

## **Klickitat River Adult Salmon and Steelhead Monitoring Updates**

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**ABSTRACT:** Ongoing monitoring in the Klickitat River is aimed at determining status and trends in spring Chinook salmon and steelhead populations. Redd counts, run reconstruction (harvest plus escapement), and mark-recapture methods are used to monitor adult abundance and distribution. Mark-recapture estimates of run size at Lyle Falls on the lower Klickitat (in which fish are tagged at the Lyle Falls adult fish trap and recaptured further upstream either at Klickitat Hatchery or by anglers) generally provide the most robust abundance estimates.

For spring Chinook, mark-recapture estimates from 2007-2012 give an average of about 3300 hatchery-origin fish (ranging from 1000-5800) and 530 natural-origin fish (ranging from 400-675). Estimates for 2012 are about 3600 hatchery fish (with a 95% confidence interval of 3000-4300) and about 580 natural-origin fish (95% CI of 490-690). These include adults and jacks; jacks represented about 21% of the population at Lyle Falls in 2012. Redd counts have increased in the last two years and no longer show a significant downward trend (for 1996-2012 data) as had been shown in past years; however, high numbers of hatchery fish on natural spawning grounds are likely playing a large role in this trend. Evidence from spawner survey carcass counts and preliminary radio telemetry results point to the significant presence of hatchery spawners in the wild. Overall the wild spring Chinook population is still exhibiting low numbers relative to likely historic runs and is still quite depressed.

For steelhead, mark-recapture estimates from most of the last 8 years yield an average total wild steelhead (summer and winter) run of about 1610 fish (ranging from about 1100 to 2430 fish); for hatchery steelhead the recent years' average is about 2930 fish (ranging from about 1830 to 5170 fish). The 2012 wild summer steelhead run was estimated to be about 990 fish (95% CI of 535 to 2144); the 2012 hatchery summer steelhead run estimate was about 2620 fish (95% CI of 1400 to 5770). Recent genetic analysis indicates a high percentage of out-of-subbasin steelhead in the lower Klickitat (approximately 25% of wild fish and 30% of hatchery fish).

Also, preliminary results from the video monitoring facility recently installed at Castile Falls (RM 64 on the Klickitat) indicates a total steelhead passage from late June through early September 2012 of 36 fish, with 11 wild spring Chinook observed during the same period. This monitoring will provide important information regarding future management options in the upper Klickitat River.