Appendix C: Subsistence Use in the NPR-A by Village

This appendix provides a summary of subsistence use of NPR-A by the eight villages in the North Slope Borough (NSB). Much of the information for this section was obtained from the 2008 draft NSB Coastal Management Plan with the addition of information from a few more recent sources.

Winter trails and roads connect the communities in and around the NPR-A by snow machine. A coastal route connects the communities of Point Hope, Point Lay, Wainwright, and Barrow. A route south from Barrow connects it to Atqasuk. Another route connects Wainwright to Atqasuk and on to Nuiqsut. A route from Nuiqsut travels south to Anaktuvuk Pass, and Nuiqsut is also connected by a seasonal ice road to the oil field development roads on onto Deadhorse and the Dalton Highway. A seasonal ice road gives Nuiqsut residents access to the Dalton Highway, and during some years, a snow/ice road connects to Barrow.

While each village has unique patterns of subsistence use, Table C-1 provides a generalized depiction of subsistence activities by year for the North Slope. While not all villages precisely follow this calendar, it provides a general picture of subsistence activities in the NSB. The table was prepared Molly Pederson and was included in an EPA communications protocol for the North Slope (EPA 2009).
Subsistence Activities by Village

Point Lay:

Caribou, fish, and beluga whale comprise the most significant subsistence resources of Point Lay residents. Seals and walrus are not as intensively used as in the past due to the reduction in dog teams and the present adequate supply of caribou. Point Lay’s subsistence use area spans from the coast from Icy Cape to Cape Beaufort and inland along the Kukpawruk River and into the DeLong Mountains.

<table>
<thead>
<tr>
<th>January</th>
<th>July</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Trapping continues</td>
<td>• Fish continues</td>
</tr>
<tr>
<td>• Seal hunting</td>
<td>• Caribou hunting</td>
</tr>
<tr>
<td>• Seal skins prepared for bleaching</td>
<td>• Gathering eggs in Pt. Hope</td>
</tr>
<tr>
<td>• Polar bear hunting</td>
<td>• Ugruk and walrus hunting</td>
</tr>
<tr>
<td>• Build/repair skin boats</td>
<td>• Drying meat and making seal oil</td>
</tr>
<tr>
<td>• Continue build/repair skin boats</td>
<td>• Preparing ugruk skins for boats</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>February</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Trapping continues</td>
<td>• Caribou hunting by boats, some by snow machines</td>
</tr>
<tr>
<td>• Caribou skins drying outside</td>
<td>• Ugruk and aiviq hunting continues</td>
</tr>
<tr>
<td>• Seal and ugruk skins drying/ bleaching</td>
<td>• Ugruk skins prepared for boats &amp; boot bottoms</td>
</tr>
<tr>
<td>• Continue build/repair skin boats</td>
<td>• Duck hunting at Pigniq</td>
</tr>
<tr>
<td></td>
<td>• Boat frames built</td>
</tr>
<tr>
<td></td>
<td>• Geese hunting at Wainwright</td>
</tr>
<tr>
<td></td>
<td>• Tuktaq making time</td>
</tr>
<tr>
<td></td>
<td>• Fish on rivers</td>
</tr>
<tr>
<td></td>
<td>• Berry picking inland</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>March</th>
<th>September</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Some polar bear hunting</td>
<td>• Panmaksrak coming through</td>
</tr>
<tr>
<td>• Seal hunting</td>
<td>• Some duck hunting</td>
</tr>
<tr>
<td>• Trapping continues for fox, wolf and wolverine</td>
<td>• Beginning of fall bowhead whale hunt</td>
</tr>
<tr>
<td>• Women sew ugruk skins for skin boats</td>
<td>• Moose hunting</td>
</tr>
<tr>
<td>• New skins put on boat frames</td>
<td>• Whaling in Kaktovik/Nuiqsut/Barrow</td>
</tr>
</tbody>
</table>
April
- End of trapping season
- Whaling season begins
- Caribou and ground squirrel hunting inland
- Time to clean cellars if not done during winter
- Birth of young seals

October
- Fall whaling continues
- Ice fishing on rivers and lakes
- Caribou hunting first part of the month
- Ice fishing along coastline for cod fish

May
- Whaling continues
- Geese/ptarmigan hunting inland
- Duck hunting on ice
- Ice breakup on rivers
- Seals on ice at Qaaktugvik
- Ugruk have their young

November
- Polar bear hunting on the coastline
- Seal hunting
- Some hunters still at fish camps
- Traditional Thanksgiving Feast

June
- Nalukataq in the whaling communities (Kaktovik, Nuiqsut, Barrow, Pt. Hope)
- Going off to Summer camps
- Fishing on rivers and lakes begins
- Seal hunting
- Fish in Qaaktugvik

December
- Trapping season for fox, wolf, wolverine
- Seal hunting
- Polar bear hunting
- Traditional Christmas Feasts
- Traditional games of skill and endurance

Source: EPA 2009

Some villagers are descended from the Utukok River people, and hunters still use this familiar territory for hunting (NPR-A Task Force 1978). Shellfish, including clams, crab and shrimp, is harvested from the waters adjacent to Point Lay, and driftwood is harvested from beaches and in the waters around the community (Pedersen 1979).

Point Lay received a quota for bowhead whales, and it participated in the spring 2008 harvest for the first time in recent history. Inupiat people of this area whaled from Icy Point during the 1800s, and Point Lay whalers participated in whaling until 1941 (Braund 2008). While in recent years this community did not participate directly in bowhead whaling, community members traveled to other communities to join other whaling crews. With the new quota, Point Lay will participate in future spring whale hunts.

