also a traditional source of dog food. The blubber of the beluga was often rendered into oil for cooking and lamp fuel. Misirak (rendered oil), which has been anaerobically fermented, continues to be a highly prized Inuit delicacy and is eaten as a condiment with dried, frozen or cooked meats. A large beluga can yield up to 200kg (441lbs) of meat and 50 kg (110 lbs) of maktaaq. 300 litres (66 gal) of

oil can be produced from beluga blubber. The skin of beluga produces strong yet soft and supple leather when tanned. Inuit have used the abundant resources provided by the beluga for making boat covers, footwear and dog whips.

Beluga Whale and Nutrition

In the Inuit culture food is shared. This means that when a whale is killed, the community members will eat healthy food.

Most people like the skin (maktaaq or muktuk) best. It is an excellent source of protein. Dried beluga meat is an excellent source of iron and protein. Beluga blubber is a good source of protein and omega-3 fatty acids which help prevent heart disease and may help prevent cancer.

What we know about Beluga:

Beluga skin (maktaaq or muktuk), meat and blubber are eaten raw, aged, dried, cooked or boiled in soups or stews. The aging of blubber, skin and meat is a traditional practice used to develop a desirable flavour. In the past, what skins were used to cover boats. now the skin eaten raw, aged or cooked is the favourite part of the mammal. The bones near the flipper (cartilage) are also very well liked. The oil from the whale blubber is used for fueling lamps.

Nutritional Value of Beluga Whale			
Body Part	Meat	Blubber	Skin
Excellent source (supplies 25% or more of daily need)	Iron, Protein	Fat	Protein
Good source (supplies 15-24% of daily need)		Protein, Omega-3 fatty acid	
Fair source (supplies 5-14% of daily need)	Fat	Iron	Fat, Vitamin A

Did you know:

Beluga meat is an excellent source of protein. We need protein to build and repair our muscles, skin and blood. Protein also helps us fight sickness.

Beluga meat is an excellent source 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.

Beluga blubber is a good source of omega-3 fatty acids, which help protect against heart disease and may help prevent cancer.

Prepare foods safely!

Botulism is a type of poisoning that people can get from food. If a food with botulism germs is stored at warm temperatures in a container without air, these germs can grow into a poison.

To prevent Botulism poisoning, narwhal should be aged in a very cool place. Store in containers which allow air in. If the meat is aged in oil, stir often to let the meat contact the air. Ask your Health Centre for more information.

Healthy eating!

Dried beluga meat is a great snack for traveling on the land. Serve beluga muktuk with rice, vegetables and a glass of milk or unsweetened juice for a healthy meal.

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Spring Ecological Patterns



Area 1: Central Labrador Coast Hunters have explained that by late March or early April beluga whales start to move into this area of Labrador, but stay further out to sea. Some stay in this area, and some drift north. In late April or early May small groups of beluga whales move into the coastal waters of the central Labrador coast from the south and east. Their exact location is determined by the pattern of open water and spring floe edge.

Usually the whales are located along the east coasts of the outer islands. They move north from here, gradually getting closer to shore as the ice breaks up in late May and early June. Hunters have explained that the whales' preference is to move close to shore, especially into the larger bays not blocked by the remains of winter ice.

Area 2: Northern Labrador Coast By mid March, hunters have observed beluga offshore along the northern section of the Labrador coast and east of Killiniq Island. Hunters have described that these groups often contain four to eight whales, but some groups contain only two or three, while others as

many as 15. These whales spend the winter in this area. Hunters also explained that in March, beluga whales might start to move into this area from further east or southeast

By mid May the first groups of whales moving northward from the central Labrador coast arrive in this part of northern Labrador. They usually stay further away from the coast because of ice conditions. In early June, numbers increase, and whales begin to gather in the open water of the mouths of the larger bays and fiords. As soon as the ice leaves, females move to the heads of the bays, to give birth at the end of July or in August. They feed on Arctic Char throughout the time they are in the bays and fiords.

Area 3: Killiniq Island Killiniq Island is one of the richest marine resource areas along the southern coast of Hudson Strait. It is here that the waters of Ungava Bay, Hudson Strait and the Labrador Sea mix together, creating a vertical movement (upwelling) of nutrients and small deep-sea organisms. The visible effect of this upwelling is recognized by hunters, who identify the plants and other small organisms brought to the surface.



"When the surface is calm between the tides we find all kinds of small plants and small sea life floating on the surface and in the pools, things we don't see in other places just around Killiniq. They must come from the bottom of the sea not from the surface. This happens even in winter in the water and on the bottom of the ice when it gets broken from a storm." (BJ, Killiniq, 1974)

The geographic location of the Killiniq Island area and the fact that it is an area rich in food make it critical for both the westward and the eastward migration of beluga.

Almost all beluga whales move by this area, including those that continue their coastal spring migration past the fiords of northern Labrador. The Inuit have also observed that some whales arrive in the waters of this area from further east.

Most of the whales travel west through the waters between Killiniq Island and the Button Islands. Hunters describe these as whales that lingered near Killiniq Island in the winter and early spring. A much larger number of whales come from the waters to the east and south east of the Labrador coast, eventually migrating west along Hudson Strait. The hunters identified two routes of movement and grouping, one closer to the coast and moving, slowly, the other further out to sea and moving much more quickly. Hunters living further west also identified this distinction .

"There are always whales here at Killiniq in winter and some stay around in April. Others move into Hudson Strait or turn south into the open water of Ungava Bay. These whales move around in groups. Mostly two or three, or five or six, but once in a while we can spot larger groups with more than 15 whales. We are not at sea at that time so we only can spot them from on top of the hills where we go to search the sea." (BJ, Killiniq, 1974)

"Beluga start to arrive around Killiniq when the ice begins moving around in March. More beluga come through Killiniq in May. Sometimes, narwhals can be seen around Killiniq. They are known to have thicker mukluk. I saw bowhead whale bones from the mountains of Killiniq. Bowhead whales can sometimes be seen in the area. Whales and harp seals will also be seen passing around the Killiniq Island. Killer whales can occasionally be seen and they push the beluga towards shore." (SU, 1974).

Some of the whales traveling north along the Labrador coast gather at the eastern entrance of McLellan Strait (red arrow), separating the Ungava peninsula from Killiniq island. Whales can only move west through the strait just before high tide when the strong tidal current flows from east to west. These whales then move west across the upper part of Ungava bay, or south along the edge of the ice on the eastern shore of Ungava Bay.

Area 4: Northeastern Ungava Bay Hunters have observed that by late May and early June, a small number of whales have moved south from the Killiniq Island area into the coastal waters of northeastern Ungava Bay. This area has never been used extensively by beluga whales except as a travel route to the bottom of Ungava Bay. Nonetheless, hunters have described a significant decrease in the number of beluga that now move toward the south. They indicated that there are not many whales and that they may move in both northerly and southerly directions following the coast, usually not close to shore. The whales in this area do not use the bays to feed or molt. Their route of movement is dependent on the position of the floe edge and especially on the location of heavy pack ice, which in turn is dependent on the direction, strength and persistence of the wind.

Area 5: Southern Ungava Bay Only a few beluga whales are in this area before the end of June, and no exact counts have been made. Arrival time and number in spring is dependent on the amount of ice in Area 3. Because of the strong river currents, there is open water available in the estuaries on the south coast of Ungava Bay if the whales can move through the ice in the north.

Area 6: Southwestern Ungava Bay Coast Whales reach this area by moving north along the coast from southern Ungava Bay. There is a smaller movement of beluga into this part of the coast from the north as well. Individual whales arrive in May, when there is still ice along the coasts until June. They cannot come close to land except where the tides and currents have broken up the ice and created open water. The whales will move to the shore in those places (marked on the interview map) at high tide following the currents and tides. Small groups begin to arrive from the north and south in early June, and follow the currents into Leaf Bay on high tide. Some whales, primarily females, move into the estuaries of the larger rivers. In later June most of the whales leave and follow the coast northward.

