

Whitefish and beaver ecology of the Yukon Flats

Abstract: In recent years, the Alaska Department of Fish and Game has heard comments from residents of the Yukon Flats that area whitefish populations have declined. High beaver populations, and more specifically, an increase in the number of beaver dams disrupting whitefish movements is typically cited as the cause of this decline. To examine this issue, fifteen lifelong residents of the Yukon Flats were identified as local experts and interviewed as a source of traditional ecological knowledge, or TEK, on whitefish and beaver. Interview topics specifically included Native names and local taxonomies relating to whitefish, seasonal movements and life history information, information on the harvest and use of whitefish, and the impacts of beaver dams on whitefish.

Respondents provided significant insights on these topics. On the central question of how beaver dams impact whitefish, respondents collectively described a complex and delicately balanced natural system involving the flow and movement of water through the Yukon Flats. In this systems, whitefish rely on the semi-regular occurrence of floods and high water events to recharge fish habitats with fresh water and to maneuver around beaver dams. A number of changes observed by respondents over their lifetime may have combined in recent decades to adversely impact whitefish populations on the Yukon Flats. These changes include: 1) reduced harvests of beaver by local residents, 2) abandonment of traditional stream management practices to clear streams and promote passage of whitefish into key habitats, 3) environmental changes resulting in area lakes and wetlands drying up, and 4) less frequent occurrence of rejuvenating floods and high water events since 1991.

There was general consensus that significantly fewer whitefish are harvested today on the Yukon Flats than in prior decades when there was a more universal reliance on wild foods, including whitefish, to feed families and maintain family dog teams. Despite this reduced exploitation, a majority of respondents thought whitefish populations had declined in recent years. While whitefish still appear to be broadly distributed across the Yukon Flats, declining whitefish numbers is a concern among users of the resource. Beaver dams have probably contributed to localized declines in whitefish populations in some drainages. Whether high beaver populations are the primary cause for the more generalized decline in the whitefish resource over the entire Yukon Flats is less clear given the other factors advanced by respondents. These local experts suggest that larger scale changes in Yukon Flats weather patterns and hydrology also play prominent roles. Suggestions for further research are offered to better understand these dynamic relationships on the Yukon Flats.

Citation: Andersen, D. B. and C. L. Fleener. 2001. Whitefish and beaver ecology of the Yukon Flats, Alaska. U. S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program, Final Report (Study No. 00-006). Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 265, Fairbanks, Alaska.