A 2003 survey found that 77.4% of households in Point Lay depend on subsistence to some extent, and 13.6% of the households depend on subsistence for more than half their food (North Slope Borough 2004). This survey found there is little difference on dependence on subsistence resources by income.

Many Point Lay people have lived in Wainwright in the past and still retain close family ties there. Therefore, it is not surprising there are several overlapping areas of subsistence usage with Wainwright hunters, such as in the Beaufort and Raven basins up the Kukpowruk River where each group goes for furbearers. Icy Cape is another area that each village uses for hunting waterfowl. Wainwright hunters occasionally come for caribou to the western Brooks Range in the southeast corner of the NPR-A, which is also used by Point Lay people. In March
and April both villages may hunt for wolf and wolverine in the Amatusuk Hills.

A seasonal description of current subsistence activities of Point Lay follows. A summary of historical subsistence patterns for Point Lay is contained in the 1989 resource inventory for the Kasegaluk Lagoon AMSA (NSB 1989; pp. 3-37 – end of chapter).

- **Spring:** During April, seals emerge from their lairs and are hunted along the coast, especially along passes in Kasegaluk Lagoon. Point Lay residents gather eggs and hunt terrestrial mammals and mammals. Migratory waterfowl and eggs are taken in May and June at coastal sites and along inland rivers. Specific areas, such as the islands in Kasegaluk Lagoon north of the village and along the barrier islands, yield large quantities of eggs. Ground squirrels are taken near the village, and hoary marmots are hunted in the Amatusuk Hills. Snow machines are used to hunt caribou as they move toward the coast for the summer or in the Amatusuk and Kiklupiklak hills (Bennett 1977; Schneider and Bennett 1979).

- **Summer:** Boats replace tundra travel for access to subsistence resources. Caribou are taken along the coast and around Icy Cape, and waterfowl and eggs continue to be taken in early summer. Open lead sealing is done in early June and later during the annual walrus hunt at Icy Cape. As the sea ice retreats in June, walrus migrate north past Point Lay, and the villagers conduct their annual hunt. Walrus are found with ice flows from Omalik Lagoon north to Icy Cape, where most of the most recent hunts have been conducted. Communal beluga whale hunts are conducted in the lagoons and shallow bays in early July often near the west side of Icy Cape and the passes north of the village. Boats are used to herd whales into shallow water where they can easily be retrieved after being killed. Occasionally belugas are taken in August. Almost all the village is engaged in fishing which begins in early July through late September. Gill net fishing occurs near river mouths (except Kokolik), at ocean passes, in Kasegaluk Lagoon, and at the popular Sitkik Point Nets are moved about 15 miles up the Kukpowruk River in September for grayling. A variety of salmon, whitefish, flounder, smelt, herring, bullhead, and an occasional char are taken. Berries and other edible plants are collected along the coast, inland along rivers and near the historic site of Cully (Bennett 1977; Schneider and Bennett 1979).

- **Fall:** The fall migration of waterfowl attracts hunters to the Icy Cape area. Caribou hunting is actively pursued from late August to October at inland locations. Whole families engage in fall grayling fishing up the Kukpowruk River, even after the school year has begun. Nets are used until freeze-up, when hook and line is used for ice fishing at traditional ice fishing sites. One especially popular site 15 miles upriver is called Neokok’s, or #1 camp. As fall approaches, preparations are made for ice fishing. Snow machines are taken by boat up the Kupowruk River and left to be used after freeze-up (Bennett 1977; Schneider and Bennett 1979). Berry picking is combined with fishing trips,
and coal is sometimes brought back to the village after freeze-up by snow machine from the mine on the Kukpawruk. Residents hunt moose, a relatively new species to the area. Spotted seals are hunted in early fall when they are fat and do not sink (Bennett 1977; Schneider and Bennett 1979).

**Winter:** Some ice fishing continues in early winter, and occasional caribou hunting trips are taken. Trapping is done all winter primarily at coastal areas, but storms may prevent the checking of traps at regular intervals. Wolf, wolverine, and caribou hunting may be combined in areas towards the mountains. Coastal traps are often set next to washed up marine mammal carcasses which attract fox and wolverine. Polar bears are also taken at trapping sites, where they are attracted because of the bait or foxes. Otherwise, polar bears are not as actively hunted as in former years. Some sealing is attempted. In late winter some people travel to other villages to participate in the bowhead whaling activities (Bennett 1977; NPR-A Task Force 1978; Schneider and Bennett 1979).

**Point Hope:**
Located on the Chukchi Sea coast approximately 125 miles from the western border of the NPR-A., Point Hope has a population of 674 people (U.S. Census 1010). For at least two thousand years the area has supported a significant arctic population because of the availability of these marine species and the ability of the inhabitants to secure them. Both terrestrial and marine resources continue to be harvested from the sea, ice, and land environments to provide an adequate food supply. This intimate association with the environment is strongly influenced by Iñupiaq language, art, survival skills, and social and ceremonial practices (USGS 1979). Customary and traditional use of subsistence resources is documented in many sources (Foote and Williamson 1961, Foote and Williamson 1966, Heller 1966, George and Fuller 1997, ADFG 2000, Lowenstein 1980, NSB 1979a, Patterson 1974, Pedersen 1979, Pedersen 1971).

