

KLICKITAT SPRING CHINOOK POPULATION STATUS, PRELIMINARY TRENDS, AND RECENT FINDINGS

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ABSTRACT: The spring Chinook salmon population native to the Klickitat River is part of the Middle Columbia River evolutionarily significant unit and is a focal species in the Klickitat Subbasin Plan. Although not listed under the Endangered Species Act, this stock is considered depressed by Washington Department of Fish and Wildlife. Historical evidence indicates that a large run of spring Chinook existed in the Klickitat River. Monitoring data from the late 1980s to present indicate an average total run size of 1300 to 2400 fish, and an average wild spawner escapement of 200 to 500 fish, with a stable to slightly declining total run size over that time period. Redd count data from the mid 1990s to present suggest an annual decline of approximately 5% (with a 95% confidence interval of 0% to 11% decline). Mark-recapture population estimates in recent years indicate a similar to slightly higher total run size compared to previous estimates, with similar estimates of wild fish numbers. These estimates also indicate a possible declining trend in recent years, although more years of data are needed to determine real trends. Despite recent improvements to fish passage at Castile Falls on the upper Klickitat River, and initially increased spawner escapement to the upper river reaches, returns in 2008 were unexpectedly low in this area, probably due to overall low 2008 returns. Genetic analysis of Klickitat spring Chinook indicates a mixing of stream-type (spring Chinook) and ocean-type (summer/fall Chinook), and has resulted in unusual genotypes as compared to both spring and fall Chinook populations from other river basins. This may have resulted from past hatchery broodstock mixing of stream- and ocean-type fish, or from hatchery introgression on natural spawning grounds, or less likely is a natural genotype in this subbasin. It is unclear if this has affected natural spawner success and smolt to adult survival rates. Low smolt to adult return rates characterize the hatchery stock. While statistical trends in this population are currently difficult to identify conclusively due to annual variability in run size and uncertainty in estimates, the chronically low numbers of returning fish coupled with potential genetic issues warrant some concern and suggest a need for management alternatives. Continued monitoring of this population and its responses to management actions should be a high priority.