

2007-2008 Coho Spawning Surveys in Upper Elk Creek

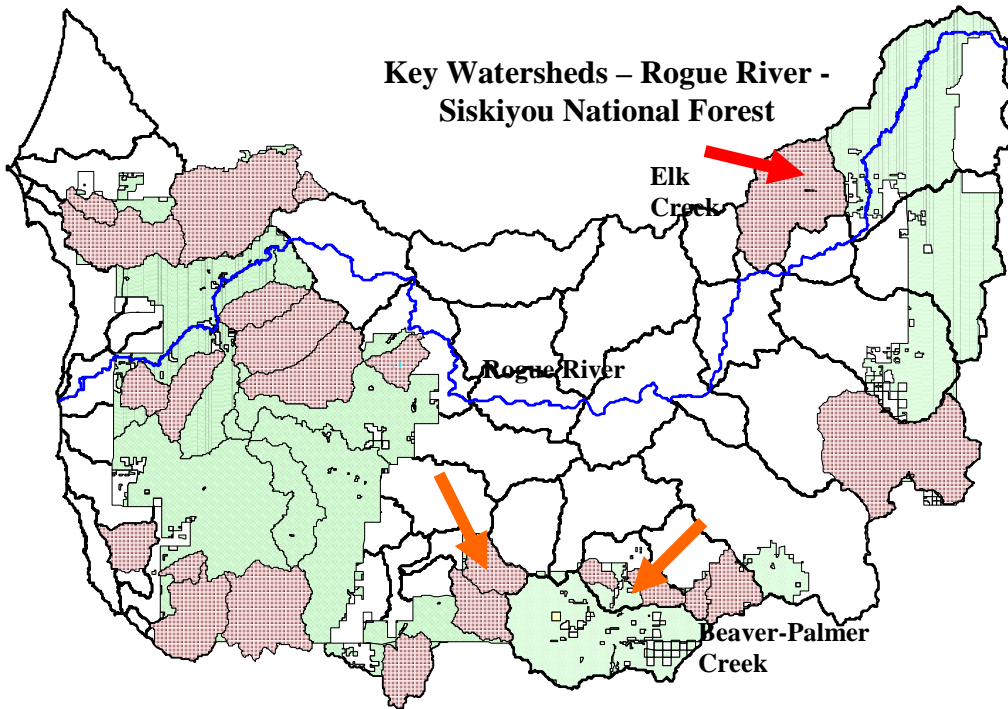


Figure 1. Rogue River with Key Watersheds

Coho salmon spawner escapement through the Elk Creek Trap and Haul was low during the fall of 2007. Especially when this year was to be the highest of the typical three-year cycle that coho appear to have established in the Rogue River. About 650 wild adult coho were counted through the trap and haul facility at River Mile 1.7 by January 1st 2008 (Mike Evenson – personnel communication). This brood year was from a record run of 2,700 wild fish through the facility in 2004 – 2005. The progeny of these fish would rear in freshwater until spring 2006, migrate to the ocean for approximately 18 months and return this past fall 2007. Only 5 coho redds were found in Bitterlick Creek and 12 coho redds in Sugarpine Creek during three surveys in December 2007. Flows were moderate during the later two surveys and high during the first survey in early December. Poor ocean productivity has been advanced as the reason for low adult salmon returns the past two years (ODFW, unpublished).

Figure 2 shows the results of the past four years of coho spawning surveys in these two reaches. The length of the two reaches surveys the past four years are 1.5 miles in Bitter Lick Creek and approximately one (1) mile in Sugarpine Creek. **Figure 3** shows the location of these two reaches in the subwatersheds. Sugarpine Creek appears to each year support more coho salmon spawners than Bitter Lick Creek.

