

# Aboriginal Subsistence Whaling in Greenland: The Case of Qeqertarsuaq Municipality in West Greenland

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**ABSTRACT.** Policy debates in the International Whaling Commission (IWC) about aboriginal subsistence whaling focus on the changing significance of whaling in the mixed economies of contemporary Inuit communities. In Greenland, Inuit hunters have taken whales for over 4000 years as part of a multispecies pattern of marine harvesting. However, ecological dynamics, Euroamerican exploitation of the North Atlantic bowhead whale (*Balaena mysticetus*), Danish colonial policies, and growing linkages to the world economy have drastically altered whaling practices. Instead of using the *umiaq* and hand-thrown harpoons, Greenlandic hunters today use harpoon cannons mounted on fishing vessels and fiberglass skiffs with powerful outboard motors. Products from minke whales (*Balaenoptera acutorostrata*) and fin whales (*Balaenoptera physalus*) provide both food for local consumption and limited amounts of cash, obtained through the sale of whale products for food to others. Greenlanders view this practice as a form of sustainable development, where local renewable resources are used to support livelihoods that would otherwise be dependent upon imported goods. Export of whale products from Greenland is prohibited by law. However, limited trade in whale products within the country is consistent with longstanding Inuit practices of distribution and exchange. Nevertheless, within the IWC critics argue that even limited commoditization of whale products could lead to overexploitation should hunters seek to pursue profit-maximization strategies. Debates continue about the appropriateness of cash and commoditization in subsistence whaling and about the ability of indigenous management regimes to ensure the protection of whale stocks. This case study describes contemporary whaling in Qeqertarsuaq Municipality in West Greenland, demonstrating that despite significant changes, whaling is an integral part of Greenland's mixed economy and a vital component of Greenlandic Inuit cultural identity. The social organization of whaling continues to be kinship-based, and Greenlandic foods, including whale products, are prominent in local diets and in cultural celebrations. The research reveals that Greenlanders participate in whaling not to maximize profits but in order to sustain cultural traditions and to reduce dependency on tenuous links to the world economy.

**Key words:** Greenland, Qeqertarsuaq Municipality, aboriginal subsistence whaling, Inuit whaling, mixed economy, minke whale, fin whale, International Whaling Commission

**RÉSUMÉ.** Les débats sur les politiques concernant la chasse de subsistance à la baleine, au sein de la Commission baleinière internationale (CBI), tournent autour du changement de signification de la chasse dans l'économie mixte des communautés inuit contemporaines. Au Groenland, les chasseurs inuit capturent des baleines depuis plus de 4000 ans, dans le cadre d'un prélèvement polyvalent d'espèces marines. Cependant, la dynamique écologique, l'exploitation euro-américaine de la baleine boréale (*Balaena mysticetus*) dans l'Atlantique Nord, les politiques coloniales du Danemark, et les liens de plus en plus forts avec l'économie mondiale ont changé radicalement les pratiques de chasse à la baleine. Au lieu d'utiliser l'oumiak et les harpons lancés à la main, les chasseurs groenlandais d'aujourd'hui utilisent des canons lance-harpon montés sur des bateaux de pêche, et des embarcations légères en fibre de verre équipées de puissants moteurs hors-bord. Les produits du petit rorqual (*Balaenoptera acutorostrata*) et du rorqual commun (*Balaenoptera physalus*) fournissent à la fois de la nourriture pour la consommation locale et un peu d'argent liquide, provenant de la vente de ces produits pour la consommation alimentaire à l'extérieur de la communauté. Les Groenlandais voient cette pratique comme une forme de développement durable, où des ressources renouvelables locales sont employées pour entretenir un style de vie qui dépendrait autrement de biens importés. L'exportation de produits baleiniers est interdite par la loi au Groenland, mais le commerce limité de produits baleiniers à l'intérieur du pays est en accord avec la longue tradition inuit de distribution et d'échange. Des critiques au sein de la CBI soutiennent cependant que la commercialisation des produits baleiniers, même à faible échelle, pourrait amener une surexploitation si les chasseurs cherchaient à poursuivre des stratégies de maximisation des bénéfices. Les débats continuent pour savoir si l'argent liquide et la transformation des produits baleiniers en marchandises sont appropriés dans le cadre de la chasse de subsistance, et si les régimes de gestion indigènes sont capables d'assurer la protection des stocks de baleines. Cette étude de cas décrit la chasse contemporaine à la baleine dans la municipalité de Qeqertarsuaq dans le Groenland occidental, et montre qu'en dépit de changements significatifs, la chasse à la baleine fait partie intégrante de l'économie mixte du Groenland et qu'elle est une composante vitale de l'identité culturelle inuit du Groenland. L'organisation sociale de la chasse à la baleine continue d'être fondée sur les liens de parenté, et la nourriture groenlandaise, y compris les produits baleiniers, a une place de choix dans l'alimentation et les fêtes culturelles locales. La recherche révèle que les Groenlandais participent à la chasse non pour maximiser leurs bénéfices, mais pour maintenir des traditions culturelles et réduire leur dépendance à l'égard des liens ténus qui les relient à l'économie mondiale.

**Mots clés:** Groenland, municipalité de Qeqertarsuaq, chasse aborigène de subsistance à la baleine, chasse inuit à la baleine, économie mixte, petit rorqual, rorqual commun, Commission baleinière internationale

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## INTRODUCTION

The International Whaling Commission's (IWC) aboriginal subsistence whaling regime has come under increasing scrutiny following implementation in 1986 of a moratorium on commercial whaling. As the IWC struggles to implement new management procedures for commercial whaling, some suggest that management procedures for aboriginal subsistence whaling should also be revised (Gambell, 1993). A central issue in this discussion is the definition of the terms "subsistence" and "commercial" and the distinctions these imply between aboriginal subsistence and other types of whaling, such as small-type coastal whaling (Freeman, 1993, 1990).

Discussions about subsistence and cash in rural economies are certainly not new, nor are they limited to whaling. Research throughout the North has revealed that mixed subsistence-market economies provide rural communities and regions with a reliable economic base, even when linkages to the larger world economy are tenuous and uncertain (Wenzel, 1991; Wolfe and Walker, 1987; Asch, 1983; Feit, 1983; Usher, 1981). In these mixed economies, cash and commercial-wage sectors are mutually supportive, and money generated from wage employment or sales of local products is used to capitalize subsistence harvest activities. In Greenland, research by Dahl (1987, 1989, 1990), Nuttall (1992), and Møller and Dybbroe (1981)

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demonstrates the close interrelationships between subsistence and commercial-wage sectors in local communities and regions. In fact, Dahl (1989) argues that differentiation between commercial and non-commercial harvesting of wild resources in Greenland is meaningless because the two pursuits are inextricably linked.

Aboriginal subsistence whaling in Greenland is an integral part of these local and regional economies (Caulfield, 1991; Josefsen, 1990; Larsen and Hansen, 1990; Greenland Home Rule Government, 1989; Helms *et al.*, 1984; Kapel and Petersen, 1984; Donovan, 1982; Petersen *et al.*, 1981). Greenlanders catch minke whales (*Balaenoptera acutorostrata*) and fin whales (*Balaenoptera physalus*), both of which are subject to IWC jurisdiction. The IWC first adopted quotas for Greenlanders' catch of humpback whales (*Megaptera novaeangliae*) in 1961 and in 1975 placed quotas on catches of minke and fin whales (Gambell, 1993). In 1985, the IWC reduced Greenlanders' minke whale quota by more than half and eliminated humpback catches entirely, ostensibly due to concern about whale stocks (Table 1). Minke quotas were reduced even further in the late 1980s to a low of 60 for West Greenland for 1989. However, this was offset somewhat by increased fin whale quotas. In 1991, an increased minke quota was adopted for the three-year period 1992-94; the three-year quota is 315 whales (including those struck but lost), with a maximum of 115 in any one year. Hunters in West Greenland were allowed to take 21 fin whales in 1992 under a one-year quota (Anon., 1991). Whales caught under these provisions are used only for local consumption within Greenland and may not be exported.

