

INDICATOR

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Changes in harvest

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“...for us, so-called subsistence activity is far more than subsistence. Hunting is more than food on the table. It is a fundamental part of who we are.”

Labrador Inuit Association. Presentation to Scoping Meeting, Nain, April 1997.

“Not that finding any of those eggs was easy. Wild birds’ eggs can’t just be picked up like stones; they’re tucked away in some pretty unlikely spots. Sometimes you have to do some cliff-climbing with a strong rope, then use a long piece of wire to pull them out from under the big overhanging rocks where birds hide them.”

J. Igloliorte, 1994.

The harvest of natural resources is a key feature of traditional lifestyles and economies throughout the Arctic, and a continuing reliance on it as a mainstay of indigenous existence in the north is evident. The following sections describe current trends in natural resource harvest in four regions of the Arctic: Alaska, Canada’s Northwest Territories (NWT) and Nunavut, and the Russian North.

Population/ecosystem status and trends

Alaska

In Alaska, wild food harvests vary considerably by geographic area. The total harvest has been estimated at about 43.7 million pounds (approximately 19.8 million kg) of wild resources, an average of about 375 pounds (170 kg) per capita [1, 2]. This is in comparison with an estimated 16–40 pounds (7–18 kg) per capita of fish and wildlife resources harvested

by people living in urbanized parts of the state [2]. The majority of the subsistence harvest is fish (60% by weight), followed by land mammals (20%), marine mammals (14%), birds (2%), shellfish (2%), and plants (2%) [1, 2]. Subsistence harvests account for about 2% of the total fish and wildlife harvest state-wide, compared with 97% taken by commercial fisheries and 1% by sport fishing and hunting [2].

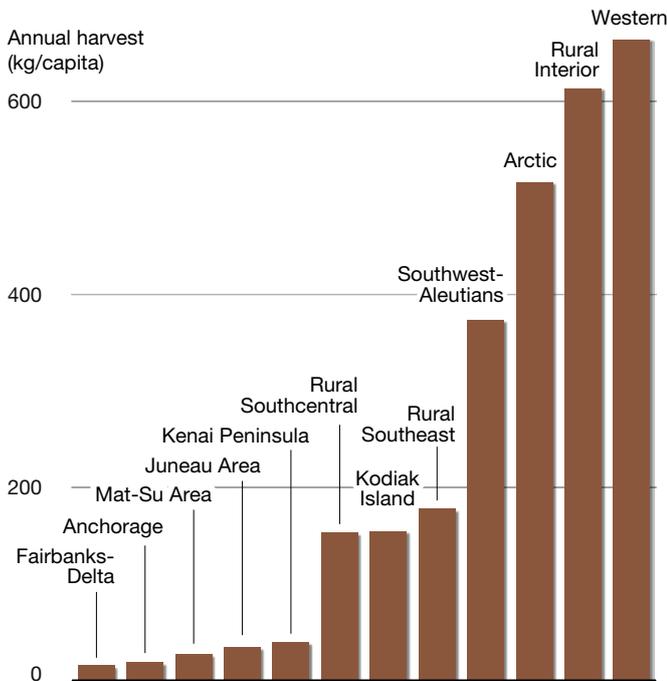


Figure 20.1: Wild food harvests in Alaska by area, 1990s [1, 2].

Land mammals harvested for subsistence include moose, *Alces alces*; caribou, *Rangifer* spp.; black and brown bear, *Ursus* spp.; Dall sheep, *Ovis dalli*; mountain goat, *Ovis* spp.; deer, *Odocoileus*; elk, *Cervus* spp.; and muskox, *Ovibos moschatus*. Migratory waterfowl provide an important source of fresh meat in the spring. Other birds harvested include ptarmigan, *Lagopus* spp., and grouse. Fish species harvested for subsistence include five species of salmon, *Salmo* spp., as well as whitefish, *Coregonus clupeaformis*; sheefish, *Stenodus leucichthys*; halibut, *Reinhardtius hippoglossoides*; herring, *Clupea harengus*; trout, *Salmo salar*; grayling, *Thymallus arcticus*; char, *Salvelinus alpinus*; and pike, *Esox lucius*. Trapping is at least as important for its cultural and symbolic attributes as for its economic attributes. Marten, beaver, wolf, fox, and wolverine are important resources targeted for trapping. Marine mammals harvested for subsistence and handicraft purposes by Alaska Natives include bowhead, *Balaena mysticetus*, and beluga whales, *Delphinapterus leucas*; seals; sea lions, *Eumetopias jubatus*; walrus, *Odobenus rosmarus*; and sea otter, *Enhydra lutris*. In addition to fish and game, berries and greens are also gathered, providing an essential and highly valued contribution to the diet.

