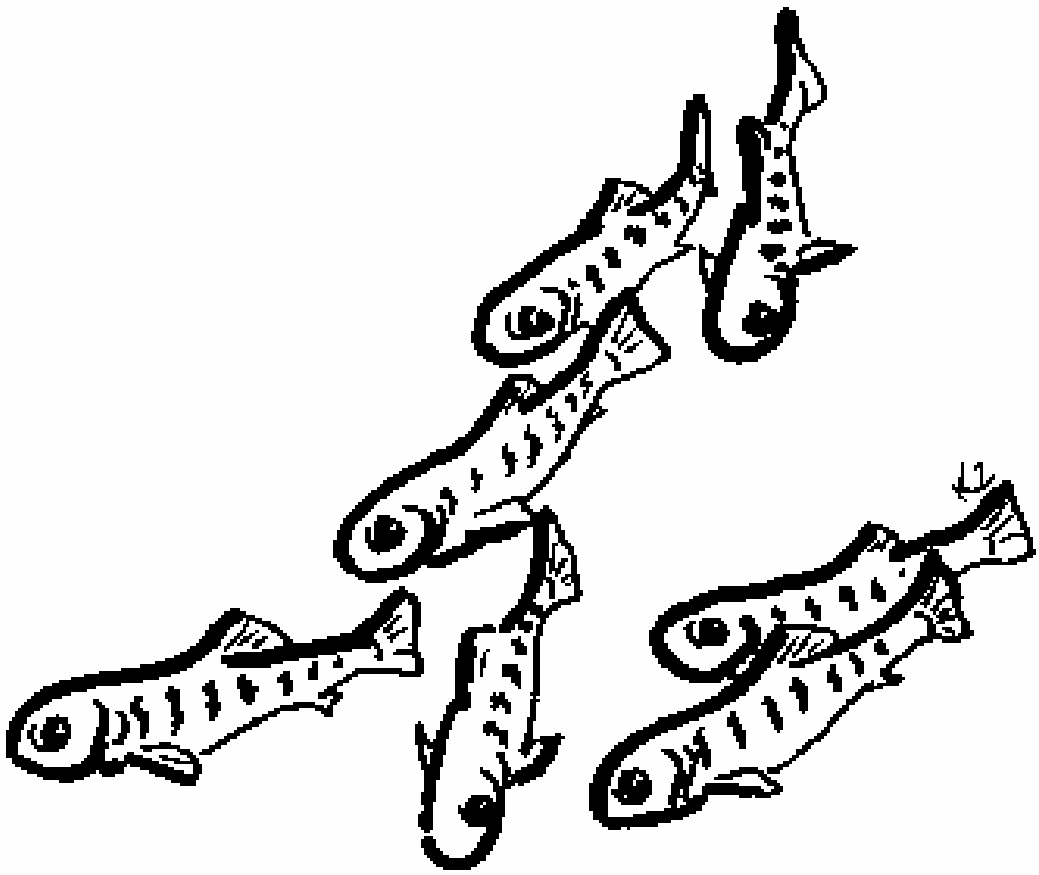
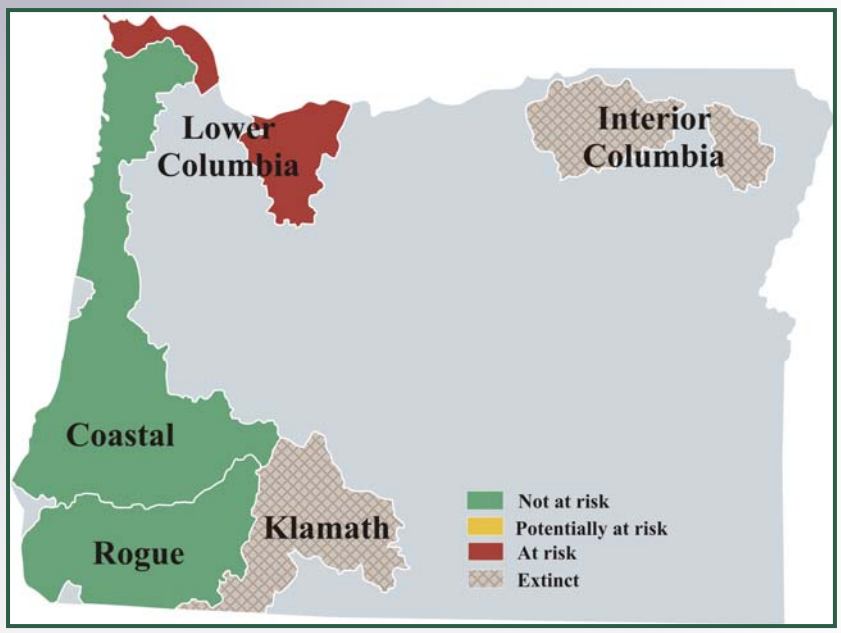


Coho



Coho salmon are widespread in small, low gradient streams of the coast and lower Columbia. They enter freshwater and spawn after fall rains raise river levels, typically from September through December. Coho smolts migrate seaward on spring freshets after one year of freshwater rearing. Virtually all adults return at three years of age with sizes averaging 5-10 pounds. A small percentage of males return one year earlier as jacks. Oregon coho generally range along the Oregon coast where survival is closely related to upwelling of cool, nutrient-rich waters. Five coho SMUs include a total of 34 historical populations. Interior Columbia and Klamath populations are extinct. Low numbers, low productivity, and large hatchery influence place the lower Columbia coho SMU at risk. Coastal and Rogue coho have recently rebounded from critical low numbers to the point where their near term sustainability is not at risk.