While there is widespread acceptance within the IWC of Greenland's aboriginal whaling, critics express fears about the development of internal markets for whale products and concern that profit maximization, commoditization, and capital intensification may be developing (IWC, 1985; Lyng, 1990). In this case study from Qeqertarsuaq (in Danish, Godhavn) Municipality in West Greenland (Fig. 1), I focus on these

concerns and illustrate the complex and dynamic relationship between subsistence and cash in contemporary Greenlandic whaling. These questions highlight tensions that exist in Greenland between continuity and change in the procurement, distribution, and exchange of whale products. Furthermore, they underscore the difficulties facing indigenous societies in pursuing sustainable development in the Arctic because of conflicting perspectives in Inuit and Euroamerican societies about appropriate human-environment relationships.

STUDY AREA

The focus of this research is on Qeqertarsuaq Municipality in the Disko Bay region of West Greenland. The municipality encompasses all of Disko Island and a small island group in the bay itself. Qeqertarsuaq, the largest of two communities in the municipality, is located at 69° north latitude, 53°33' west longitude (Fig. 1). The region has a marine climate, influenced by the adjacent Disko Bay and Davis Strait. The average yearly temperature is -2.5° Celsius. Temperatures range from lows of -25° to -30° Celsius in winter to highs of +15° Celsius or more in summer. During winter, the sun drops below the horizon for a period of six weeks between late November and early January. Sea ice usually covers most of Disko Bay from December until March or April.

Qeqertarsuaq Municipality has a population of 1143 people, 90% of whom are Greenlandic Inuit. The two communities in the municipality are Qeqertarsuaq itself, with a population of 1075, and Kangerluk (Diskofjord), with a population of 68. The language of local Inuit residents is Kalaallisut, or Greenlandic Inuit, part of the Eskimo-Aleut linguistic family (Woodbury, 1984). The non-Inuit-speaking population of the municipality is almost entirely Danish.

TABLE 1. International Whaling Commission (IWC) quotas for Greenlandic aboriginal subsistence whaling, 1984-94

Year	Minke whales		Fin whales	Humpback whales
	W. Greenland	E. Greenland		
1984	2 yr quota total = 588;	10	6	9
1985	max. 444 per year	10	8	8
1986	2 yr quota total = 220;	10	10	0
1987	max. 130 per year	10	10	0
1988	110	12	10	0
1989	60	12	23	0
1990	95	12	21	0
1991	100	12	21	0
1992	3 yr quota total = 315;	12	21	0
1993	max. 105 per year	12	2 yr quota total = 42	0
1994		Not yet determined		Not yet determined

Source: IWC, 1983-91; Jessen, pers. comm. 1992.

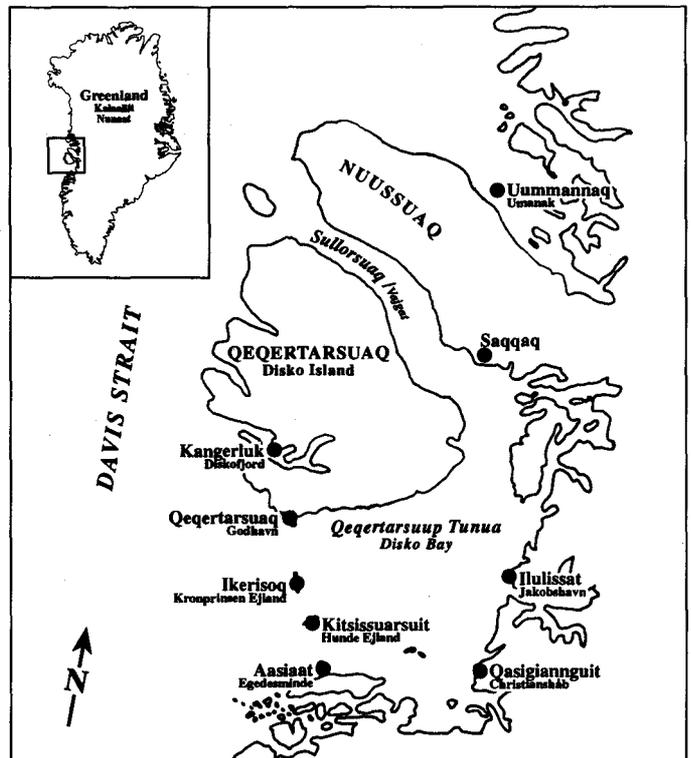


FIG. 1. Map of Disko Bay region, West Greenland.

## METHODS

This case study was one of three sponsored by the Greenland Home Rule Government in 1989 and 1990 designed to describe and analyze the changing significance of aboriginal subsistence whaling in West Greenland (cf. Josefsen, 1990; Larsen and Hansen, 1990). The study communities were selected by the Home Rule government in order to illustrate a cross-section of contemporary whaling practices in Greenland. Hunters in Qeqertarsuaq Municipality participate in both fishing vessel and collective whaling for minke and fin whales. The municipality's mixed economy combines intensive commercial fishing typical of south Greenland with hunting activities (particularly for seal, beluga and narwhal) more typical of municipalities farther north.

I gathered data for the research during 1989 and 1990, while my family and I lived in the town of Qeqertarsuaq. Visits were also made to nearby Kangerluk, some 20 km to the north. Research methods employed in the study included a formal survey covering 22% of all households in the municipality (random sample;  $n=62$ ), systematic interviews with household members participating in whaling in 1988 and 1989, interviews with key informants, and participant observation of whaling and other harvest activities. For the formal household survey, I designed and tested a survey questionnaire that was translated into both West Greenlandic and Danish. For interviews with Greenlandic-speaking households, a local research assistant/translator was employed. Members of the research team recorded responses, which were then coded and analyzed using an SPSS statistical package. In most cases, household interviews were conducted with males, although female household members frequently contributed to responses. Household food consumption data were gathered over a one-year period using a 24-hour recall method. Selected households representing a cross-section of Qeqertarsuaq were asked to report which meat and/or fish products they consumed for one week during the months of October 1989 and January, April, and July 1990. In addition to the community-based research, I also conducted interviews with officials in the Greenland Home Rule Government in Nuuk and Copenhagen and in the Greenland Fisheries Research Institute in Copenhagen. Research methods were designed in keeping with ethical principles for social science research in the North (Association of Canadian Universities for Northern Studies, 1982).

THE GREENLANDIC INUIT WHALING COMPLEX:  
A HISTORICAL OVERVIEW

Contemporary Greenlandic whaling is part of a historical complex of marine resource use dating back at least 4000 years (Grønnow and Meldgaard, 1988). Until the end of the 18th century, Inuit hunters used skin-covered *umiut* (singular: *umiaq*) in the Thule tradition to catch bowhead and humpback whales (Petersen, 1986). Whales were an important part of Greenlandic diets, provided raw materials for fabricating hunting and fishing equipment, and served as the focus of highly organized collective whaling practices. Prior to contact with Europeans, hunters were governed by customary laws regarding ownership of harpooned whales, distribution of products from flensed whales, and appropriate behavior during whaling and flensing (Glahn, 1921). Whales figured prominently in the Greenlandic spiritual world. Like all animals of the sea, whales were a gift from *Sassuma*

Arnaa, the "Mother of the Sea" (Greenland Home Rule Government, 1988; Sonne, 1986). Hunters demonstrated their respect for these gifts through ritual behavior and right-mindedness, one early-colonial observer noting that "... when they sail out for whale fishing they dress themselves up in their finest clothes ostensibly because the whale demands respect and no filth will tolerate" (Dalager, 1915:56). Whale products were also part of a flourishing exchange economy extending the length of Greenland's west coast. Until the 17th century, Inuit hunters traveled hundreds of kilometres by kayak and *umiaq* to exchange baleen from whales in Disko Bay for furs and soapstone from South Greenland.

Since the 1700s, Greenlandic whaling practices have changed dramatically due to dynamic ecological conditions, the introduction of new technologies, 270 years of Danish colonial policies, and expanding linkages to the world economy (Fig. 2). In the 18th and 19th centuries, Greenlanders were employed as whaling crew members by Danish colonial authorities. They gained access to new whaling technology and became increasingly reliant upon goods provided by colonial traders. Yet by the mid- and late-19th century, Greenlandic Inuit whaling had been reduced only to sporadic and isolated catches of larger whales. Humpback whaling persisted in Paamiut and Nuuk into the early 20th century. However, bowhead stocks were so decimated by Euroamerican whalers that Greenlanders were forced to shift their efforts to other whale stocks, especially minke and fin whales (Gulløv, 1985). As a result, much Inuit knowledge about bowhead whaling was lost, and the spiritual linkages between Inuit hunters and their prey were severely disrupted (Petersen, 1986, 1987; Lyngé, 1990).