Figure 2. Wild coho escapement to spawning survey reaches

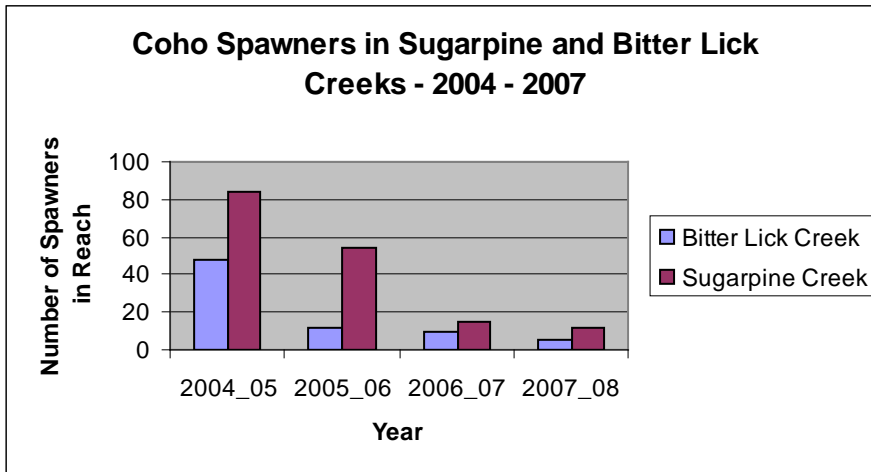
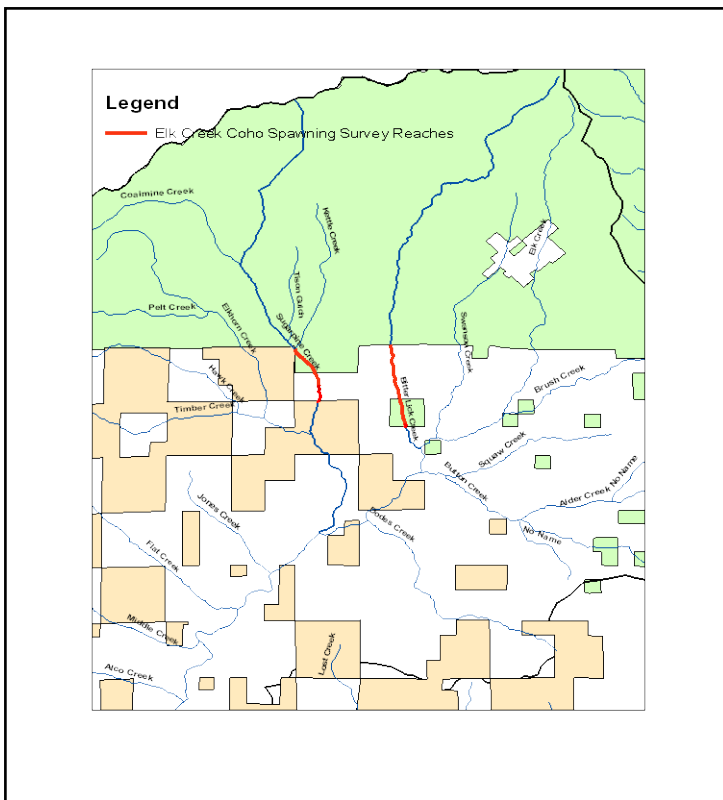


Figure 3. Coho spawning survey reaches in upper Elk Creek watershed.



