

AFSC/ABL: Sockeye salmon genetics - 1986 mixed stock fishery

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The incidence of four discrete characters of individual sockeye salmon -two genetically inherited proteins (PGM-1*and PGM-2*) , freshwater age at migration, and the presence of the brain-tissue parasite *Myxobolus arcticus*-in weekly samples from two Alaskan fisheries (Noyes Island in 1986 and Sumner Strait in 1987) were used to infer stock composition of the catches based on corresponding character samples from 73 Alaskan and Canadian stocks. Estimated contributions of 13 stock groups, formed on the basis of character similarity of their members, were roughly consistent with expectations from tagging experiments, knowledge of stock magnitudes, and similar assessments from scales. Imprecision of the estimated contributions by the 13 stock groups limited their practical value; but variability was much reduced for combined estimated contributions by two inclusive categories, namely stock groups whose members had either high or low brainparasite prevalence. Noyes Island catches consisted predominantly of unparasitized fish, most of which were probably of Canadian origin. The majority of Sumner Strait catches consisted of parasitized fish, whose freshwater origins may have been in Alaska or Canada.