A comparative analysis of subsistence harvests by the same community over a period of twenty years (1964–1984) found that not only had the composition of the harvest changed over time, the per capita harvest had declined by roughly 25% [3]. According to another study that examined subsistence fishery harvest patterns and trends in Yukon River communities, declining salmon runs during the 1990s resulted in significant declines in subsistence fish harvests that, because of their magnitude, are virtually impossible to make up for with harvests of

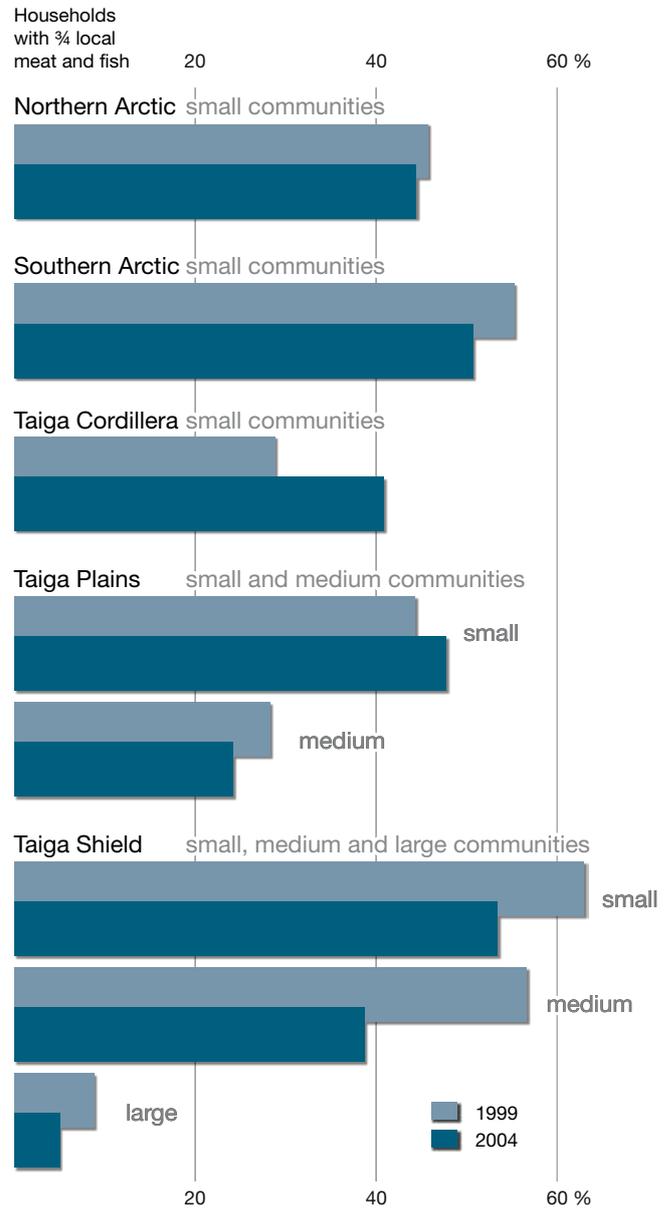


Figure 20.2: Percentage of households who reported that more than 75% of meat-fish was harvested from the NWT [5].

other species. From 1990 to 2000, total subsistence salmon harvests by Yukon River communities decreased by about 60% [4].

