

## NORTHEAST OREGON HATCHERY REVIEW

The Northeast Oregon Hatchery (NEOH) project is presently in Phase II of Master Plan development and had its origin in the Subbasin Planning and the Integrated System Planning processes. The Northwest Power Planning Council (NPPC), through its Columbia River Basin Fish and Wildlife Program (1987), developed measures to plan for mitigation of the losses of steelhead and salmon in the Columbia basin. A segment of that planning process is the Northeast Oregon Hatchery project which covers five subbasins; the Hood, Umatilla, Walla Walla, Grande Ronde, and Imnaha. This report covers the development of the Grande Ronde and Imnaha subbasin (Figures 1 and 2) master plans. Phase I of the master plan identified the species and numbers of fish for hatchery supplemented production (Tables 1 and 2), information gaps and uncertainties associated with the project, and established a format for the plan. Phase I planning also saw a tacit division of the project into three segments; (1) Hood River subbasin, (2) the Umatilla and Walla Walla subbasins, and (3) the Grande Ronde and Imnaha subbasins. Phase II of the Grande Ronde and Imnaha master plans should be completed late in 1991.

Phase II of the project will refine production numbers by species and size at release (Tables 1 and 2), determine the feasibility of re-introducing extinct species within the subbasins, identify water resources and hatchery facility sites, describe facility conceptual designs and cost estimates, establish inter agency management and harvest programs, identify critical uncertainties, conduct genetic resource assessments and establish monitoring and evaluation programs. Phase III of the master plan will produce a document for presentation to the NPPC for approval prior to preparation of the Environmental Impact Statements and dedication of funds for final design and the construction of facilities by Bonneville Power Administration.

Current management objectives are; (1) to rebuild runs to meet the goals outlined in the subbasin plans, (2) to provide sustainable in-subbasin tribal and sports harvests, (3) to maintain genetic character of non-supplemented wild/natural stocks, (4) if possible, to move LSRCP Imnaha production to within the Imnaha subbasin, (5) to restore natural adult seeding goals to at least 100% of maximum through supplementation and harvest management, (6) to orient hatchery fish to return to the natural environment to spawn, and (7) to monitor and evaluate releases and returns based on release sites and production methods.

Production goals (Tables 1 and 2) for the project were defined in Phase I of the master planning process. These production goals are expected to be refined to identify the needs of individual watersheds within each subbasin for each species. A feasibility study will address the potential to restore extinct species (sockeye and coho salmon). Supplementation using "presmolts" (Timed-Release Fed Fry) will be tested in habitat where seasonal climate inhibits smolt releases. Specific pathogen free waters

will be used for incubation and early rearing of fry to approximately 50 mm in length. Smolts and other juveniles will be reared at a density not to exceed 0.10 lbs/ft<sup>3</sup>/in. Genetic resources will be managed to protect the supplemented stocks native to the subbasin through a practice known as "conservation supplementation". Some stocks and watersheds may be managed as a "harvest supplementation" programs. Broodstock will be managed to provide a genetic base that represents a complete cross section of run timing and incorporates genetic diversity traits that are found in fish reproducing naturally. Smolt size at time of release will mimic that of wild/natural fish.

Table 1. Phase I Master Plan Imnaha subbasin production goals by species and production products.				
SPECIES:	ADULT RETURNS: (to mouth of river)	SMOLTS RELEASED: (15 fish/lb) (150-170 mm)	TIMED-RELEASE FED-FRY: (150 fish/lb) (60-70 mm)	BROODSTOCK SOURCE
Spring chinook	1,570	346,500 <sup>a/</sup>	230,000 (46,000) <sup>b/</sup>	Imnaha River
Fall chinook	300	120,000 <sup>c/</sup>	0	Snake River

a/ Smolt to adult survival,  $S_{sa}$  equals 0.004 (0.4%).

b/ TRFF-to-smolt survival is expected to equal 20%.

c/ "0"- Age migrants, size 40/lb, egg to fry survival goal = 0.85.