This breakdown of the indigenous subsistence whaling regime resulted in major alterations to whaling practices in Greenland. Danish colonial authorities decided to revitalize whaling in Greenland by operating a whaling vessel on behalf of local Greenlanders. From 1924 to 1949, Danish authorities operated the 127-ton catcher boat *S/S Sonja*, which caught fin, blue, sperm, and other large whales. *Sonja's* Danish crew delivered the whales to local communities, where the meat was given to local people in exchange for assistance with flensing. The blubber was shipped to Denmark, where it was rendered and sold to offset the ship's operating costs. Between 1950 and 1958 a new vessel, the 250-ton *Sonja Kaligtoq* ("the one that tows [whales]"), was put into service. At first it too delivered whales to local communities, but from 1954 onwards it delivered whales

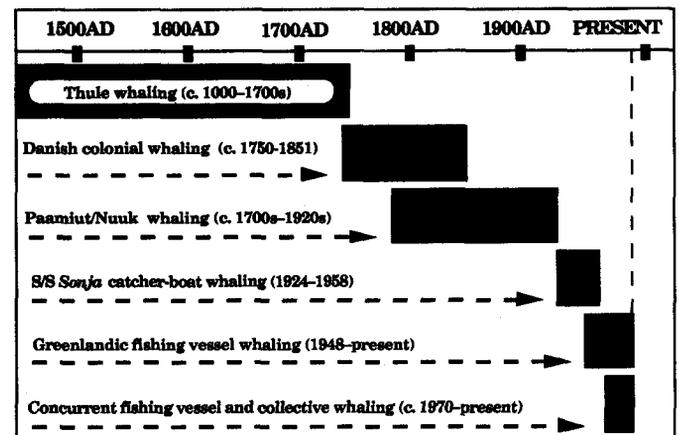


FIG. 2. Recent eras in Greenlandic Inuit whaling.

to a shore-based processing plant at Tovqussaq (situated between Nuuk and Maniitsoq). Whale meat processed at the plant was frozen and then shipped to communities along Greenland's west coast (Smidt, 1989).

However, Greenlanders themselves revitalized community-based whaling in 1948, when several fishermen began installing small harpoon cannons on their vessels in order to catch minke, fin, and other whales (Kapel, 1977, 1979; Fig. 3). In the late 1950s and in the 1960s, Greenlandic whaling was largely dominated by a few Greenlandic vessel owners who controlled their own means of production. Meat and *mattak* (whale skin with some blubber attached) from the whales caught were sold in nearby communities. About 1970, fiberglass skiffs and powerful outboard motors became available. Hunters working collectively used these and high-powered rifles to surround, shoot, and then harpoon a minke whale, a practice similar to beluga and narwhal whaling. This collective hunt apparently developed early in the coal-mining community of Qullissat in Disko Bay, where hunters had access to cash for purchasing new technology. Use of this technique enabled Inuit hunters who did not own large fishing vessels to participate in minke whaling. As Kapel (1978:220) notes,

the method . . . is in accordance with the collective and co-operative way of life, which was characteristic for the hunting communities, and today needs encouragement and support. In fact, the collective catching could be regarded as a modern version of the traditional Eskimo way of hunting bowheads from umiaks.

Collective whaling for minke continues today in West Greenland, concurrent with fishing vessel whaling. However, in part because of criticism of the technique in the IWC, its use is sharply limited by Home Rule government regulations. Currently, only about 25-30% of all minke whales are taken by this method (Greenland Home Rule Government, 1990a).

#### QEQTARSUAQ MUNICIPALITY — A SOCIOECONOMIC PROFILE

##### *Qeqertarsuaq's Whaling History*

Whaling was a part of marine-based resource use patterns in Disko Bay long before the arrival of European whalers (Sandgreen, 1973). When Dutch and other whalers began frequenting West Greenland in the 17th and 18th centuries,

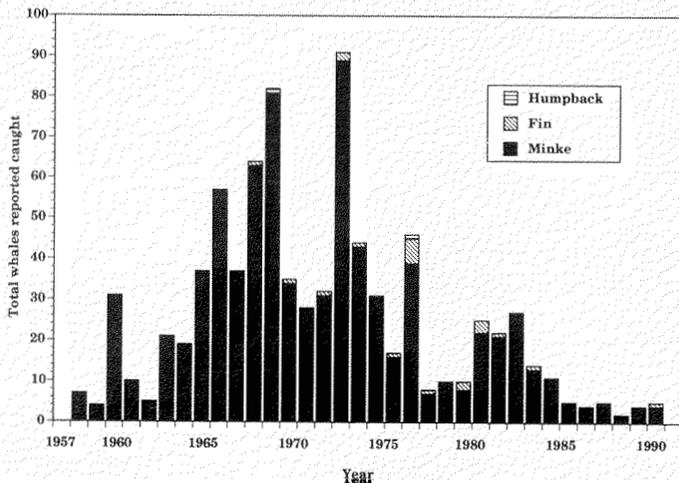


FIG. 3. Reported catch of minke, fin, and humpback whales in Qeqertarsuaq Municipality, 1957-91.

Qeqertarsuaq became a site of trading activities between Inuit peoples and visiting whalers. The Dutch referred to Qeqertarsuaq's harbor as Liefde Bay, and a Danish missionary visiting the region in 1738 found over 200 people in the vicinity (Sandgreen, 1973). Following Denmark's assertion of colonial authority over Greenland in 1721, Danish authorities sought to restrict trade between Greenlanders and others and to initiate their own whaling enterprises. In 1773, the Danes founded the colonial settlement of Godhavn ("good harbor") and, in 1774, began shore-based whaling operations (Gad, 1973). Sven Sandgreen, a Swedish-born trader, organized this early colonial whaling for bowheads by hiring local Inuit hunters. However, shore-based whaling produced poor results and faced increasing competition from Dutch, English, and German whaling ships. For example, in 1776 Dutch and German vessels alone caught 132 and 62 bowheads respectively in Disko Bay, while the local shore-based catch in 1777 was only six bowheads (Sandgreen, 1973). The Danes strengthened their presence in Disko Bay in 1782 by creating an inspectorate for North Greenland based in Qeqertarsuaq. Over the next hundred years, Qeqertarsuaq's importance as the northernmost Danish administrative center in Greenland would make it an important port of call for Euroamerican polar explorers and official delegations (Fisker, 1984).

Danish colonial whaling in Qeqertarsuaq declined in the early 1800s (Gad, 1946). While 20 whales were caught in 1804, the catch declined to 12 in 1816 and to only 1 or 2 each year by the 1830s and 1840s (Amdrup *et al.*, 1921; Fisker, 1984). Finally, Danish authorities shut down whaling operations in Qeqertarsuaq in 1851, citing economic difficulties (Sveistrup and Dalgaard, 1945).

Local Greenlanders continued to catch large whales after 1851 on a sporadic basis, using the meat and *mattak* entirely for local consumption. Oral traditions in Qeqertarsuaq today relate how Piitarsuaq, Peter Carl Niels Broberg, a renowned hunter and forebear of families still active in whaling today, caught both bowhead and minke whales (Caulfield, 1991; Broberg, 1945). Born in Qeqertarsuaq in 1825, Piitarsuaq obtained a whaling sloop and harpoon cannon from a Scottish whaler whom he assisted in the 1860s. In May 1864, he led a hunt for two bowheads off Qaqqaliaq (a point of land near Qeqertarsuaq), using this sloop, two *umiak*, and a large number of kayaks (Grønvald, 1986).

Greenlanders in Qeqertarsuaq continued sporadic whaling into the early 1900s (*cf.* Bang, 1912; Rosendahl, 1967). In the 1920s and 1930s, the Danish whaling vessel *Sonja* delivered 43 whales, including 30 large fin whales, to local people. This abundance of meat actually enabled hunters to double the number of sled dogs owned in the period 1925-35, improving access to hunting for other sea mammals (Møller and Dybbroe, 1981).