Northwest Territories, Canada¹

According to Northwest Territories (NWT) Labour surveys, about 37–45% of NWT residents went hunting or fishing in 2002 [6]. This has changed little since the first survey in 1983, and is high compared to southern Canada. According to the licensing system, the number of resident hunters declined by about 3% per year between 1990 and 2004, and stabilized at about 1200–1300 hunters annually in recent years. The number of hunters at outfitted camps in the Taiga Cordillera (primarily Dall sheep hunters) has not changed significantly in the past 10 years (350–400 hunters). The number of outfitted hunters in the southern

1. Information on harvest in the NWT is taken from [5].

Arctic (mostly for barrenland caribou) was increasing until 2002, but has levelled down to about 650–700 hunters during the past 3 years.

About 40–60% of NWT residents living in small communities rely on traditional/country foods for at least 75% of their meat and fish. This percentage has not changed greatly for the past 10 years. The percentage of NWT residents living in medium and large communities that consume traditional/country foods is lower than for people living in small communities, and has declined during the past 10 years. The lowest percentage (less than 10%) of people who eat traditional/country foods (meat and fish) live in Yellowknife, the only large-sized community in the NWT.

Nunavut, Canada

Environmental change in Arctic regions is a key contributing factor to changing Inuit subsistence patterns. As examples, the Inuit speak of the thinning of

the ice which makes hunting more challenging; species they once relied upon are disappearing; berries are not ripening. The impacts of climate change affect travel patterns and prevent the Inuit from reaching certain species. These shifts in the time and place of harvesting affect their ability to respond to the changes taking place.

Yet despite these impacts to the Arctic ecosystem, Inuit continue to benefit from their traditional knowledge, or as Inuit sometimes call it, Inuit science, which has been passed from one generation to the next. A series of workshops was recently held in the four Inuit regions of the Canadian Arctic focussing on environmental change and what it means for communities there [7]. They showed that some Inuit have already made changes to the traditional times of the year when they travel on the land, and some find themselves collecting their winter wood and other supplies in the spring when they only used to do so in the fall. Inuit fishers check their nets more often, and harvesting activities are now carried out earlier in the year [7]. It is also important to note that even in times of change, the Inuit cultural activity of sharing food continues [8].

Russia

In the Soviet period of Russia, i.e., prior to the early 1990s, both commercial and subsistence consumption was increasing for almost all types of natural resources. This resulted in the depletion of some resources, consequently followed by a decrease in harvesting activities. This was the case for waterfowl in the eastern sector of the Russian Arctic, and for some populations of *Coregonus* whitefish and salmonids. In addition to over-harvesting at the local level, declines in waterfowl, and therefore waterfowl harvest, was also related to deteriorating conditions in the non-breeding grounds in wetlands of China and other countries of eastern Asia [10].

In the post-Soviet period, as a result of increased prices for vehicles, emigration of the non-resident population, and the closing of a large number of settlements, the overall area where natural resources were harvested was substantially reduced. In addition, the commercial use of all types of natural resources, although primarily fur, fish, and ungulates, has declined due to increased transportation costs and lowered demand (and hence reduced prices). An interesting result of the decline in commercial harvest has been the revival of some long-forgotten traditional uses of natural resources, such as whale and walrus hunting by Chukchi and Yupigyt (Eskimo) people, collection of waterfowl eggs (which has increased substantially in some areas of Chukotka), and hunting for moulting geese. Yet, as the harvest of marine mammals nowadays is predominantly to provide for the traditional needs of local indigenous people, and especially so in Chukotka, harvesting has declined for almost all species, and in particular for walrus [11].

