

**The Subsistence Use of
Beluga Whale in Cook Inlet
by Alaska Natives, 1993**

Technical Paper No. 232

by Ronald T. Stanek

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ABSTRACT

This report describes the subsistence use of beluga whale by Alaska Natives in the Cook Inlet area of southcentral Alaska. Information derives from interviews with beluga hunters by the Division of Subsistence, Alaska Department of Fish and Game between 1987-90 and 1993. The study was done in consultation with the Alaska and Inuvialuit Beluga Whale Committee with funding from National Marine Fisheries Service in 1993. As described in the report, beluga have been hunted for subsistence uses in Cook Inlet since before historic contact and continuing into the contemporary period. Currently, beluga are used by Dena'ina hunters, primarily from Tyonek, and resident Inupiat or Yup'ik hunters who have moved to the greater Anchorage area from communities where beluga are traditionally used. As many as 33 different households with beluga hunters were identified in the greater Anchorage area with a chain referral method, although most do not hunt each year. Beluga are taken for human consumption, and the beluga meat, skin, and oil are shared between families, within and outside of the southcentral region. Beluga are taken by hunters in shallow water associated with river channels or tidal mud flats, or in the deep water of the open inlet, primarily between mid-April and mid-October, using skiffs, harpoons, floats, and rifles. A well-established beluga hunting camp is located inside the mouth of the Sustina River. Based on a survey of 16 of 19 households known to have hunted beluga in Cook Inlet in 1993, an estimated 20 beluga were taken in Cook Inlet in 1993. Of these, 15 beluga (75 percent) were harvested and 5 beluga (25 percent) were struck and lost. This compares with take estimates ranging between 16-24 beluga from 1987-1993 in Cook Inlet. A few additional animals may be taken by Alaska Native hunters in Cook Inlet who live outside the greater Anchorage area, whose takes have not been systematically documented.

Place Names Mentioned in *The Subsistence Use of Beluga Whale in Cook Inlet by Alaska Natives*, 1993, by Ronald T. Stanek, Technical Paper No. 232, Division of Subsistence, Alaska Department of Fish and Game.

