

Rogue Spring Chinook

Existing Populations

The Rogue Spring Chinook SMU consists of a single population within the Rogue basin upstream of Gold Ray Dam (Table 53).

Table 53. Population list and existence status for the Rogue Spring Chinook SMU.

Exist	Population	Description
Yes	Rogue	Rogue River basin (upstream of Gold Ray Dam)

Habitat Use Distribution

The criterion was evaluated based on current and historically accessible areas. ODFW Rogue watershed staff estimate that spring Chinook currently use 33 miles of habitat including 31 miles in the mainstem Rogue between the head of Gold Ray Reservoir and Cole Rivers Hatchery, and two miles in Big Butte Creek. Construction of Lost Creek Dam and the barrier dam at Cole Rivers Hatchery blocked nine miles of spawning habitat historically used by spring Chinook (USFWS 1954).

It must be recognized that the estimates of habitat accessibility are derived at the 1:100,000 scale and thus *will not* capture habitat lost in many smaller (1:24K) streams resulting from barriers such as culverts. Habitat lost in smaller streams will vary by population, but is not likely to account for 50% of any population, and thus does not alter assessment outcomes derived using data at the 1:100,000 scale. Data presented in this report on accessibility and inaccessibility of habitat should be viewed as general approximations of reality and not as a definitive analysis on habitat availability/accessibility. These issues will be more thoroughly addressed through the conservation planning process.

Table 54. Habitat accessibility data used in evaluating interim criteria for the Rogue Spring Chinook SMU.

Population	Accessible (miles)	Inaccessible (miles)	Percent Accessible
Rogue	33	9	79%

Abundance

Naturally-produced spring Chinook spawner abundance was estimated by subtracting the number of fish harvested above Gold Ray Dam from adult passage counts at Gold Ray Dam. Gold Ray Dam passage numbers and hatchery and naturally-produced fish harvest estimates were provided by ODFW (pers. comm., Tom Satterthwaite, 1/18/05). Harvest estimates for 2003 and 2004 were not yet available, so it was assumed that the harvest rate on naturally-produced fish in 2003 and 2004 was the same as the average of natural fish harvest rates in 2001 and 2002. This assumption is supported by the consistency in harvest regulations, and similarly low natural fish harvest rates in 2001 and 2002. In those two years, harvest of naturally-produced fish was 2% and 1% respectively.

Table 55. Abundance estimates (adults) used in evaluating interim criteria for the Rogue Spring Chinook SMU.

Population	30 Year Average	25% of Average	Abundance by Return Year					No. Years >25% of Average
			1999	2000	2001	2002	2003	
Rogue	11,386	2,847	2,679	8,072	6,043	17,279	11,410	4

Productivity

Productivity was derived using abundance estimates for naturally-produced adults calculated as described in the “Abundance” section. The abundance of naturally-spawning hatchery fish was estimated to be equal to 5% of the number of spring Chinook returning to Cole Rivers Hatchery. Cole Rivers Hatchery returns were obtained from ODFW (pers. comm., Tom Satterthwaite, 6/8/04).

Spawner age compositions from 1974-1994 were obtained from ODFW (2000). Sampling has not been conducted since 1994 to determine age composition by return in subsequent years, so the average age composition from 1974-1993 were applied to the return years 1994-2003. This application is supported by relatively consistent age composition in 1974-1993. In all but three years, the dominant age class (age 4) made up between 42-64% of the returning population. Further, age-4 fish were the dominant age class in all but two years in this period. Only age 4-6 fish were included in the recruits per spawner estimate. Age-2 and 3 fish were considered to be jacks.

Table 56. Productivity estimates used in evaluating interim criteria for the Rogue spring Chinook SMU.

Population	Recent Complete Brood Years of Below Average Abundance	Productivity (R/S)					
		Year 1	Year 2	Year 3	Year 4	Year 5	Years \geq 1.2
Rogue	1994, 1996-99	1.5	0.6	0.8	2.8	2.2	3

Reproductive Independence

The abundance of naturally-spawning hatchery fish was assumed to be equal to 5% of the number of spring Chinook returning to Cole Rivers Hatchery. This assumption is based on the findings of Cramer et al. (1985). Cramer et al. (1985) showed that in 1979-1981, the number of naturally-spawning hatchery fish was 3-8% of the number of spring Chinook that entered Cole Rivers Hatchery. Annual numbers of hatchery fish that spawned naturally were estimated from the proportion of finmarked fish among returns to Cole Rivers Hatchery, the number of marked fish recovered during spawning surveys, and the proportion of spawners recovered as spawned carcasses (Cramer et al. 1985).