In the early 20th century, climate changes throughout West Greenland forced a shift in local economies from marine mammal hunting to cod fishing (Smidt, 1989; Vibe, 1967). With the introduction of motorboats in Disko Bay during the late 1920s, the use of kayaks began to decline, although not without heated debate. Kayak hunters, objecting to the noise and smell of motorized vessels, would continue to challenge the use of motorboats for hunting through the 1940s and 1950s (Fisker, 1984; Rosendahl, 1948).

The Greenland Commission's actions in the 1950s to implement a massive modernization program in West Greenland led Qeqertarsuaq to lose its status as an administrative center,

and several nearby settlements were abandoned under resettlement policies (Fisker, 1984). Qeqertarsuaq's future was itself uncertain, but efforts by local residents in the 1960s to revitalize the economy led to increasing emphasis on shrimp harvesting and processing. In 1962, a shrimp processing ship was stationed in Qeqertarsuaq for the first time by the Royal Greenland Trade (KGH), and in 1966 private investors built a small shrimp processing plant. In 1968, a local Greenlander built a small freezer plant, which purchased hunting and fishing products. The plant purchased whale meat and *mattak* for local distribution and also bought salmon for export to Denmark (Berliner, 1970). Changes in local fisheries during this period, particularly growth in the shrimp fishery, forced many fishermen to exchange their smaller (20-30 foot) multi-purpose vessels for larger vessels (over 40 foot) designed specifically for shrimping.

Whaling was revitalized in Qeqertarsuaq in 1958 when hunters began catching minke whales with fishing vessels equipped with harpoon cannons (Kapel, 1978). During the period 1964-77, seven vessels reported minke catches, with the total harvest reaching as high as 89 minke whales in 1973 (Fig. 3). The vessels involved typically carried out a multispecies harvest, principally catching shrimp and salmon but taking whales opportunistically. Hunters used minke products for household consumption or sold them to other individuals. In some cases, minke products were sold to local processing plants or to public institutions, such as hospitals in the Disko Bay region.

About 1970, collective hunts for minke whales began in Qeqertarsuaq as skiffs and powerful outboard motors became available. The development of this collective hunt made it possible for many hunters to obtain their own whale meat and *mattak* without having to buy it from fishing vessel owners. During this same period, vessel owners were increasingly involved in the shrimp fishery, which had begun in earnest in the 1950s and had become the major focus of commercial fishing activity in Disko Bay.

#### *Contemporary Mixed Economy in Qeqertarsuaq Municipality*

Today Qeqertarsuaq has a mixed subsistence-cash economy based upon commercial shrimping and fishing, seafood processing, public services, and household-based hunting and fishing. This mixed economy is similar to that found elsewhere in the North (cf. Wenzel, 1991; Wolfe and Walker, 1987; Asch, 1983; Feit, 1983) where household production and reproduction are based upon a mutually supportive relationship between income from wages and sales of hunting and fishing products on the one hand and household subsistence production on the other. As is true throughout Greenland, the Home Rule government owns nearly all major infrastructure in the municipality and is the predominant employer (both privately owned processing plants in the municipality came under Home Rule ownership in the 1980s). The local fishing fleet consists of 23 vessels, 4 of which are large, privately owned commercial shrimp trawlers. Most vessels are 20-50 feet in length, family owned, and used for multispecies harvests of shrimp, cod, wolffish, halibut, and salmon.

The average household size in the municipality in 1989 was 3.92 persons. Ninety percent of all local households speak Kalaallisut, or Greenlandic Inuit, as their principal language (Caulfield, 1991). Most households own the means of producing local wild foods for their own consumption (Table 2), principally a dog team for winter travel and a skiff with outboard motor

TABLE 2. Household ownership of the means of production, Qeqertarsuaq Municipality, 1989 (n = 62)

Means of production	Percent of households owning	Average number owned (range)
House/apartment	32	1 (0-1)
Skiff	77	2 (0-5)
Outboard motor	76	2 (0-4)
Sled dogs	73	9 (0-27)
Dog sledge	60	2 (0-4)
Snow machine	19	1 (0-2)
Car/truck	10	1 (0-1)
Fishing cutter	10	1 (0-2)
Shrimp trawler	7	1 (0-2)
Rifles/shotguns	86	6 (0-20)
Fishing or seal nets	66	21 (0-150)
Harpoon cannon	5	1 (0-1)
Freezer	95	2 (0-4)

Source: Caulfield, 1991.

for summer use. More than three-quarters of all households surveyed own a skiff with an outboard motor, and nearly the same percentage own sled dogs (the average number owned is nine). Over 80% of all households own rifles or shotguns, with an average of six per household.

Wage employment, particularly in fisheries processing and public service, is a key element in household economic strategies. Fully 87% of all households had at least one wage employee, and the average household had 2.1 persons employed. Public employers provide the great majority of wage jobs in the municipality (Table 3), although many of the positions are seasonal or part time. Figure 4, for example, shows the seasonal nature of employment with Royal Greenland A/S (formerly Kalaallit Tunissiorfiat, or KTU), the Home Rule-owned shrimp and fish processing plant.

Local residents harvest a wide variety of wild resources both for household use and as a source of cash income. Resources providing the greatest economic return are shrimp, cod, wolffish, salmon, beluga, narwhal, and seals. In 1989, 39% of all local households received income directly from the sale of wild resources, and 37% of all local residents were classified as either full-time or part-time hunters and fishers by the Home Rule government (Caulfield, 1991). Hunting and fishing products are sold principally through three outlets: 1) the Home Rule-owned processing plants, 2) the local *kalaaliaraq*, an outdoor kiosk where unprocessed hunting and fishing products are sold privately, and 3) sales directly to local institutions or other households. Prices paid for locally caught foods are set through negotiations between the hunters and fishers organization and public authorities. Table 4 shows selected prices paid for local foods in 1989 (prices in Table 4 and throughout are given

TABLE 3. Full-time and part-time wage employment by major public employers, Qeqertarsuaq Municipality, 1988

Employer	Full-time	Part-time
Municipal government	73	36
KTU processing plant	10	246
KNI store	74	0
Nunatek (elec., tel.)	14	40
Health service	16	2
Police	3	2
Church	1	2

Source: Caulfield, 1991.

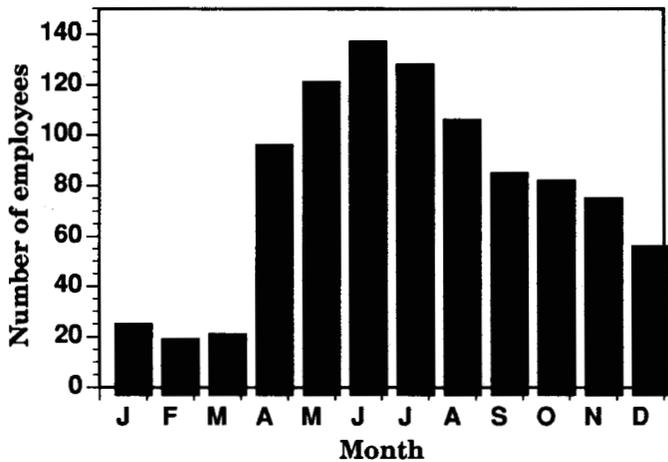


FIG. 4. Seasonal nature of wage employment with Royal Greenland (formerly KTU) Processing Plant, Qeqertarsuaq, 1989.

TABLE 4. Selected prices paid for locally caught fish and wildlife products at KTU processing plant and at *kalaaliaraq* (outdoor kiosk), Qeqertarsuaq Municipality, 1989 (in U.S.\$)

Product	KTU price (\$/kg)	<i>Kalaaliaraq</i> price (\$/kg)
Seal meat (ringed seal)	.55	6.36
Beluga <i>mattak</i>	8.73	14.55
Beluga meat (fresh)	2.18	3.64
Minke whale meat	1.82	4.00
Salmon	4.35	9.09
Eider duck	1.82	5.46

Source: Caulfield, 1991.

in U.S. dollars, calculated at an exchange rate of 5.5 Danish kroner per U.S. dollar). Prices shown for sales to KTU are wholesale prices for unprocessed products, while those shown for the *kalaaliaraq* are prices local consumers are charged. When such products are available, KTU processes them and ships them to other communities in Greenland for retail sale. Observations of *kalaaliaraq* sales in Qeqertarsuaq between September 1989 and July 1990 revealed that the most frequently sold foods were fish (26%), seal (22%), beluga or narwhal (14%), and caribou (14%) (Caulfield, 1991).

