

# Hells Canyon Bull Trout SMU

ESA Designation:  
**Threatened 1998**

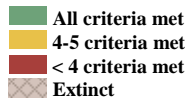
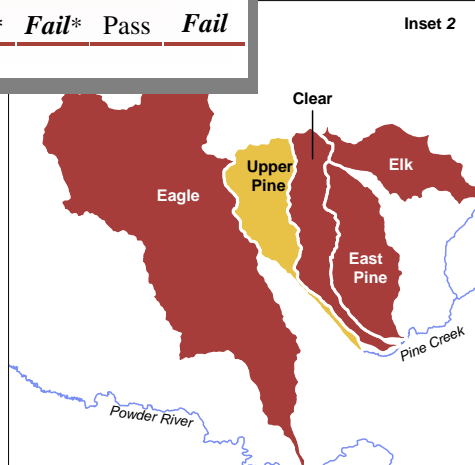
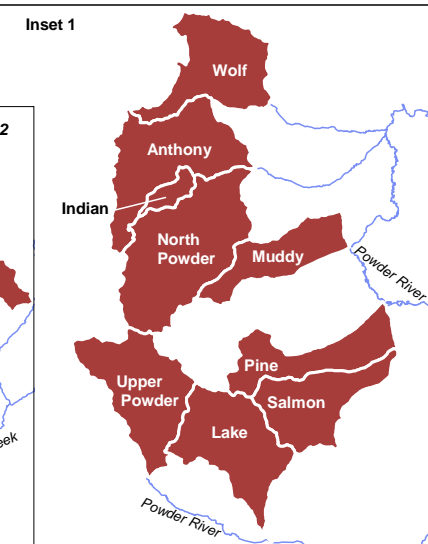
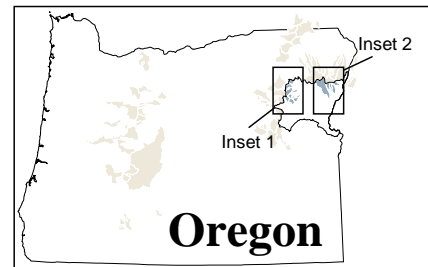
State Status:  
**Critical**

Interim Assessment:  
**At Risk**

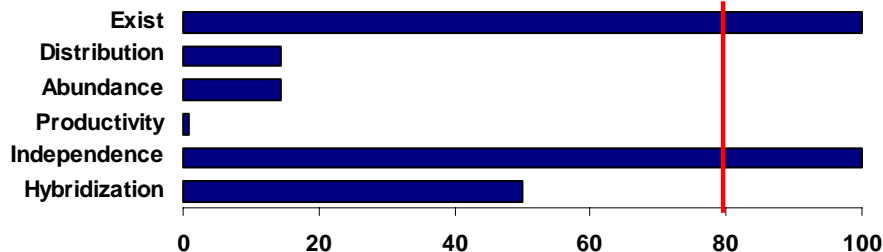
The Hells Canyon Bull Trout SMU includes 14 populations in Pine Creek and Powder River, both of which flow into the Snake River between Weiser River and Hells Canyon Dam. Three additional populations exist in close proximity on the Idaho side of the Snake River. Movement between the Idaho and Pine Creek populations is possible. Most populations in this SMU are characterized by extremely low abundances and restricted distributions. Productivity is hampered by habitat quality and quantity and the inability to express a migratory life history. The SMU passes two of the six criteria and is classified as ‘at risk’. Limited data sets and inferences from other information for populations in this SMU provide a qualified level of confidence in the assessment of the interim criteria.