A 2003 survey found that 93% of Point Hope residents depend on subsistence to some extent, and 75.2% of Iñupiat households rely on subsistence resources for more than half of their food (North Slope Borough 2004). The survey found that 21% of households received income from selling arts and crafts.

Certain species, such as seals and caribou, are present near Point Hope much of the year, and some smaller mammals and ptarmigan are available all year. Other resources, such as bowhead whales, are obtained during the spring and fall. Changing environmental conditions and resource fluctuations require a specialized knowledge of the region and the ability to expand traditional hunting areas. Seals and caribou have historically been a mainstay of coastal Iñupiat. Caribou have undergone periodic population fluctuations. Point Hope subsistence users also harvest clams, crab and shrimp in marine waters.
A 1980 report describes sea ice-based subsistence hunting in Point Hope (Lowenstein 1980). This study mapped general locations for hunting walrus, seal, beluga, bowhead, fox, polar bear, and eggs.

The discussion in the rest of this section provides a seasonal description of subsistence use for Point Hope. A historical explanation of the village’s subsistence patterns can be found beginning on page 2-57 of Chapter 2 of the 1984 CMP Background Report.

• **Spring:** Spring is an important period in the Point Hope subsistence cycle because of animal migration patterns. The most significant resource is the bowhead whale. The whole community is involved with whaling from the time the offshore leads form in the ice south of the point in late March or early April until June. Extensive pre- and post-season activities reflect the significance of whaling to Iñupiaq culture and contribute to its continuity (NSB 1979). Hunting techniques combine traditional methods and commercial whaling equipment of a hundred years ago - shoulder and darting guns, harpoons, and skin boats (Marquette 1977). Seals, an occasional walrus, beluga whales, and polar bears are taken when bowhead whales are not running, but the main sealing season begins along the south shores of the peninsula after whaling has ended. Seals and walrus follow the receding ice pack and are not commonly available at Point Hope in the summer. Walrus are also hunted in south shore leads and by boat as the old ice breaks up (NSB 1979). Early migratory birds passing through the area are harvested. The area of subsistence activities includes extensive sea ice usage along the north coast and around the point towards Cape Thompson. Inland areas along the Kukpuk and Ipewik rivers also are utilized (Foote and Williamson 1966).

• **Summer:** By late June the ice is usually gone from around Point Hope allowing boat travel. Subsistence activities are diversified and include wide areas of usage. Bird nesting sites at Cape Thompson and Cape Lisburne are visited by boat to collect eggs and birds (Maclean 1971). Frequent use has resulted in the naming of specific ledges and trails on the cliffs. Ocean fishing for char and salmon is conducted with beach seines and nets along the north and south shores, and lagoons produce whitefish. Most of the fish are consumed immediately, so little is left for drying or freezing. Fresh meat during the summer is supplied by caribou, which are found in several places inland along the coast, the Kukpuk River area, or towards the Pitmegea River (Lowenstein 1980). Salmon and grayling are caught at the mouth of the Kukpuk River and at other fishing areas along the river. Berries and edible plants are collected and, if not used immediately, are stored in oil or frozen. Some bearded and harbor sealing may occur in late spring/early summer (Pedersen 1971). The second run of beluga whales occurs in July, and some may be taken with nets from the beach (Burch 1981). Seasonal activities encompass extensive areas along the north and south coasts and the Kukpuk River (Foote 1966).
• **Fall:** Subsistence activities in the fall are conducted from about mid-September to early November and are characterized by intensive fishing along the Kukpuk River. About three-fourths of the total fish harvest is obtained in the fall (Pedersen 1971). Fishing is combined with caribou and moose hunting up to the mouth of the Ipewik River. The advent of the snow machine made possible participation in both fishing and caribou hunting, whereas only in one of these activities was possible with a dog team (Pedersen 1971). Gill nets and hook and line are used for fishing before freeze up and afterwards through holes in the ice. Grayling, char, whitefish, and Dolly Varden are taken. Cod are utilized in fall when storms throw them up on the beaches (Lowenstein 1980). Caribou are hunted along the Kukpuk River and at coastal and inland areas around Cape Thompson. Migratory waterfowl are again harvested on their return migration. Seals begin to reappear as the sea ice forms, and some are hunted by boat while people are out driftwood collecting. More intense sealing is done as the ice thickens. Trapping season opens in early November. The area of greatest fall subsistence usage extends from the south shore inland to an area beyond the Kukpuk River and part of the north coast. The area towards Cape Lisburne is not as heavily used (Foote 1966).

• **Point Hope whalers have a long history of participating in fall Bowhead whaling. Up until the early 1900s, whalers used skin boats during the fall whaling, but today motorized boats are used in the fall. Previously, whales would migrate close to Point Hope when the point extended further offshore. Today, new challenges have reduced the number of whales landed: The point has eroded significantly, whales migrate further offshore, and climate changes have resulted in a later freeze up. Due to safety concerns, whales are not harvested during years when the seas are too dangerous. Point Hope whalers still participate in subsistence activities related to fall whaling including preparation of boats and whaling gear, stockpiling fuel and other supplies, and having the whaling crew prepared to set out to see on short notice.

