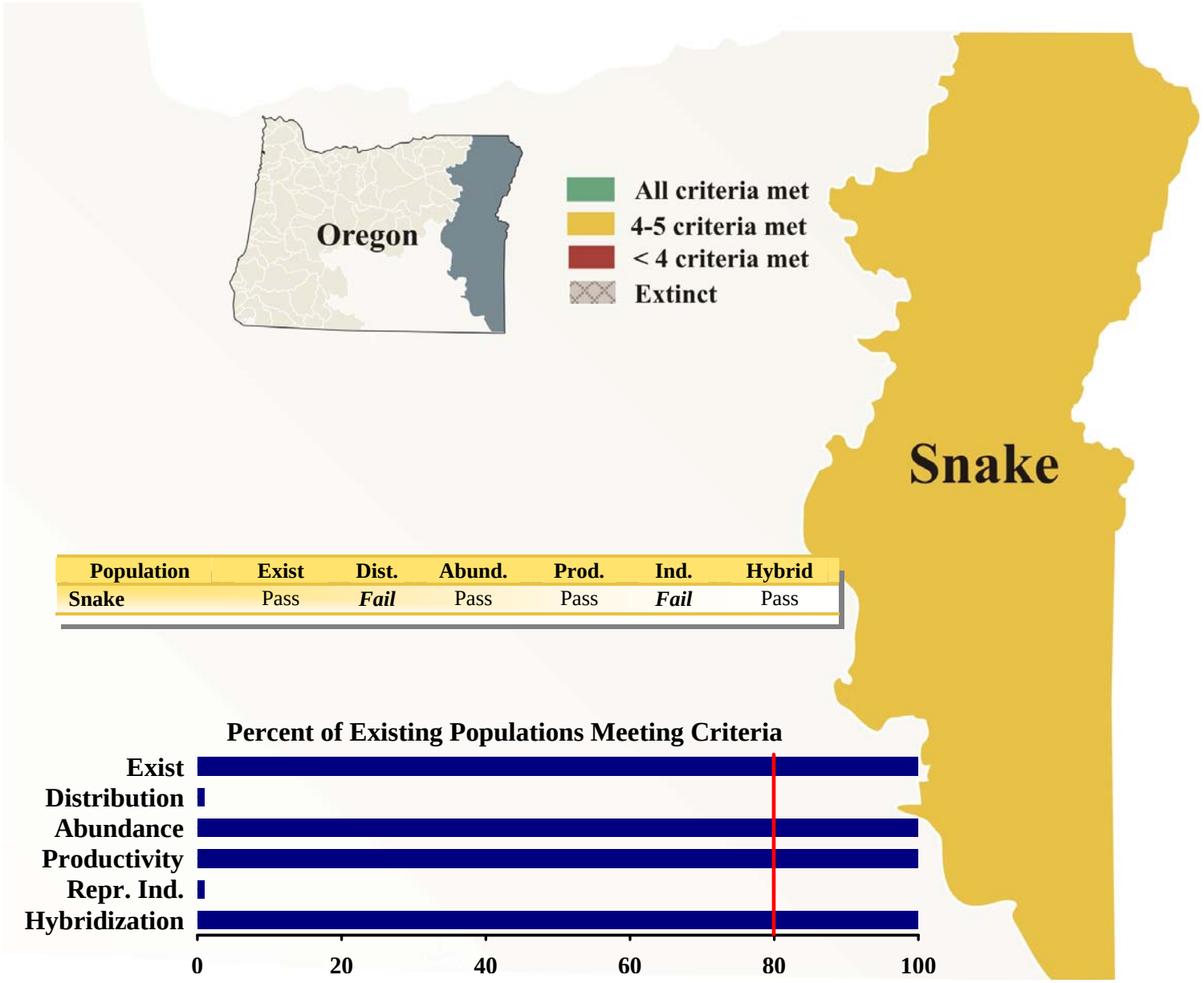
Snake Fall Chinook SMU

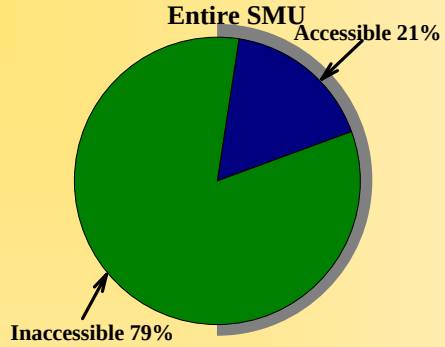
ESA Designation:	State Status:	Interim Assessment:
Threatened 1992	*Threatened*	*Potentially At Risk*

This SMU includes a single remnant population currently limited to Oregon, Washington, and Idaho portions of the Snake River between Lower Granite Reservoir and Hells Canyon Dam. Construction of three dams in Hells Canyon eliminated access to historic spawning areas in tributary mainstems and the Snake mainstem as far upstream as Shoshone Falls in central Idaho. Numbers today are near 5% of estimates in the 1940s, but in the last few years have approached the capacity of remaining habitat due to aggressive hatchery supplementation and favorable ocean conditions. The Snake population met four of six interim risk criteria leading to the conclusion that its near-term sustainability is potentially at risk. Suitable data and other information on populations in this SMU provide a moderate level of confidence in the assessment of the interim criteria.



