

## **Klickitat River Run Size Updates and Preliminary Radio Telemetry Results**

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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. For spring Chinook, redd counts, run reconstruction (harvest plus escapement), and mark-recapture methods are used to monitor run size. For 2010, run reconstruction yielded a total run size estimate of about 2,500 fish, with approximately 1,900 adult (4- and 5-year-old) fish, and 77% hatchery-origin fish. Mark-recapture estimates of run size to Lyle Falls on the lower Klickitat River were higher, with an estimate of approximately 4,500 total fish (95% confidence interval of 3,500 to 5,800), 3500 to 4100 adult fish, and 89% hatchery fish. Redd counts from 1996 to 2010 show a 4.4% decline (95% CI: -8.8 to 0.0%). Redd count data and the wild component of the other estimators indicate that the wild spring Chinook population in the Klickitat is fluctuating at levels under 500 fish and is still quite depressed. The 2011 forecast for spring Chinook is for an average-sized run of about 2100 adult fish (hatchery and wild).

Mark-recapture methods offer the best monitoring tool for steelhead; for 2010 the hatchery summer steelhead estimate was approximately 5,100 fish (95% CI: 3,800 to 7,200), substantially higher than recent years' average for the Klickitat. This number may be biased high by dip-ins of out-of-basin fish captured at Lyle Falls. The 2010 wild summer steelhead estimate is approximately 1,000 fish (95% CI: 770 to 1,330), which is slightly below recent years' average.

Preliminary results are also available from a radio telemetry study with objectives of monitoring spawning locations and timing (particularly differences between hatchery/wild stocks), passage obstructions, and stray/dip-in rates for steelhead and spring Chinook. Fish are tagged at the Lyle Falls adult trap, released upstream, and monitored via fixed sites and mobile tracking. A total of 54 Chinook (38 hatchery and 16 wild) and 134 steelhead (41 hatchery and 93 wild) have been tagged since fall 2009. Preliminary estimates indicate fairly high rates of fallback over Lyle Falls of tagged Chinook (with some reascending the falls), harvest rates of about 52% for hatchery steelhead, and pre-spawn mortality rates of about 6-11% for wild stocks. Evidence also suggests very little passage obstruction at the Klickitat Hatchery weir (a point of interest for managers). Radio telemetry monitoring will be ongoing for several years.