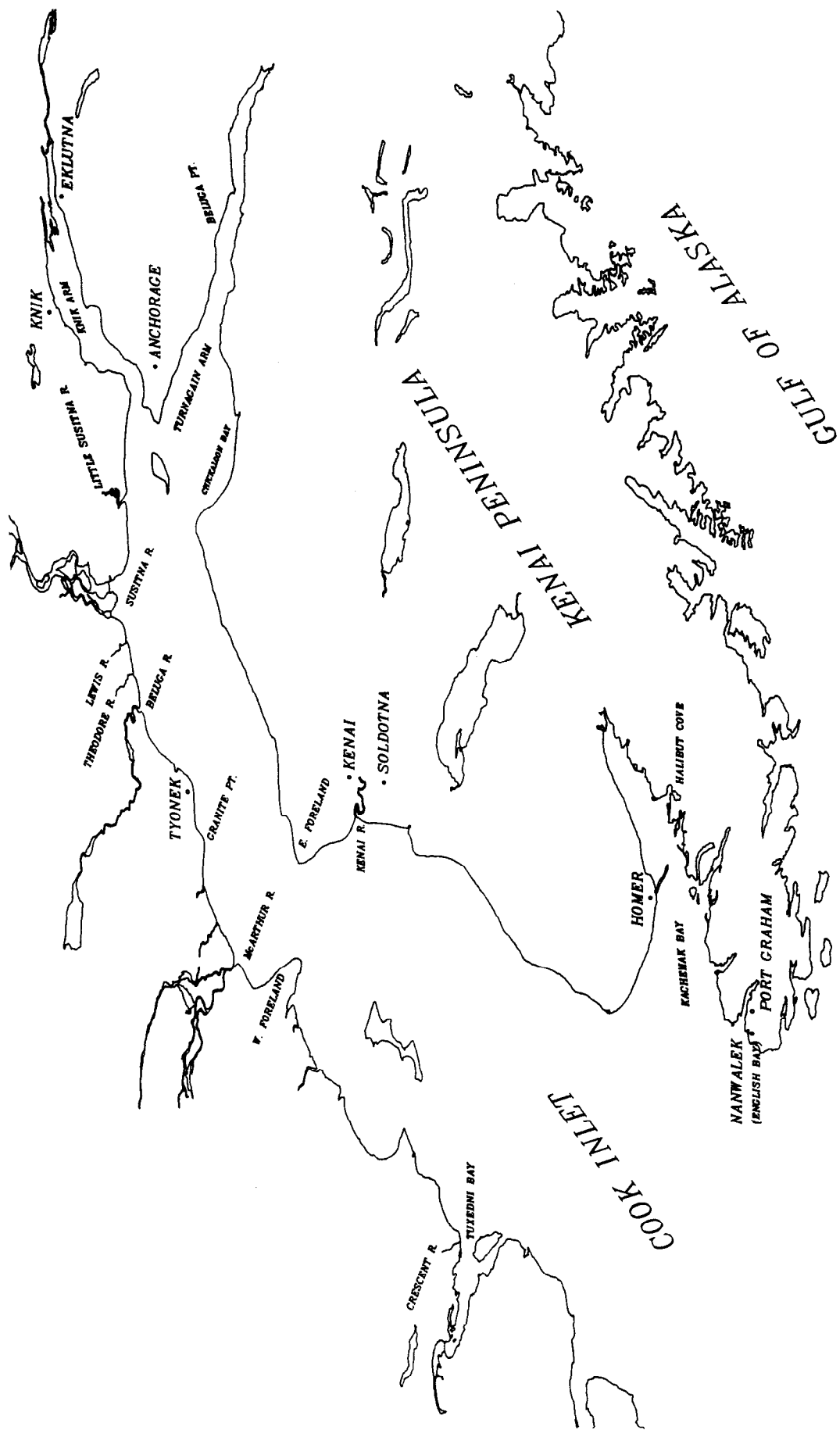


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INTRODUCTION

This report describes the subsistence harvest and use of beluga whale (*Delphinapterus leucas*) in Cook Inlet by Alaska Natives in 1993. The report describes contemporary patterns of use by Alaska Native hunters who live in the Anchorage, Matanuska-Susitna, and Kenai boroughs. It also summarizes information on prehistoric and recent historic use patterns in the region. The report derives from a two-year study of beluga, harbor seal and sea lion in Alaska. The research was conducted by the Division of Subsistence of the Alaska Department of Fish and Game under contract with the National Marine Fisheries Service. The study was conducted in cooperation with the Alaska and Inuvialuit Beluga Whale Commission and the Indigenous People's Council for Marine Mammals.

The beluga whale is one of several toothed whales in Alaska (Klinkhart 1966). Beluga whale range in the Gulf of Alaska, from Yakutat west to Kodiak Island, including Cook Inlet, where the greatest concentrations are thought to occur (Calkins 1984). The beluga of Cook Inlet may be a separate breeding population from the beluga of the Bering Sea. The extent of their biological differences may be revealed by future genetic research. The Cook Inlet population is thought to number between 500-1,000 animals in the early 1990s; however, complete counts from which precise estimates may be made with confidence are unavailable (Morris, pers. comm., 1993).

Beluga are seen throughout Cook Inlet, occupying areas of open water as well as scattered ice. Residents of Tyonek have seen beluga swimming among scattered ice and following the ice pushed by incoming tides (Goosmer, pers. comm., 1990). In the 1930s, beluga were reported to break through the ice in mild

winters while feeding upon tom cod (Osgood 1937:39). Feeding activity for salmon and smelt often bring beluga from the open Inlet into the lower reaches of major rivers like the Kenai, Crescent, Susitna, and Beluga rivers, the intertidal areas of the Little Susitna, Theodore, Lewis, and Crescent rivers, as well as the waters of Knik Arm, Chickaloon Bay, and the forelands (Calkins 1984:3-5). Beluga can be found in the Kenai River in early spring and in late fall (November) following runs of hooligan and long-fin smelt respectively (Bendock pers. comm., 1990), as well as throughout the summer months in pursuit of salmon. In Kachemak Bay in southwestern Cook Inlet, beluga are often seen in April and May and in the fall. At one time they appeared seasonally in large numbers in Halibut Cove Lagoon where they fed on concentrations of herring, once the focus of large local commercial herring fisheries (Meganack, pers. comm., 1982).

PREHISTORIC AND HISTORIC USES OF BELUGA IN COOK INLET

Prehistoric Use of Beluga in Cook Inlet

Archaeological studies in coastal areas around Cook Inlet have found some evidence of beluga and other small whales and porpoises as part of the range of resources used by marine mammal hunter societies which occupied the Inlet prior to historic contact. The most commonly occurring marine mammals in upper Cook Inlet are harbor seal and beluga. Pictographs of whales and other marine mammals occur at several sites in Kachemak Bay and Tuxedni Bay (de Laguna 1975:206-263; Stevens 1974:301-334).

Both Eskimo and Indian occupied sites contain beluga bones during the Kachemak period (de Laguna 1975:31). The site at Beluga Point along Turnagain Arm contains stone tool complexes indicating cultures with a reliance, for at least part of the year, on salmon, seal, and beluga (Reger 1981:193-206). Workman,

Lobdell, and Workman (1980:391) found beluga bones among the larger array of porpoise and harbor seal elements. On the west side of Cook Inlet, at West Foreland and the Kustatan village site, de Laguna (1975:139) found beluga bones along with clam and cockle shells buried in a midden. However, de Laguna (1975:31) found that the full range of whale bones were not properly represented in many Kachemak sites and that uncut bones were not common. She suggested that the relative absence of whale bones was due to flensing of killed animals on beaches. Only those bones required for tools were brought back to village sites.