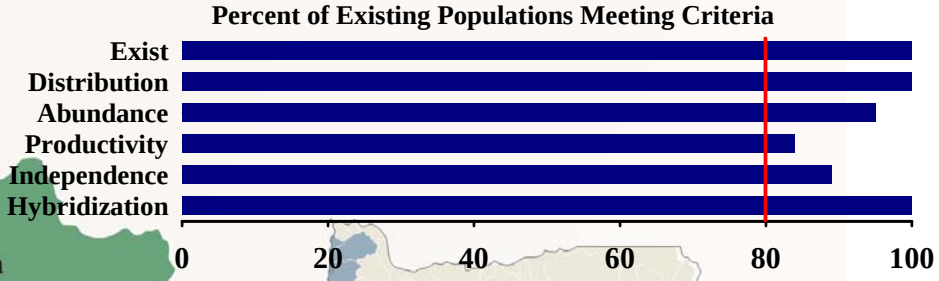
Coastal Coho SMU

ESA Designation:	State Status:	Interim Assessment:
Proposed Threatened 2004	*Critical*	*Not at Risk*

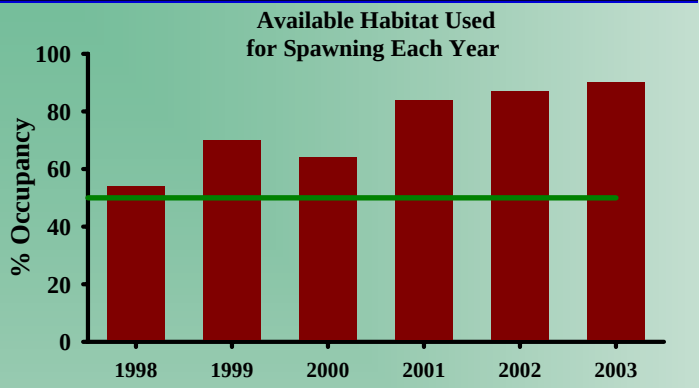
This SMU includes 19 populations in ocean tributaries from the Necanicum to the Sixes rivers that were assessed. All of the six interim criteria were met by at least 80% of the populations. Until recently, escapements have been at or near record lows. However, numbers, distributions, and productivity have rebounded for most populations in the last four years following improved ocean productivity. These improvements have eased near-term risks, but it is not clear whether all underlying factors for the recent decline have been addressed or if this is just a temporary response to improved ocean conditions. Extensive and detailed data on populations throughout this SMU provide a high level of confidence in the assessment of interim criteria.

Population	Exist	Dist.	Abund.	Prod.	Ind.	Hybrid
Necanicum/Ecola	Pass	Pass	Pass	Pass	Pass	Pass
Nehalem	Pass	Pass	Pass	Pass	Pass	Pass
Tillamook	Pass	Pass	Pass	Pass	Pass	Pass
Nestucca	Pass	Pass	Pass	Pass	Pass	Pass
Salmon	Pass	Pass	**Fail**	**Fail**	**Fail**	Pass
Siletz	Pass	Pass	Pass	Pass	Pass	Pass
Yaquina	Pass	Pass	Pass	Pass	Pass	Pass
Beaver	Pass	Pass	Pass*	Pass	Pass	Pass
Alsea	Pass	Pass	Pass	Pass	Pass	Pass
Siuslaw	Pass	Pass	Pass	Pass	Pass	Pass
Upper Umpqua	Pass	Pass	Pass	Pass	**Fail**	Pass
Lower Umpqua	Pass	Pass	Pass	Pass	Pass	Pass
Tahkentich	Pass	Pass	Pass	Pass	Pass	Pass
Siltcoos	Pass	Pass	Pass	Pass	Pass	Pass
Tenmile	Pass	Pass	Pass	Pass	Pass	Pass
Coos	Pass	Pass	Pass	Pass	Pass	Pass
Coquille	Pass	Pass	Pass	Pass	Pass	Pass
Floras	Pass	Pass	Pass*	**Fail***	Pass	Pass
Sixes	Pass	Pass*	Pass*	**Fail***	Pass	Pass

** Inferred*

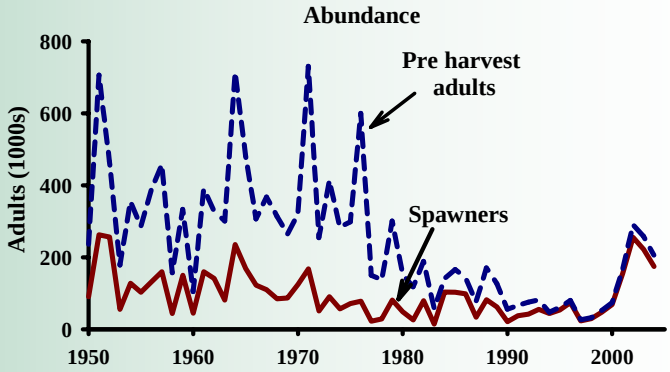


Distribution - Pass



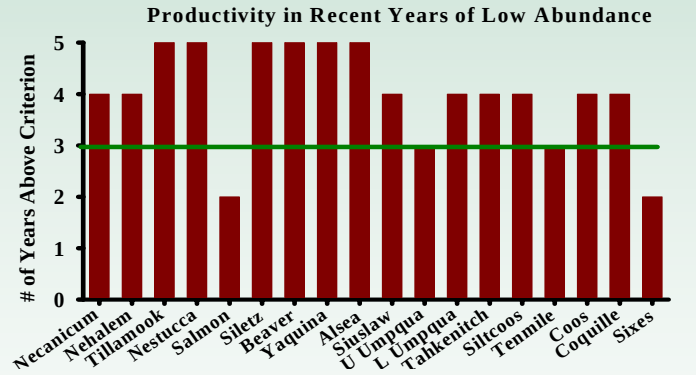
- All of the populations within the SMU passed the criterion.
- Nearly 100% of the historical habitat is still accessible today. Habitat suitability is likely below historic levels at certain stages of the coho life cycle (e.g. over-winter rearing).
- Occupancy has been greater than 50% for all years where data were available.
- Occupancy rates in the SMU have climbed each year since 1998 due to increased returns of naturally-produced fish.
- In the last three years, SMU wide occupancy has exceeded 80%.