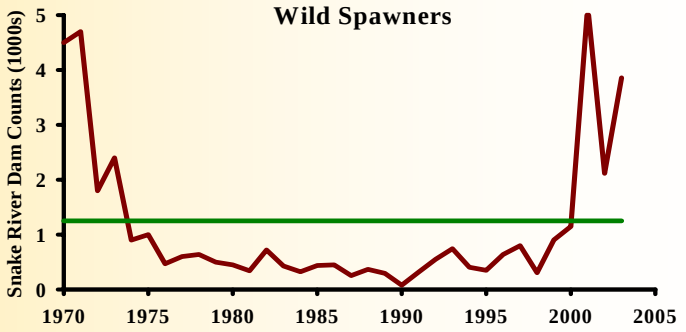
Population	Exist	Dist.	Abund.	Prod.	Ind.	Hybrid
Snake	Pass	***Fail***	Pass	Pass	***Fail***	Pass

Distribution – Fail



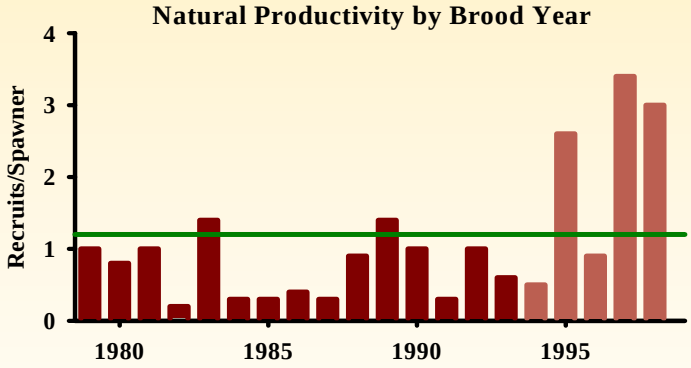
- Only 21% of the habitat area historically available to fall Chinook in the Snake basin remains accessible.
- Construction of the lower Snake and Hells Canyon dam complexes eliminated much of the historical habitat. Prior to dam construction, adults migrated as far upstream as Shoshone Falls, Idaho.
- Current spawning areas include the Snake mainstem – between the upstream end of Lower Granite Reservoir and Hells Canyon Dam - and the lower portions of large tributaries including Oregon's Grande Ronde and Imnaha rivers.

Abundance - Pass



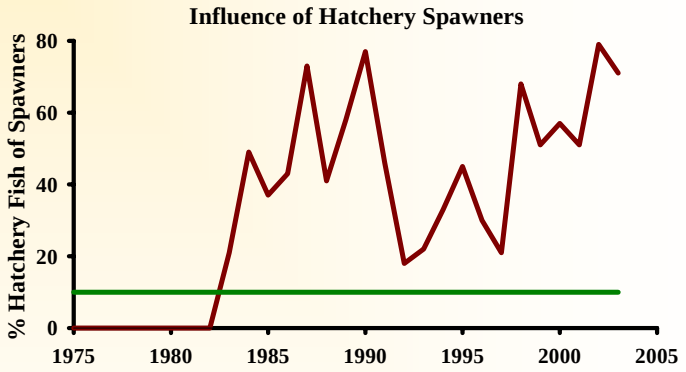
- In the early 1940s, the Snake return averaged 72,000 fish. By the 1950s the number dropped to 15,000-29,000. In the early 1970s, counts at Little Goose Dam were near 5,000. Between 1975 and 2000, counts at Lower Granite Dam ranged between 75 and 1,000 fish.
- Returns in 2001-2003 are the first since 1973 to be above the criterion threshold. These returns are associated with aggressive hatchery supplementation and good ocean conditions.
- Recent redd counts in the Grande Ronde and Imnaha rivers have increased in conjunction with Lower Granite escapements.

Productivity - Pass



- Productivity has exceeded 1.2 recruits per spawner in only five of the last 25 years despite consistently low parent abundance levels.
- Recent productivities of greater than 1.2 recruits per spawner coincide with good ocean conditions.

Independence - Fail



- The independence criterion was exceeded in each of the last 21 years for the single Snake River population.
- Hatchery conservation programs are an important tool in attempts to preserve Snake River fall Chinook. Fish are released from a series of acclimation sites upstream from Lower Granite Dam.
- Hatchery fish have made up 47% of the natural spawning population since 1983.

Additional Information

- Snake fall Chinook numbers are affected by, mixed stock fisheries, downstream and upstream passage mortality at eight Snake and Columbia river dams, as well as migration effects of flow and temperature changes related to hydropower system operation.