Lobdell (1980: 121-123) reported that species identification was quite difficult for many of the whale elements recovered at Kachemak sites -- "many of the vertebrae were quite small and likely represent the most common whale seen in Kachemak Bay, the beluga." Lobdell also suggested that the size of the animals may have precluded the hauling of large bones to midden sites. Beach flensing is the common practice with contemporary beluga hunters and salvagers of Cook Inlet beluga, who typically remove the outer layers of skin and blubber, and cut the meat off the bones leaving the carcass on a mudflat, sandbar, or shoreline where it is carried away by subsequent tides (Fall, Foster, and Stanek 1984; Stanek, field notes). Often, the only bony parts removed for use away from the kill site are the teeth or lower jaw, flippers, and tail.

Historic Harvest Activities in Cook Inlet

Alutiiq Eskimos and Dena'ina Athabaskans were Cook Inlet area inhabitants at the time of Russian and American exploration and settlement. Beluga whales were one of five marine mammal species hunted by the Alutiiq (Chugach) in Prince William Sound at historic contact (Birket-Smith 1953). Osgood (1937:39) reported that some Dena'ina considered the beluga better eating than seal, and that they were widely sought after.

Whales were killed with a harpoon fitted with a toggle point and floating bladder, similar to that used to take sea lions (Osgood 1937:84; Birket-Smith 1953:33). The harpoon shafts were rather stout implements being made of three inch diameter spruce poles eight to ten feet long and tipped with a four to five inch whalebone foreshaft. This was then fitted with a toggle-bone tipped with a stone point. A drag bladder and stone tipped toggle were attached to the shaft with lengths of sinew. Complementing the harpoon as a striking instrument was a lance used to kill the exhausted animal.

Historically, beluga hunting presumably took place from strategic shoreline blinds along rivers and bays, as it sometimes does today. In upper Cook Inlet, kayaks or baidarkas were used by the Dena'ina (Osgood 1935). Among all the methods reported, one method in particular seems to have been unique to the Upper Inlet Dena'ina. Wrangell (1970:12) described a method he witnessed during the 1830s in Cook Inlet. To paraphrase his account, in the vicinity of streams where beluga pursued fish, poles were driven in the mud supporting a platform, on which hunters sat. There they waited during the incoming tide and watched for a whale to pass near. When one came close enough, the hunter threw a harpoon with a bladder attached. After harpooning a whale, the hunter followed in a baidarka and speared the animal with a lance.

Shem Pete, a Dena'ina elder (1987:63-65) also related the oral tradition about the *yuyqul*, the hunting platform or "spearing tree", which was described to him by Bidyaka'a, the last Dena'ina to actually use one. According to Fall (1981:192), the spearing platform may be derived from the wild game stands used by Athabaskan hunters. The word *yuyqul* appears to be unique to the Upper Inlet dialect (Kari 1987:61).

Another method used by the Upper Inlet Dena'ina involved a fence or weir built across the Beluga River, and a moveable dam of poles used in "Takasitna

Harbor" - perhaps Tuxedni Bay (Fall 1981:191). Each structure was used to trap seals and beluga as they moved out of the river on ebb tide, having ascended the river during the tide in pursuit of fish.

The Alutiiq of Lower Cook Inlet, now residing primarily in Port Graham and Nanwalek (English Bay), harvested beluga in the Kachemak Bay area. Beluga is called *asingaar'naq*, which means "something that looks fancy or bright" (Meganack 1993). Walter Meganack of Port Graham remembered the harvest of beluga during annual hunts for seal, sea lion, and beluga at Halibut Cove during the 1920s (Stanek 1984:56, 79). His father and others rowed in Norwegian dories with the tide from Port Graham to Halibut Cove:

On the point, where the old cannery stood, we would make camp. The hunters would line up along the point, and as the animals came in with the incoming tide, they would shoot. Some of the seals' whiskers would be covered in herring eggs. Shot animals would drift into the lagoon with the tide. When the shooting was over, we went into the lagoon and retrieved animals which were floating, had gone dry on the beach, or which we could see in the shallows. The animals were butchered and the fat rendered into oil. The whole area smelled of (cooking) fat and wood smoke. (Meganack 1982)

The skin and a layer of fat, or *kiimuq*, were removed and boiled for rendering into oil. The meat was cut into strips and most was dried. The remaining meat was boiled and eaten fresh.

Port Graham and Nanwalek residents have not hunted beluga for some time, according to respondents. Some use of beluga continues, however, from relatives living elsewhere in the Cook Inlet area, such as Kenai (Elenore McMullen pers. comm., 1993).

Commercial Harvests in Cook Inlet

During the last century, attempts to establish a sustained commercial harvest of beluga in Cook Inlet have been unsuccessful. For a short period during the early 1900s, a commercial operation called the Beluga Whaling Company caught whales in the Beluga River (DeArmond 1969:31). The fat was rendered into oil and the hides processed for sale. Another commercial operation was attempted during the 1930s, resulting in about a hundred whales harvested (ADF&G 1969:3). Tyonek residents in the 1980s recalled this historic commercial operation. The beluga were harvested with large, strong nets stretched across the river at high tide after the whales had entered. On the ebb tide, beluga were left stranded in the shallow water and mud. Up to 30 whales were reported taken on one tide. The whales were flensed and the fat rendered into oil for sale in Anchorage (Fall, Foster, and Stanek 1984:168). Remnants of the old buildings were still standing on the banks of the Beluga River during the early 1990s.

