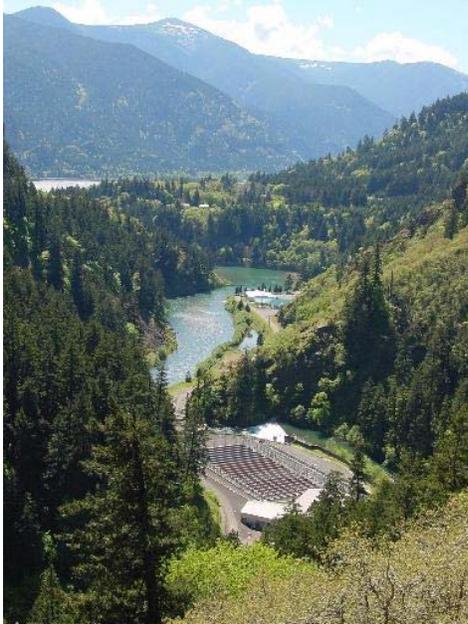


Hatchery Update

Little White Salmon National Fish Hatchery



About Little White Salmon National Fish Hatchery

The Little White Salmon National Fish Hatchery (NFH) was established in 1896 and is the oldest federal hatchery on the Columbia River. Congressional authorization was based on the intent to supplement the commercial fishing industry. The hatchery's role expanded during the 1930's with the enactment of the Mitchell Act and further amendments in 1946. The Mitchell Act was enacted to mitigate for fisheries lost due to the construction and operation of Columbia River hydroelectric projects.

The hatchery is located 12.5 miles east of Stevenson, Washington, off State Highway 14, Columbia River mile 162. The hatchery is located on 410 acres of Service land.

Rearing facilities at the Little White Salmon NFH include 9 – 8' X 79' covered raceways, 22 – 10' X 110' open raceways, and 2 – 10' X 235' open raceways. The total nursery capacity is 11.25 million eggs.

Recent events include the Little White Salmon NFH becoming the first hatchery in the Nation to receive

the U.S. Fish and Wildlife Service Environmental Leadership Award.

Hatchery Mandates

Operation of the Little White Salmon NFH assures that the U.S. Fish & Wildlife Service continues to meet mandated Treaty Trust responsibilities. The current production program is guided by specific fish production goals identified in the Columbia River Fish Management Plan (Plan). The U.S. District court Plan was developed as a result of the *U.S. v Oregon* agreement, to address Native American fishery concerns. Fish production goals include:

- 1,000,000 yearling spring Chinook salmon released on site.
- 210,000 yearling spring Chinook salmon released on the Umatilla Indian Reservation using native, locally adapted stocks.
- 2,000,000 subyearling upriver bright (URB) fall Chinook salmon released on site.
- 1,700,000 subyearling URB Fall Chinook salmon released off site on the Yakama Indian Reservation as part of mitigation for John Day Dam and to restore this stock to historic levels.

Cultural Values

The Columbia River Treaty Tribes (Yakama, Warm Springs, Nez Perce, and Umatilla) share the in-river harvest of spring Chinook, URB fall Chinook, and coho returning to the Little White Salmon NFH. Surplus fish are provided to the Yakama Nation to support the tribal nutrition program and for ceremonial use. The cultural significance of these fish to the tribes is best characterized by the following quotation:

"Salmon was presented to me and my family through our religion as our brother. The same with the deer. And our sisters are the roots and berries. And you would treat them as such. Their life to you is just as important as another person would be."

Margaret Saluskin, Yakama Nation, Columbia River Inter-Tribal Fish Commission.

Adult Escapement Goals

A minimum of 1,850 adult URB fall Chinook salmon and 1,000 spring Chinook salmon are necessary to collect enough eggs for full production as mandated.

Coded-Wire Tag Marking Program

Marking of fish using an adipose fin clip and/or coded-wire tagging technology has made it possible to determine survival rates and contribution of salmon to the various fisheries in and out of the Columbia River. At present all spring Chinook salmon are fin clipped with 75,000 being coded-wire tagged. This mass marking of spring Chinook complies with selective fisheries management practices now instituted for hatchery releases into the Columbia River.