Abundance - Pass



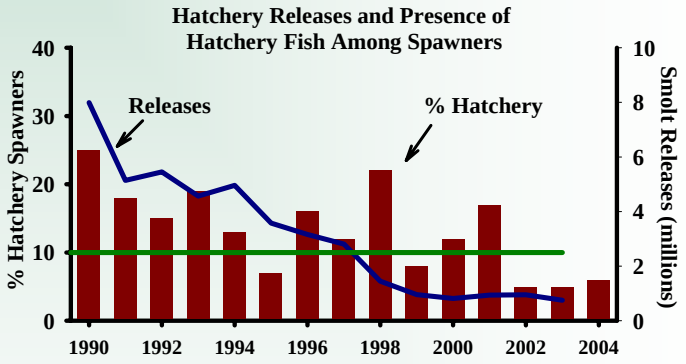
- 18 of the 19 populations passed the abundance criterion causing the SMU to pass.
- Implementation of selective fisheries for marked hatchery fish and abundance-based limits on incidental impacts have reduced ocean harvest rates of wild fish from 80% as late as the 1980s to 5-15% today.
- An extended period of poor ocean conditions dropped 1990s numbers to record low levels, despite fisheries reductions.
- Recent spawner numbers in the SMU have rebounded to 30 year highs following improvements in ocean productivity, but pre-harvest abundance remains well below historical levels.

Productivity - Pass



- 16 of 19 populations met the productivity criterion demonstrating the resiliency of the SMU.
- Productivity in the early-to-mid 1990s was at or below replacement in much of the SMU despite adult seeding well below carrying capacity.
- The median productivity for the SMU over the last five broods was 2.8 recruits per spawner.
- Annual productivity estimates for each population between 1990 and 2000 varied widely, but generally ranged between 0.3 and 3.6 recruits per spawner.

Independence - Pass

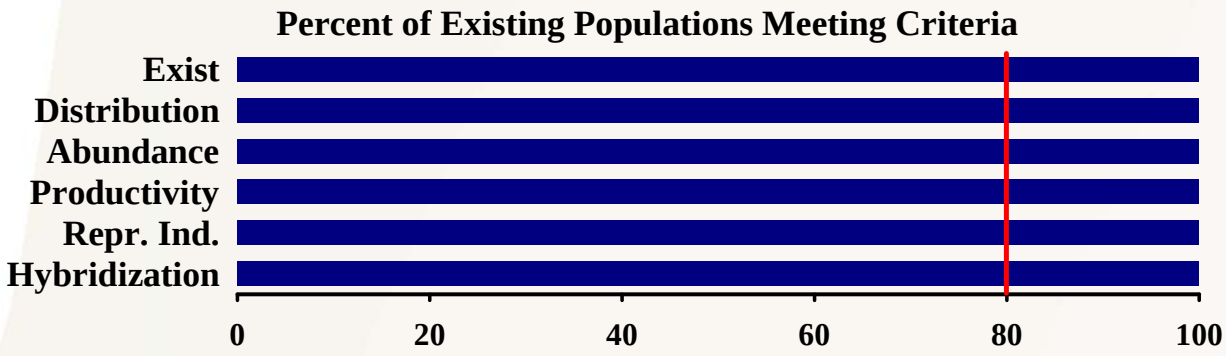


- 17 of 19 populations assessed passed the criterion. Only the Salmon and Upper Umpqua populations failed.
- The graph above represents the coast-wide aggregate. Reductions in smolt releases have reduced stray hatchery spawners throughout the SMU.
- Releases of coho smolts into coastal basins have been reduced from eight million per year in the 1990s to one million per year in the early 2000s.
- In 1990, hatchery fish made up 25% of the naturally spawning population within the SMU. By 2002, that level had been reduced to 5%.