During the 1940s and 1950s, beluga were harvested by resident trappers and homesteaders living in the lower Susitna Basin (Ross, pers. comm., 1986), and by Dena'ina residents at Knik and Eklutna (Theodore, pers. comm., 1992). Some of the beluga was used as human food and dog food, but most of the harvest was sold in Anchorage. Some beluga products were shipped to Nome, where beluga harvested in Norton Sound provides subsistence food products.

When the Alaska Native Medical Center (the ANS Hospital) opened in 1953 in Anchorage, it often served wild foods such as seal, moose, and reindeer to its patients (Fortuine 1986:252). This was done in an effort to make the patients feel more at home and provide a diet similar to what they were accustomed. Among the wild foods served were beluga skin and meat. As mentioned above, in the 1950s, the beluga purchased for the hospital dietary program were taken by residents of the lower Susitna Basin and Upper Inlet (Ross pers. comm., 1986;

Theodore pers. comm. 1992). Because of the requirement of health inspections and certification, the U. S. Department of Agriculture disallowed the practice of serving wild foods (Fortune 1986).

CONTEMPORARY USE OF BELUGA IN COOK INLET

Contemporary Hunters of Cook Inlet Beluga

During the most recent decade, Cook Inlet beluga continue to be taken for subsistence uses. It is convenient to speak of two general groups of hunters taking beluga in the Cook Inlet area. One group of hunters reside year-round in the Cook Inlet area (including Anchorage, Matanuska-Susitna area, Kenai area, and Tyonek), while the other group of hunters reside in Alaska communities outside the Cook Inlet area (including Kotzebue Sound, Norton Sound, Seward Peninsula, Yukon-Kuskokwim Delta, Bristol Bay, and Barrow).

The exact number of local and nonlocal beluga hunters in Cook Inlet is difficult to determine for several reasons. Hunters do not self-report to any agency or non-governmental organization; there are no reporting requirements for hunting beluga. Hunters are organized into many small, independent hunting groups which may see each other occasionally out in Cook Inlet, but which have no regular dealings with one another.

Currently, hunters are not formally organized into a larger network of hunters. At present, the entire set of hunters is not known to any single person. Unlike a small village where the hunting activities of families are visible and publicly known, the large, sprawling area of greater Anchorage affords anonymity to hunters who desire privacy. Some beluga hunters in fact seek privacy, so their hunting activities do not offend southcentral residents from other cultural traditions, where marine mammals are not a part of the family's traditional diet. These hunters prefer

not to draw attention to themselves. In addition, there is fluidity to the Cook Inlet beluga hunting pattern. The set of people hunting in Cook Inlet shifts over time for reasons described below.

For this project, many of the Cook Inlet beluga hunters were identified through a chain-referral network methodology. During interviews with known hunters, other hunters known to respondents were identified. Some of these new hunters were contacted and interviewed, further expanding the network of hunters. This was a time-consuming method in the dispersed urbanized area surrounding Cook Inlet. Nevertheless, it was the most practical method for identifying hunters under current conditions.

Using the chain-referral approach, as many as 33 different households involved in hunting Cook Inlet beluga were identified as part of this research project. Probably this is a low count of the total number of hunters who have hunted beluga in Cook Inlet over the past decade or so, but a high count of the number of hunters and hunting groups taking beluga each year in Cook Inlet. On most years, the number of beluga hunters operating in Cook Inlet may be considerably less than 33 (see Table 2). The number of hunters is known to vary each year, though the precise numbers operating each year are not known. Hunters combine into hunting groups, containing members ranging from about 2 to 5 different households, working together in one or several boats. We know the composition of only some of these hunting groups at present. In sum, the total set of hunters taking beluga in Cook Inlet over the past decade is probably somewhat larger than 33, but how much larger is not known with certainty.

One difficulty in identifying and counting hunters is the fluidity of the nonlocal hunter group. Based on hunter interviews, it appears that many of the hunters residing outside Cook Inlet are not regular hunters in Cook Inlet. Some hunt on the occasional year. Others are known who have hunted only once or twice,

after which they are not seen again on Cook Inlet. The cycling of different nonlocal hunters through Cook Inlet is an imponderable that makes identifying nonlocal hunters for precise counts difficult from one year to the next.

The majority of local hunters live in Anchorage. Other local hunters reside in the Matanuska-Susitna Valley, on the Kenai Peninsula, and in Tyonek. Several of the local hunters were former residents of the Copper River Basin. Most of the older hunters had learned to hunt beluga in their community of origin. At some point in their lives, they had moved to the Anchorage area, usually for paid employment. By contrast, some middle-aged hunters had lived in southcentral Alaska most of their lives. These hunters learned to harvest beluga from other local hunters, or learned when they periodically visited relatives in their family's community of origin. The children of local hunters who have grown up in the southcentral area have learned to hunt beluga from families and friends in Cook Inlet. In this manner, the local pattern of use was being taught to children.