Table 2. Phase I Master Plan Grande Ronde subbasin production goals by species and production products.				
SPECIES:	ADULT RETURNS: (to mouth of river)	SMOLTS RELEASED: (15 fish/lb) (150-170 mm)	TIMED-RELEASE FED-FRY: (150 fish/lb) (60-70 mm)	BROODSTOCK SOURCE
Spring chinook	3,780	915,000 <sup>a/</sup>	150,000 (30,000) <sup>b/</sup>	Lostine River Catherine Creek
Early fall chinook	5,000	1,250,000 <sup>c/</sup>	0	Wenatchee River
Coho	d/	d/	d/	c/
Sockeye	d/	d/	d/	c/

a/ Smolt to adult survival,  $S_{sa}$  equals 0.004 (0.4 %).

b/ TRFF-to-smolt survival is expected to equal 20%.

c/ "0"- Age outmigrants, size 40/lb, egg to smolt survival goal = 0.85.

d/ Production profiles will be developed after completion of the feasibility studies.

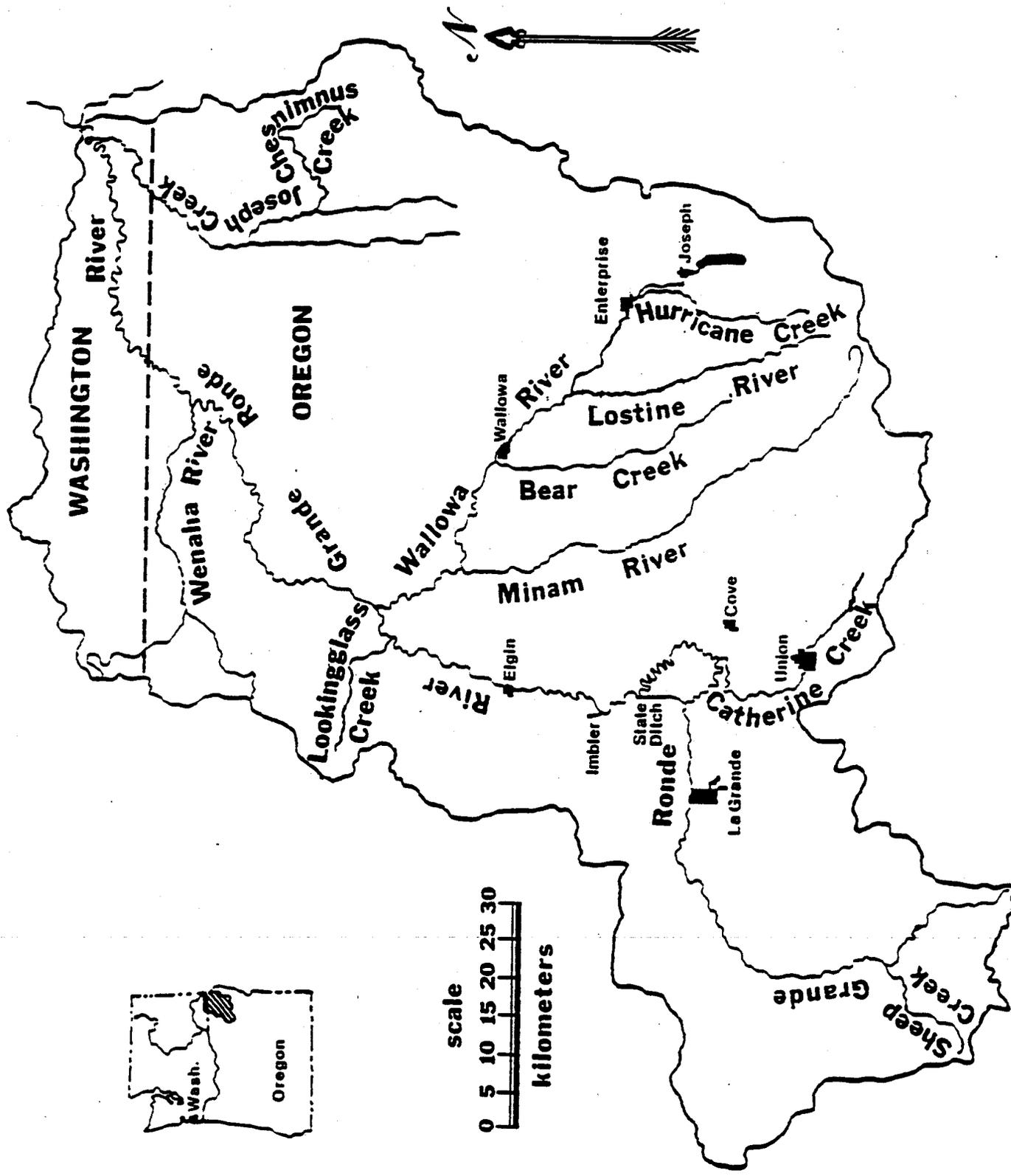


Figure 2. Grande Ronde River Subbasin

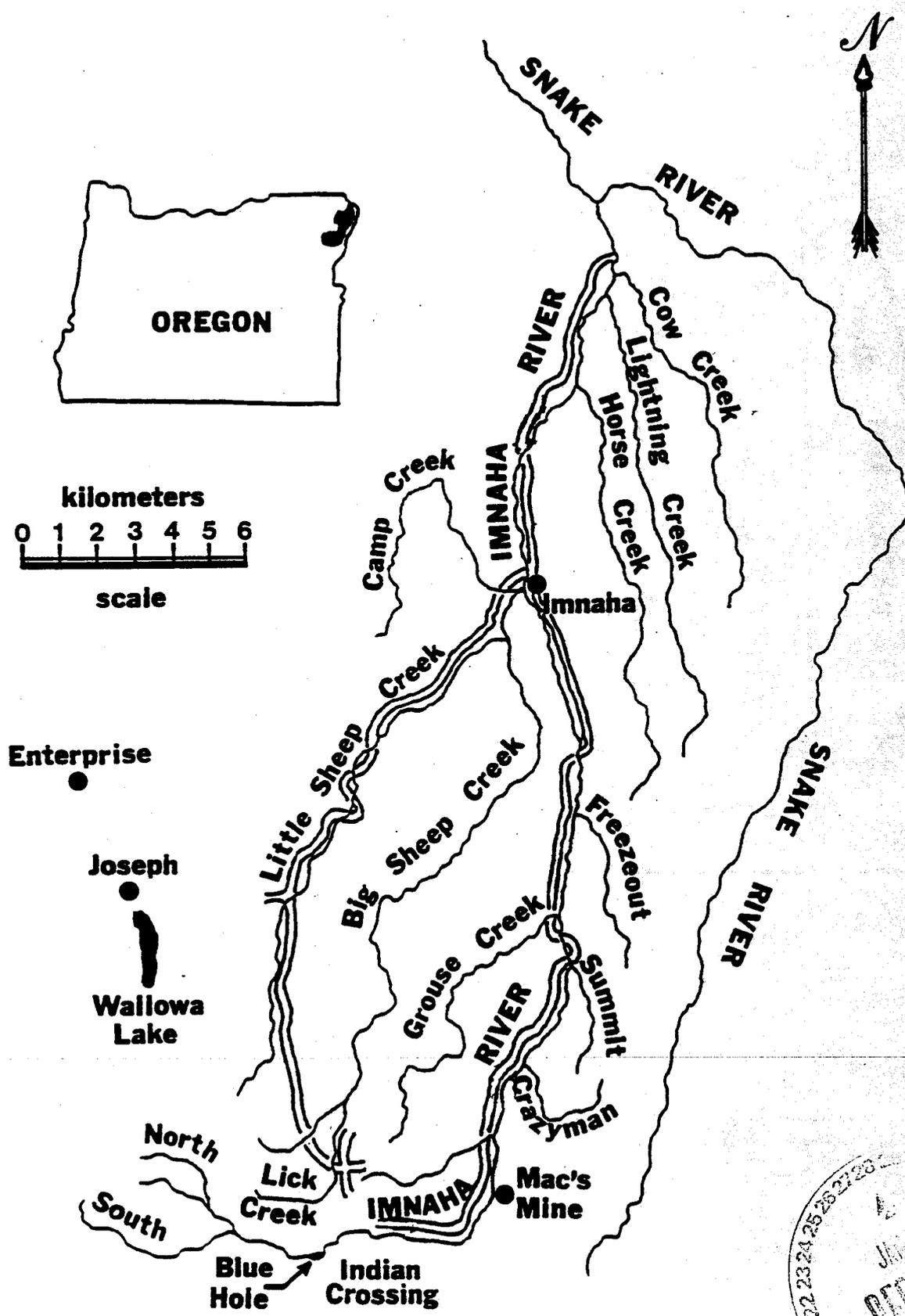


Figure 1. Imnaha River Drainage.