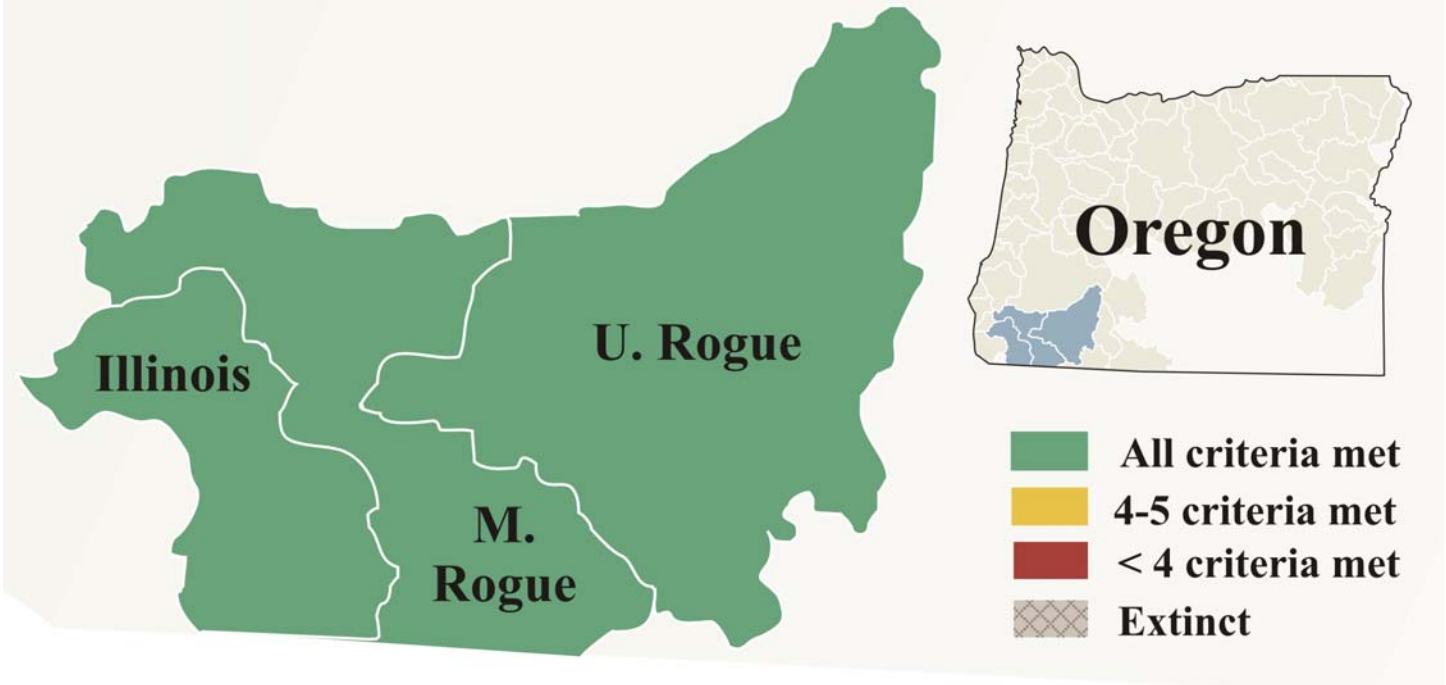
Rogue Coho SMU

ESA Designation:	State Status:	Interim Assessment:
Threatened 1997	*Critical*	*Not at Risk*

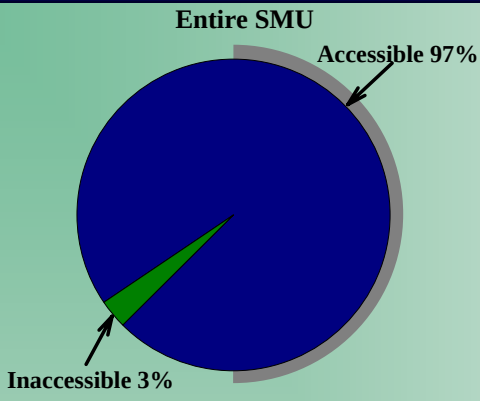
The SMU consists of three populations within the Rogue Basin. This SMU met all six of the interim criteria meaning the near-term sustainability is not at risk. Data from annual seining surveys near Huntley Park were used to assess the abundance and productivity criterion in aggregate for the SMU. Spawning ground observations were used to assess the reproductive independence criterion. 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
Illinois	Pass	Pass*	Pass	Pass	Pass	Pass
Middle Rogue	Pass	Pass*	Pass	Pass	Pass	Pass
Upper Rogue	Pass	Pass*	Pass	Pass	Pass	Pass

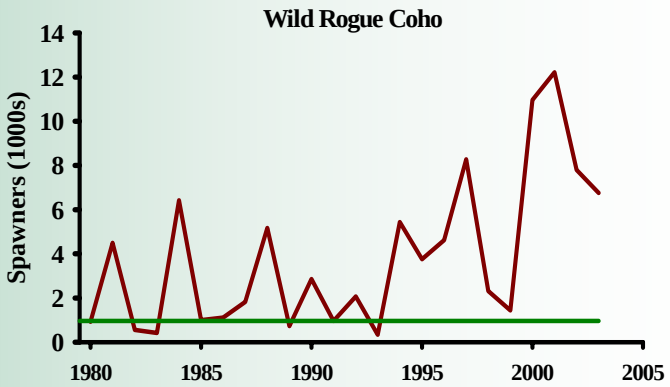


Distribution – Pass



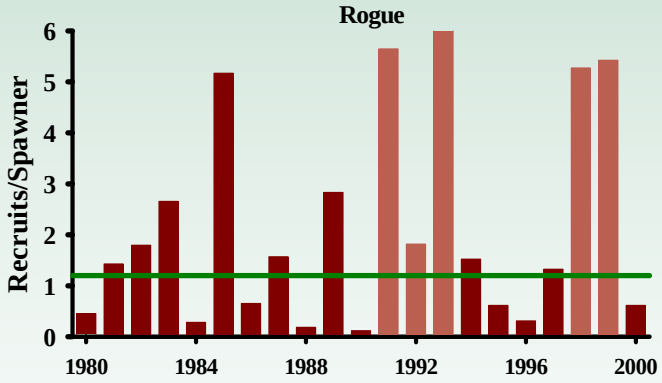
- Each of the populations within the Rogue passed the distribution criterion.
- 97% of historical coho habitat remains accessible.
- Lost Creek Dam, built in 1977, blocked access to 12 miles of historical coho habitat in the upper Rogue River. Applegate Dam eliminated 19 miles of habitat in the Middle Rogue. Over 900 miles of coho habitat remain accessible in the SMU.

Abundance – Pass



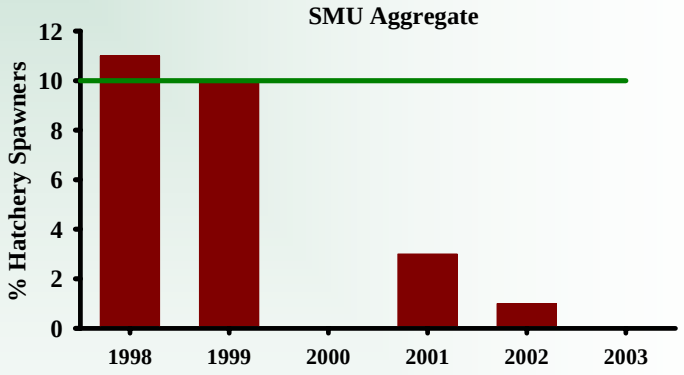
- The abundance criterion was exceeded in each of the past five years based on aggregate Rogue River data.
- All of the populations were assessed as one based on Huntley Park mark-recapture estimates adjusted for upstream harvest.
- Wild returns to the Rogue in the last four years are among the greatest in the 20 years of estimates.