Hunters from Tyonek, Knik, and Eklutna are a somewhat different case. As noted above, the Upper Inlet Dena'ina have a long history of hunting Cook Inlet beluga. The intensity of beluga hunting by Dena'ina families at Tyonek has varied over time. Tyonek residents interviewed in 1983 estimated that during the 1930s and 1940s about 6 to 7 whales per year were used by the community. Since the 1940s, village elders reported that there was a shift away from marine mammal hunting associated with an increase in the number of moose in the area. There was very little beluga hunting activity between the late 1940s and late 1970s. By 1979 there appeared to be a resurgence of beluga hunting effort by Tyonek residents. Village elders knowledgeable in beluga hunting and processing were teaching the methods to younger residents. Division studies found that three beluga were taken by Tyonek in 1979, and one per year was harvested between 1981 and 1983. Dena'ina families at Knik and Eklutna, while taking beluga in the past, have not

reported hunting whales during the last 15 years or so. Residents have reported more frequent sightings of beluga in Knik Arm in recent years.

Not surprisingly, the majority of beluga hunters residing outside the southcentral area come from communities where beluga and other marine mammal products are important parts of the local economy. As stated above, hunters come from communities around Kotzebue Sound, Norton Sound, the Seward Peninsula, and the Yukon-Kuskokwim Delta. Some other locations from which hunters originate include Barrow, King Island (Nome), and Bristol Bay.

There are several situations that account for nonlocal residents hunting in Cook Inlet. Usually, non-local hunters are visiting Anchorage for some reason, and find they have an opportunity to go hunting with relatives or friends who live in Anchorage and own boats. There have been instances where nonlocal hunters report that beluga hunting conditions were bad in their home community, or that the recent year's beluga harvest was unproductive. For example, in 1986, hunters from Kotzebue were unable to hunt due to persistent ice conditions in their area. Some Kotzebue hunters visiting in Anchorage teamed up with Anchorage hunters to harvest beluga, transporting beluga products back to their homes.

Some nonlocal hunters have reported that they think it is a novel idea to hunt beluga from Anchorage. These hunters have done it once or twice just for the experience. There are some nonlocal hunters who make it an annual event. These hunters schedule their visit to southcentral Alaska to include activities like shopping, visiting friends and relatives, and hunting seals, sea lions, or sea otters. One group of Anchorage hunters even has sponsored a beluga hunt and reunion for former school classmates.

Beluga Hunting Patterns and Methods in Cook Inlet

Beluga hunting in Cook Inlet can occur almost year-round, except for three or

four months of cold or inclement weather. There is little documentation of the precise movements of Cook Inlet beluga. In winter, they occupy ice free areas, and as noted above, they can be found among the ice flows in certain areas, particularly where an abundant supply of food is found. They are commonly seen in Kachemak Bay. Tyonek residents report that beluga arrive near Tyonek during early May (Fall, Foster, and Stanek 1984:166). They remain in upper Cook Inlet throughout summer and fall, and return to lower Cook Inlet during November. While in the upper inlet, beluga feed on salmon, hooligan, and tom cod which are moving into freshwater drainages to spawn.

Most beluga hunting in Cook Inlet occurs between mid-April and mid-October and takes place in the upper inlet from the Beluga River to Anchorage. Favorite hunting locations include the Beluga, Theodore, and Susitna river mouths where beluga are readily found throughout the spring and summer and early fall months. During the late fall and early spring, some hunters travel to Kachemak Bay to hunt beluga, as well as harbor seal and sea lion.

The beluga and seal hunting areas used by Tyonek residents extend from the mouth of the Susitna River along the western shoreline of Cook Inlet to Tuxedni Bay. Most hunting by Tyonek residents is around the Beluga and Theodore rivers, and along the west side of the Inlet between the Susitna River and Granite Point (Fall, Foster, and Stanek 1984:168-169).

During the recent decade, Tyonek residents used the following methods to hunt beluga. Beluga were hunted from boats lying in wait along river banks (see Fall, Foster, and Stanek 1984:168-169). When beluga entered the river, they were shot with high powered rifles. When a whale was struck, hunters quickly followed to kill it. The whale was then gaffed or tied by a rope about the tail or the jaw. The whale was taken to shore for butchering, or tied to the side of the boat and towed back to the community.

Other beluga hunters in Cook Inlet used methods similar to those used by Tyonek hunters, with a few additional features. Their hunting implements included high caliber rifles for making the initial strike, harpoons commonly about eight feet long, consisting of a wooden handle, a steel shank foreshaft onto which a brass toggle point was attached with a length of line, and a buoy for securing to a struck beluga. Some hunters used a different harpoon with a fixed point for making the final kill.

Hunting locations included river channels and mud flats; the deep water of the open inlet; and the inlet shoreline. Most commonly, hunters chose to hunt beluga in river channels and mud flats where animals were most concentrated, and where there were fewer escape routes. In a river channel or mud flat, hunters pursued beluga, approaching close enough to shoot. A second method used in river channels or mud flats was for hunters to wait, sitting in their boats anchored along a river channel or standing on the river bank. Beluga were shot when they passed close by the boat or river bank. Hunting in deep water areas required pursuing beluga by boat to approach close enough for a rifle shot. Once a shot struck, the beluga was followed until the hunter either could take other shots or use a harpoon to attach a buoy. After the floats were attached, the whale was followed with the skiff and eventually killed. Some hunters in Cook Inlet simply shot at beluga, using no harpoons or floats. A few hunters have been observed using a kayak at the Susitna River.

