

Application of Mixed-Stock Analysis for Yukon River Chum Salmon, 2010

Here we report interim results for genetic mixed-stock analysis (MSA) of Yukon River chum salmon harvested from the Pilot Station sonar test fishery; this is a continuation of previous work by Flannery et al. (2007). For the 2010 season, 84% of the chum salmon were from summer run stocks and 16% from fall run stocks. Summer chum salmon comprised the majority of the harvest through July 27. Within the summer run component, apportionments were 77% to the lower river stock group and 23% to the middle river stock group (20% upper Koyukuk and middle mainstem, 3% Tanana). These genetic proportions for lower and middle summer chum salmon were in close agreement to proportions estimated from escapement projects.

Fall chum salmon did not outnumber summer chum salmon until the July 28 to August 10 time period, well after the start of the fall management season. Within the fall run component, the largest contribution of fall chum salmon came from the Tanana region (31%). Contributions of fall chum salmon from other regions were: U.S. Border 28%, Canada mainstem 15%, Canada Porcupine 10%, White 16%, and Teslin 0%. The abundance estimates for fall chum salmon derived from the genetic and sonar method continued to be less than those from the escapement and harvest method. The level of agreement between the methods appears to be related to the run timing in a given year, with better agreement when the fall run is not late.

Key Words: chum salmon, Yukon River, mixed-stock analysis, microsatellites.

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