Productivity – Pass



- Aggregate productivity exceeded 1.2 recruits per spawner in each of the last five broods.
- Productivity has been greater than 1.2 recruits per spawner in 13 of the last 21 broods. Recruits per spawner often exceeded 2.0.

Independence - Pass

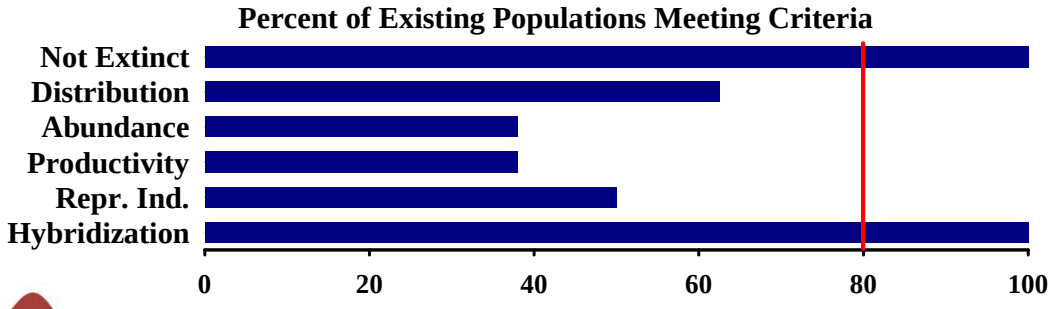


- Each population passed this criterion in at least four of the last five years based on observed ratios of hatchery and wild fish during standard random spawning surveys.
- Observed hatchery fractions on spawning grounds are consistent with independent population estimates via run reconstruction.

Lower Columbia Coho SMU

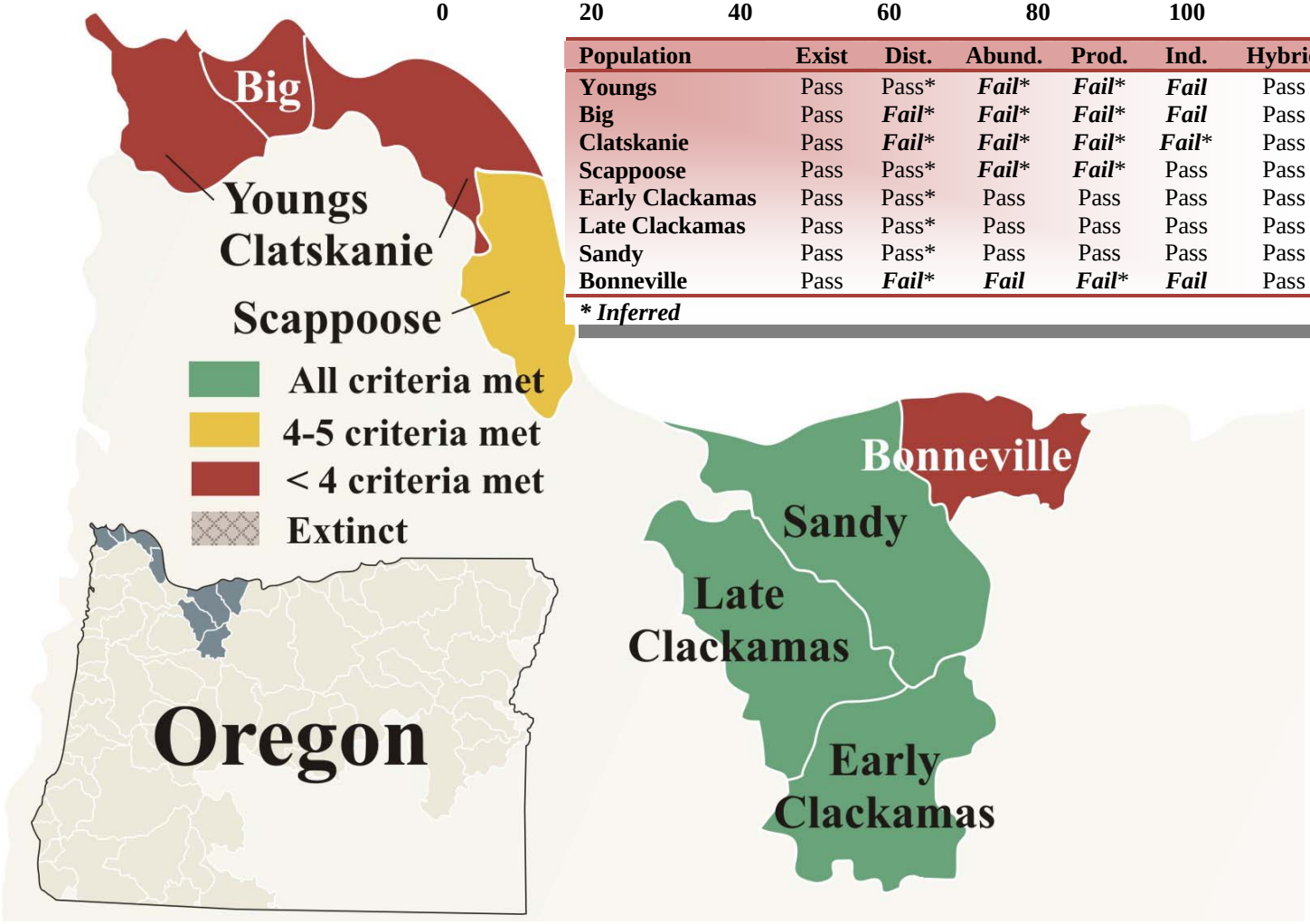
ESA Designation:	State Status:	Interim Assessment:
Threatened 2004	*Endangered*	*At Risk*

This SMU includes eight populations in tributaries from the Columbia River mouth to Fifteenmile Creek upstream of Hood River. Both early and late-run Clackamas coho are also included in this SMU. None of the populations are officially designated as extinct, though several populations are severely depressed and current returns may primarily be offspring of naturally spawning hatchery fish. The SMU failed four of the six criteria so its near-term sustainability is 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.