Depending on the location of the hunt and the amount of time to be spent, hunters might overnight while on a hunt. Some hunting parties used tents at temporary camps, others used hunting cabins, while others spent the night in boats. One well-established beluga camp is located inside the mouth of the Susitna River. It is equipped with drying racks and facilities for wall tents.

Occasionally, a dead or wounded beluga washes up on Cook Inlet beaches which are accessible to people. If the skin and blubber of these animals are in good condition, they are sometimes salvaged. Reports of the salvage of beached whales appear periodically in southcentral newspapers, including the salvage of a beaked whale near Kenai City in the early 1980s and a beluga in 1991 (Anchorage Daily News: 1991). Tyonek residents sometimes find beached beluga on their shores, and attempt to salvage edible parts.

Estimated Subsistence Takes of Beluga in Cook Inlet

As part of this project, an attempt was made to contact known beluga hunters to estimate the number of beluga taken in Cook Inlet in 1993. In 1985, prior to this current study, several beluga hunters who hunted in the Susitna River area were contacted, and an informal dialog was established which continued and expanded in subsequent years. Information was gathered through informal and formal personal interviews with hunters regarding hunting locations, timing of hunting activities, recovered and struck and lost animals, harvest methods, product use, distribution patterns, hunter group dynamics, and beluga ecology. Formal telephone interviews about harvest levels were made with some hunters between 1987-90, and again in 1993 (see Table 2). No hunters were surveyed in 1991 or 1992 by the Division of Subsistence due to lack of funding. The AIBWC implemented a mailed harvest reporting system those two years, however, precise estimates could not be made from the data obtained. In 1993, the Division of Subsistence surveyed 16 households of 19 households known to have hunted in 1993. They were asked about the number of beluga taken for subsistence in 1992 and 1993 by their hunting groups.

Based on reports of surveyed hunters, there were 17 beluga reported taken for subsistence use in Cook Inlet in 1993 (Table 1). Of the reported take, 10

TABLE 1
Estimated Subsistence Takes of
Beluga Whale by Alaska Native Hunters*
in Cook Inlet, 1993

	<u>Estimated Beluga Killed</u>		
	<u>Harvest</u>	<u>Struck and Lost</u>	<u>Total Take</u>
Reported by Surveyed Hunters (N=16 Households)	13	4	17
Expanded to All Known Hunters* (N=19 Households)	15.4	4.8	20.2

* Includes hunters from the Anchorage, Matanuska-Susitna, and Kenai Peninsula boroughs. Does not include Alaska Native hunters in Cook Inlet who live in other areas. Including unknown hunters, the total annual take may range as high as 30 beluga in the opinion of observers, but the take of hunters from outside the region have not been documented systematically.

Source: Division of Subsistence, Alaska Department of Fish and Game

TABLE 2
Estimated Subsistence Takes
(Reported and Expanded to Known Hunters*)
of Beluga Whale (*Delphinapterus leucas*)
By Alaska Native Hunters
In the Cook Inlet Area, 1987-93

Year	Known Hunting Households*		Known Hunting Households Surveyed		Reported Kill			Estimated Expanded Kill			
	Households		Households		Harvest by Surveyed Households	Struck and Lost by Surveyed Households	Take by Surveyed Households	Harvest by Hunting Households	Struck and Lost by Hunting Households	Take by Hunting Households	
1987	11		4		8	1	9	22.0	2.8	24.8	
1988	8		5		12	3	15	19.2	4.8	24.0	
1989	11		9		11	2	13	13.4	2.4	15.9	
1990	11		5		7	2	9	15.4	4.4	19.8	
1991	--		--		--	--	--	--	--	--	
1992 **	--		8		9	1	10	--	--	--	
1993	19		16		13	4	17	15.4	4.8	20.2	
MEAN	12		8		10	2	12	17.1	3.8	20.9	

* Households known to have hunted; does not include some unknown hunters in Cook Inlet (see text)

** Retrospective estimates from household surveys conducted in 1993

Source: Division of Subsistence, Alaska Department of Fish and Game

beluga were harvested and 4 beluga were struck and lost in 1993. The reported take of 17 beluga is probably a conservative estimate of the total subsistence take of beluga in Cook Inlet in 1993, for several reasons. First, the reported take does not include animals that may have been taken by three households who hunted in 1993 but were not surveyed. Assuming the three unsurveyed households hunted at the average level of surveyed households (17 beluga by 16 households, or 1.0625 beluga per household), then an additional 3.2 beluga may have been taken by the unsurveyed households, for an expanded estimated take of about 20 beluga in 1993 from known hunting households.