• **Winter:** Inland travel becomes easier during winter, which lasts from November to March/April. Longer trips are taken to Cape Lisburne and Kivalina in conjunction with caribou hunting and furbearer hunting. Sealing and caribou hunting are the major suppliers of subsistence foods during winter, and sea ice fishing for cod contributes to the diet in January. Cod fishing is done with hook and line through the ice. Trapping sites are set up all along the coast north and south of the village, especially around sea mammal carcasses to attract arctic fox and wolverine. Sealing sites along the south coast are used most frequently, but north coast sites are used if ice and wind conditions permit (Lowenstein 1980). Polar bears, who feed on seals, are more abundant in late winter. Formerly they were hunted by air by sport hunters, but this is now prohibited by law. Iñupiat hunters harvest up to 10 bear a year from locations north and south of the village from 5 to 7 miles offshore (Lowenstein 1980). The winter area of subsistence usage is more extensive than at any other season, ranging from Cape Lisburne to the ice pack well beyond Cape Thompson to inland regions encompassing nearly all the Kukpuk and Ipewik river drainage (Foote 1966).
Wainwright:

Wainwright's location on an extensive lagoon system gives it easy access to waterfowl, seals, and fish, especially smelt. Bowheads, belugas, walrus, and seals are taken from the ocean/sea ice environments. Subsistence hunts for bowhead whales occur in the spring and fall. Subsistence users harvest clams, crab and shrimp. The Kuk River provides an avenue to areas within the NPR-A, where fish and other predators attracted to them are taken. Terrestrial resources such as caribou, furbearers, plants/berries, bear, and ptarmigan are available. Subsistence activities are concentrated along coastal areas from Point Franklin to Icy Cape and inland along the Kuk and Utukok river drainages. Avid hunters may extend their operations to the Meade and Colville rivers or along the coast to Point Lay and Peard Bay (Ivie and Schneider 1979).

A 2003 survey found that almost 92% of Wainwright households depended on subsistence to some extent, and 31% of households depended on subsistence for more than 50% of their food source (North Slope Borough 2004). A 1988-1989 study reported that marine mammals represented 70% of usable pounds of subsistence harvests, terrestrial mammals 24%, fish 5%, and birds 2% (Braund 1993b). A 1988 study found that Wainwright residents still use traditional lands for subsistence even though area residents are no longer live in the remote areas around the village (Ivie and Schneider 1988). Nelson (1981) describes areas used for fishing, waterfowl, polar bear, ringed seal, spotted seal, walrus, beluga, and bowhead resources.

The following bullets summarize subsistence use by season.

- **Spring:** Whaling is the most important subsistence activity in spring. Bowheads migrate north beginning in April and are taken in open leads in the offshore ice as they pass close to shore at points of land jutting into the ocean, such as Pt. Belcher or Icy Cape. Wainwright people travel up the coast as far as Peard Bay to hunt bowheads in the spring.

- **Schools of beluga whales arrive about the same time as bowheads, and they are hunted from the ice along leads or driven into inlets in summer and killed. Walrus and ringed seals are harvested in spring along with some harbor and bearded seals. Migratory waterfowl are taken along the coast and along rivers beginning in May. Squirrels and marmots are sometimes pursued in conjunction with furbearer hunting trips to the mountains.**
• **Summer:** Activities focus on the coast and along rivers as tundra travel becomes more difficult in summer. Families occupy traditional camping sites along the coast for sealing, waterfowl hunting, and other activities up to midsummer, when fishing becomes more intense. Waterfowl are taken in early summer until they nest, and some egg collecting is done by families along the Kasegaluk Lagoon or Sea Horse Islands. Bearded seals are hunted in early summer southwest of the village, and spotted seals, which migrate south in fall, are best taken in late summer when they will float after being shot. Walrus are prevalent in July and August and are taken on drifting ice floes in front of Wainwright and along the coast to Peard Bay. Caribou come to the coast during summer and are taken along the coast from Icy Cape to Peard Bay from late August onward. Berries are collected in late summer near the village and along the Kuk River. Fishing is a major subsistence activity for Wainwright residents nearly all year; however, in midsummer nets are set up in front of the village for salmon, trout, and whitefish. Fishing moves to streams and rivers as the migratory fish work their way up.

• **Fall:** Fall activities center on fishing and caribou hunting. In recent years, Wainwright began a fall subsistence whale hunt. Caribou skins are best at this time, and the animals are hunted on the coast from Icy Cape to Peard Bay and along major rivers. Migrating waterfowl are also hunted at spots such as Icy Cape and Pt. Belcher. Access to caribou is tied to waterways as the animals travel along the drainages and beaches, and waterways provide transportation for locating the caribou and hauling the harvest home.

• Fishing is conducted at camps for up to two months along the Kuk, Ivisaruk, and Avalik rivers, often in conjunction with other hunting and berry-picking expeditions (Nelson 1981). After freeze-up, travel is easier, and additional fishing trips are made to Utukok River camps. Sometimes people use charter airplanes to reach these camps. Sites on the Kuk River are used after freeze-up with snow machines, as overland travel is possible from Wainwright in a few hours. When shorefast ice forms in the late fall, polar bears are taken when they come to the coast to feed on sea mammal carcasses. The meat is popular for winter holiday feasts. Coal is collected in late summer and fall along the Kuk River and coastal beaches after heavy storms.

• **Winter:** Furbearers are taken during the winter, especially in late winter when there is increased daylight and better weather. Fox are taken along major rivers and at coastal sites; wolf and wolverine are trapped or shot on the coast or at inland locations. Ringed seals are taken throughout the winter along leads in the ice, and some caribou and polar bear may occasionally be taken.

