

Eastern North Slope Dolly Varden genetic stock identification and stock assessment

Abstract: Dolly Varden are an important subsistence fishery resource for North Slope residents. This anadromous char species has a complex life history in which mixed stock aggregates winter in freshwater, making stock assessment difficult. Objectives of this study are to examine the variability and efficiency of aerial surveys of discrete wintering aggregations; verify known and identify undocumented spawning and wintering sites in several rivers; and collect fin clips from spawning aggregations to characterize population structure. Replicate aerial counts of wintering Dolly Varden within a 28 km section of Ivishak River were conducted during September 2001. The mean summed count for two observers over all subsections was 10,932 Dolly Varden (standard error, 314). This represented about 22% of a Baily mark-recapture estimate that indicated 49,523 Dolly Varden (standard error, 7,277) were present. Forty Dolly Varden were also fitted with radio tags in the Ivishak River during September 2001 to evaluate movement during the mark-recapture experiment and identify wintering sites during 2002. Dolly Varden fitted with radio tags moved substantially, primarily upstream, and remained within the 28-the index area during aerial surveys. Specific locations of wintering sites will be determined during April 2002. Spawning locations were identified in the Echooka and Saviukviak rivers. Fin clips were taken from 106 Dolly Varden from the Echooka River and 30 from the Saviukviak River.

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