

# Fish and Wildlife of Alaska's North Slope

## FISHERIES

A variety of fish species found along the Alaskan Beaufort Sea coast support subsistence, commercial, and recreational fisheries on the North Slope. Arctic cisco and least cisco are the principal species harvested in the Colville River region, although broad whitefish (*Coregonus nasus* or *aanaakijiq*) and humpback whitefish (*Coregonus pidschian* or *pikuktuuq*) are also taken. The recreational fishery consists primarily of oilfield workers angling for Dolly Varden (*Salvelinus malma* or *iqalupik*) and arctic grayling (*Thymallus arcticus* or *sulukpaugaq*), with pink salmon (*Oncorhynchus gorbuscha* or *amaqtuuq*) or chum salmon (*Oncorhynchus keta* or *iqalugruaq*) occasionally taken during the open-water summer season.



Nuiqsut residents participating in winter subsistence fishing.

The Inupiat community of Nuiqsut operates subsistence fisheries in the Colville Delta throughout most of the year, but the greatest fishing effort occurs in summer and fall. Nuiqsut has the largest documented subsistence fish harvest in the Beaufort Sea. A dozen fish species are taken in the fishery; however, arctic cisco (*Coregonus autumnalis* or *qaaqtaq*), least cisco (*Coregonus sardinella* or *iqalusaaq*), and broad whitefish constitute the majority of the catch. Arctic grayling and burbot (*Lota lota* or *tittaaliq*) harvests are also important to the community. Although subsistence fisheries also operate out of the Inupiat villages of Barrow, Atkasuk, and

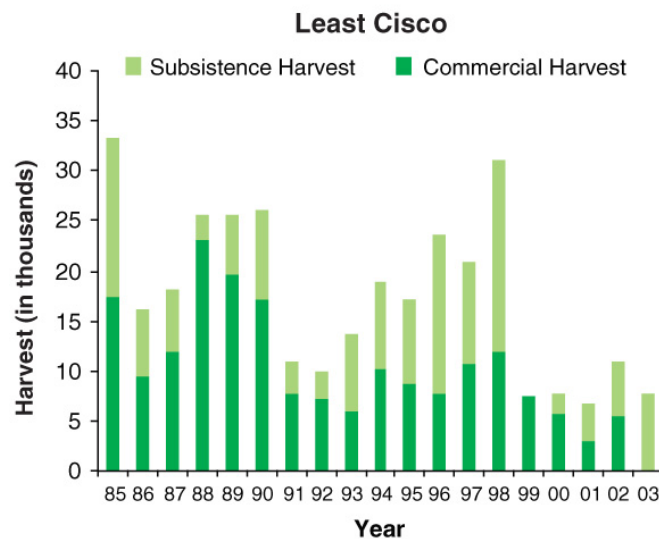
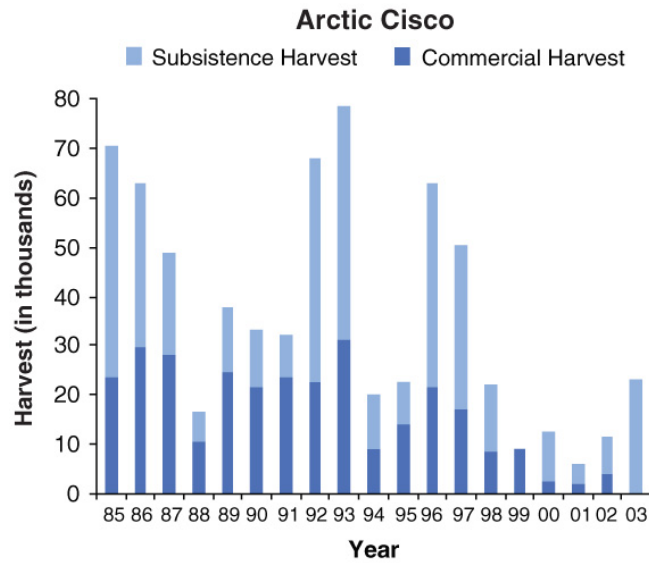
Kaktovik, distance largely isolates these communities and their local subsistence stocks from oilfield activities and hence from any potential oilfield-related impacts.

### Nuiqsut Subsistence Fishery

Fish provide more food per capita to the community of Nuiqsut than any other subsistence resource harvested, including bowhead whales or caribou. Fish constitute 30 to 40 percent of the edible harvest. Nearly 80 percent of Nuiqsut households participate in some fishing activity. In addition to supplying food, subsistence harvesting is an integral part of the cultural and social fabric of the Inupiat community.

The summer fishery targets broad whitefish throughout the western Colville Delta. Reported summer harvests have ranged from 3,100 to 4,500 broad whitefish with an average weight of five pounds. A number of other species are taken incidentally, including pink salmon, chum salmon, grayling, burbot, humpback whitefish, and round whitefish (*Prosopium cylindraceum* or *siguilauraq*). Although a prized food fish when taken, Dolly Varden are relatively scarce in the Colville River and are not a major subsistence species.

The fall and winter under-ice harvest generally begins in early to mid-October when ice is thick enough to support snowmachine traffic. Major winter fishing areas occur throughout the Colville River. Arctic cisco is the principal species targeted in the



Annual harvest of arctic cisco (*Coregonus autumnalis* or *qaaqtaq*) and least cisco (*Coregonus sardinella* or *iqalusaaq*), 1985-2003. Subsistence harvest data not available for 1999. Commercial harvest data not available for 2003.

winter fishery, as shown in the charts below. Studies conducted by ConocoPhillips scientists have shown that the annual catch of arctic cisco and its contribution to the fishery can fluctuate dramatically in response to the variable recruitment of newly spawned fish from spawning stocks in the Mackenzie River delta area of the Northwest Territories, Canada.

