

## Lower Columbia Summer Steelhead

### *Existing Populations*

The only population within the Lower Columbia Summer Steelhead SMU is in the West Fork Hood River (Table 120).

**Table 120. Population list and existence status for the Lower Columbia Summer Steelhead SMU.**

Exist	Population	Description
Yes	Hood River	Hood River Basin (West Fork)

### *Habitat Use Distribution*

The criterion was evaluated based on current and historically accessible areas. The population data show “0 miles inaccessible” (Table 121). It must be recognized that these estimates are derived at the 1:100,000 scale and thus *will not* capture habitat lost in many smaller (1:24,000) 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 of habitat should be viewed as general approximations and not as a definitive analysis on habitat availability/accessibility. These issues will be more thoroughly addressed through the conservation planning process.

**Table 121. Habitat accessibility data used in evaluating interim criteria for the Lower Columbia Summer Steelhead SMU.**

Population	Accessible (miles)	Inaccessible (miles)	Percent Accessible
Hood	35	0	100%

### *Abundance*

Natural abundance estimates for Hood River were based on the number of natural origin fish passed above Powerdale Dam. Data were available for the 1993-2004 spawning years (Olsen 2005). Abundance and productivity were compared to the full seeding level rather than the 30-year average because only 11 years of abundance data were available, and runs in the Hood have been depressed. The full seeding level provided a better benchmark to identify years of low abundance. The full seeding estimate derived at by multiplying the summer steelhead smolt capacity of the basin as estimated by Underwood et al. (2003) by a smolt-to-adult survival rate of 6.38%. Underwood et al. (2003) estimated the smolt capacity of the basin using a habitat based smolt capacity model and stream inventory data from ODFW, Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO) and the U.S. Forest Service (USFS). The smolt-to-adult survival rate of 6.38% is the median of survival rates of naturally-produced summer steelhead smolts outmigrating from the Hood River as estimated by Olsen (2004) for the 1993-1998 broods. That full seeding estimate is greater than the Lower Columbia Technical Recovery Team escapement goal of 600 spawners (NPCC 2004a).

**Table 122. Abundance estimates (adults) used in evaluating interim criteria for the Lower Columbia Summer Steelhead SMU.**

Population	Full Seeding Level	25% of Full Seeding	Abundance by Return Year					No. Years >25% of Full Seeding
			2000	2001	2002	2003	2004	
Hood	884	221	146	177	415	541	184	2

### Productivity

Productivity was estimated using spawner abundance estimates, hatchery composition, and annual age composition (Olsen 2005). Parents were defined as the number of natural and hatchery origin spawners passed above Powerdale Dam. Recruits were defined as the number of naturally-produced offspring passed above Powerdale Dam to spawn. Since there were not five years of parent abundance below full seeding within the abundance trend, we evaluated the productivity criterion based on the five years of lowest parent abundance.

**Table 123. Productivity estimates used in evaluating interim criteria for the Lower Columbia Summer Steelhead SMU.**

Population	5 Years of Lowest Parent Abundance	Productivity (R/S)					Years $\geq 1.2$
		Year 1	Year 2	Year 3	Year 4	Year 5	
Hood	1994, 1996-99	0.1	0.3	0.2	0.8	3.5	1

### Reproductive Independence

Reproductive independence was evaluated based on the proportions of natural and hatchery fish passed above Powerdale Dam. The hatchery to naturally-produced ratio of fish arriving at the spawning grounds is controlled by selectively passing fish at Powerdale Dam. Since the Hood River summer steelhead hatchery program is integrated, naturally-produced fish are used to supplement broodstock and hatchery fish are used to supplement natural spawning. Current management practices allow for up to 50% of the summer steelhead passed above Powerdale Dam to be of hatchery origin.

**Table 124. Reproductive independence estimates used in evaluating interim criteria for the Lower Columbia Summer Steelhead SMU.**

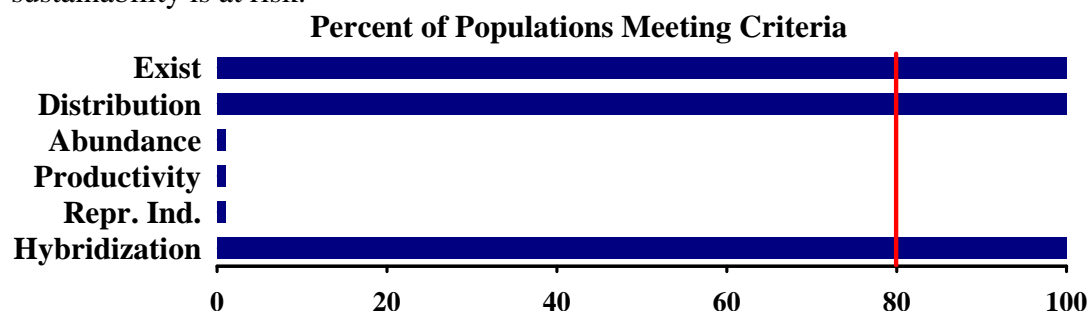
Population	% Spawning Fish of Hatchery Origin					Years $\leq 10\%$
	2000	2001	2002	2003	2004	
Hood	1%	1%	23%	48%	53%	2

### Hybridization

Hybridization has not been identified as an issue for lower Columbia summer steelhead.