Population	Exist	Dist.	Abund.	Prod.	Ind.	Hybrid
<b>Pine Creek</b>						
Elk	Pass	Fail	Fail*	Fail*	Pass	Pass*
East Pine	Pass	Fail	Fail*	Fail*	Pass	Pass
Clear	Pass	Pass	Fail*	Fail*	Pass	Fail
Upper Pine	Pass	Fail	Pass*	Fail*	Pass	Pass*
<b>Powder River</b>						
Eagle	Pass	Fail*	Fail*	Fail*	Pass	Fail
Wolf	Pass	Fail	Fail*	Fail*	Pass	Pass
Anthony	Pass	Pass	Fail*	Fail*	Pass	Fail
Indian	Pass	Fail	Fail*	Fail*	Pass	Fail
North Powder	Pass	Fail	Fail*	Fail*	Pass	Fail
Muddy	Pass	Fail	Fail*	Fail*	Pass	Pass*
Pine	Pass	Fail	Fail*	Fail*	Pass	Fail
Salmon	Pass	Fail	Fail*	Fail*	Pass	Pass
Lake	Pass	Fail	Fail*	Fail*	Pass	Pass*
Upper Powder	Pass	Fail	Pass*	Fail*	Pass	Fail

\*Inferred

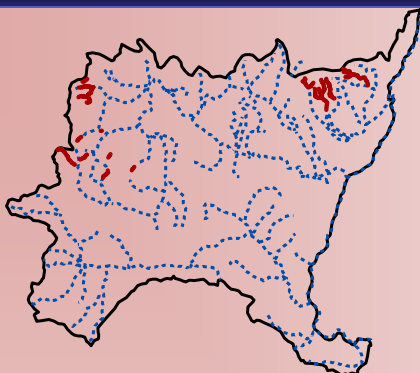


Percent of Populations Meeting Criteria



## ***Distribution - Fail***

---



**Bull Trout Spawning /Rearing**

**Major Rivers**

- Bull trout distribution in the SMU is highly fragmented and limited to short isolated segments of headwater streams. Fifty-four percent of the populations have a spawning distribution less than 4 km.
- Two populations, Clear and Anthony, pass the distribution criterion. These populations exceed ten km, occupy more than 50% of their historical distribution, and remain connected to migratory corridors and other populations.
- Large dams including Brownlee and Oxbow on the Snake River, and Thief Valley and Mason on the Powder River, restrict distribution and minimize connection between populations. Unscreened diversions and irrigation canals entrain bull trout and hinder migration and connectivity.

## ***Productivity - Fail***

---

- Quantitative productivity data are not available, however restricted and fragmented distribution, absence of a migratory life history, degraded habitat, low densities encountered during survey efforts, and the presence of brook trout all suggest the productivity of populations within the SMU is extremely depressed.
- None of the populations pass the productivity criterion.

## ***Additional Information***

---

- Bull trout in this SMU are naturally produced. All populations pass the reproductive independence criterion.
- 

## ***Abundance - Fail***

---

- This review estimated the minimum number of adults present in each Pine Creek basin population from annual index redd counts. The Upper Pine population is the only population to consistently contain the minimum number of adults necessary to pass the abundance criterion.
- All populations in the Powder River basin, except the Upper Powder, fail the abundance criterion based on field observations of extremely low densities. None of the observations in these populations suggest abundance might exceed levels necessary to avoid the effects of inbreeding.
- A 1999 population survey in Silver Creek (Upper Powder) estimated the reproductive population to exceed levels necessary to avoid the effects of inbreeding. Based on this estimate the Upper Powder population passes the criterion.
- Even though data are not available to assess abundance of all populations, the SMU is considered to contain less than 1,000 reproductive adults and considered at risk of the deleterious effects of genetic drift.

## ***Hybridization - Fail***

---

- Brook trout were stocked in high alpine lakes in the Wallowa and Elkhorn mountains, and many introductions established self-sustaining populations. Most populations where brook trout are present fail the hybridization criterion.
- Brook trout are present in Upper Pine, Elk, Lake, and Muddy, however their distribution does not overlap that of bull trout. These populations pass the criterion.
- Brook trout are not present in East Pine, Salmon, and Wolf creeks. These populations also pass the criterion.