

PATTERNS AND TRENDS IN SUBSISTENCE FISH HARVESTS, NORTHWEST ALASKA, 1994–2004

ABSTRACT

This project explored patterns and trends in subsistence fish harvests from 1994 through 2004 in 6 Northwest Alaska communities: Ambler, Kiana, Kobuk, Noatak, Noorvik, and Shungnak. The project involved a coordinated analysis of 2 related datasets: a community time series dataset in which each record contained a single year of fish harvest data for a single community, and a household panel dataset in which each record contained a single year of fish harvest data for a single household. The household panel data were supplemented with additional data from 92 selected households acquired during interviews. The strongest trend identified in the analysis was a declining harvest of chum salmon *Oncorhynchus keta*, -6.9% annually ($r^2=0.402$, $P=0.036$). Total subsistence fish harvests showed no trend ($r^2=0.045$, $P=0.612$), because increasing harvests of sheefish *Stenodus leucichthys* and Dolly Varden *Salvelinus malma* supplanted chum salmon. Possibly because households were targeting sheefish and Dolly Varden, use of setnets declined during the study period while use of rods and reels increased. Harvests of salmon other than chum salmon increased during the period, although only the trend in pink salmon *O. gorbuscha* was statistically significant ($r^2=0.390$, $P=0.040$), possibly providing evidence of expanding salmon range. In interviews with 92 selected fishing households, environmental factors, such as “unusual water levels” and “unusual weather,” were most frequently named as affecting fishing, and accounted for 34% of reported factors. Personal factors, such as health and age of the household members, accounted for 21%, while financial factors, such as employment and rising costs, accounted for 19% of reported factors. The data described a stable subsistence fishery, not without interannual variation, and not without shifts in species selections, but stable in the sense that residents continued to harvest almost exactly the same amount of fish per person over a decade’s time.

Key words: subsistence fishing, chum salmon, *Oncorhynchus keta*, sheefish, *Stenodus leucichthys*, whitefish, *Coregonus* spp., Dolly Varden, *Salvelinus malma*, Ambler, Kiana, Kobuk, Noatak, Noorvik, Shungnak, Kotzebue District, Cape Krusenstern National Monument, Kobuk Valley National Park, Kotzebue Sound, Noatak National Preserve.

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