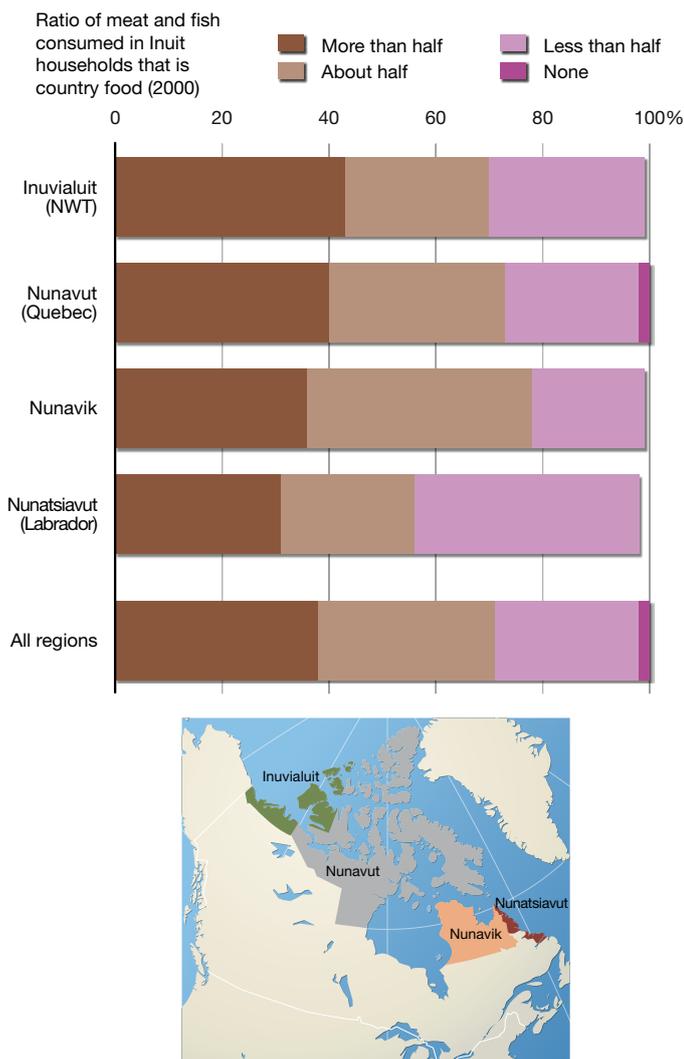


Figure 20.3: Consumption of harvested meat/fish in Inuit Households [9].

Overall, subsistence consumption has slightly decreased as the food supplies to the Arctic have improved. However, its relative significance, i.e., the amount of harvested natural resources per indigenous family, remains higher in comparison to the Soviet era. In addition, commercial use of natural resources, such as hunting of sable and wild reindeer, collection and sale of berries and mushrooms, and commercial fisheries, has returned to previous levels.

Noticeable changes in the amounts, ratios, and species composition of harvested waterfowl have also occurred

since the 1970s and 1980s. Since then, harvest pressure on bird populations in the Russian Arctic has decreased by 30% to 60% depending on the region [10].

According to assessment of the authors the area used for game hunting and fishing activities in the Russian Arctic has been reduced by at least 50% compared to the 1980s, and by more than two-thirds when compared to 1950s due to the closing of settlements and a reduction of rural populations. This is also result of reductions in reindeer herding activities and a total collapse of hunting for Arctic fox, *Alopex lagopus*.



Chukotka, Russia Anatoly Lolis/Topham Picturepoint/UNEP

Concerns for the future

Environmental and economic changes and their combined effects on subsistence harvests are dynamic and complex. This is particularly so in Russia, where overall trends in subsistence harvests have become much more dependent upon local conditions since the economy was decentralized, rendering the evaluation of trends much more complicated.

Subsistence and commercial fishing are often inextricably linked, and in some cases performed by the same people, thus decreases in commercial harvest results in less cash being available to subsistence users. The recent record-high price of oil and gas compounds the problem, as it not only limits the ability to travel, but also increases the costs of imported food, equipment, and supplies. Further, increasing prices for non-renewable resources

are prompting increased mineral exploration and resource extraction activities. While these activities can provide new sources of employment and cash, they can also alter or destroy fish and wildlife habitat, and bring in people who compete for resources.

Finally, climate change is causing erratic weather patterns and changing the timing of freeze-up and break-up, which in turn affects migratory and harvesting patterns. Subsistence harvesting remains an important component of life in remote Arctic areas, and the subsistence harvest of fish and wildlife by indigenous and local residents is likely to continue well into the future. In light of the changing and increasingly challenging circumstances in the Arctic, however, more protection and ongoing monitoring will be required of harvested species.