"Our elders remember when the whales used to group in the mouth of Leaf Bay in May, but they do not do that anymore. There is probably too much noise and more hunters, but the elders say the number of whales coming to this part of the coast is less than before. Things are changing and it is not just the noise, maybe it is in the environment . I think this is where the real change is coming from. Beluga whales have sometimes moved all the way up Leaf river to the rapids in high tides. They rarely go in or out the river by the inlets of the north islands from Leaf River." (TC, 1986)

Area 7: Northwest Ungava Bay The waters of Ungava Bay mix with the waters of Hudson Strait in this area, creating a rich ecological and resource zone. Beluga whales become numerous in June and into July. Whales moving across the top of Ungava Bay join in this area with those that moved north along the west coast of the bay. Hunters have stated that they believe that these are just a few of the whales that have moved south as they cross the mouth of Ungava Bay. The hunters have indicated that most of the whales tend to move in a westward direction across Ungava Bay, toward the coast south of Cape Hopes Advance. These whales then move north along the coast, and continue northwesterly along the coast of Hudson Strait.

Area 8: Coastal Hudson Strait This is a very important ecological area for the beluga of the southern Hudson Strait region. The map provides a more detailed look at ecological patterns in this area.

Area 9: Offshore Hudson Strait Hunters have not directly observed a movement of beluga further off the coast of Hudson Strait. They have, however, observed that faster moving groups of beluga can be seen further offshore in eastern Hudson Bay in early April, before the westward-moving beluga are observed in closer proximity along the floe edge of the Hudson Strait coast. Based on this fact, hunters have speculated that the movement from east to west must involve different groups and routes of migration. They have also speculated that this movement of beluga may be comprised of the groups that spend the winter in Hudson Strait.

Area 10: Hudson Bay Near Cape Smith, beluga whales travel south in late April and May, following the floe edge and moving quickly. Hunters have identified this early movement, which means that this cannot be the same group described in areas 3 and 8. Hunters have speculated that these whales are part of a migration that takes place further offshore. From Cape Smith, the whales continue to move south along the coastal ice in late May and into June.

Area 11: Hudson Bay The whales continue to migrate south towards the Nastapoka and the Richmond Gulf area, tending to stay on the seaward side of the coastal islands. The tides are not strong in this area, so the whales select particular places with stronger currents, moving quickly in small groups. These whales usually move beyond the limits of safe ice for Inuit travel, so it was difficult for the hunters to describe the composition of the groups.

Area 12: Hudson Bay Further south, near the Great Whale river, hunters have noted that whales will move into the area from northerly and southerly directions. The whales moving from the south are thought to be those that wintered in the waters west of Long Island. These whales will then continue to move north along the coast of the Richmond Gulf area.

Details of the southern Hudson Bay region in the spring are shown on the Southeastern Hudson Bay map.

Summer Ecological Patterns

Area 1: Southeastern Hudson Strait In the summer, some whales remain in this region and along the west and east coasts of the peninsula. The movement of whales west into Hudson Strait is no longer active.



Area 2: Southern Ungava Bay

The southern part of Ungava Bay, especially the Whale River and Mucolic River estuaries, is a very important area for whales in the summer. The size of the population is made evident by the fact that in the early 1900s the beluga of southern Ungava Bay were commercially harvested for their oil by the Hudson Bay Company. This activity led to a decline in the summer population size, but, nonetheless, provided an important food base for Inuit. Recently, however, the population has declined.



Discussions with hunters point to noise from canoes and boats as a factor in this decline, but they also say that they have a sense that the general ecology and physical environment of southern Ungava Bay is changing, and has affected the seasonal ecology of whales. The region has been identified for a program of cooperative management between hunters and marine mammal researchers, and will serve as a model for the integration of Inuit and scientific knowledge and for management decisions based on this knowledge.

Ungava Bay has a tidal range that can exceed 10 meters, thus exposing large flats and shallow water areas in the estuaries at low tide. The river water is also warm in comparison to the sea, which is favorable to the beluga habitat.

The shallow and relatively warm water of the Mucolic and Whale rivers enable beluga to roll on the sand and gravel to change their skin, or molt. They begin to appear in this area by July, and throughout August utilize the estuaries and adjacent waters. In mid to late August, beluga whales have been sighted in the Koksoak river, sometimes as far as 25 kilometers beyond the tidal range of the estuary.

"Beluga come in the summer, around the end of July, into Whale River, but they don't show up around George River until August. By the end of August, there are none left around any of these rivers." (JA, 1982)

"Whales are found in the Mucolic Estuary and River. There can be as many as 30-40 whales there at one time. Other spots, usually one or two whales are seen. Joseph and myself know that there used to be many more beluga around this area, and now there aren't enough. My mother heard true stories from the Ananak about hunting whales in the bays. This was a very good place but the company killed many whales and after that they were harder to get. There used to be more whales around." (JA, 1982)

"The whales which occupy the Whale and Mucolic rivers are stragglers from the big migration which travels across the mouth of Ungava Bay. These stragglers come into the two rivers in July and August to change their skins in the shallow waters. They then move out in August and September in a northeastern direction." (SU, 1982)

Area 3: Western Ungava Bay Coast Whales tend to use this region throughout most of the summer, moving toward the shore with the tide. Hunters have noted that special areas are preferred by beluga, which they tend to use year after year. In July they gather together in small groups of two or three whales. In the past, these groups were much larger.

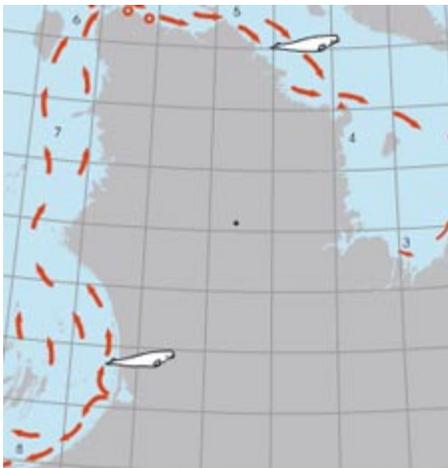
Area 4: Northwestern Ungava Bay A small number of whales remain in this area throughout the summer, following the tide away from and toward the shore. Some whales drift in a north-south direction along the coast during July and August.

Area 5: Hudson Strait Details of the Hudson strait region in the summer are shown on the Southern Hudson Strait map.

Area 6: Hudson Bay In August, the whales of the Hudson Bay coast begin to occupy the estuaries of Nastapoka River, Little Whale River and the southwestern section of the Richmond Gulf. Some whales still move into the mouth of the Great Whale River, but the Inuit have observed that the numbers in recent years have significantly decreased. It is mostly females with young that move with the tides into the estuaries, while the males stay further seaward along the coastal islands. The Inuit have explained that they think that different groups tend to utilize each of these estuaries, but that there is some mixing and coastal traveling between places.

Area 7: Central and Southern Hudson Bay This is a very important and very active ecological area for the beluga whale from their arrival in late April until they depart to the north in September. It is also an area where some beluga remain during winter. The area extends south from Cape Weggs, along the Hudson Bay coast as far as James Bay (area 8).

Fall Ecological Patterns



Area 1: Killiniq Island Beginning in late September, the first groups of whales begin to arrive in the Killiniq Island region, on a return migration east from summering areas in Hudson Strait and Hudson Bay. Larger groups of beluga move through the area from mid October to early November. At this time the whales travel through the waters north of Killiniq Island and not immediately adjacent to land. Most of the whales then move south along the Labrador coast, but some are observed moving eastward off the coast. The whales traveling south along the Labrador coast join those that spent the summer on the northern coast. Beluga do not move close to land as they travel toward the south.

Area 2: Northeastern Coast Ungava Bay At the end of August, a small number of beluga whales that spent the summer in the estuaries of southern Ungava Bay move north toward Killiniq Island. These few whales and they further from shore.

"The only time the whales move northward along the east coast of Ungava Bay is in late August and September. These whales are the ones coming from the Whale and Mucalic rivers areas and they will met up with the other groups coming from Hudson Strait and then travel together to the wintering areas." (KJ, 1984)

Area 3: Southern Ungava Bay When the whales leave the estuaries in mid August, they move further offshore, and by September migrate north along the coast.

Area 4: Western Ungava Bay Coast By September, the whales have moved away, probably toward the north where they meet with other groups. Whales are seldom in this region after September and will usually not be seen again until the following spring.

Area 5: Hudson Strait Details of the Hudson strait region in the fall are shown on the Southern Hudson Strait map.

Area 6: Hudson Strait At the beginning of October, beluga whales arrive in this area from Hudson Bay in the south, from the north of Nottingham Island and from the west side of Hudson Bay. Some spend time along the coast of Hudson strait so that they can feed, but most continue to migrate toward the east. The whales moving north from Hudson Bay stay away from the coast and are seen closer to Mansel Island.