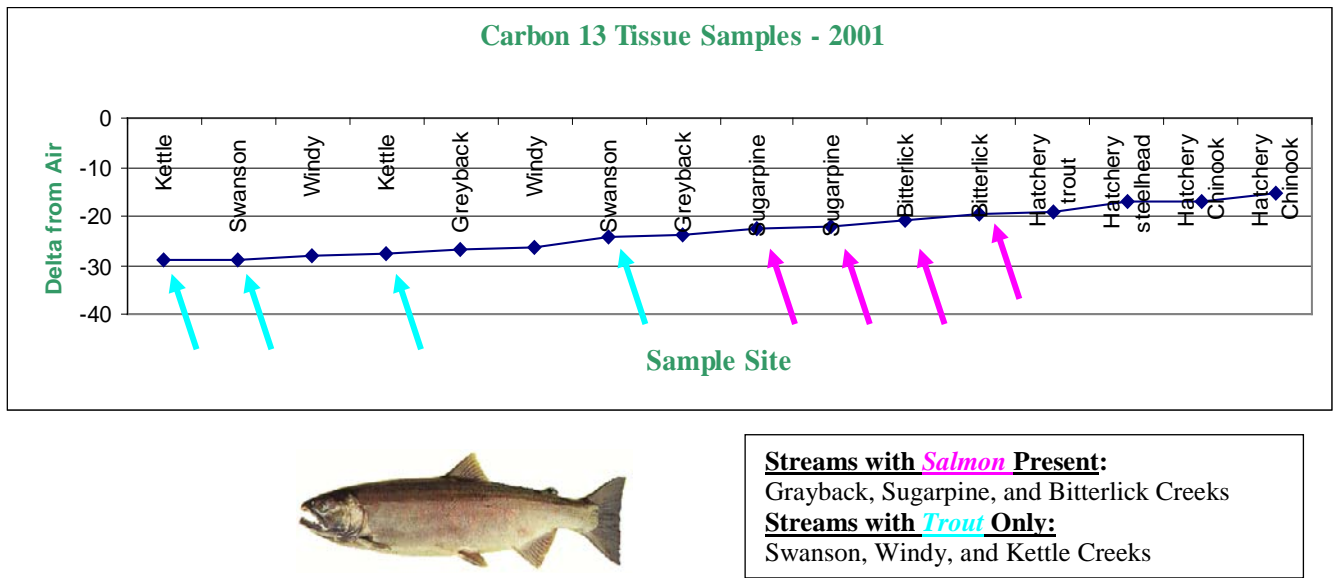
Discussion

Access to Sugarpine Creek is closer to the Rogue River and has less bedrock chutes and small waterfalls than access to Bitter Lick Creek. Typically, Sugarpine Creek has about two times the number of redds in the spawning reach even though the length of the reach is about 2/3 of the reach length in Bitter Lick Creek. Streamflows during coho migration

are critical as in drier years fish do not appear to migrate to the upper reaches of Elk Creek successfully. In the drought year of 2001 coho only occupied the lower half of the Bitter Lick Creek spawning reach.

Spawning surveys are a good measure of several metrics to monitor coho salmon. A study in 2001 showed that ocean-derived nutrients from salmon carcasses were detectable in streams with salmon when compared with trout-only streams. **Figure 4** illustrates the higher concentrations of Carbon 13 in Sugarpine Creek and Bitter Lick Creeks when compared with nearby trout streams Kettle Creek and Swanson Creek where only coastal cutthroat trout are found.

Figure 4. Ocean-Derived Nutrient Sampling in Trout and Salmon Streams



Adult coho salmon escapement to spawning areas also correlates well with the number of juvenile coho salmon present in pool habitat the following summer as evidenced by **Figures 5 and 6**. The findings of these surveys appear to imply that ample rearing habitat is present for larger numbers of juvenile fish and habitat is not currently fully seeded with juvenile coho salmon. Figure 7 tabulates spawning survey redd counts for coho salmon the past four years. The Elk Creek Dam may be breached during the next two years and spawning surveys may serve as a good surrogate of overall spawning escapement in the watershed.

Figures 5 and 6. Graph of number of juvenile coho salmon per square yard of pool habitat the summer following spawning versus the total number of wild coho salmon who passed through the Elk Creek trap and haul facility and river mile 1.7.