Wainwright is noted throughout the North Slope for its smelt, and much fishing is done in January through March in the Kuk Lagoon. With the increased popularity of smelt, fishing has been extended from October to May (Ivie and Schneider 1979; NPR-A Task Force 1978; Nelson 1981). A discussion of historic subsistence patterns begins on page 2-77 of Chapter 2 of the 1984 CMP Background Report.
Atqasuk:
Atqasuk is an inland community with a 2010 population of 233 located about 60 miles southwest of Barrow on the Meade River within the NPR-A. The village was resettled in 1977 mainly with people from Barrow who had once lived in the area. A number of studies document customary and traditional use of subsistence resources (Brower and Hepa 2000b, Craig 1987, George and Fuller 1997, ADFG 2000, Hepa et al. 1997, NSB 1979a, Patterson 1974, Pedersen 1979, Pedersen et al. 1979). About 84% of Iñupiaq households in Atqasuk participate in subsistence, and all households shared subsistence resources according to a 2003 survey (North Slope Borough 2004).

Since Atqasuk is an inland community, terrestrial resources are of major interest to subsistence hunters. Strong family ties between Barrow and Atqasuk, however, result in joint hunting and sharing of sea mammal resources and common subsistence use areas, especially along the upper half of the Meade River. Caribou, waterfowl, and fish are Atqasuk’s primary resources. As a result of caribou hunting restrictions imposed in the 1970, there has been more use of fish and waterfowl resources.

A 1995 survey of Atqasuk residents by the NSB found that 58% of the households harvested wildlife for the year beginning July 1, 1994 (NSB 1997). This survey found that 91% of the 177 harvest instances involved sharing. The most important subsistence foods during this period were caribou and fish which accounted for 94% of the edible pounds. Although plant materials represent one percent of the edible pounds harvested for subsistence, these materials provide nutrients and minerals to supplement other subsistence foods.

Table C-2: Important Subsistence Species Harvested in Atqasuk July 1, 1994 – June 30, 1995

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent of edible pounds harvested</th>
<th>Species Harvested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Mammals</td>
<td>2(^1)</td>
<td>Polar Bear, ringed seal and bearded seal.</td>
</tr>
<tr>
<td>Birds</td>
<td>3</td>
<td>Ptarmigan, eider (unidentified sp.), brant, white fronted goose, Canada goose.</td>
</tr>
<tr>
<td>Fish</td>
<td>37</td>
<td>Grayling, broad whitefish, humpback whitefish, burbot, rainbow trout, and silver salmon.</td>
</tr>
<tr>
<td>Terrestrial Mammals</td>
<td>57</td>
<td>Caribou (57% of total edible pounds), ground squirrel, wolverine and wolf.</td>
</tr>
<tr>
<td>Plants</td>
<td>1</td>
<td>Blueberries and salmonberries.</td>
</tr>
</tbody>
</table>

Source: NSB (Hepa et al. 1998)

A seasonal description of current subsistence uses follows (NSB 1984 CMP Background Report).

- **Spring**: Some villagers travel to Barrow to participate in whaling, and some residents

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\(^1\): Atqasuk is not located on the coast, however, residents travel to the coast to participate in bowhead whale subsistence hunts and harvest of other marine mammals. These harvests are not reflected in this table.
receive shares for the harvest. Trapping continues to mid-April, and hunting of furbearers continues until the snow is gone. Caribou provide a critical source of food after depletion of winter food supplies. Geese are found along interior waterbodies and on the tundra after the snow melts and are hunted intensely with productive results at such places as Uatuq on the Meade River. Ground squirrels are trapped or shot as they come out of hibernation. Brown bear and moose are taken if they are encountered. Ptarmigan are harvested all year but are most sought after when they flock together in the spring.

• **Summer:** Due to the limitations of land travel at Atqasuk from shallow river, summer activities concentrate near the village. Fishing is the primary activity, and gill nets are set as soon as the ice leaves the river in late May/early June. Grayling, whitefish, char and pink salmon are taken. Any long coast trips, such as to Barrow or the Meade Delta or the Inaru River, must be taken by early July before the water drops. Walrus and seals are not generally hunted by villagers, but a hunter may join in a hunt if he is in Barrow. The emphasis on fishing intensifies in August as the fish begin to migrate. Fish and caribou camps are set up along the Meade, lower Nigisaqtugvik, and lower Isuqtug rivers and near the village. Berries are gathered in later summer also.

• **Fall:** Fishing and caribou hunting dominate fall activities with many harvest areas located near the village. Fish camps are set up at lakes to take advantage of this especially productive season. Geese are taken along the waterways as they migrate south. After freeze-up, snow machines increase access to more remote. Caribou normally are hunted into the winter, if restrictions allow. By late fall lake fishing ceases, but rivers continue to be fished by jiggling or with nets.

• **Winter:** Trapping is actively pursued in the winter, though not as intensely as in the earlier part of the century. Lines encircle the village and some trappers set up in traditional areas farther away. Furbearers are hunted, especially incidentally during late winter caribou hunting. Caribou hunting and river ice fishing (for grayling, whitefish, and cod) along with occasional take of furbearers occur regularly then. As in other villages, December is a time for community celebrations and sharing of subsistence foods. By late winter/early spring, fishing activity picks up on the Meade River. Some residents may travel to the coast for sea mammal hunting; and some join in spring whaling at Barrow (NPR-A 1978a; Schneider et al. 1980).