Area 7: Hudson Bay In late August and early September, whales begin to leave the area. Inuit hunters have explained that there is a southern and northern movement towards Richmond Gulf. Whales move past the Cape Smith region in mid September, some passing quite close to the land.

Area 8: Hudson Bay The movement of whales into the area east of Long Island is felt to be part of a larger pattern of movement extending south from the Richmond Gulf area. In the fall, there is a movement west from the Long Island area, and then north through the islands of Sanikiluaq.

Details of the southern Hudson Bay region in the fall are shown on the separate map for southeastern Hudson Bay.

Winter Ecological Patterns

Area 1: Killiniq The Inuit hunters did not know exactly where the whales over-winter, but thought that they were somewhere away from the land.

Area 2: Hudson Bay Whales remain in the zone west of Long Island throughout the winter, moving into James Bay and toward the Islands of Sanikiluaq Islands.



Caribou - Tuktu



There are currently over 3 million caribou in North America, from the Western Arctic herd in Alaska to the George River herd in Labrador. Caribou provides one of the most important food sources for Inuit in Canada and has been a major part of Inuit diet and culture for many generations. Like the arctic char, the caribou is consumed in every Inuit community across Canada. Most parts of the caribou are eaten, providing Inuit with the rich source of nutrients needed to maintain their health. Caribou meat and liver are rich in protein and iron and the liver and stomach contents are an important source of Vitamin A. Caribou blood is another excellent source of iron. The fat of the caribou is a tremendous source of energy, while the lining of the stomach is eaten as a special treat. Caribou meat is eaten raw, frozen, aged, cooked or dried. The heads are eaten sometimes in soups, and the bones provide tasty and nutritious marrow. Not only is the caribou an exceptional food source but it also provides clothing and tools necessary for survival. The hide of the caribou is an excellent material for clothing; it acts as a thermal insulator not

allowing cold or moisture to penetrate through, providing the warmest winter clothing and sleeping mats, still in use today. Other uses of the caribou include using the dorsal tendons found along the spine and back legs to produce ivalu (sinew) for thread and cordage. Bones and antlers provide necessary tools like needle cases, and scrapers while traditionally the velvet on the antlers was used by men to tie back their hair. Caribou continue to have many uses and remains essential to Inuit for both food and material use.

Caribou and Nutrition

Caribou has been an important part of our Inuit diet and culture for generations. Caribou meat and liver are rich in protein and iron. The liver and stomach contents are an important source of Vitamin A. Caribou fat provides us with energy. Most parts of the caribou are eaten, providing us with a rich source of nutrients needed for health.

What we know about Caribou

Most Inuit rely on caribou as a main source of food. Caribou meat is eaten raw, frozen, aged, cooked or dried. The hides are used for clothing and crafts, and to sleep on when out on the land. In some regions, caribou provide a source of income to licensed outfitters who guide nonresident hunters for trophy bulls. Caribou is also processed into jerky, sausage, roasts and steaks to sell in stores.

Nutritional Value of Caribou						
Body Part	Meat	Blood	Liver	Bone Marrow	Stomach Contents	Fat
Excellent source (supplies 25% or more of daily need)	Protein	Iron	Protein, Iron, Vitamin A			Fat
Good source (supplies 15-24% of daily need)	Iron, B Vitamins	Protein		Iron, Fat	Iron, Vitamin A	Iron
Fair source (supplies 5-14% of daily need)	Fat, Calcium	B Vitamins	Fat, Calcium	Protein, Fat, Vitamin A	Protein, Fat, B Vitamins, Calcium	Protein

Did you know:

Caribou meat and liver, eaten raw, frozen boiled or dried, is an excellent source of protein. We need protein to build and repair our muscles, skin and blood. Protein also helps us fight sickness.

Caribou liver and stomach contents provide us with vitamin A. Vitamin A is needed for healthy skin, bones and teeth. It also helps our body fight sickness.

Caribou liver and blood 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.

Prepare foods safely!

Brucellosis is a naturally occurring disease caused by bacteria. It is found in caribou, musk ox and reindeer. Infected animals may show signs of swollen joints or body parts. The chances of getting Brucellosis from an infected caribou are low but can occur.

If you are handling caribou that might be infected with brucellosis, be sure to follow these steps: Wear gloves, do not touch diseased parts, wash your hands with soap and water after handling the animal, boil your knife and other tools after butchering, do not eat any diseased parts of the caribou, make sure the meat is well cooked, do not feed diseased parts to dogs.

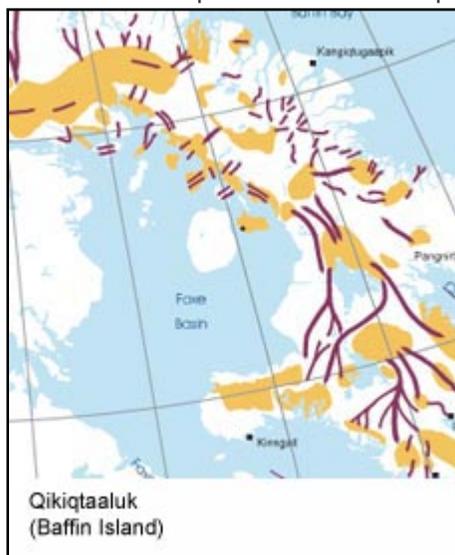
Healthy eating!

The fat content of caribou meat is very low (1%) when compared to 12-20% for beef, pork and poultry. Eat roast caribou with boiled potatoes and peas for a healthy meal. Serve it with milk or unsweetened juice.

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Inuit Knowledge of the Qikiqtaaluk Caribou

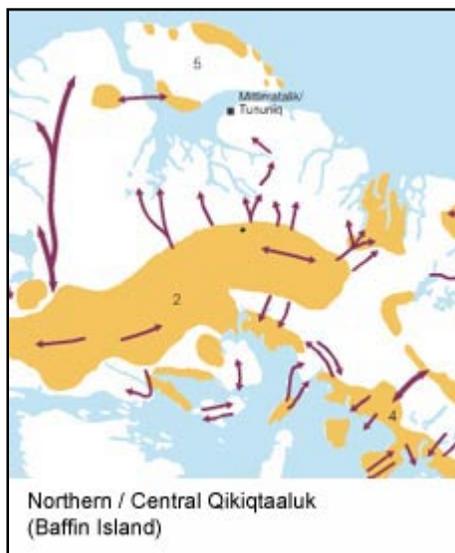
The information presented in this map series was collected during the 1974 ITK Land Use and



Occupancy Study. The Inuit environmental and ecological knowledge collected from active hunters and elders from the eight communities of Qikiqtaaluk provided the information needed to develop a detailed and comprehensive description of the seasonal ecological patterns for all Qikiqtaaluk caribou herds.

The text accompanying these maps provides a general overview for the northern Qikiqtaaluk population based on Kangiqtugaapik, Mittimatalik and Tununirusiq, and a more detailed description of the central and southern sector of the island included in the pilot area. This area is comprised of the communities of Kinngait, Kimmirut, Iqaluit, Pangnirtuuq and Qikiqtaaluk.

The hunters identified a pattern of caribou ecology that included both the northern and southern parts of this large island. They explained that even though the herds of northern and southern Qikiqtaaluk were separate, they were, at least to some extent, probably linked together through a shared use of the central Qikiqtaaluk grouping and calving areas.



Although this information represents the ecological patterns for Qikiqtaaluk that hunters observed or were told about from the late 1800s to 1975, they explained that these patterns keep re-establishing themselves in conjunction with the broad population cycles of caribou. The hunters also pointed out that the ecological patterns and cycles of the past may not continue into the future because of changing conditions created by human activity in the north. A hunter from the community of Qikiqtaaluk, made the following comments:

"We don't know if the caribou are going to keep behaving the way they always did in the past. There is a lot of development that is going to happen on the land with mines and tourists coming to the new park [Auluetok National Park]. This will affect all of the caribou and mainly the females ready to calve, and change the places they use during the year. The same thing will

happen with the seals and whales or walrus because of the oil and the ships that will be coming to the north. Even Inuit will cause problems if our communities get too big and we make more noise or garbage and smells than before." (TK, Qikiqtaaluk)

The information provided by the 1974 interviews identifies a pattern of caribou ecology that is comprised of a southern and northern grouping of herds. These large regional groups and their possible interrelationships are illustrated on the map of Qikiqtaaluk caribou ecology.