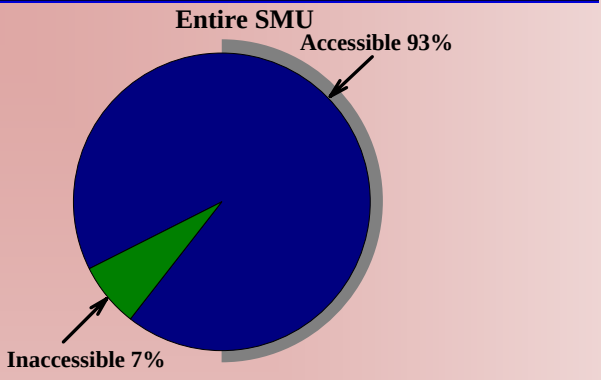


Population	Exist	Dist.	Abund.	Prod.	Ind.	Hybrid
Youngs	Pass	Pass*	***Fail****	***Fail****	***Fail***	Pass
Big	Pass	***Fail****	***Fail****	***Fail****	***Fail***	Pass
Clatskanie	Pass	***Fail****	***Fail****	***Fail****	***Fail****	Pass
Scappoose	Pass	Pass*	***Fail****	***Fail****	Pass	Pass
Early Clackamas	Pass	Pass*	Pass	Pass	Pass	Pass
Late Clackamas	Pass	Pass*	Pass	Pass	Pass	Pass
Sandy	Pass	Pass*	Pass	Pass	Pass	Pass
Bonneville	Pass	***Fail****	***Fail***	***Fail****	***Fail***	Pass

**** Inferred***

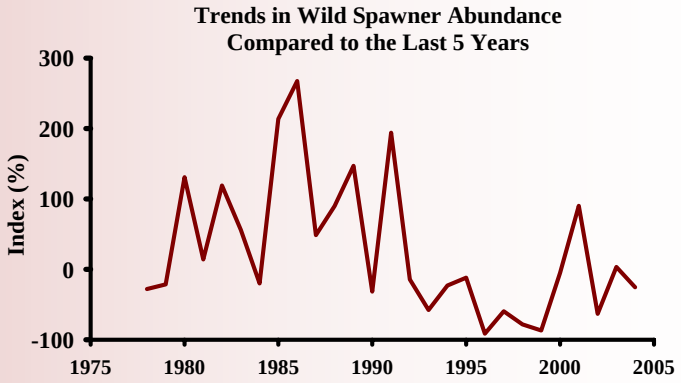


Distribution - Fail



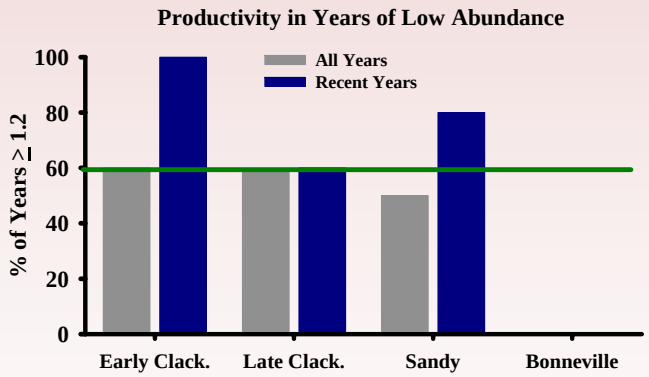
- Five of eight populations passed this criterion.
- The Sandy population has lost the most habitat (19%).
- Beginning in 2000, naturally produced coho were allowed access to habitat above hatchery barriers in Youngs River and Big Creek basins. A hatchery barrier on Gnat Creek (Big) blocks access to four miles of habitat.
- Given the small size of populations in Big, Clatskanie, and Bonneville, it is unlikely that wild spawners are distributing themselves throughout the available habitat in these populations.

Abundance - Fail



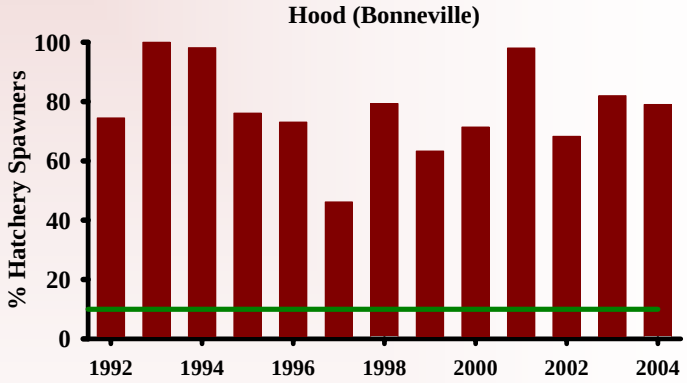
- Only three of eight populations passed this criterion.
- The graph above is an index of returns to the Clackamas (early and late run) and Sandy and reflects relative changes in abundance in those populations. Returns among those populations have declined from levels in the 1980s, but are higher than the depressed returns of the late 1990s.
- Though some spawners have been seen in populations downstream of the Willamette River the past few years, no fish were observed in index reaches for several years in the 1990s.
- Returns to the Hood River (Bonneville population) are consistently low and are primarily hatchery strays.

Productivity – Fail



- Three of eight populations met the criterion.
- Productivity in Youngs, Big, and Clatskanie was assumed to be low because abundance is low and hatchery fractions are high. Data were inconclusive in the Scappoose resulting in a treatment as a criterion failure.
- Clackamas late-run productivity has varied between 0.1 and 14.3 since 1992. Recruits per spawner in the Sandy have exceeded 1.2 for nine of 22 broods since 1978.
- Productivity of the Clackamas early-run population has generally been low over the last three generations, but has been above the interim criterion in recent years.