Households in Qeqertarsuaq have some of the highest incomes in all of Greenland because they have access to the shrimp fishery (Greenland Home Rule Government, 1991). In 1989, the median taxable income for residents of Qeqertarsuaq Municipality was just over \$17 000 and household survey data revealed income ranges from \$13 000 to \$180 000. Figure 5 shows taxable income for residents of Qeqertarsuaq Municipality in 1988 and reveals considerable economic differentiation among households. Households with the highest incomes typically are those owning shrimping and fishing vessels.

Household members in Qeqertarsuaq participate widely in hunting and fishing for local consumption. Fully 90% reported doing so in 1989. Research findings reveal that the average per capita production of wild food by local households in 1989 was 121 kg. Nearly three-quarters of all households obtained most or all of their meat or fish from the local environment. The importance of cash to subsistence production is reflected in the high cost of equipment typically used by hunters and fishers. Despite government subsidies of some hunting and fishing equipment, the cost of this equipment if purchased locally can exceed \$17 000 (Table 5).

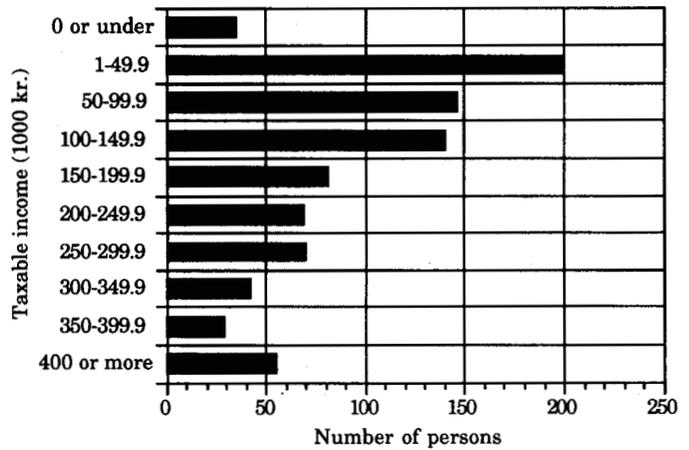


FIG. 5. Taxable income in Danish kroner, by income range, for residents of Qeqertarsuaq Municipality, 1988.

TABLE 5. Costs of hunting and fishing equipment typically used by household members to procure wild foods, Qeqertarsuaq Municipality, 1990

Type of equipment	1990 price (U.S. \$)
Fiberglass skiff (16' Pocco 500)	6 400.00
Outboard motor (40 hp Mariner)	4 100.00
Fuel tanks and hoses (x2)	460.00
Shotgun (12 gauge)	450.00
Rifle (7.62 mm Remington)	675.00
Rifle (.222 Sako)	890.00
Boat radio, battery, antenna	600.00
Plastic floats (x5)	300.00
Fish net/arctic char (x2)	160.00
Fish net/salmon (x2)	110.00
Seal net (x4)	80.00
Binoculars	170.00
Dog sledge	470.00
Dog harnesses and lines (x9)	200.00
Dog sledge pad (caribou hide, x2)	65.00
Sled dog whip	75.00
Harpoon shaft and head (x2)	450.00
Ice chisel	29.00
Tent	360.00
Sleeping bag	130.00
Survival kit with flares	110.00
Fiberglass skiff (8.5')	836.00
Campstove and tank	38.00
Walkie-talkie	282.00
Ammunition (12 ga./25 shells, x5)	40.00
Ammunition (7.62 mm/15 shells, x5)	45.00
Ammunition (.222/20 shells, x5)	32.00
<b>Total</b>	<b>\$17 557.00</b>

Source: Caulfield, 1991.

CONTEMPORARY MINKE AND FIN WHALING  
IN QEQTARSUAQ MUNICIPALITY

Hunters in Qeqertarsuaq Municipality catch fin whales using fishing vessels equipped with harpoon cannons and catch minkes using both fishing vessels and collective hunting techniques. Each technique has distinctive technologies, processes, and modes of social organization. Current practices contain elements of both continuity and change, where ancient whaling traditions and knowledge exist side by side with modern technology.

Contemporary whaling usually takes place between May and October or November and is highly opportunistic. Participation

in whaling in recent years has been widespread, particularly in the collective hunt for minkes, where nearly 70% of all households surveyed have participated (Caulfield, 1991). Households participating in minke whaling (using both collective and fishing vessels) reported participating an average of one time per year between 1979 and 1989.

*Fishing Vessel Whaling for Minke and Fin Whales*

In 1989-90, only 2 fishing vessels in a fleet of 23 in Qeqertarsuaq were used for catching minke and fin whales (Table 6). Both were primarily involved in shrimp trawling but spent 1-2 weeks each year catching whales on an opportunistic basis. One vessel is an older style fishing cutter built in 1949 for use in diverse fisheries, and the other is a newer style vessel built in 1988 and designed primarily as a shrimp trawler (Fig. 6). The older vessel is owned by a father and son, while the newer is owned by five brothers. In 1989, both types of vessels used a Kongsberg 50 mm harpoon cannon with a "cold" (non-exploding) harpoon. As discussed below, more recent Home Rule regulations now require the use of an exploding penthrite grenade.

Whaling crews on fishing vessels usually number 4-6. Kinship is the most important factor in determining who participates in the hunt. Weather and whaling quotas are the major limiting factors. Typically the time involved in searching for and catching a whale is only a few hours (Caulfield, 1991). Once the whale is caught, it is towed to one of several flensing sites near Qeqertarsuaq or Kangerluk. Flensing can take 3-4 hours for a minke whale and as much as 6-10 hours for a fin whale. In Qeqertarsuaq, hunters tow the whale at high tide to a rocky point near the harbor, where they attach the whale's tail to a winch with a hand crank. As the tide falls, flensers use large kitchen knives to remove slabs of meat, blubber, and *mattak*.

The social organization of Greenlanders is typically built upon bilateral kinship systems, with the nuclear family as the most important social unit (Kleivan, 1984). This extended family unit continues to be important in fishing vessel whaling today (Fig. 7). Whaling crews include both kin members and local elders with considerable whaling experience. Thus, the pattern of social organization used differs significantly from that of shrimping, where non-kin members are frequently employed.

TABLE 6. Characteristics of older and newer style fishing vessels used in minke and fin whaling, Qeqertarsuaq Municipality, 1989

Characteristic	Older style vessel	Newer style vessel
Year built	1949	1988
Length	37.6 feet	56 feet
Tonnage	19 BRT	46 BRT
Type of hull	wooden	steel
Engine type	69 hp diesel	367 hp diesel
Normal crew	4 persons	5 persons
Cost to present owner	\$100 000	\$875 000
Est. gross income 1989	\$85 000	\$550 000
Weeks fishing 1989	12	36+
Weeks whaling 1989	ca. 1	2
Harpoon type	Kongsberg 50 mm	Kongsberg 50 mm
Principal uses	shrimping, whaling, seal hunting	shrimping, whaling

Source: Caulfield, 1991.

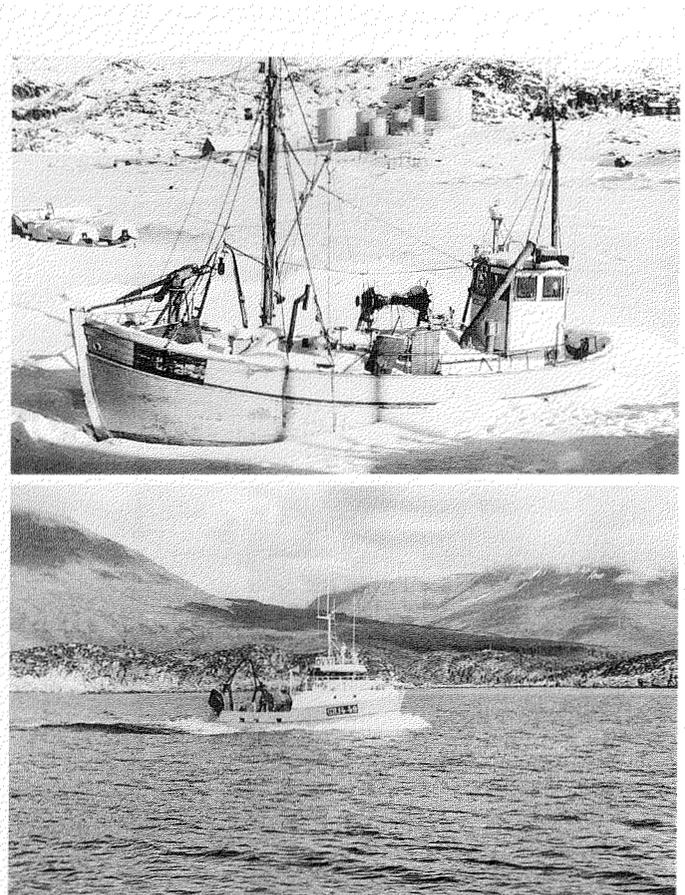


FIG. 6. Older and newer style fishing vessels used in whaling in Qeqertarsuaq.