The hunters interviewed pointed out that the southern caribou population seems to be larger and more widespread than the herds in the north. They described the plant life as better developed in the south and that there are more areas where the caribou can group together in larger numbers than in the more rugged northern terrain.

They also explained that the caribou of northern Qikiqtaaluk are linked to the ecological patterns of both the central area of Qikiqtaaluk itself and to the Melville Peninsula to the southwest.



The discussions with hunters indicated that there is an ecological relationship between the development of the northern Qikiqtaaluk caribou population and the population cycle of the southern Qikiqtaaluk herds. This is supported by direct observation-based evidence. Older hunters who had spent time in the interior speculated that when the caribou population of the central and southern regions begins to grow rapidly, more and more caribou move north from the major grouping areas of Nettilling and Amadjuak lakes.

At first these caribou groups may return south in the spring, but as the population in the north increases, and as the caribou using the grouping and feeding areas in the central and Nettilling-Amadjuak Lake region also increase in number, the northern area becomes more independent.

When this happens, patterns of seasonal movement, and concentration and feeding areas particular to the north are established.

As the population of the central and southern herds begins to decline, caribou using the northern grouping and feeding areas reestablish an active migration into central Qikiqtaaluk.

Feeding Areas

Primary Grouping and Feeding Areas Primary concentration and feeding areas are well-defined areas where large numbers of caribou gather during specific seasons, usually for least two or three seasons, and sometimes throughout the year. They represent core areas from which caribou move in the late summer and fall to smaller, more widely dispersed and sometimes distant secondary or third level grouping and feeding areas. The caribou return to these primary areas in the spring.

Secondary Grouping and Feeding Areas According to the hunters, these areas are usually geographically smaller than the primary areas, have fewer caribou and are in existence for one or two seasons of the year. Caribou that migrate out of the primary areas support the population of these secondary areas.

Third Level Grouping and Feeding Areas The hunters identified these areas as places where caribou gather for one or two seasons, but in smaller numbers and usually in small and scattered groups. When the population is in decline these areas may not be used at all, and only come back into use after the population recovery is well advanced.

Clusters or Pockets

These areas are small and usually defined by their geographic features, such as a small valley, island or other topographic feature. Caribou are found in these areas at specific times of the year. The hunters also described these areas as sometimes being inhabited by a particular type of caribou, such as bull caribou that wander independently.

Seasonal Migration

The hunters described migration as being one of the primary and most important characteristics of caribou behavior and ecology. When they spoke of migration, they referred to the major changes in seasonal locations that take place when large numbers of caribou move out of or into their primary concentration and feeding areas.

The hunters described two important migrations. The first is in the fall and early winter (late August into October), when caribou move out of concentration and feeding areas, heading primarily south to their winter and spring feeding grounds. The second is in the spring, when female caribou and young that were born the previous year leave the winter areas and migrate back to the primary concentration and feeding areas. Migrations, both in the spring and the fall, take place over very well defined routes that were identified by the hunters. They explained that when the population levels of caribou are low, the migration routes tend to be less defined. These migrations, and the routes caribou use, become much better defined as the caribou population grows.

"When there are not many caribou around they will still move from one place to another in the summer and head back in the spring, but not in big groups. They will just wander in the direction they want to go. When there are lots of caribou they travel together in large groups and move very fast. They do not even stop to feed, just keep going day and night." (N, 1974, Iqaluit)

Although migration routes are important for the movement of caribou from one place to another, Inuit hunters cautioned against assuming that all caribou will behave this way.

"Most caribou will follow the group and move where the leaders take them. But some just follow their own minds and go where they want to. Maybe they are not as strong as others and do not want to travel so far or maybe they just get tired and stop along the way. This is good for the Inuit because it means we can find caribou all along the way and not just where caribou start or stop the migration." (D, 1974, Iqaluit)

Local Movements

In addition to the seasonal migrations, the hunters identified areas and behaviors that caused caribou to shift their location. For example, some caribou move upland from the coast toward exposed, windy areas to escape mosquitoes. In addition to this localized movement which was described with a great deal of precision, the hunters also described how caribou, once in a region, wander about in small, scattered groups. The hunters stressed the importance of the long distance migrations of many caribou, but they also explained that all along the migration route, some caribou leave the migration to take up seasonal residence in an area. These movements result in a localized dispersal of caribou within the seasonal concentration and feeding areas.

Population Cycles

The active hunters and elders who were interviewed for the 1974 study pointed out that all of the animals the Inuit depend on go through increases and decreases in population size, but only caribou go through major shifts in their numbers over long periods. This necessitates a deeper understanding of their habits. A hunter from Kinngait described the cycle:

"Because caribou eat the small plants that grow on our land they do not have to chase after the food. That is why they can sometimes be found in great numbers where the plants they eat are plentiful. It is in those places that are known to the hunters where we can find many caribou.

It is true that when the number of caribou grows too big the food supply cannot last forever. When this happens, the caribou begin to run out of food. That is when the size of the herds begins to decrease and grow smaller with every year.

This change can happen very fast but it usually takes a long time before the caribou almost disappear. When they start having trouble finding enough food they start to lose their fat or get sick and weak. When this is happening hunters will find large groups of wolves following the caribou, which is a sign to us that something may be going wrong. When the caribou start to grow weak and get thinner we also notice changes when we butcher them. Sometimes we find spots on their liver or other problems. At this time caribou can also be badly affected by the flies that make nests just inside their skin.

When the number of caribou becomes very low and they are no longer easy to find in the areas where we like to hunt, they never really disappear completely. Some always survive. It is these small groups that will begin to grow as the plants themselves start to come back to life." (Kinngait, 1974)

The elders agreed that the caribou cycle usually lasts for 30 to 40 years, but that it has sometimes lasted longer. They explained that the cycle is not always the same from one area to another, but at some point, when the numbers of caribou are either very high or very low, hunting throughout southern and central Baffin Island will be either very easy or very difficult. The hunters explained that the caribou population decreased through the 1940s and 1950s, perhaps reaching its lowest population numbers throughout the entire area in the late 1950s and early 1960s. A hunter from the North Bay area described the situation:

"There are always going to be some caribou, but when they are scattered all over the place and there are maybe only two or three walking together, it takes a lot of knowledge to be a successful hunter. [That] is when we really had to rely on the knowledge of our elders. Even if they were too old to travel and hunt, we needed them to give us instructions about where to go to find the caribou.

If you traveled for maybe a week or even more and then met up with just a few caribou, you had to be very careful not to do something stupid [to scare the caribou] just because you were excited or hungry from traveling." (Kimmirut, 1974)

Another elder, originally from the Amadjuak Bay area, told a story to explain the population cycle of caribou:

"I am an old man now. I no longer have the strength to travel far inland to search for caribou, but I still have good eyesight. If I continue to be healthy maybe I will hunt again right around the community. The caribou are starting to come back and they are getting closer than before. When I was a young hunter and just getting a wife it was not a problem to get the meat for food. In the fall we always got enough skins for our winter clothing. My mother was still alive but she was very old and told us stories she heard from her grandmother of times when the caribou would almost disappear from our land. She told us that this is the way it was with caribou and that we will find this to be true in our own lifetimes.

My mother had this knowledge even though she never hunted and it turned out to be true. The caribou started to disappear very fast and we had to work hard and even then we never really got as many as we needed. In those days it wasn't possible to run to the store and buy things to make our clothing so we were very worried about finding enough caribou in the fall to get the skins that we needed. If the caribou is a good size and the skin is not full of holes from the flies it takes about four caribou to make a parka for a hunter. Even if we were careful with our clothing, caribou parkas only last one or two years. That is why we were worried about even more than food when the caribou started to disappear.

I think this was happening around 1950 or maybe a little bit later. It was at the time the man came to Kinngait to teach us about how to make the stone carvings we now sell in the south. Things did not get much better for quite a few years, so we never came back with much food or skins from caribou. Maybe that's why lots of Inuit started to come to Kinngait and begin making carvings. It was in those days we would take the large boat and go out to the far away islands to hunt walrus and sometime beluga whale. We needed this meat to feed our families and keep our dog teams alive." (OP, Kinngait, 1974)

An Inuit Hunter's Story

This story, told in 1967, describes a caribou hunt that took place sometime in the 1940s.