**Barrow:**
Barrow is located in the central part of the Borough on the Arctic Ocean near where the Beaufort and Chukchi Seas meet, and it is surrounded by the NPR-A to the south. It has a population of 4,212 people (2010 U.S. Census). Barrow subsistence activities include bowhead whaling, hunting of other marine mammals, hunting for caribou, trapping fishing, gathering of plants. Many studies document the customary and traditional use of subsistence resources by Barrow residents (Sonnenfeld 1956, Braund 1993a, Braund 1989b, Chance 1966, Craig 1987,

A 2003 survey found that 91% of the Iluquitait households interviewed participate in the subsistence economy, and more than half of them received more than half their food from subsistence (NSB 2004). The study found that households with advanced education and permanent jobs are most active and productive participants in subsistence hunting and fishing activities. A 1987-1989 study summarized the percentages of usable pounds of subsistence resources: Marine mammals represented - 55%; fish – 11% and birds 4% (Braund 1993a).

Barrow’s yearly cycle of subsistence activities is similar to that of traditional times due to the seasonality of the resources, however, a shift in emphasis has occurred for several reasons. Seasonal restrictions and quotas have been imposed on caribou and bowhead whales, severely limiting their take and causing heavier exploitation of other resources such as waterfowl, walrus, and beluga whale. Full-time employment has affected midwinter hunting, but subsistence activities are carried out after hours and during vacations/weekends. The take of walrus and seals for dog food has decreased, along with the number of dog teams. The importance of walrus and seal in the human diet, however, fluctuates with whale and caribou harvest restrictions. Snow machines allow easier access to land-based resources; and this, coupled with whale and caribou limits, has caused a greater usage of waterfowl and freshwater fish (Pedersen et al. 1979; Schneider et al. 1980).

Boats are used for travel in the open water season and in ocean leads. Outboard motors and all-terrain vehicles enable hunters to travel much farther in a day than in the past. Aircraft are used by some to access fish camps or special hunting areas far from the village. Plans are also used in the exchange of subsistence foods between villages.

Barrow hunters use the sea-ice/ocean environment at all times of the year, ranging from Peard Bay to Pitt Point for marine mammals, waterfowl, and fox. Spring whaling is based at camps on the ice shelf northwest of the village. The coastal zone is used for ducks, seals, walrus; fishing (spring/summer); and fall whaling (especially at Pigniq). The coast is also used for collecting eggs, driftwood, and occasionally plants and invertebrates, also for picnics and camping. Inland areas are used in pursuit of caribou, fish, and fur-bearers (Schneider et al. 1980). Subsistence users have been reported to harvest clams and crab from marine waters.

The following bullets summarize the seasonal use of subsistence resources.

- **Spring:** Bowhead whaling heads the list of spring subsistence activities from April to June in offshore leads. Other subsistence activities increase with the daylight hours and
the appearance of migratory animals. Ducks, some walrus, and bearded seals may be available offshore west and north of the point in April. Snow machine travel in pursuit of geese inland along waterways increases (Schneider et al. 1980). Trapping closes at this time but furbearer hunting continues at places, such as Qaviarat on the Meade River and Kalayauk, which is also noted for its geese and ducks. Caribou may be hunted, but usually whaling takes precedence unless the quota is met early, in which case all of the above resources are then pursued. Ptarmigan are available all year but are taken in greater numbers in the spring when they flock. By June, whaling is over and seal and duck hunting camps are set up along the coast southwest to Peard Bay. One especially popular camp is at the historic site of Pigniq, north of town.

- **Summer:** In late spring/early summer, gathering of coastal and inland birds eggs commences but not as intensely as in the past. When the rivers are free of ice, nets are set at fish camps for whitefish, char, and salmon. By early July, when the shore ice retreats, boat travel becomes more frequent with trips taken to Wainwright, Nuiqsut, Beechy Point, and inland fish camps, such as Qaviarat, where other year round activities take place as well. Ringed sealing decreases as the ice leaves and bearded and harbor seals become more numerous. Bearded seal hunting requires a communal effort, and hunts are conducted west of Barrow or from Pigniq. Walrus are hunted cooperatively after the shore ice breaks up. Coastal fishing with nets for salmon, and char occurs at traditional sites along Elson Lagoon and west of the point, where net tending may be combined with duck and sea mammal hunting. Whitefish and grayling are taken with gill nets in mid- to late-summer as they move from lakes to major rivers. Inland fishing is thus intensified. Payugvik, on the Meade River, is a traditional site used for more than a hundred years as a summer and winter fishing spot. It is a common rest stop for people traveling the trail between Barrow and Atqasuk. Berries and plants are collected in season in conjunction with other activities on the coast and at inland lakes and rivers. The major fish effort for the Barrow area takes place at inland sites. Sealing and walrus hunting decrease in late summer. Caribou skins are in prime condition in late summer when the hunting effort begins. A few grizzly bears are taken if the occasion presents, usually while conducting other subsistence activities along rivers. Duck hunting continues into September as the southward migration begins, especially at Pigniq where some fishing is also done (Schneider et al. 1980).