Table 57. Reproductive independence estimates used in evaluating interim criteria for the Rogue Spring Chinook SMU.

Population	Percent of Spawning Fish of Hatchery Origin					Years
	1999	2000	2001	2002	2003	\leq 10%
Rogue	30%	13%	15%	4%	6%	2

Hybridization

Hybridization has not been identified as an issue for Rogue spring Chinook.

Assessment Conclusions

This SMU consists of a single population upstream of Gold Ray Dam in the Rogue River. The population passed all criteria except for reproductive independence indicating the near-term sustainability of the SMU is potentially at risk. The Rogue basin is home of the largest Chinook hatchery program on the Oregon coast. Cole Rivers Hatchery releases approximately 1.9 million spring Chinook smolts annually to mitigate for habitat lost to Lost Creek Dam.

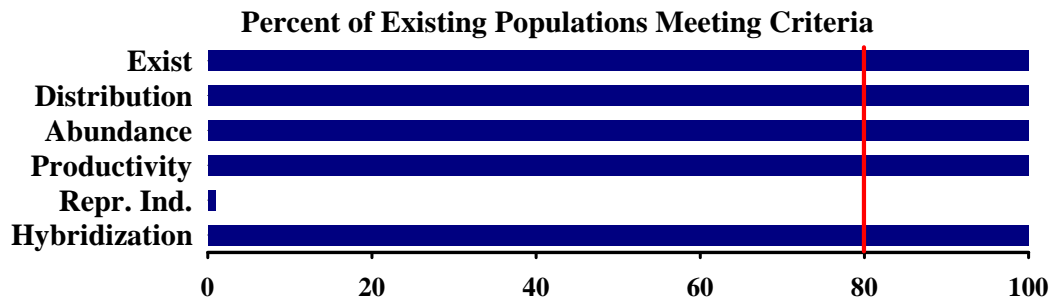
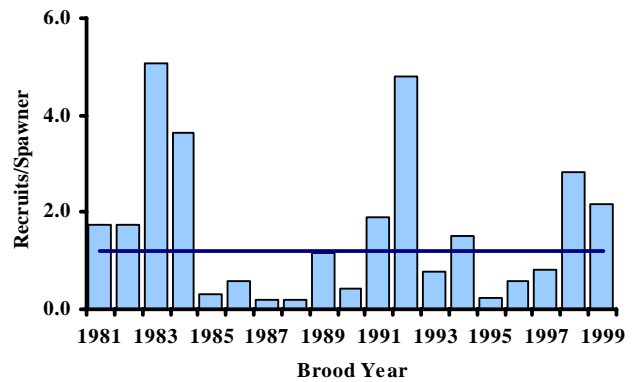