Independence - Fail

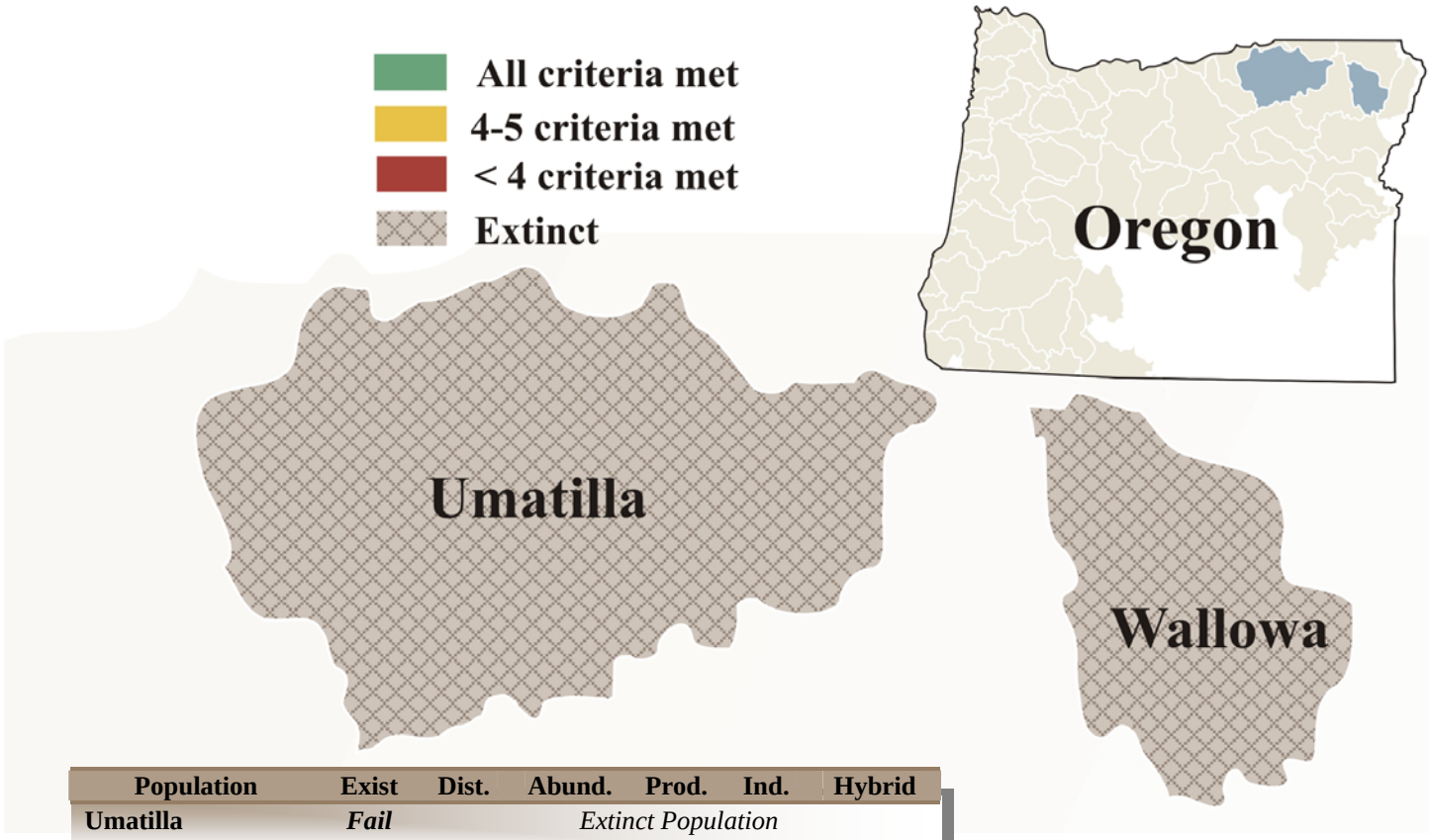


- Four of eight populations passed this criterion.
- Hatchery fish dominate returns to the Youngs River and Big Creek, but are less frequent in the Clatskanie and Scappoose. The Scappoose passed the criterion, but the Clatskanie did not.
- Few hatchery fish return to North Fork Dam (Clackamas) or Marmot Dam (Sandy) and current practices allow hatchery fish to be identified and prevented from passing upstream.
- No coho hatchery fish releases are made in the Hood, but hatchery fish make up more than 50% of annual returns.

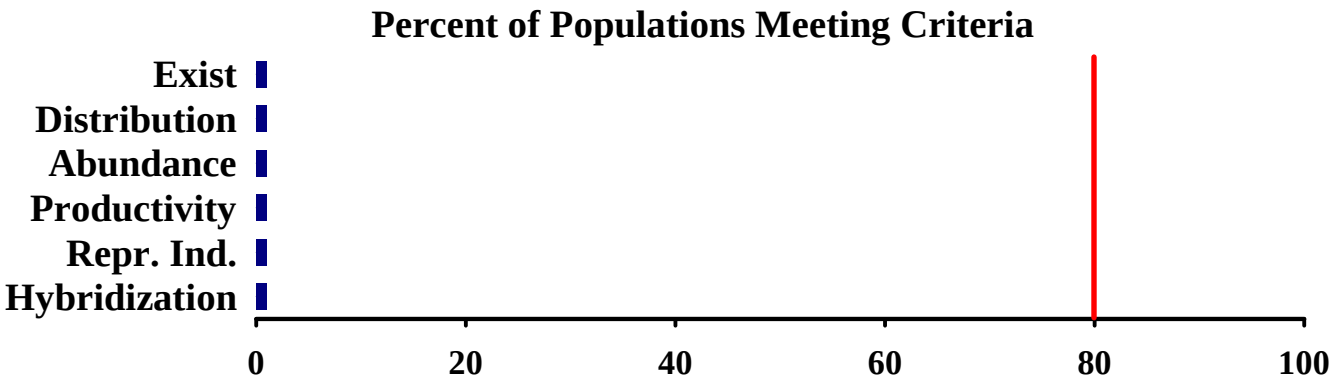
Columbia Interior Coho SMU

ESA Designation:	State Status:	Interim Assessment:
No Designation	*No Status*	*Extinct*

