

## **Timing and origin of Chinook salmon stocks in the Copper River and adjacent ocean fisheries using DNA markers**

The objectives of this project were to delineate major geographic and temporal stocks of Chinook salmon *Oncorhynchus tshawytscha* within the Copper River, investigate run timing within the Copper River, and characterize the timing and relative magnitude of Copper River stocks in the fisheries of the Copper River District. The system exhibits significant genetic divergence both within and among its major drainages. With some exceptions, populations adhere to an isolation-by-distance model in that populations closest geographically are also closest genetically. The broad groups include a heterogeneous collection of populations in the Upper Copper River, a homogeneous group from the Gulkana River drainage, and a diverse set of Lower Copper River glacial lake populations from the Tazlina, Klutina, Tonsina, and Chitina drainages. Within the Lower Copper River group, 2 single collections were particularly divergent, Tebay River from the Chitina River drainage and Mendeltna Creek from the Tazlina River drainage. The inriver collections from Baird Canyon and collections from the marine fisheries consistently showed that the Upper Copper River stocks contributed early followed by the Gulkana River and Lower Copper River populations. Similar results were observed for the marine collections. The results also indicate that the marine fisheries are, to a great extent, targeting Chinook salmon bound for the Copper River.

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