Second, the reported take does not include animals that may have been taken by any unknown hunters in 1993, that is, hunters not identified through the chain referral method. It is probably not the case that this unknown group is as large as the known group, based on what we know of hunting patterns in Cook Inlet from hunter interviews. If one assumes the possibility that a third of the harvest is being missed due to unknown hunters (which may be a high assumption), then perhaps an additional 10 beluga were taken in Cook Inlet by unknown hunters. Therefore, adding 17 beluga (the reported take by surveyed known hunters), 3 beluga (an assumed take by unsurveyed known hunters), and 10 beluga (an assumed take by unsurveyed, unknown hunters), results in an estimated 30 beluga taken in Cook Inlet by Native Alaska hunters in 1993. This may be a high estimate, because the liberal assumption that one-third of the take is being missed. The actual beluga take in 1993 is likely to be some number between 17 and 30 beluga.

The reported takes of beluga by surveyed households from 1987-93 have ranged from 9 to 17 whales, with a mean reported take of 12 whales, as shown in Table 2. The estimated subsistence takes of beluga from 1987-93 expanded to unsurveyed hunting households have ranged from 16 to 24 whales, with a mean of 19 whales. The expanded subsistence take of 20 whales by known hunters in

1993 is close to the seven-year mean of 19 whales in Cook Inlet (Table 2). Based on surveyed hunter comments and research observations, it appears that hunting effort and levels of take by local resident hunters have been relatively consistent over the last decade in Cook Inlet. That is, there is nothing to indicate trends in the pattern of use of Cook Inlet beluga by local hunters, either increases or decreases in hunting effort or levels of take.

Use of Beluga Whale Products and Patterns of Exchange

The skin and fat are the usual items obtained from beluga harvested in Cook Inlet. They are used to produce highly valued subsistence products such as boiled skin with fat and processed beluga oil. Meat and internal organs such as hearts and liver are other items obtained from animals more occasionally. Portions of the meat, if used, are stripped and dried for about two weeks. The dried strips are cut into convenient lengths and stored, either frozen, unfrozen in a cool dry place, or unfrozen in a container of beluga oil. Some beluga are flensed for the skin and fat, and the meat, skeleton, and internal organs are left, commonly to wash back into Cook Inlet. In addition to the meat, skin, and internal organs used for food, teeth and vertebrae are occasionally kept for hand crafted items, such as masks and jewelry.

In Tyonek, skin, fat, and oil were all used. Beluga meat was roasted, boiled, and ground into burger. The blubber was rendered into oil, while strips of skin and fat were boiled (Fall, Foster, and Stanek 1984:172).

There was a regular order in which beluga were butchered by Tyonek residents, and certain knowledgeable individuals directed the processing activity. The function of beluga leaders during the 1980s is consistent with historic descriptions of beluga leaders among the Dena'ina (Bidyaka'a, a historic figure in Upper Cook Inlet, was "chief of beluga killing", according to Pete 1980:6;

1987:65). A beluga harvested by Tyonek in 1983 was butchered in the following way:

First the flippers and tail were removed and discarded. The skin and blubber were removed by making parallel cuts the length of the carcass about 16 inches apart. As these strips of blubber were flensed from the animal they were cut into blocks approximately 24 inches in length. After the blubber was removed exposing the flesh, the backstraps were cut from the backbone. The ribs with the meat remaining on them were then separated from the backbone, exposing the internal organs. The liver, heart, and inner tenderloins were then removed. The remaining skeleton and internal organs were either used for dog food or returned to the inlet. The blubber and meat were cut into smaller portions and shared throughout the village. Fall, Foster, and Stanek 1984: 170-172

When a beluga was processed at Tyonek, everyone in the community was notified. The elders were provided for first, then everyone was allowed to take what they needed, and portions were delivered throughout the community. This pattern of sharing falls within the type of sharing called "generalized redistribution" in the subsistence literature, in that some products are made available to all community members, regardless of kinship ties to the hunter.

Hunters from communities other than Tyonek typically butcher beluga on beaches near the kill sites. This process is illustrated by the following case example, which occurred in May 1988. That year, when the king salmon were running strong, a beluga hunter living in Anchorage and his two adult sons made a trip to hunt beluga between the Susitna and Beluga rivers. The hunting group killed one whale near the Beluga River. The beluga was pulled ashore on a nearby, hard-packed beach to keep the skin and fat relatively free of mud, thereby reducing the amount of additional cleaning later at home. The skin was cut into large chunks, placed into washtubs, and covered. Most of the meat was removed and also placed into tubs. The group camped overnight on the beach and caught the flood tide back to Anchorage the next morning. The carcass of the whale was left at the kill site.

Back in town, the skiff was met by several relatives and friends. The three adult members of the hunting party each received equal portions of skin and fat and meat. Each in turn gave portions to other relatives, and some skin and fat was sold to a friend. Two relatives received skin and fat in exchange for helping pay for gasoline and ammunition used on the hunt. Another relative received skin and fat and meat for the favor of helping unload the skiffs and cleaning equipment. The hunting leader and his sons later sent 100 pounds to relatives in Kotzebue. The leader pointed out that he usually hunts with one or two other boats or crews. In that case, other boats get equal portions of the kill.