Both of the populations (Umatilla and Wallowa) within this SMU are extinct as a result of extensive water use, habitat degradation, and mainstem dam passage problems. It is believed that coho were eliminated from the Umatilla shortly after the construction of Three Mile Dam in 1914. Coho were virtually eliminated from the Wallowa by a 14 foot dam at river mile 3.0 in place between 1907 and 1924. Spawners were occasionally observed in the basin as late as the 1970s, but none have been seen since then.



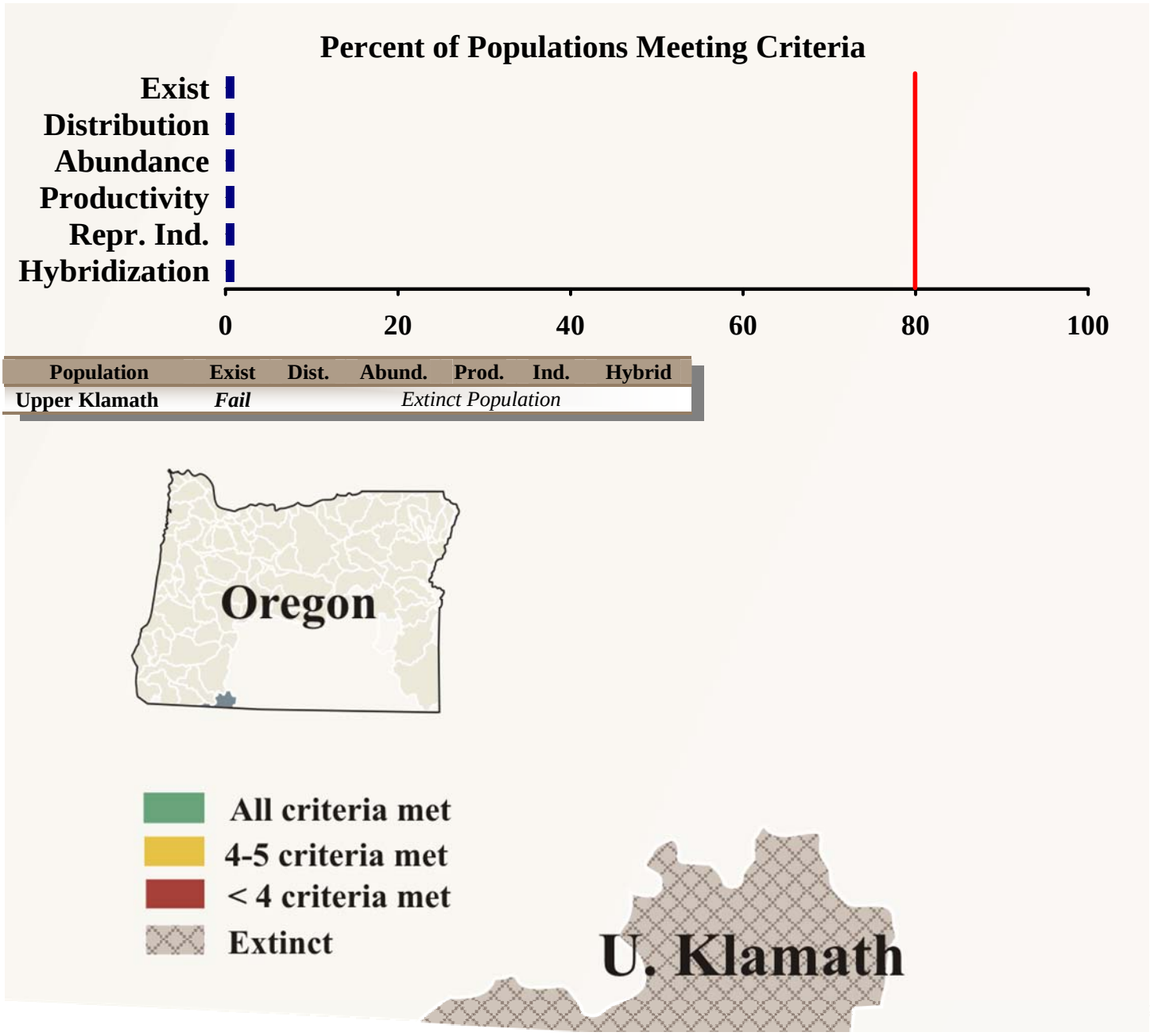
Population	Exist	Dist.	Abund.	Prod.	Ind.	Hybrid
Umatilla	*Fail*		*Extinct Population*			
Wallowa	*Fail*		*Extinct Population*			



Klamath Coho SMU

ESA Designation:	State Status:	Interim Assessment:
No Designation	*No Status*	*Extinct*

This SMU historically consisted of a single population in the Klamath basin upstream of the Oregon/California border. A series of dams has extirpated coho and other anadromous salmonids in the upper Klamath, 190 miles upstream from the river mouth. Access was originally blocked in 1918 with the installation of Copco 1 Dam. In 1925, Copco 2 Dam was built just a quarter mile downstream of the original dam. Iron Gate Dam, built in 1962, eliminated another seven miles of habitat downstream of the previous two dams.



Population	Exist	Dist.	Abund.	Prod.	Ind.	Hybrid
Upper Klamath	*Fail*	*Extinct Population*				