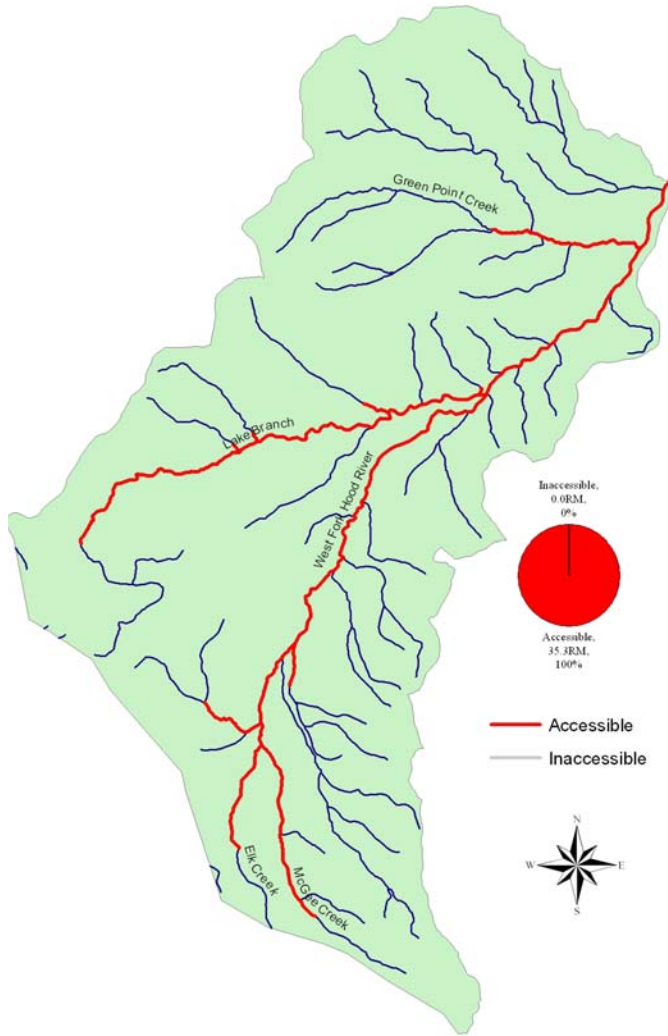
### Assessment Conclusions

This SMU consists of a single population in the Hood River. Hood River summer steelhead primarily inhabit the West Fork. The inherent habitat productivity in Hood River is limited by high gradient and glacial turbidity. The population met three of six criteria and its near term sustainability is at risk.

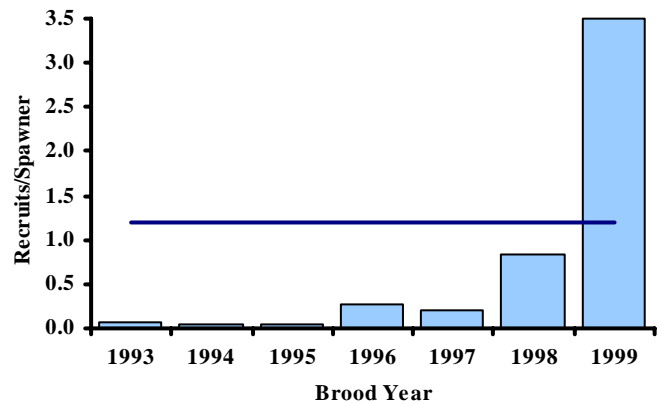
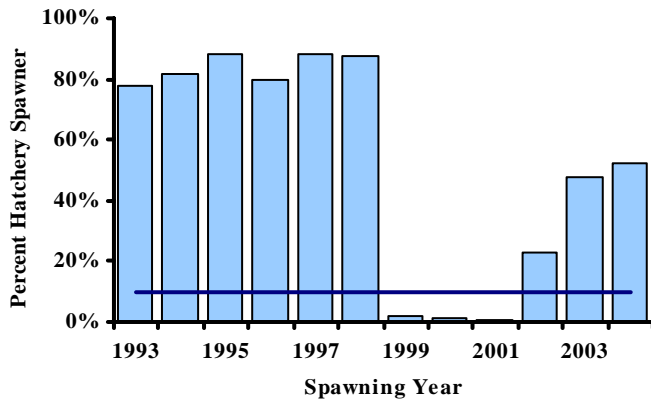
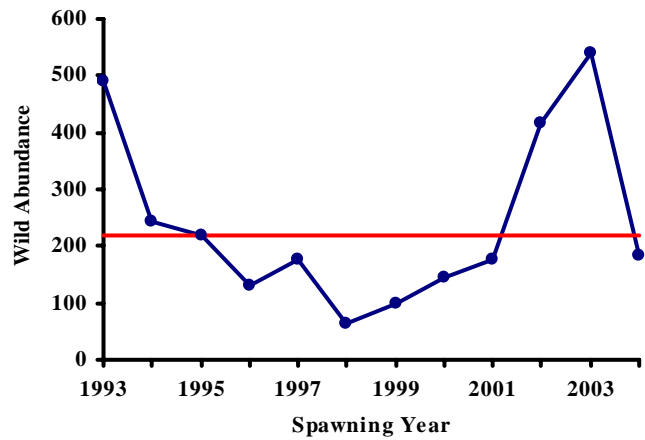


**Figure 28. Assessment outcome for each of the six interim criteria with respect to the 80% threshold identified by the NFCP.**

### Hood – Lower Columbia Summer Steelhead



The Hood population failed the abundance, productivity, and independence criteria. Returns to the Hood are monitored at Powerdale Dam where each fish arriving at the dam is counted. Some hatchery fish are allowed to pass to supplement natural spawning at a rate of 50% of total escapement. Returns in 2004 fell below the abundance criterion threshold, and productivity has only exceeded 1.2 recruits per spawner for one brood since 1993.



#### Assessment Outcome

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