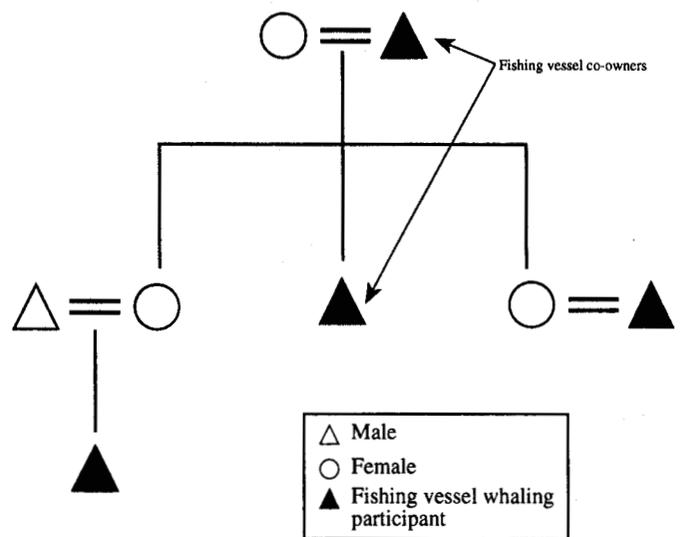


FIG. 7. Simplified diagram showing kinship between fishing vessel whaling participants, Qeqertarsuaq Municipality, 1988.

*Collective Whaling for Minke Whales*

In collective whaling for minkes, hunters use skiffs with outboard motors, high-powered rifles, and hand-thrown harpoons. They coordinate their efforts to surround a whale, shoot it with rifles, and then harpoon it. These techniques closely resemble those used for beluga and narwhal (Dahl, 1990). Hunters surveyed reported that they typically use 14- to 18-foot

fiberglass skiffs with outboard motors of 40 horsepower or more (Table 7). The average number of skiffs participating in collective hunts is 16 (range is 5-35), with an average of two hunters per skiff. Most hunters use 7.62 mm caliber rifles, and virtually all skiffs have a harpoon, line, and several plastic floats onboard. Walkie-talkie radios are commonly used to communicate during the hunt. The cost of equipment (skiff, outboard, rifles, etc.) used in collective hunting is estimated to be about \$12 000 (excluding fuel and ammunition).

Like fishing vessel whaling, collective whaling is largely opportunistic and success is enhanced by calm winds and seas. Once a minke whale is sighted, hunters communicate by radio about its location. If enough skiffs and hunters are able to participate in the hunt, the whale is pursued. Hunters maneuver their skiffs into position alongside the whale when it surfaces and shoot it with their rifles, aiming for the lungs. Once the whale is slowed by bullets, the hunters hurl a harpoon with line and floats attached into the animal to tire it and to minimize the risk of loss. When the whale is dead, hunters tow it tail first with several skiffs to the flensing site (typically the same used in fishing vessel whaling), where it is flensed in a manner similar to that described above.

Participation in collective whaling is much more widespread than in fishing vessel whaling because most households own the necessary equipment. As in vessel whaling, kinship is the major factor governing who participates (Fig. 8). The cooperative nature of the hunt clearly strengthens kinship networks in the communities.

*Distribution, Exchange, and Utilization of Minke and Fin Whales*

Inuit customs determine how minke and fin whales are distributed and utilized within extended families and how they are exchanged in local markets. While most of the meat, *mattak*,

TABLE 7. Reported characteristics of equipment and participants in collective minke whaling, Qeqertarsuaq Municipality, 1989 (n=42)

Characteristic	Description
Most common size of skiff	14 foot
Average number of skiffs participating	16
Average number of hunters participating	30
Average number of hunters per skiff	2
Range of skiffs participating	5-35
Most common rifle caliber	.30-06
Average expenses per hunter for fuel and ammunition	\$52.91 (292.52 Dkk)

Source: Caulfield, 1991.

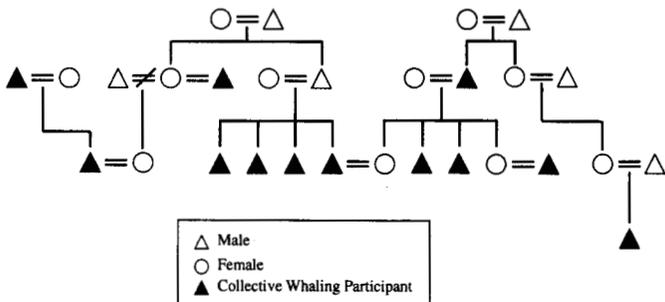


FIG. 8. Simplified diagram showing kinship between collective whaling participants, Qeqertarsuaq Municipality, 1988.

and blubber is used for household consumption, hunters often sell limited amounts for cash. Whale products are distributed in three stages: 1) products are divided among hunters and flensers themselves, 2) participants in the hunt may distribute their shares to other households or sell portions of their shares for cash, and 3) recipient households may share portions with others.

In fishing vessel whaling, the vessel owner(s), crew, and others involved in flensing share in the first stage of distribution. Typically, 40-60% of the catch is allocated to the vessel in order to cover equipment and fuel costs. For example, a minke whale caught in 1988 and estimated to weigh about 2000 kg was divided into two shares — about 65% (1300 kg) for the vessel and about 35% (700 kg) for the owner, his immediate family, and crew members, all of whom are kin related (Caulfield, 1991).

Distribution of whale products in the collective hunt is distinctive because hunters seek to ensure that all shares are equal. Once the flensing is completed, hunters create equal piles of meat and *mattak* (one for each skiff participating) at the flensing site. Hunters then line up facing two participants who serve as distributors. One distributor stands with his back to the line of hunters and points at random to a pile of whale. The other distributor, who can't see which pile is being pointed to, calls out the name of a hunter in line who then collects that pile. The distributor calling out the hunter's name has no idea which pile is being pointed to, and thus all hunters are assured that they are treated equally (see Dahl, 1990, regarding use of this technique for beluga).

Prices for minke and fin whale products sold at the KTU processing plant and at the local *kalaaliaraq* are fixed, generally on an annual basis, through negotiations between the Home Rule government and the national or local hunters and fishers association (Table 8). While avenues exist for selling minke and fin whale products locally, very few households in Qeqertarsuaq Municipality sold these products in 1989. Only one household, or 2% of those surveyed, reported doing so (Caulfield, 1991). In that case, the household reported receiving \$1270 for minke meat and *mattak* at the local *kalaaliaraq*. Furthermore, the manager at KTU in Qeqertarsuaq reported that no such products have been purchased by KTU in recent years (N. Bjerregård, pers. comm. 1989). He attributed this to IWC quotas, which sharply limited the number of whales available.

Minke and fin whale meat, *mattak*, and *qiporaq* (ventral grooves on the whale's underside) are highly desired foods in most Greenlandic households. Families prepare whale meat in stews, fry it in butter, or eat it dried (*nikkut*). Greenlanders prefer to eat *mattak* raw or boiled. Household survey data reveal that fully 97% of all households use minke whale products and 73% use fin whale products. Most obtain minke products by

TABLE 8. Prices paid to hunters (in U.S. \$) for minke whale products by KTU (Disko Laks) and at the *Kalaaliaraq* in Qeqertarsuaq, 1989

Product	KTU price	<i>Kalaaliaraq</i> price
Minke whale meat (fresh)	1.81/kg	4.00/kg
Minke whale <i>qiporaq</i> (fluted belly flesh)	2.72/kg	5.46/kg
Minke whale <i>mattak</i> with blubber	1.14/kg	2.73/kg
Minke whale <i>mattak</i> without blubber	Price not available	9.09/kg
Dried minke whale meat ( <i>nikkut</i> )	7.82/kg	Price not available

Source: Caulfield, 1991.

participating in hunting and flensing themselves (40%), while 35% usually purchase their products from the *kalaaliaraq* (Fig. 9). More households purchase fin whale products because few own a fishing vessel with harpoon cannon.