As shown by the case above, for hunters living in southcentral communities other than Tyonek, beluga products are usually not distributed through "generalized redistribution." Instead, beluga products are distributed through several types of transactions. First, adult hunting partners from different households commonly receive initial shares from the hunt. The products are then commonly shared by each individual with relatives in his or her kinship network. Some beluga products also are given by the hunter to friends who are known to use them, commonly through some reciprocal exchange transactions involving favors, bartered goods, or money. In this way, beluga products from a single whale may circulate widely through networks of kin and friends, linking families in and outside of the southcentral area.

Since the availability of regular air transportation, marine mammals products are known to flow between families in Anchorage and many other parts of the state. Beluga products are among the items shared. Normally, subsistence food items flow from families in rural villages to relatives in urban areas who are less able to procure them. In the case of beluga, some products travel in the other direction, from hunters in the Cook Inlet area to family and friends in villages elsewhere in the state.

THE COOK INLET BELUGA HUNTER GROUP

On March 3rd, 1994, the Division of Subsistence sponsored a meeting of Cook Inlet beluga hunters in Anchorage to inform them of the beluga project funded through NMFS. There were fourteen marine mammal hunters in attendance, along with a representative of the Alaska and Inuvialuit Beluga Whale Committee (AIBWC), and three Division of Subsistence researchers. As this was the first meeting of Cook Inlet beluga hunters, the meeting was exploratory and informational. The purpose of the meeting was to inform the hunters of the project, the AIBWC, and beluga issues in the state and region. Another purpose was to establish a time for future meetings with a larger contingent of hunters, to further discuss beluga issues, with additional agency representatives, if desired by the group.

A variety of issues were discussed during the meeting, including the start of a discussion of the possibilities of the formal organization of hunters into a regional beluga group. There were no proposals made during the meeting, and the Cook Inlet beluga hunters in attendance took no formal actions on any item.

Subsequent to this meeting, some Cook Inlet marine mammal hunters and users met with NMFS area officials, and formed an organization called the Cook Inlet Marine Mammal Council (CIMMC). A letter declaring their formation and a set of by-laws which appointed officers were released. The group has formed to deal with all marine mammals in Cook Inlet, including beluga whale. The group has not met formally with the Division of Subsistence. The Indigenous People's Council for Marine Mammals took no action on a proposal to include the CIMMC as a member organization, and the IPCOMM staff is waiting for additional information from the group, such as its membership, goals, and relationships with federal and state agencies (Carl Jack, pers. comm.).

BELUGA SKIN SAMPLES COLLECTED IN 1993 AND 1994

In response to a request from the NMFS Southwest Fisheries Science Center genetics laboratory at La Jolla, California through the AIBWC at its December 1993 meeting, the Division of Subsistence collected three skin samples from beluga taken for subsistence by Cook Inlet hunters. Two samples were from frozen tissue of beluga taken in summer 1993. One sample was from a freshly-killed whale taken in spring 1994. Samples were preserved in DMSO and sent with identifying information to the Center.

SUMMARY

Beluga have been hunted for subsistence uses in Cook Inlet since before historic contact and continuing into the contemporary period. Currently, beluga are hunted by Alaska Natives for food, craft materials, and sharing and exchange between families.

This research identified several types of beluga hunters in Cook Inlet. Dena'ina hunters (primarily from Tyonek) practice the oldest continuing hunting pattern in Cook Inlet, harvesting beluga from traditional areas along western Cook Inlet. Another group are marine mammal hunters, most of whom are Inupiat or Yup'ik, who have moved to the greater Anchorage area from communities where beluga are traditionally used. As residents of the Cook Inlet area, they have established a pattern of hunting beluga in Cook Inlet which is now being taught as a customary practice between family members and friends. A third type of hunter are Alaska Natives who live outside the southcentral region and who hunt beluga whale in Cook Inlet while visiting the area. Subsistence products are carried back by this group to home communities.

Estimating the number of hunters is difficult in the large, sprawling metropolitan area. Hunters are not formally organized into a larger network of hunters; some hunters desire privacy; and there is fluidity within the set of hunters as people move in and out of the southcentral area. Using a chain referral approach, as many as 33 different households with beluga hunters were identified by this research project. On most years, the number of hunters operating in Cook Inlet is probably considerably less than 33.

To estimate beluga takes, 16 households were surveyed of 19 households known to have hunted beluga in Cook Inlet in 1993. Expanding reported takes to unsurveyed households known to hunt, we estimate that 20 beluga were taken in Cook Inlet in 1993. Of this take, 15 were harvested and 5 struck and lost. The estimate does not include Alaska Native hunters in Cook Inlet who live outside the Anchorage, Matanuska-Susitna, and Kenai Peninsula boroughs. Including unknown hunters, the total annual take may range as high as 30 beluga, based on the opinion of observers; however, the takes of hunters from outside the region have not been documented systematically. The estimated take of 20 beluga in 1993 compares with take estimates ranging between 16-24 beluga from 1987-1993 in Cook Inlet.

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