My father and his brothers always lived on the coast toward Kimmirut at a place called Tuksiktok. I lived there with my father and his two brothers but there were many other families in that region. The caribou seemed to stay away for a long time, or at least that is how I remember it. My father was too old by that time to travel since he was just about like I am today. He explained how we must travel north up by the big lakes [Mingo and Amadjuak lakes] because he was sure we would find caribou there. He told us that even though there weren't many caribou on the coast where we were living, they were probably beginning to come back further north.

It was going to be a long trip and my father gave us very careful instructions about where we must go. It was probably late in the summer but I remember it still being very hot, and there were lots of mosquitoes along the coast because the winds were clam at that time. I had traveled in the wintertime by dog team from the coast towards Amadjuak Lake, but now we were going to walk and search for caribou and take their skins for clothing. My father told us about the landmarks that we must watch for and explained where we should start to look carefully for the caribou. We had rifles in those days but it seemed as though there was never enough bullets, so we had to think about many things. I can still show you on the map where we went. This trip took us about three weeks, maybe even more, because we left when it was warm and we came back when there was snow on the ground.

The information that my father gave us was exactly right, and since we followed his instructions we ran into a group of caribou around the eastern shore of Mingo Lake. There were not a lot but I seem to remember somebody counting more than ten that were moving together and feeding on the grasses. We had to be very careful not to make any mistakes to scare the caribou, and this meant we had to stay where they could not smell us from the direction of the wind. At that time of year the days were growing shorter, but we spent at least a whole day just watching the caribou and deciding how we can kill as many as possible before the rest got scared and ran away. There were three of us and we told each other that each hunter had to shoot at least three caribou. We were eating dried fish and dried meat of the seal and we had some fat for energy. We didn't even have a tent with us, and every night we would just sleep on the ground with a few old winter caribou skins to protect us. My father told us not to take dogs with us because they would be hungry and not dependable. When dogs are hungry they will break loose from the hunter and chase after the caribou.

The next day we saw the caribou and they were closer than ever. And it really wasn't difficult to crawl towards them very slowly until we were close enough for firing the shots. That morning we were able to get seven caribou. The rest of the day was spent taking the skins off of the meat and for the first time we ate as much caribou as we wanted. We stored the skins and the meat carefully under a large pile of stones. In that part of our territory hunters have been searching for caribou for a long time, and we did not have to go far to collect the stones. We simply used those that had been collected by our grandparents or maybe even by hunters who had been there a long time before our grandparents.

After we finished this hard work we rested before starting our walk towards the big Lake [Amadjuak Lake]. I can't remember exactly but we walked two or three days and then spotted just a few caribou feeding right next to the lake. The land there is very low and difficult for walking, and since we were no longer hungry we said let's not bother with these because it is not easy to reach them. It was not even possible to find a hill to climb to search for the caribou. Because this was not a good land to walk over we headed towards the river valley where my father said we would find caribou. My father told the truth because of the knowledge he had from his life, and there we found many small groups of caribou, some with three or four or maybe a few more animals. We stayed in this area for almost a week and shot caribou every day. I can't remember exactly how many but more than 20. We did the same thing as before, collecting stones to protect the meat and the skin. We only took what we needed to eat and began the walk home. When we reached the coast people were joyful to learn that we had stored lots of caribou. The weather was getting cold and the snow was coming. I can't remember exactly when we left by dog team to get the caribou, but I know it was before Christmas, and that at least three or four sleds traveled inland to set traps and to pick up the skins and the meat.

Peary Caribou- Tuktu



The Peary Caribou can be distinguished by its almost pure white coat and small size. In the last few decades the total population of Peary Caribou has been declining which has led to the careful management of their population and their identification on the endangered/threatened species list. Human activities such as oil and gas exploration and hunting have all had an impact on the population. The primary reason for the decline has been linked to weather, in particular, a series of harsh winters in the 1970's. Inuit from Victoria Island used the pure white hide of the Peary Caribou for boots but this practice has stopped in recent years since the population decline.

Musk ox - Umingmak



Musk ox are located only in specific areas of the arctic, and where available are a valuable local food source. Musk ox meat provides many important nutrients for growth and health. It is an excellent source of protein and iron and a good source of Vitamin B, which helps the body use energy. The density and the length of the umingmak (musk ox) hair is useful on caps to keep off mosquitoes, and makes excellent bedding. Today, qiviut (musk ox inner wool) is used for knitting and is considered to be more valuable than cashmere. Musk ox are gregarious animals grouping together in mixed herds of 10-20. When threatened by a wolf, their main predator (other than humans), they will form a circle around their young to protect them. They have been known to scoop up wolves with their horns, hurl them into the air then stomp them underfoot. For the most part, musk ox are highly peaceful animals that eat only plants. Today, the Inuit hunt musk ox under a quota system in order to protect this unique ice-age species.

Musk Ox and Nutrition

Although muskox is not as important as caribou as a food source, it is still used for both food and crafts. Muskox provides many important nutrients for our growth and health. Muskox meat is an excellent source of protein and iron. It also provides a good source of B vitamins, which help our bodies use energy.

What we know about Muskox:

Inuit hunt muskox under a quota system to protect the number of animals. People hunt the animals for food and use the thick hides for blankets and rugs. Some muskox are hunted by sport hunters providing income to Inuit guides. The inner wool or qiviut of the muskok is used for weaving and knitting. These woven goods bring high prices because the wool is very soft and warm.

Musk Ox Nutritional Information	
Body Part	Meat
Excellent source (supplies 25% or more of daily need)	Protein, Iron
Good source (supplies 15-24% of daily need)	B Vitamins
Fair source (supplies 5-14% of daily need)	Vitamin C

Did you know:

Muskox meat, is an excellent source of protein. We need protein to build and repair our muscles, skin and blood. Protein also helps us fight sickness.

Muskox meat is an excellent source 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.

Muskox meat is a good source of B vitamins. B vitamins help our bodies use the energy from food. They also help us form antibodies that fight sickness.

Prepare foods safely!

Brucellosis is a naturally occurring disease caused by bacteria. It is found in caribou, muskox and reindeer. Infected animals may show signs of swollen joints of body parts. the chances of getting Brucellosis from an infected muskox are low, but can occur.

If you are handling a muskox that might be infected with brucellosis, be sure to follow these steps: Wear gloves, do not touch diseased parts, wash your hands with soap and water after handling the animal, boil you knife and other tools after butchering, do not eat and diseased parts of the muskox, make sure the meat is well cooked, do not feed diseased parts to dogs.

Healthy eating!

The fat content of muskox meat is very low (1-2%) when compared to 12-20% for beef, pork and poultry. Ground muskox meat makes great burgers or sausage. serve them with cabbage salad and a glass of milk or unsweetened juice.

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

Narwhal -Tuugalik



In North Baffin the narwhal is a very valuable food source. The maktaaq (skin and blubber) is delicious; it has a chewy texture and is rich in vitamin A and protein. When narwhals are hunted, most people like to eat the maktaaq first. Dried narwhal meat is an excellent source of protein and iron. Narwhal blubber is eaten raw, aged and cooked or boiled in soups and stews. The blubber is an excellent source of vitamin A and also contains omega-3 fatty acids which help prevent heart disease and is believed to help prevent cancer. Narwhal maktaaq is a rich source of Vitamin C, which is otherwise very difficult to obtain in a region where fresh fruit is rarely available. Scurvy, the disease that caused such heavy losses among European sailors and arctic explorers lacking Vitamin C in their diets,

is unknown among Inuit. Traditionally, the blubber was used as oil for lamps; its clear burning oil was more valuable than seal oil which tends to leave the igloo covered with black soot. Misirak, (rendered oil), which is anaerobically fermented, continues to be a highly prized Inuit delicacy eaten as a condiment with dried, frozen or cooked meats. Narwhal sinew is preferred by some seamstress's because of its length and strength. The narwhal also supplies ivory from its long, spirally twisted horn, the canine tooth of the male. Narwhal are sociable marine mammals generally forming groups of about ten, although during migration, herds of a thousand or more have been seen. Narwhals feed on fish, squid, octopus and mollusks.

Narwhal and Nutrition

Dried narwhal meat is an excellent source of protein and iron. Narwhal blubber, eaten raw, aged or boiled is an excellent source of vitamin A.