Hunters also use whale products for sled dog food. Twenty-seven percent of all households reported using minke whale meat for this purpose, while 22% reported using fin whale in this manner. Most households reported a decline in their use of whale meat for sled dog food due to the lower IWC quotas, especially for minke whales. However, hunters stress the importance of obtaining local foods for their sled dog teams. Unlike Inuit in Alaska and Canada, Greenlandic hunters generally do not use snow machines because they fear that the noise and smell will affect hunting success. In fact, it is illegal to use a snow machine for hunting on the sea ice in Qeqertarsuaq Municipality (Grønlands Landsting, 1987).

NUTRITIONAL AND SOCIOCULTURAL SIGNIFICANCE OF MINKE AND FIN WHALING

Marine mammals, including whales, contribute to a high-calorie diet, which is desirable for outdoor activities in an arctic climate (Helms, 1983). Figure 10 shows the proportion of wild meats and fish consumed by five selected households in Qeqertarsuaq between October 1989 and July 1990. The largest category of wild food consumed (number of meals where food was present) was fish (23%), followed by seal and walrus

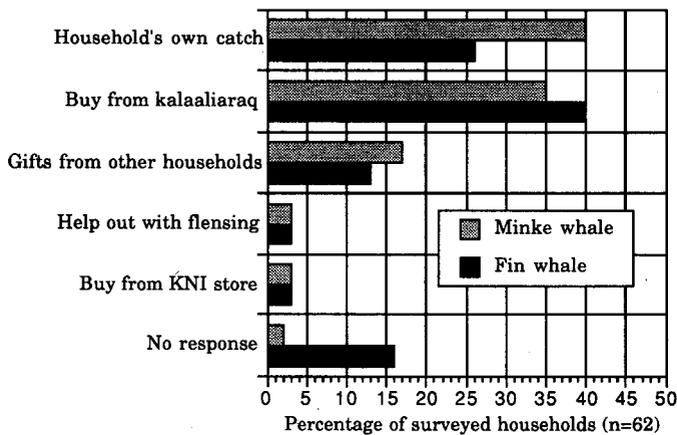


FIG. 9. Means by which households usually obtain minke or fin whale products, Qeqertarsuaq Municipality.

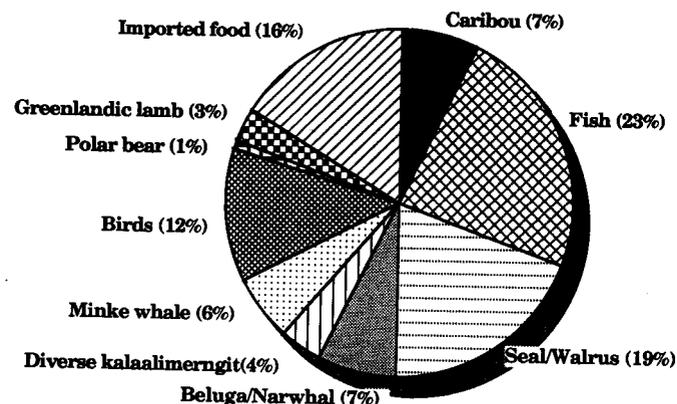


FIG. 10. Proportion of meat and fish consumed, by type, for five selected households in Qeqertarsuaq, October 1989 - July 1990.

(19%), imported meats and fish (16%), birds (12%), beluga and narwhal (7%), caribou (7%), minke whale meat/*mattak* (6%) and other meat/fish (8%).

Greenlanders refer to locally obtained wild foods as *kalaalimerngit* in the West Greenlandic Inuit language. They differentiate between these foods and *qallunaamerngit*, or "white man's foods." *Kalaalimerngit* constitute a substantial part of household diets and are integrally linked to Greenlandic identity. As Larsen and Hansen (1990:16) point out, the distinction between *kalaalimerngit* and other foods is more than simply the origin of the food. In their words, "eating Greenlandic food is of great symbolic weight in determining whether a person is a true Greenlandic. . . ." Greenlanders emphasize their desire to eat local wild foods for both nutritional and cultural reasons:

We don't want to eat European food. When we eat European food, we don't feel full. Greenland is a cold place. When we eat European food, we get cold after one or two hours riding in a boat or travelling with a dog team. *Kalaalimerngit* is what we want to eat . . . especially for the old people and for the children, when they get sick. If they eat Greenlandic foods, it's better for them. [Author's field notes, 18 February 1990, Qeqertarsuaq.]

The procurement, processing, and sharing of *kalaalimerngit* reflect the underlying systems of reciprocity and community solidarity that continue to be important in Greenlandic life today. While whaling festivals of the type held by Inuit in Alaska do not exist in Greenland, whale products are highly valued during household and community celebrations. These products are often served at a *kaffemik*, a special family celebration held to commemorate birthdays, anniversaries, baptisms, or confirmations, and during community celebrations like those held on Greenland's National Day (21 June).

Petersen (1989) describes the changing significance of sharing wild foods in Greenlandic communities. Until recently, local residents participated both in generalized sharing and in bartering among households and communities. Sharing thus fostered community solidarity and provided insurance against difficult times. In the 20th century, these generalized patterns of exchange have declined somewhat, and meat gifts are increasingly restricted to relatives and close neighbors (Kleivan, 1984).

Despite these changes, residents of Qeqertarsuaq Municipality continue to share wild foods with other households. Figure 11 shows that 50% of all households surveyed often or always share wild foods with others, while 22% occasionally or rarely do

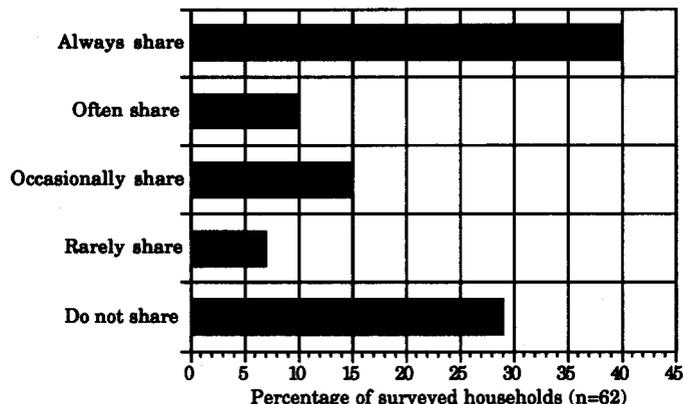


FIG. 11. Frequency with which households share wild foods with others, Qeqertarsuaq Municipality.

so. Twenty-eight percent do not share at all. For those households that do share ( $n=44$ ), virtually all (98%) do so with immediate family members, while 78% also do so with extended family members. However, respondents report that the sharing network is changing over time. Seventy-six percent of all households reported that sharing has declined over the past 20 years. The major reason cited was that more households sell hunting and fishing products today in order to obtain cash necessary for equipment and household expenses.

In Qeqertarsuaq, sharing practices today are generally limited to members of one's immediate or close extended family. Gifts of meat or fish (called *pajugat*) may be shared with those whom household members like or who have helped them in some way (*qujagisaqarneq*). Household members may also give meat to those with whom they have a name relationship (*atsiaqarneq*) (Langgaard, 1986). Meat gifts may be provided to close family members (*ilaquttat*), such as parents, grandparents, or cousins. Gifts may also be given to those who are unable to hunt for themselves (*pilersuissoqanngitsut*) or to those lacking the means to hunt or fish for themselves (*piniuteqanngitsut*). Furthermore, the type of meat given may depend upon the sex of the recipient. For example, boys are typically given the front flipper and claws of a seal in order to give them strength in hunting. Gifts are given without consideration of the material wealth of the recipient. Thus, the owner of a shrimp trawler and the elderly widow both participate fully in contemporary sharing networks.