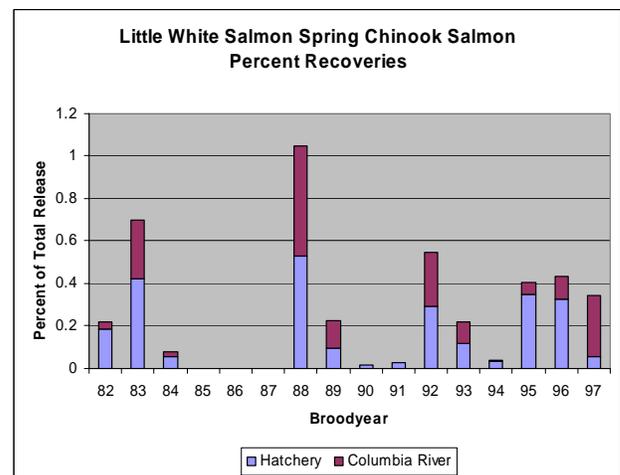
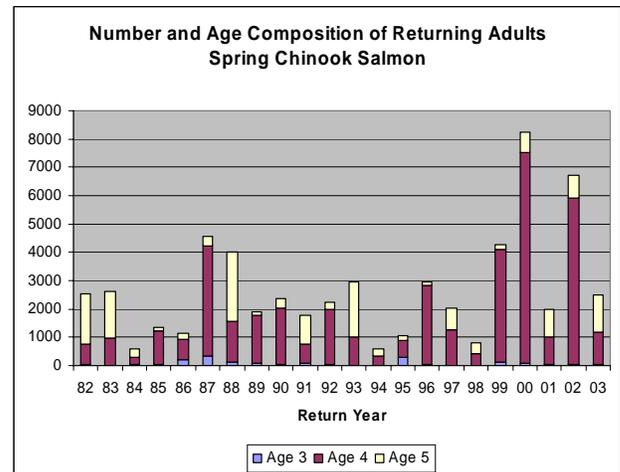
Presently 200,000 URB fall Chinook salmon are adipose fin clipped and coded-wire tagged to access survival and fisheries contribution. All other URB fall Chinook salmon are released unmarked. This will change as early as 2005 whereby all hatchery salmon, reared and released into the Columbia River, will be marked in some manner, depending on funding and equipment availability.

Sampling of Returning Fish

A proportion of returning adults are sampled at each hatchery. Sex and length are recorded and scales are collected so that age can be determined. By using sample information and the number of returning fish, it is possible to calculate the number of returning fish for each age group and, consequently, the number of fish returning from each brood year or release year.

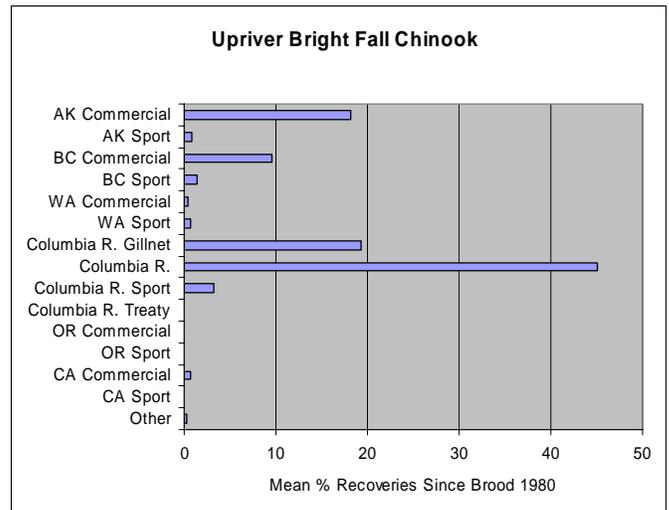
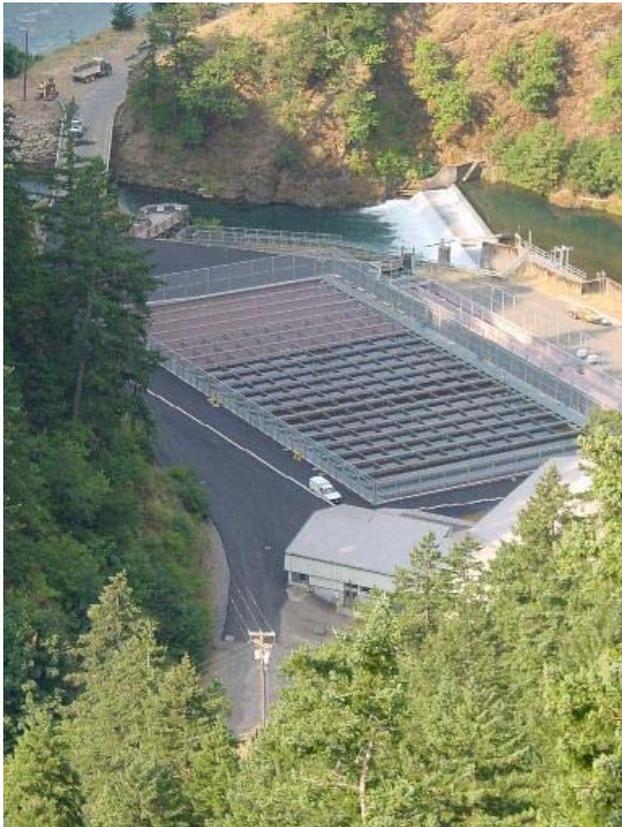
Spring Chinook Salmon