- **Fall:** Fall activities are characterized by intensive caribou hunting, fishing, and whaling. Barrow has a fall whaling season from about September to October which is conducted in open water, generally along the barrier islands east of the village. Fall whaling is generally not as productive as that in the spring because of weather conditions. Caribou are still numerous near Barrow in September. Inland fishing is best in the fall, and that activity increases especially at such historic places as Iviksuk on the Inaru River and Nauyalik on the Meade, where a landing strip provides easy access for the villagers.
Fishing is often combined with caribou hunting and berry picking and, later, with furbearer hunting. Permanent (cabins) and temporary camps are set up at favorite spots to conduct these activities for extended periods of time. Food storage is another function of these camps, as ice cellars store excess food which can be transported to the village later. They are not, however, as commonly used today as in the past. The camps are like small tent cities, especially after freeze-up, and are heavily used on weekends. Distant camps as far away as Teshekpuk Lake are used by Barrow residents, either because their past history includes personal familiarity or because nearer camps may be overcrowded. Pigniq and other coastal areas continue to produce ducks while they are available; a few seals and walrus may also be found. As ice forms on inland waters, fishing continues for whitefish, grayling, and burbot with nets and by jigging. Ringed seals again appear on the coast. Moose have recently extended their range northward and are sometimes available in the Colville drainage, but the number taken by Barrow residents is small. Some hunters, however, charter aircraft for fall hunts to Umiat (NPR-A Task Force 1978a; Schneider et al. 1980).

• Winter: Subsistence activities progressively decrease during the coldest and darkest months of winter. Sealing is good on the west side of Barrow, and polar bears are harvested if they are encountered close to the coast. Inland travel is generally curtailed; river and lake fishing ceases by midwinter. Trapping is a minor activity compared to earlier in the century; but hunting of furbearers is more common due to the versatility of the snow machine. Traplines still are set on nearshore pack ice off Barrow and inland about one hour. They are extended much farther in all directions when the weather warms in March. The historic site of Pulayaaq on the Meade River is used for trapping in late winter and for taking waterfowl in the spring as well as for summer fishing and hunting. Nearby, Pulayatchiaq is also a current and historical area for trapping and spring waterfowl. Some traplines extend for a hundred miles with many loops and follow the rivers, ridges, or other easily traversed features. Furbearer hunting by snow machine is also done when people are out hunting caribou or trapping. Foxes are trapped or shot incidental to other hunting trips. The local demand for wolf and wolverine far exceeds the supply.

Midwinter is a time for socializing and celebrations at which subsistence foods, particularly whale, play an important role. As winter progresses and daylight hours lengthen, subsistence activities and travel increases. Traplines are extended, and caribou hunting is important because food supplies are generally low. Sealing and polar bear hunting continues off the point and along the coast in each direction. In late winter, preparations begin for spring whaling (NPR-A Task Force 1978; Schneider et al. 1980).
**Nuiqsut:**


Some hunters from Nuiqsut use more than 4,000 square miles for subsistence activities (Nuiqsut 1979). Marine mammals harvested by Nuiqsut hunters include bowhead whales, beluga whales, bearded seal, ringed seal, spotted seal and polar bear. The most important land mammals are caribou and moose with wolf, wolverine, and fox also harvested. Fish harvests include arctic cisco, whitefish, least cisco, grayling, humpback whitefish, burbot, northern pike, pink salmon, and arctic char.

A 2003 survey found that 85% if the Nuiqsut households use subsistence food, and about 74% of the households receive more than 50% of their food from subsistence (North Slope Borough 2004). About 18% percent of the households are below the poverty level. A 1984 report also found that 50% of food consumed in Nuiqsut is from subsistence resources (Galginaitis et al. 1984). A 1994-1995 survey found that 60% of households interviewed participated in subsistence activities during this period, and 87% of those activities involved sharing.

Due to the shifting resource base, such as the caribou decline, Nuiqsut hunters constantly modify their subsistence strategies to respond to changes, just as traditional hunters exhibited flexibility in their resource procurement. Yet these changes are tempered by today’s social and economic constraints of village responsibilities.

The general area of subsistence activities extends from the village east to the Sagavanirktok River, south to the middle Colville, west to Teshekpuk Lake, and along the coast to Pitt Point to the mouth of the Canning River. Hunters also join Barrow people for sea mammal hunting and occasionally go to Kaktovik and Wainwright.
Table C-3: Important Subsistence Species for Nuiqsut July 1, 1994 – June 30, 1995

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent of edible pounds Harvested</th>
<th>Species Harvested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Mammals</td>
<td>2</td>
<td>Polar Bear, ringed seal.</td>
</tr>
<tr>
<td>Birds</td>
<td>5</td>
<td>Eider (unidentified sp.), Sandhill crane, ptarmigan, geese (unidentified sp.) and tundra swan.</td>
</tr>
<tr>
<td>Fish</td>
<td>30</td>
<td>Arctic cisco, broad whitefish, least cisco, and whitefish (unidentified sp.).</td>
</tr>
<tr>
<td>Terrestrial Mammals</td>
<td>60</td>
<td>Caribou (58% of total edible pounds), moose (5% of total edible pounds), red fox, arctic fox, wolverine, and wolf.</td>
</tr>
<tr>
<td>Plants</td>
<td>&lt;1</td>
<td>Blackberries, blueberries, cranberries, and salmonberries.</td>
</tr>
</tbody>
</table>

Source: Brower and Opie 1998

The following description of subsistence activities for Nuiqsut provides a seasonal summary of use.

- **Spring:** Spring whaling on the coast draws some men to Barrow to participate as crew members or whaling captains. No spring whaling is done near Nuiqsut. Furbearer hunting in the foothills and on the plain becomes an important activity as the daylight and weather improves and continues until the snow is gone in May. Seals are taken on the sea ice in April/May. Grayling, cod, and lake trout are taken with hook and line during the warmer weather. Long snow machine trips may be taken to Barrow or Kaktovik or even farther to visit friends and relatives before the snow melts. Some caribou may be taken in conjunction with these trips.