As Dahl (1989) points out, contemporary marine mammal hunting in Greenland serves complex integrative and cultural functions. The social organization of whaling remains closely tied to kinship relationships between hunters and their families. When hunters speak excitedly over a walkie-talkie about sighting a whale, they share that knowledge with a discrete group because of shared language. Whaling involves sharing of knowledge, values, and beliefs about the relationship between animals and hunters. Elders demonstrate culturally appropriate behavior to younger hunters as they work alongside each other in whaling activities. Participation in whaling remains a source of prestige, which validates the role of hunting in Greenlandic society. Greenlandic men speak with barely muted pride as they describe their participation in catching a whale. Marine mammal hunting provides Greenlanders with a sense of collective security. For those with limited or seasonal incomes, hunting provides food for the table. As local hunters point out, it is like "money in the bank."

Whaling fosters a strong sense of community identity. Use of symbols associated with whaling, such as the presence of a bowhead whale on Qeqertarsuaq Municipality's ceremonial shield, reinforce this. Increasingly, whaling also contributes to a sense of Greenlandic national identity. Greenlanders believe their harvest of marine mammals to be a fundamental human and cultural right and feel a sense of solidarity with others who share this view. This growing awareness has also led to closer cooperation with fellow Inuit in Canada, Alaska, and Chukotka through the Inuit Circumpolar Conference (ICC) and with other nations in the North Atlantic.

#### GREENLAND, ABORIGINAL WHALING, AND THE IWC

While the IWC clearly recognizes Greenland's minke and fin whale catches as aboriginal subsistence whaling, critics at the international level express fears that profit maximization, commoditization, and capital intensification could develop in

the whaling regime (Lynge, 1990). Debate has also focused on infractions of IWC whaling quotas by some Greenlandic hunters, particularly during the mid-1980s. Greenlanders, in contrast, have voiced strong dissatisfaction with minke whale quota reductions first imposed in 1985. While more recent quotas have been increased somewhat, Greenlanders argue that quotas are still far from providing the estimated 670 tons of whale products needed each year (Anon., 1988).

#### *Profit Maximization and Commoditization in Whaling*

This research demonstrates that neither fishing vessel nor collective whaling in Qeqertarsuaq Municipality is carried out primarily on a profit-maximizing basis. Fishermen use their vessels largely for shrimp trawling and spend only one or two weeks whaling out of about five months of activity. Whaling is economically marginal for vessel owners, with incomes from whaling in recent years amounting to no more than 10% of total gross. For example, the older style trawler described above had a gross income of about \$54 000 in 1988, only \$4000 of which came from sales of whale products. The newer style trawler grossed about \$550 000 in 1989, and whale products accounted for only about \$5500. Expenses associated with whaling for this vessel were estimated to be about \$900, providing a net return of about \$4600.

Cash plays a smaller role in collective whaling. While customary distribution practices often leave each hunter with only small amounts of whale, participation can be beneficial. As an example, in a typical hunt with 16 skiffs and 30 hunters, participants might divide a minke whale weighing 2000 kg into equal shares of about 60 kg. At current prices, each share would be worth about \$340. Thus even with operating costs of about \$50 per skiff, participation in the hunt clearly brings a positive economic return.

While avenues exist in Qeqertarsuaq Municipality for selling minke and fin whale, hunters have rarely used them in recent years. Even in the 1960s and 1970s, when more whale products were sold, cultural factors restrained any interest in maximizing profits. Hunters were reluctant to treat whales as a simple commodity because of the prestige involved in carrying out all aspects of whaling. Hunters refused to develop specialized hunting and processing systems, choosing instead to remain personally involved in all aspects of the hunt.

#### *Capital Intensification and New Technology in Whaling*

Vessel owners who also whale have kept pace with the demands of the shrimp and fishing industry by improving their vessels' technology and efficiency (Berthelsen *et al.*, 1989). However, whaling technology used today is virtually the same as that used 40 years ago. Interestingly, the only significant change in technology has been made to meet international requirements for the humane killing of whales. As of 1991, the Home Rule government required all fishing vessel whalers to use the Norwegian-designed penthrite grenade, the so-called "hot harpoon." Vessel owners in Qeqertarsuaq seem favorably inclined toward this development, even though additional cost and specialized training are required.

#### *Greenlandic Whaling and External Regulatory Regimes*

The Greenland Parliament (in Greenlandic, Naalakkersuisut) enacts laws to regulate whaling practices, and the Home Rule administration establishes regulations to carry out these laws.

According to Home Rule regulations, hunters involved in minke or fin whaling must 1) have a full-time hunting license, 2) reside in Greenland, and 3) have a "close affiliation" with Greenlandic society. Hunters must also have a special whaling permit issued for each whale taken. Furthermore, hunters using fishing vessels must use a 50 mm harpoon cannon capable of firing the penthrate grenade. Regulations also specify that whales with young may not be caught and that only the larger and more mature fin whales may be taken.

Hunters wishing to participate in a collective hunt must first receive special dispensation from the Home Rule government before a hunt can take place (Greenland Home Rule Government, 1990b). Typically, requests for dispensation are submitted to the Home Rule offices in Nuuk by municipal authorities. This is given if the authorities determine that the hunt has major significance for the local community and if there are insufficient quantities of whale products from fishing vessel whaling. Home Rule regulations also require that a minimum of five skiffs participate, that all skiffs have a harpoon and floats on board, and that rifles of 7.62 mm caliber or larger be used.

The Home Rule government allocates IWC quotas for minke and fin whales to local municipalities in consultation with the national hunters and fishers association (KNAPK) and the nationwide municipal government organization (KANUKOKA). In making the allocations, the Home Rule considers population size, availability of suitable vessels with harpoon cannons, and the availability of economic alternatives. Once municipalities receive their annual quota, they allocate specific whale quotas to vessels and collective hunters after consultation with the local hunters and fishers association. Local authorities have become increasingly strict in monitoring whaling in recent years.

#### DISCUSSION

Greenlandic Inuit whaling in Qeqertarsuaq Municipality has undergone dramatic transformation because of ecological dynamics, colonial policies, and growing interaction with the world economy. Despite this transformation, whaling remains closely linked to Inuit customs and traditions of great depth. Contemporary whaling practices in Greenland include the sale of whale products for local consumption. However, the data reveal that this exchange is limited and not carried out to maximize profits. Instead, the purpose is to obtain cash necessary for continuation of hunting pursuits and to sustain flows of hunting products to other Greenlanders who are unable to obtain their own whale products. Market forces do not dominate contemporary whaling practices. Rather, as Freeman (1993) notes, the goal is to sustain local social, cultural and economic activity intergenerationally, a goal that encompasses changing technologies designed to improve efficiency and safety.

Greenland's whaling management regime remains in a state of flux and is subject to both external and internal forces. Within the IWC, scientific uncertainty about the status of whale stocks and whale population dynamics makes management decisions difficult. Debates about "humane" killing of whales and the IWC's jurisdiction over small cetaceans continue to dominate IWC meetings. As improved data about the status of whale stocks become available, the political debate could increasingly turn more to culturally based arguments about the ethics and appropriateness of whaling. Anticipating this shift, the governments of Greenland, Iceland, the Faroe Islands, and Norway have formed a North Atlantic Marine Mammal Commission

(NAMMCO), which may well serve as a forum for developing regionally based research and management strategies for marine mammals (Anon., 1992; Hoel, 1993).

Within Greenlandic society, whaling regulation continues to be a source of some controversy. In recent years, increasingly strict IWC quotas have significantly reduced the number of whales caught, placed a strain on culturally based hunting practices, and fostered increasing alienation of hunters from whaling management regimes. For example, hunters in Qeqertarsuaq believe that quotas are far too low to meet household requirements. In 1989, 86% of households surveyed reported that they could not obtain enough minke whale products, citing IWC quotas as the primary reason. Furthermore, Home Rule regulations limiting whaling only to full-time hunters exclude many who have participated in whaling in the past, particularly in the collective hunt. Many part-time wage-earners are also active hunters who would like to participate. The effect of these regulations has been to deepen social differentiation in local communities and to undermine egalitarian hunting practices. While regulatory changes are now under way, recent quota infractions in some municipalities may be a reflection of the alienation that many hunters feel toward these quotas and regulations. Modest increases in IWC quotas for minke whales enacted in 1991 may reduce these tensions somewhat, but many Greenlandic hunters continue to believe that decisions about whaling made at the international level are motivated more by political than biological considerations.

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