The blubber also contains omega-3 fatty acids which help prevent heart disease and may help prevent cancer. Narwhal skin (maktaaq or muktuk) is a favourite food. It has a chewy texture and is rich in vitamin A and protein.

What we know about Narwhal:

When narwhal are hunted, most people like to eat the fresh skin (maktaaq or muktuk) first. Narwhal meat is eaten dried. The skin and blubber are eaten raw, aged, cooked or boiled in soup or stew. Traditionally, the blubber was used as oil for lamps and the hides were used for covering whale boats and in making boot soles. The ivory tusks and the backbone are used for carving.

Narwhal Nutritional Information			
Body part	Meat	Blubber	Flipper
Excellent source (supplies 25% or more of daily need)	Iron, Protein	Fat	Protein
Good source (supplies 15-24% of daily need)		Protein, Omega-3 fatty acid	
Fair source (supplies 5-14%of daily need)	Fat	Iron	Fat, Vitamin A

Did you know:

Narwhal meat is an excellent source of protein. We need protein to build and repair our muscles, skin and blood. Protein also helps us fight sickness.

Narwhal meat is an excellent source 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.

Narwhal blubber and skin (muktuk or maktaaq) are excellent sources of vitamin A. Vitamin A is needed for healthy skin, bones, and teeth. It also helps our body fight sickness.

Narwhal blubber is an excellent source of omega-3 fatty acids, which help protect against heart disease and may help prevent cancer.

Prepare foods safely!

Botulism is a type of poisoning that people can get from food. If a food with botulism germs is stored at warm temperatures in a container without air, these germs can grow into a poison.

To prevent Botulism poisoning, narwhal should be aged in a very cool place. Store in containers which allow air in. If the meat is aged in oil, stir often to let the meat contact the air. Ask your Health Centre for more information,

Healthy eating!

Eat dried narwhal meat dipped in seal fat. Add rice and carrots and a glass of milk or unsweetened juice for a healthy meal.

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

Narwhals, Killer Whales and Ice

I remember we used to watch whales playing in the water. They would get their fore flippers up and slap on the water, and there would be a big splash. And down toward the open sea, you could see what looked like fog on a river. It would be the whales. There used to be a lot of whales. There once was a whale that came to one of the inlets just off our camp. I've heard that a whale, after being born in an area, will always come back a year later." (MA, Qikiqtarjuaq, 1974)

A detailed understanding of the sea ice environment and how it affects the behavior of marine mammals is an important part of Inuit environmental knowledge. Another is a familiarity with the effects of one species' behavior on another. In order to understand the relationship between narwhals and killer whales in northern Qikiqtaaluk, it is necessary for us to integrate the different parts of our knowledge.

In late spring, before narwhals can access the protection and feeding grounds of sounds and inlets, they must wait for large areas of land fast ice to break up and begin moving, creating channels of open water.

Each spring, sometimes hundreds of narwhals approach the region from the east, moving through Baffin Bay around Bylot Island.

As part of this movement, large groups arrive at two floe edges that block access to Mittimatalik. If they cannot enter Admiralty or Navy Board inlet, they move further west along Lancaster Sound and Parry Channel, and enter Prince Regent Inlet or Peel Sound. As the narwhals migrate through these ice-choked waters, they are closely pursued by killer whales. The killer whales follow them through Pond Inlet and along Eclipse Sound and the entire length of Navy Board Inlet. In the early part of the year, narwhals find protection under ice pans and sheets of floating ice, and seek the shallower fiords which killer whales do not like to enter.

In June and July, narwhals at the floe edge remain close to the land fast ice. If pack ice is driven against it, they wait near patches of open water. As soon as they can, the narwhals find their way to large cracks that open within the main body of fast ice. The number and size of large cracks increase faster in Admiralty Inlet than in any other part of this region, and the narwhals find their way along the inlet toward the south, following each crack as it opens. Only after the ice has cleared the fiord do killer whales follow narwhals into Admiralty Inlet.

Killer whales will hunt any type of marine mammal other than walrus. If a group of killer whales is nearby, seals will attempt to avoid danger by moving onto shore or by crowding together on ice pans. When this happens, killer whales surround the pan while one whale tries to push upward beneath the pan. If the whale breaks the ice apart the seals are forced back into the water, where they are attacked by the killer whales. Seals are more afraid of killer whales than they are of Inuit, and we can easily kill seals that have come on land to escape killer whales.

Killer whales are stronger than narwhals. A large killer whale can seize a full-grown narwhal from the side, and surface with it held entirely out of the water. Young killer whales feed on narwhals killed in this manner by swimming alongside the whale that has made the kill. Narwhals are defenseless against killer whales, their principal enemy, and they rush about in panic when a pack of killer whales approaches. It is not surprising; therefore, that narwhals are very influenced by the movements of their only predators other than occasional Inuit hunters.

The small fish narwhals feed on also influence their movements. They follow the fish along the coast and into fiords, where they also find abundant char. Narwhals breed in any season, evidenced by young ranging from those new born and suckling to others larger and nearly adult. Except in rare cases, only the

male narwhal bears a tusk, which is used to spear fish, to stir food from its shelter on the floor of the sea and for defense. The tip of the tusk is highly polished all year round, but in spring, when the animals are at the floe edge, almost the entire tusk becomes polished from the narwhal surfacing amid loose ice and repeatedly rubbing its tusk against the ice. In rare cases, a narwhal may have two tusks.

When new ice forms, narwhals begin to move from summer to fall feeding areas. Killer whales leave the region first, so narwhals often delay leaving until late into the season. When this happens, they are sometimes trapped by the new ice, and are only able to survive by repeatedly surfacing at the same spot to maintain a patch of icefree water. Eventually the open patch freezes over and the animals drown. Hunters may later find carcasses washed ashore, usually onto the west sides of Navy Board Inlet and Admiralty Inlet.

The best way to kill a narwhal is by shooting it at the base of the neck, close to the blowhole. If wounded there, it cannot stay long underwater, but must surface again near the place where it dived. This makes it possible for us to hunt narwhals even in small areas of open water at the floe edge, an environment that would otherwise offer a hunted narwhal many escape routes. While it is possible to kill a narwhal with a single shot from a small calibre rifle, dead narwhals rapidly sink. A slower kill is preferable as it enables the hunter to set a harpoon in the narwhal's flank, with an inflated sealskin or avataq attached. The avataq slows the movement of the whale, and once it has been killed, helps keep the carcass afloat.

Polar Bear - Nanuq



The Polar bear is easily the most recognizable symbol of the arctic. Nanuq, (polar bear) derives all of its food from the sea and is seldom found far from the drifting pack ice. Polar bears live mainly on the sea ice, hunting ringed seals, which is their primary source of food. Traveling on the sea ice, in search of seals can result in home ranges of 50,000 to 350,000 square km for an individual bear. Although polar bear meat is considered delicious it is never eaten raw like other meats because it carries many parasites. The polar bear liver is never eaten or fed to the dogs because it causes Vitamin A poisoning, which results in severe illness or even death. Polar bear meat, like most country foods, is an excellent source of iron and protein. Polar bear fat provides Inuit with Vitamin A and omega-3 fatty acids which helps reduce the risk of heart disease. Polar bear meat is usually baked or boiled in a soup or stew. The hide of the polar bear is quite remarkable; each hair is able to trap ultraviolet light and conducts radiation to the black surface of the skin, where it is absorbed. Polar bear pelts are used to make clothing, but this practice is not widespread here in Canada as it is with the Inuit of Greenland. This may be due to two reasons, the first of which is, caribou and sealskins are more abundant, and two, the general nature of the polar bear hide, it is wiry and bulky making it difficult to turn into comfortable winter garments.

Polar Bear and Nutrition

Polar bear meat is an excellent source of iron and protein. Polar bear fat provides us with vitamin A and omega-3 fatty acids. These fatty acids help to reduce the risk of heart disease. Polar bear meat is usually baked or boiled in a soup or stew. It is never eaten raw. Polar bear liver contains toxic levels of vitamin A and should not be eaten.

What we know about polar bears: Polar bear sport hunting is an important source of income. Tourists will pay a high price to go on a polar bear hunt by dog sled. The sale of polar bear pelts also adds to the income of many Inuit families. The pelts are used to make clothing, and the teeth and claws are used in making jewelry.