Most returning adult spring Chinook salmon return as 4 year olds. Almost all spring Chinook are harvested in fresh water in the Columbia River. The majority are harvested in the sport fishery downstream of and in Drano Lake, just below the hatchery. Some fish are harvested in the terminal tribal gillnet fishery at Drano Lake and in the mainstem Columbia River, when a commercial fishing season is allowed.



Evaluation of Raceway Baffles to Enhance the Rearing of Hatchery Fish

Baffles, or raised partitions spaced equally along the length of a hatchery raceway, increase velocities along the floor of the raceway while providing resting areas higher in the water column. This diversity in water flow simulates a more natural rearing environment and makes the raceway self-cleaning. The increased floor velocity moves solids generated by fish to the tail end of the raceway allowing easy removal during cleaning. A study is being conducted to evaluate the performance of fish reared in baffled raceways to a group reared in conventional, unbaffled raceways. Growth rates and fish health are being closely monitored in each group. In addition, both study groups contain 75,000 coded wire tagged fish that will allow biologists to determine if use of raceway baffles during hatchery rearing has an effect on adult fish return rates in subsequent years.

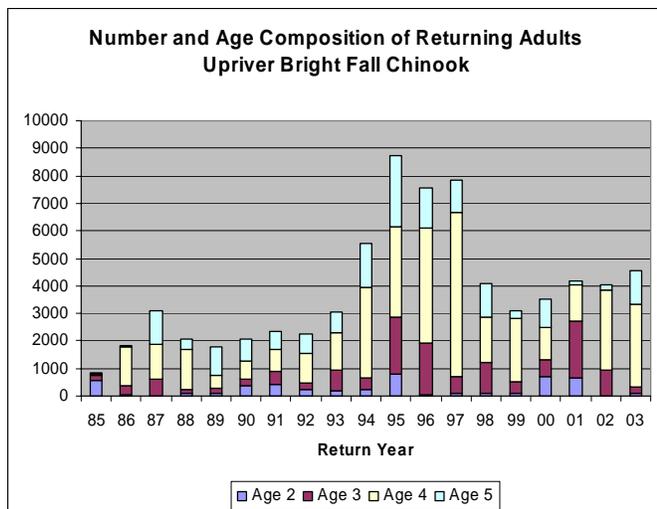


Upriver Bright Fall Chinook

Most URB fall Chinook salmon return and are harvested at age 4. These fish have contributed to commercial and sport fisheries along the west coast of the U.S. and Canada from Alaska to California. Commercial fisheries in Alaska, British Columbia and gillnet fisheries in the Columbia River harvest the majority of the fish. These fish also contribute significantly to the sport fisheries in the U.S. and Canada.

Assessment to Determine the Effect of Current and Alternate Ladder Operations of Brood Stock Collection and Behavior of Hatchery Fish

In most years more fish return to the hatchery than are needed for brood stock. The hatchery ladder is operated until maximum densities in the holding ponds are achieved. If this occurs, the ladder is closed until excess fish are randomly removed from the ponds or fish are removed during spawning. The ladder is then reopened to continue collecting adults from the full spectrum of the run. Excess fish collected in ponds, not distributed to tribal nutrition programs or spawned, are returned to the stream via a newly constructed river return tube and allowed to spawn naturally, promote stream nutrients, and to support local populations of wildlife. Radio tagging and tracking these excess fish following ladder closures would provide additional information on final destination of carcasses and would help in assessing ecological impacts of hatchery operations. This study will begin during fall 2004 using the hatchery upriver bright stock of fall Chinook.



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