- **Summer:** Whitefish are taken in nets in the Colville River when the water clears after breakup in June. As the season progresses, fishing is conducted farther up river and on Fish Creek. Waterfowl appear and are taken periodically until their fall migration. In late summer, char and salmon begin running up the river, followed by spotted seals. Some coastal fishing is done for whitefish and cisco. Children set traps for ground squirrels and fish for grayling with nets and rod/reel. Caribou hunting becomes the primary activity in late summer.

- **Fall:** Caribou hunting, fishing, and whaling are the most important subsistence activities in fall. Caribou migrate south from their respective calving grounds, but some always remain in the area throughout the winter near Fish Creek. Moose have recently moved into the region and are becoming an important resource, especially during times of restricted hunting of caribou. They are taken along the middle Colville. Fishing for cisco and whitefish is done with nets before freeze-up in the rivers and continues to be a significant activity after freeze-up at fish camps on the Colville and Fish Creek. Grayling

2: The low percentage of harvest for marine mammals reflects the unsuccessful harvest of bowhead whales during this year.
and ling cod are taken through the ice in later fall. Berries are picked during fishing and hunting trips, and sometimes driftwood and coal are collected. Whaling begins in mid-September along the coast as far east as the Canning River. Seals, ducks, caribou, and sometimes polar bear are taken while whaling. Other independent sea mammal hunting is done for seals near the Colville Delta.

• Winter: Activities slow down during the coldest and darkest part of winter. Trapping for foxes and hunting of wolves and wolverines are accomplished during this season. Caribou and moose have traditionally been taken during winter, but snow conditions at Umiat where moose congregate makes snow machine travel difficult. Seals are hunted on sea ice when open leads appear. As weather and light improve, trapping, caribou hunting and fishing is for cod, grayling, and lake trout increase (Hoffman et al. 1978; NPR-A Task Force 1978; Libbey et al. 1979).

Anaktuvuk Pass:
The community of Anaktuvuk Pass is the southern-most NSB community located on the Anaktuvuk River with a 2010 population of 324 people. About 80% of residents of this community obtain more than 50% of their diet from subsistence resources, and about 20% of households receive money from sale of arts and crafts which are created from subsistence resources (NSB 2004).

A number of studies document the customary and traditional use of subsistence resources for the residents of Anaktuvuk Pass (Spearman, 1979, Brower and Opie 1996, George and Fuller 1997, ADFG 2000, Hall et al. 1985, Patterson 1974, Pedersen 1979, Pedersen and Opie 1990). Caribou is a major subsistence species used by the people of Anaktuvuk Pass. The fall caribou migration occurs late August to early November, and the spring migration occurs mid-March through late May. As reported by George and Fuller, caribou represent 83% of the total harvest, and the community faces severe hardships during years when caribou do not migrate near the community. Dall sheep and moose are also important, but most of the harvest occurs in the Gates of the Arctic national park under significant regulation. Due to its distance from the coast, marine mammal harvest is not an important component of subsistence uses for this community.

A 1996 study by the North Slope Borough found that during the period July 1994 to June 1995 311 caribou were harvested mostly during July and August at 24 harvest locations (Brower and Opie 1996). The authors noted that this was a low number compared to other years. Other species harvested during this period include 26 sheep, mostly August and September; 1,282 Arctic char, grayling, lake trout, white fish, mostly July and August; 196 Ptarmigan, pintail, oldsquaw, white-fronted geese, mostly February through April; and 59 furbearers wolf, wolverine, red fox, cross fox, lynx, ground squirrel. Fifty of the 82 households harvested subsistence resources during this period and all of the harvesters shared the resources to some
Anaktuvuk Pass subsistence users have expressed concerns for many years about activities that affect the subsistence harvest of caribou (Pedersen 2006, personal communication). Specifically, users are concerned that activities in the Anaktuvuk River watershed interfere with subsistence uses of caribou including areas within the coastal zone of the Anaktuvuk River, Kanayut River, Nanushuk River, May Creek, and Itkillik River. A provision in Policy A-4 prohibits non-subsistence activities in these areas between August 1 and October 31 of each year.

**Table C-4: Important Subsistence Species July 1, 1994 – June 30, 1995**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent of edible pounds Harvested</th>
<th>Species Harvested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrestrial Mammals</td>
<td>95.1</td>
<td>Caribou (82.5%), Moose &amp; Sheep (12.6%)</td>
</tr>
<tr>
<td>Fish</td>
<td>4.2</td>
<td>Char, trout, grayling, &amp; whitefish</td>
</tr>
<tr>
<td>Birds</td>
<td>0.4</td>
<td>Ptarmigan, pintail, oldsquaw, W.F. Geese, &amp; other geese</td>
</tr>
<tr>
<td>Plants</td>
<td>0.2</td>
<td>Cranberries, salmonberries, &amp; blueberries</td>
</tr>
</tbody>
</table>

Source: Brower and Opie 1996

Kaktovik: Kaktovik is located on Barter Island in the northeastern part of the NSB. Although the NPR-A is located outside of the core subsistence area for Kaktovik, residents do harvest resources from around Teshekpuk Lake and the Ikpikpuk River (Stephen R. Braund & Associates 2010).

**References**