Polar Bear Nutritional Information		
Body Part	Meat	Blubber
Excellent source (supplies 25% or more of daily need)	Iron, Protein	Vitamin A, Fat
Good source (supplies 15-24% of daily need)		Omega-3 fatty acid
Fair source (supplies 5-14%of daily need)	Fat	Iron, Protein

Did you know:

Cooked polar bear meat is an excellent source of protein. We need protein to build and repair our muscles, skin and blood. Protein also helps us fight sickness.

Polar bear fat is an excellent source of vitamin A. Vitamin A is needed for healthy skin, bones and teeth. It also helps our body fight sickness.

Polar bear meat is an excellent source 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.

Polar bear fat is a good source of omega-3 fatty acids, which help protect against heart disease and may help prevent cancer.

Prepare foods safely!

Trichinosis is an infection caused by roundworms, found in raw or under cooked polar bear meat.

To prevent Trichinosis, make sure polar bear meat is well cooked. Aging or freezing do not destroy the worms found in meat with these worms.

Healthy eating!

Cook polar bear meat and add potatoes and carrots for a healthy stew. Serve with bannock and a glass of milk or unsweetened juice.

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.

Polar Bear Distribution and Movement in North Qikiqtaaluk

Polar bears depend on ringed seals for the primary part of their diet; therefore the general ecological patterns of polar bears are closely tied to the seasonal ecology of seals. Patterns of sea ice formation and movement that influence the distribution of seals and their movements also influence the movement of polar bears. Each year, beginning in midwinter and continuing into spring, bears move northward, following the seals in their use of the land fast ice and floe edge.

Polar bears eat seal blubber and skin, and will often leave a seal carcass otherwise intact. They kill seals in three principal ways. In winter, they wait at breathing holes until a seal is near, then they break the snow and ice cover with a single powerful thrust of the head and bite the head of the surfacing seal. Later in the year, they stalk seals on the ice, crawling toward them as they sleep by their breathing holes. In open water, at the floe edge or in moving ice, they swim up to seals from alongside an ice pan, and seize them as they breathe or surface.

It is said that sometimes a bear will kill a walrus by hurling a block of ice on its head. Hunters in some places have commented that a polar bear will pick up a large rock for this purpose. In summer, while waiting on land for the ice to form, bears will eat almost anything they find, from berries to fish to whale carcasses. Polar bears have no predators other than people and their dogs.

Polar bears in this region follow two principal migration routes: along the Gulf of Boothia, and along the northeast coast of Baffin Island. Bears taking the more western route are found on the comparatively firm ice that connects Brodeur and Boothia peninsulas.

The largest concentrations of polar bears in this area occur during the earliest part of the season at the northern and southern points of the ice. On their way north, polar bears usually travel overland into Bernier Bay and over the broad headland that borders Creswell Bay. Male bears arrive after the females, and the mouth of Bernier Bay is known for its large and often unpredictable male bears. The western side of Brodeur Peninsula is known as a bear mating ground.

Bears approaching eastern Baffin Island travel a corridor limited by the narrowness of the floe edge on that side. They also arrive in large numbers from Mittimatalik to the east. Twenty years ago, most migrating bears kept to the eastern side of Bylot Island, though many of them appeared at the northern end of Navy Board Inlet. Similarly, there have always been many bears at the mouth of Admiralty Inlet, which was approached by either migration route. Many bears arriving from the southeast continue further north as far as Devon Island, ice conditions permitting. This area is thought to be one of the best in the region for polar bear hunting.

Another important bear hunting area, especially in early spring, is located between Prince of Wales and Somerset islands, toward Peel Sound. Hunters have commented that there are many polar bears in this area, but they are not sure whether these ones are linked to those that move along the western side of the Gulf of Boothia. The movement of bears toward Devon and Cornwallis islands has drawn hunters into those regions.

There are many dens in the region. Hunters know a number of core denning areas, including southwestern Brodeur Peninsula, southern Bylot Island and the headlands of northern Baffin Island facing directly into Baffin Bay. Female bears build and inhabit the dens, accompanied during the early part of winter by their mates. Despite the possible passage of several years between dennings, females will return to past denning areas to build new dens.

The female polar bear situates her den to ensure it will be covered by a deep accumulation of drift snow, so that there will be enough room for she and her cub or cubs to move around under the snow. She prepares a large central area inside the den, surrounded by smaller "rooms". It is sometimes said that the cub is born in one of the side rooms, is moved from room to room as it grows, and exercises in the large central "playing room". Before the cub is born, the female leaves the den every day to feed. When she is ready to give birth the male is driven from the den. He leaves the area, continuing his movement northward, along with females that have older cubs. After the birth, the female stays in the den for several months until the cub is strong enough to leave with her. During that time, she neither eats nor defecates. The cleanliness of the den is ensured by the blocking of her anus, caused by eating earth and sod during the early phase of denning.

The behavior of polar bears is often unpredictable. Most bears are not aggressive if unprovoked, but they are curious animals and not afraid to enter a tent or snowhouse. They are attracted by the smell of seal, and if hungry, will stop at nothing to get at it. It is important for Inuit to be able to judge whether or not a bear is likely to be aggressive or otherwise dangerous. Hunters have said that the best way to judge a bear's mood is by watching its ears: it will probably be more dangerous if more of its ears are showing.

Ringed Seal - Natsiq

The ringed seal has a population estimated at close to 5,000,000 and is the most abundant sea mammal in the Canadian Arctic. Seal meat is the main part of traditional diet in almost every Inuit community. Hunting seal is part of a healthy and traditional way of life. Seal meat and organs provide Inuit with an excellent source of protein, iron and some B Vitamins. Seal liver and blubber are an excellent source of Vitamin A and contain some Vitamin C. Inuit elders say that seal is a "special food". Seal meat and organs keep Inuit healthy and warm. Seal is also used as a medicine to heal the body and soul from sickness. Ringed seal liver and beluga whale maktaaq (skin and blubber) are major sources of selenium in the Inuit diet. The skins of ringed seal are extremely valuable for clothing. They weigh less than caribou skins, and are full of oil increasing their water repellency yet they are also porous, which allows body humidity to escape. These characteristics make seal an ideal material for kamiks (boots), and for clothing worn out hunting at the ice edge or at seal breathing holes. Seal skin parkas and trousers are still worn in spring and summer by many Inuit. In the past the skins were also made into boats and kayaks, and some were made into tents. Traditionally, the intestines of the seal were turned into waterproof parkas. When camping on the land, Inuit still use seal fat for fuel oil and lighting. While seals provide important nutritional and economic benefits, sealing also continues to play an important role in the social aspects of Inuit culture. This is reflected in the rich vocabulary in the Inuktitut language for different species, varieties and characteristics of seals. Sealing provides the context in which modern knowledge, as well as Inuit traditions about hunting and the ecology are most fully expressed and transmitted through the generations.



Seal is a main food in our diet. Hunting seal is part of a healthy and traditional way of life. Seal meat and organs provide us with an excellent source of protein, iron and some B vitamins. Seal liver and blubber are an excellent source of vitamin A and contain some vitamin C.

Seal and Nutrition

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What we know about Seal:

Elders tell us that seal is a "special food" for our people. Seal meat and organs keep us healthy and help to keep us warm. Seal is also used as a medicine to heal the body and soul from sickness. Almost all parts of the seal are eaten. The skin and other parts of the seal are used to make clothing, such as kamiks, in crafts and for fuel oil.

Seal Nutritional Information						
Body Part	Intestine	Liver	Blubber	Meat	Brain	Eyes
Excellent source (supplies 25% or more of daily need)	Protein	Iron, Protein, Vitamin A	Fat, Vitamin A, Omega-3 fatty acid	Iron, Protein, B Vitamins	Iron, Protein	Vitamin A, Protein, Iron
Good source (supplies 15-24% of daily need)	Iron	Vitamin C	Iron, Vitamin C		Fat	
Fair source (supplies 5-14% of daily need)	Fat	Fat	Protein	Fat		

Did you know:

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, blubber and eyes 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.

Prepare foods safely!

Botulism is a type of poisoning that people can get from food. If a food with botulism germs is stored at warm temperatures in a container without air, these germs can grow into a poison.

To prevent Botulism poisoning, seal should be aged in a very cool place. Store it in containers which allow air in. If the meat is being aged in oil, stir often to let the meat contact the air. Ask your Health Centre for more information.

Healthy eating!