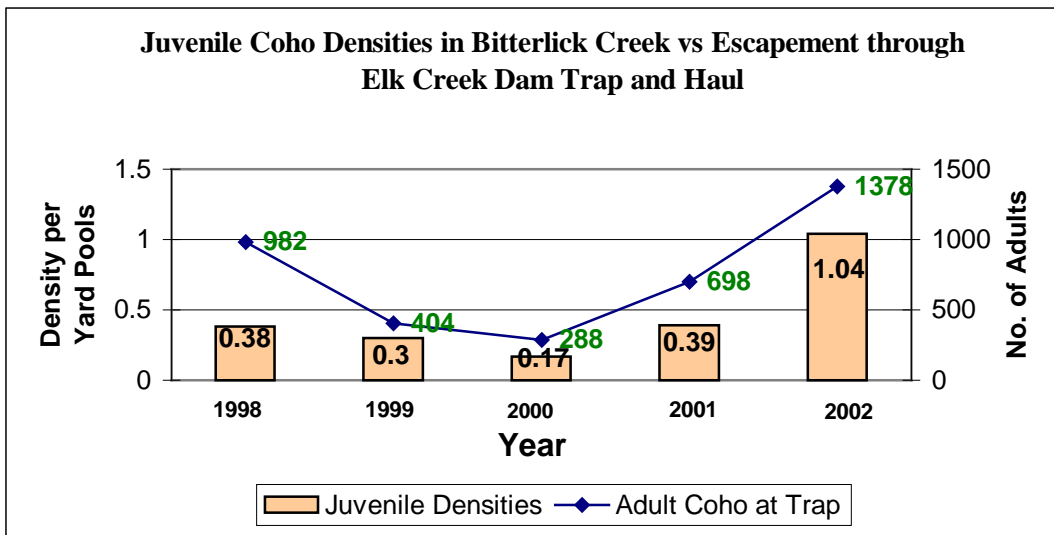
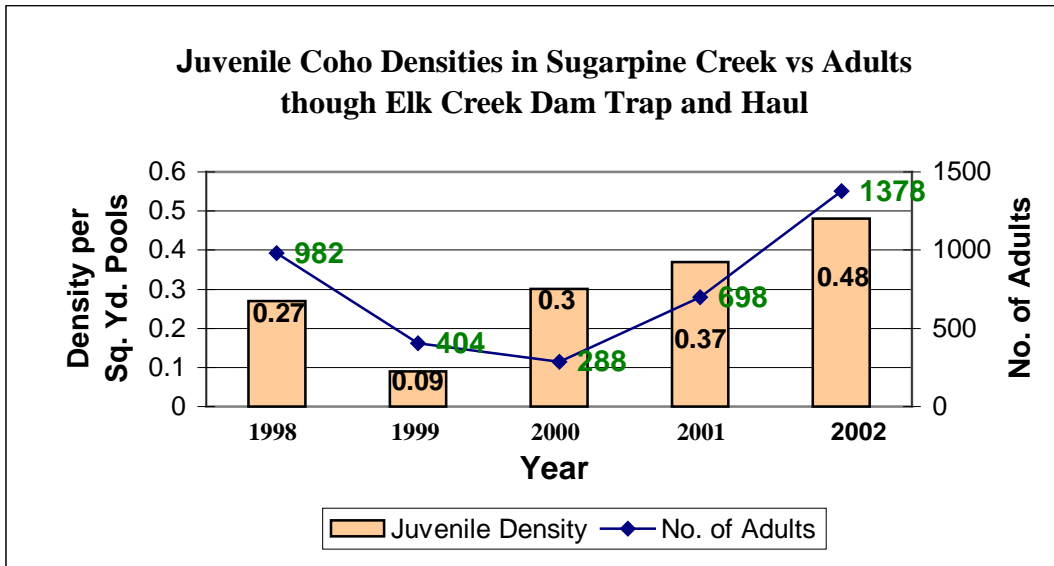


Figure 7. Summary of coho redds for the past four years of coho spawning surveys in upper Elk Creek

Bitterlick Creek (1.5 miles)

Year	Redds
2004/05	48
2005/06	12
2006/07	10
2007/08	5

Sugarpine Creek (1.0 miles)

Year	Redds
2004/05	84
2005/06	54
2006/07	15
2007/08	12

Considerable habitat work has been undertaken in both Sugarpine Creek and Bitter Lick Creek the past 5 years in cooperation with the Upper Rogue Watershed Association, Oregon Department of Fish and Wildlife and other partners. Large wood placed by helicopter and skidder is recruiting spawning gravels and creating quality rearing habitat for all species of trout and salmon. These two logjams were created in Bitter Lick Creek.