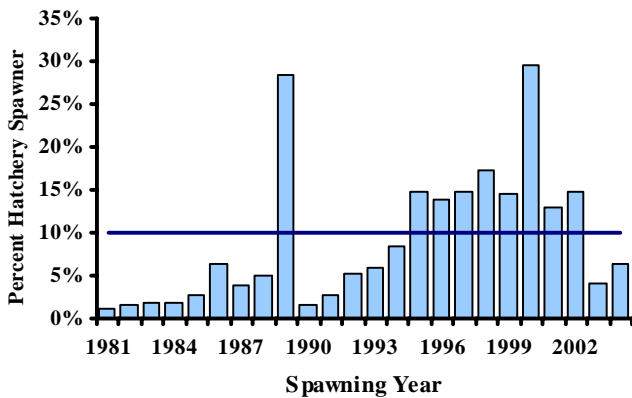
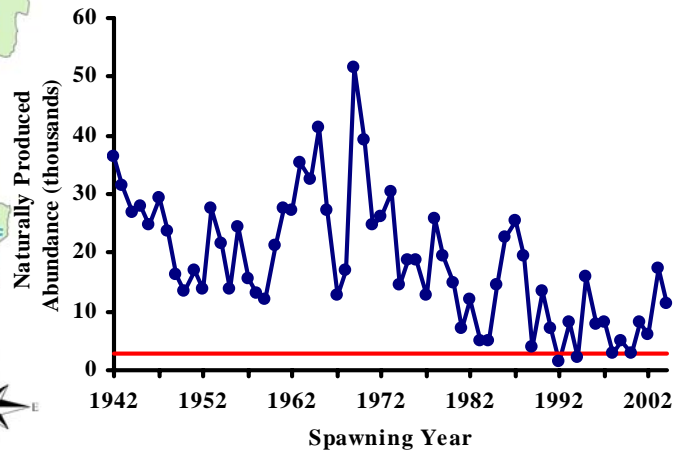
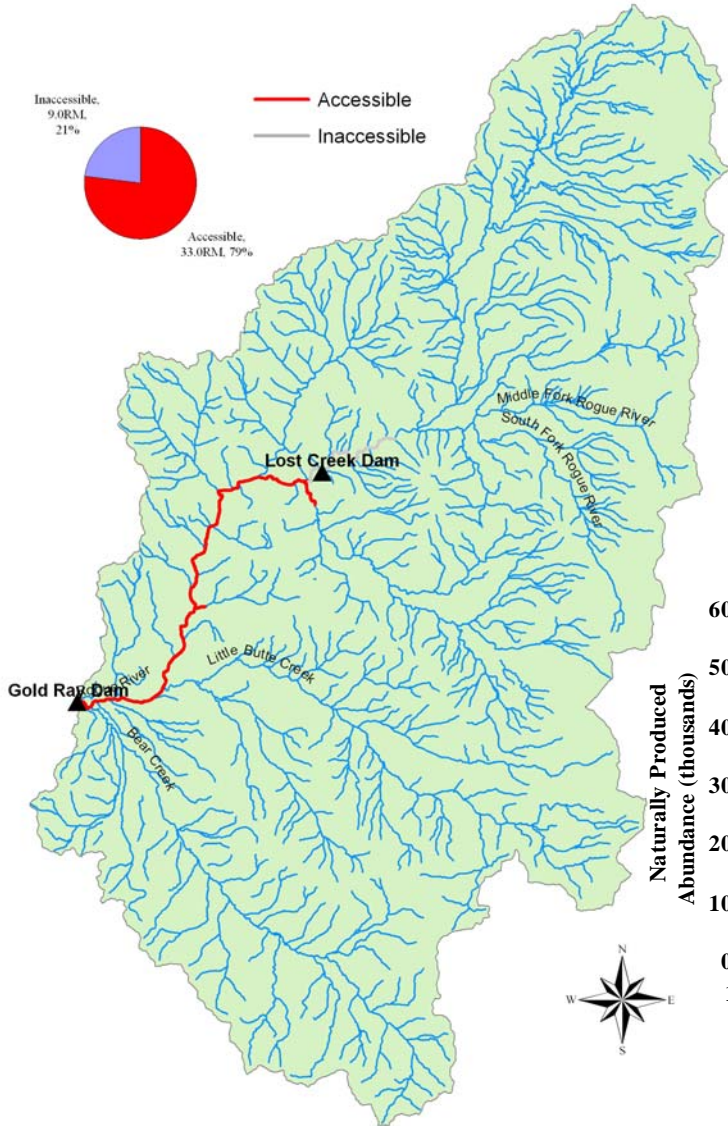


Figure 16. Assessment outcome for each of the six interim criteria with respect to the 80% threshold identified by the NFCP.

Rogue – Rogue Spring Chinook

The Rogue spring Chinook population passed each of the criteria except for independence. Abundance was indexed via adult counts at Gold Ray Dam adjusted to account for harvest above the dam. The number of naturally-spawning hatchery fish was estimated to be 5% of the population returning to Cole Rivers Hatchery. Approximately nine miles of spawning habitat was lost due to the construction of Lost Creek Dam and the barrier dam at Cole Rivers Hatchery.



Assessment Outcome

Existence	Distribution	Abundance	Productivity	Independence	Hybridization
Pass	Pass	Pass	Pass	Fail	Pass