Seal fat can be used as a dip with seaweed, fish or meats such as dried caribou. mix the fat with berries to make "ice cream" or to preserve the berries.

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Seal: A Primary Food Source

Traditionally, seal have provided one of our primary country food resources and this dependency has existed throughout our history. There are four species of seal found in the coastal waters of our territory but for most communities the two most important species of hunted for food are the common or ringed seal that we call netsik, and the bearded or square flipper seal that we refer to as udjuk. Both of these species are hunted for country food in every season of the year and the skin still has many uses. In earlier times the skin of ringed seals was used for tents, for the covering of the kayak and for the upper part of the traditional skin boot. The square flipper skin is used for rope and for the sole of the boot. The fat of both seals was used as fuel for the traditional lamp. Beginning the mid 1960s the skins of all four types of seals became a valuable source of income for our hunters, but in recent years the impacts from the anti fur movement has brought this important economic by product from our harvest of country food to a halt.

The patterns of hunting can vary from place to place depending on the particular environmental factors at different seasons, but the same general principles apply to almost every seal hunting area. Neither the common or bearded seal are migratory, but hunters explain that both of these seals tend to move about and change their areas of feeding and concentration from one season to the next. Hunters also explain that although the ringed seal is more numerous than bearded seals they are usually found together. Although both species are widely distributed, hunters identify specific seasonal locations that are known to be more productive for hunting.

In summer (late June to mid August) both species are scattered throughout the coastal waters and move further from shore. During this time, they are the most difficult to hunt with any assurance of success. By mid to late August, the seals begin to move closer to shore and into the bays. At this time, hunter knowledge becomes more specific concerning their location and patterns of movement. The geographic distribution becomes even better defined as fall progresses. Fall hunting has always been important since it provided the supply of food that could be used for food during the winter. As open water is replaced by the early formation of ice, seals will move seaward keeping in open and ice free waters, or begin to develop the characteristic "breathing hole" which is then maintained throughout the winter. The distribution of the seals along the floe edge or under the land fast ice, establishes the primary geographical and ecological patterns that are reflected in our choice of winter hunting along the floe edge or at the breathing hole. In areas adjacent to the floe edge where new ice is continually reforming during the winter, both types of hunting can be carried out in close proximity. In the central arctic, the expanses of land fast ice are much greater, and it is here that we would establish large winter settlements on the sea ice itself in order to hunt at the breathing holes.

By April and May large cracks can begin to develop in certain areas from the action of tides currents and winds and from the "heat" generated by the lengthening of the arctic day. When this seasonal change takes place, our hunting begins to focus on the seals that move onto the ice to "bask." This provides a much more productive hunting. Until recently, the harvest of seals during the spring was stored for winter dog food. As the deterioration of the sea ice continues, spring hunting gradually gives way to the open water hunting of summer.

Walrus - Aiviq



Walrus meat provides a well balanced source of nutrients. The meat of young walrus is particularly enjoyed, either raw or boiled. The kauk (skin) of the walrus, is an excellent source of protein. Walrus blubber eaten raw, aged or boiled is rich in Vitamin A and also contains omega-3 fatty acids, which help prevent heart disease and cancer, Igunak, (anaerobically fermented and aged meat) remains a traditional Inuit delicacy. To make this, Inuit hunters will cache walrus skin, blubber and meat and leave it to ferment. The skin and blubber of four or five walrus are piled into a heap about 3 m (9.8 ft) across, then large rocks, up to 50 kg (110 lbs.) are stacked upon the meat to ensure its protected from scavengers. These caches are usually secure against depredation from foxes and wolves, but polar bears may manage to get into the meat no matter how hard the hunters try to conceal it. Care must be taken however, in preparing walrus meat for human consumption as some walrus are infected with the deadly parasite *Trichinella spiralis*. Safe consumption can only be assured if the meat has been cooked thoroughly since neither freezing nor aging ensures that *Trichinella* cysts will be killed. Evidence suggests that meat of seal-eating walrus has a higher possibility of containing

this parasite. The raw meat from these infected walrus can also have a toxic concentration of Vitamin A. Walrus meat, blubber and skin are excellent winter dog food. Although Inuit generally benefit from living within hunting range of large stocks of walrus, there is one drawback. The presence of walrus tend to drive away ringed seals which can lead to a shortage of seal meat, seal oil and skins. Walrus provided a variety of useful products to Inuit. The hides of walruses were once a very important source of leather. The Inuit used them to cover the frames of umiaq, (large family boats) used for transporting people and their camps. Walrus hides were also used as roofs and leather for boots.

Walrus and Nutrition

Walrus meat is an excellent source of protein and iron. Walrus blubber eaten raw, aged or boiled is rich in vitamin A. It also contains omega-3 fatty acids, which help prevent heart disease and may help prevent cancer. The skin (kauk) of the walrus, is an excellent source of protein.

What we know about Walrus:

Walrus are hunted when there is open water. Cooler temperatures allow for the use of traditional fermentation methods. This involves burying walrus parts under gravel, which allows air to flow through, and leaving them to age. Walrus meat, blubber and skin (kauk) are eaten aged, raw or boiled. The tusks are used for carving and the skins are used for kamik carvings, clothing, bags and crafts.

Nutritional Value of Walrus				
Body Part	Meat	Blubber	Skin	Flippers
Excellent source (supplies 25% or more of daily need)	Protein, Iron, B Vitamins	Vitamin A, Fat, Protein	Protein	Iron (skin)
Good source (supplies 15-24% of daily need)		Omega-3 fatty acid		
Fair source (supplies 5-14% of daily need)	Fat	Iron	Iron, Fat, Vitamin A	Iron (blubber)

Did you know:

Walrus meat, skin (kauk) and blubber are excellent sources of protein. We need protein to build and repair our muscles, skin and blood. Protein also helps us fight sickness.

Walrus meat is an excellent source 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.

Walrus blubber is an excellent source of vitamin A. Vitamin A is needed for healthy skin, bones and teeth. It also helps our body fight sickness.

Walrus blubber is a good source of omega-3 fatty acids, which help protect against heart disease and may help prevent cancer.

Prepare foods safely!

Botulism is a type of poisoning that people can get from food. If a food with botulism germs is stored at warm temperatures in a container without air, these germs can grow into a poison.

To prevent Botulism poisoning, walrus should be aged in a very cool place. Store it in containers which allow air in. If the meat is being aged in oil, stir often to let the meat contact the air. Ask your Health Centre for information.

Walrus may also carry the roundworm that causes the infection in humans called Trichinosis. To prevent Trichinosis, make sure meat is well cooked.

Healthy eating!

Cook walrus meat with potatoes, onions and carrots for a healthy stew. Serve with bannock and a glass of milk. Try some fresh fruit or berries for dessert.

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Bowhead Whale - Arviq



Of all the wildlife available to Inuit, the bowhead whale was certainly one of the most sought after. The fact that bowhead whales are slow swimmers and float (rather than sink) when killed made these animals a very important food source. These same characteristics made the bowhead a desired target for European whalers, which resulted in a near decimation of the population. The bowhead whale was once - and if their numbers continue to increase- may again become an important part of the traditional diet and an essential resource for Inuit. The successful capture of a bowhead whale meant food, tools, equipment, shelter, heat and light for a whole community. The blubber was not only an excellent food source but it was also the best source of oil for light and heat. The bowhead meat was also an

essential food item for dogs. The bones provided some very useful resources as well. For example, the large rib bones and jaw bones were used as roof supports, the vertebrae were used as blocks for chopping and cutting and the bones were made into tools and sled runners. The baleen was used as ties to lash together Kamutiks (sleds), harpoon lines and kayak frames. One bowhead whale could ensure the well being of an Inuit settlement for an entire year. Bowhead whaling was so much a part of Inuit culture and so vital to Inuit survival, that most Inuit would like to see the return of the bowhead whale hunt. This would provide nutritious country food, as well as bones and baleen for carving. A limited, and well managed hunt has recently been revived in both the eastern and western Arctic under the Nunavut and Inuvialuit Land Claim Agreements. Tests carried out on bowhead whales from the western Arctic have estimated that these whales can live to be over 200 years old, making them the oldest living species on earth, outlasting even the tortoise. Bowhead whales are so strong that they can break through thick arctic ice to create breathing holes, and it has been discovered that their blubber is so thick and insulated that they could survive submersion in liquid nitrogen.