## Commercial Fishery

The Helmericks family has operated an under-ice commercial gill-net fishery in the outer Colville Delta for over 35 years. Fishing typically occurs from early October to late November and targets arctic cisco and least cisco, although smaller numbers of broad and humpback whitefish are also taken.



*Winter subsistence fishing.*

Since 1967, the Helmericks family has maintained a careful record of quantitative data on catch and fishing effort that has historically served as the principal index of the abundance of arctic cisco and least cisco in central arctic Alaska. From 1967 to 2000, the commercial fishery harvested an average of 17,927 (range of 2,619 to 71,575) arctic cisco annually. During that same period, an average of 9,474 (range of 5,758 to 37,909) least cisco per year were also harvested. The average weight of arctic cisco is one pound, while the average weight of least cisco is about 0.8 pounds.

## Oilfield Activities

ConocoPhillips has conducted and supported many environmental surveys over the past 25 years to determine whether oilfield activities affect populations of arctic cisco, least cisco, and broad whitefish. During

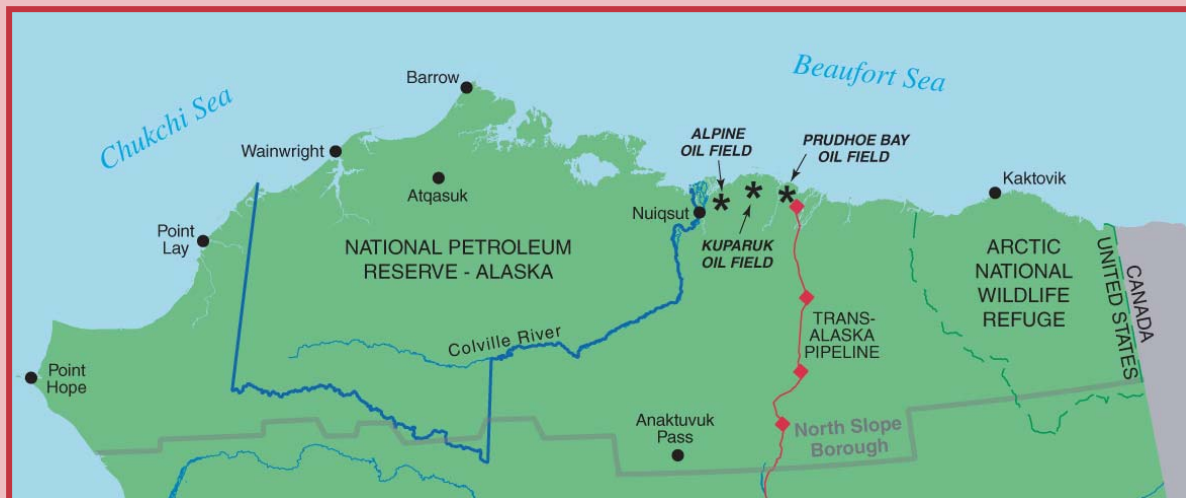
earlier years, studies focused on reactions of migrating fish to the Prudhoe Bay causeways. Beginning in 1985, ConocoPhillips added additional detailed studies to record the annual catch of both subsistence and commercial harvests in the Colville River. These programs were conducted in cooperation with the North Slope Borough and the village of Nuiqsut. ConocoPhillips participated in these programs to ensure our operations were not having any negative impact on these important fisheries. These monitoring studies are ongoing and are currently focusing on ConocoPhillips' developments in the Colville Delta.

To date, no effects from oilfield activities on fishing activities or fish stocks have been identified. Studies also have evaluated how the subsistence and commercial fisheries themselves affect these stocks. From 1985 to 1996, the Colville River subsistence and commercial fisheries collectively harvested an average of 46,147 arctic cisco and 19,918 least cisco annually. Based on mean estimates of stock size in the Colville River, the fisheries annually took between 5.4 and 13.0 percent of harvestable arctic cisco, and between 2.9 and 13.8 percent of harvestable least cisco. Analyses of these catch rates suggest the fishery can likely continue at these levels and the fish stocks will maintain themselves.

## Oil Spill Planning

If a major oil spill reaches a sensitive fish habitat, it has the potential to cause significant impacts to fish populations and subsistence lifestyles. ConocoPhillips has long recognized the need to prevent such impacts from occurring and for years has conducted studies to record and map sensitive fish-spawning, juvenile-rearing, and overwintering habitats in streams and lakes near its facilities. Physical and biological studies identify seasonal stream-flow patterns, stream substrate types, bank characteristics, and fish and bird activity and normal seasonal patterns. These data are used to establish a fish-habitat protection plan that is incorporated into each operating area's spill prevention and response plan.

In recent years, ConocoPhillips has also used a strategy of prestaging equipment and predeploying containment booms to further prevent any spilled oil from reaching sensitive fish habitats. This program uses the collected knowledge of each stream's characteristics and selects containment sites based on that stream's flow rates and the most likely volume of spilled oil that might enter that stream. Using bank characteristics and tundra access options, sites that would allow the very best collection and containment of spilled oil are located, and the correct type of equipment for that location is staged at these spots. At some locations, containment booms or other equipment is actually deployed during the summer open-water season. Immediate spill-response teams train and practice mobilizing equipment and containing fluid at these locations. The selection of these locations is also coordinated with local subsistence activity.



### For Additional Information, Contact:

Environmental Studies Program  
 ConocoPhillips Alaska, Inc.  
 P.O. Box 100360  
 Anchorage, Alaska 99510-0360  
 Telephone (907) 276-1215

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