



Hatchery Update

Spring Creek National Fish Hatchery



Introduction

The U.S. Fish and Wildlife Service (USFWS) operates 9 National Fish Hatcheries (NFH), two Fish Health Centers, and one Fish Technology Center in the Columbia River basin. The Columbia River Fisheries Program Office (CRFPO) works with 6 of these facilities to help evaluate release programs and conduct special studies. The CRFPO maintains the Service's hatchery database as well.

About Spring Creek NFH

The hatchery is located on the Columbia River in Underwood, Washington, 167 river miles from the ocean. Spring Creek has raised tule fall Chinook salmon since 1901 from stock collected in the White Salmon River, located less than one mile from the hatchery. The hatchery is funded by the U.S. Army Corps of Engineers (USACE) and the Mitchell Act, which is administered by the National Oceanic and Atmospheric Administration (NOAA) - Fisheries Division.

Hatchery Goal

Spring Creek NFH was first established to supplement commercial fisheries harvest. Today the USFWS operates this hatchery to mitigate for lost habitat, provide for commercial and sport harvest, meet tribal treaty and trust responsibilities, and to

conserve this unique stock of salmon for future reintroduction to its native habitat. One of Spring Creek's most important goals is to maintain the genetic integrity of this stock to ensure that it will remain unique among all other populations of tule fall Chinook, maximizing the potential for successful reintroduction efforts.

The hatchery produces 10.5 million tule fall Chinook for release during two different time periods. A total of 6.5 million fish are released during April followed by a 4.0 million fish release in May. Both releases are timed to take advantage of spill that annually occurs at Bonneville Dam to benefit fish stocks listed under the Endangered Species Act. This assures that water is spilled through the dam to move migrating fish safely past the dam's hydropower turbines. Spring Creek fish migrate rapidly and the first fish pass Bonneville Dam in just a few hours after release. The hatchery also transfers 3.0 million eyed eggs to the Bonneville Hatchery and 1.7 million juvenile fish to Little White Salmon NFH to boost the number of returning adult fish available for harvest.

Adult Escapement Goal

A return of 7,000 adult salmon is necessary to achieve the collection goal of 19 million eggs to meet an on-station release of 10.5 million smolts and transfers of 1.7 million juveniles to Little White Salmon NFH and 3 million eggs to Bonneville Hatchery, operated by Oregon Department of Fish and Wildlife.

Sampling of Returning Fish

A proportion of returning adults are sampled at the hatchery. Sex and length are recorded and scales are collected to determine age. 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. On average, since 1981, 13% of Spring Creek's adults return as two year olds, 66% return as three year olds, 20% are four years old, and less than 1% return as five year olds. In 2010, 50,135 adults returned to the hatchery, almost double the number of the 2009 return.

The number of fish returning from a hatchery release is influenced by early rearing at the hatchery, downstream migration, ocean conditions, and the harvest rate in the various fisheries.

Contribution

A coded-wire tag marking program has made it possible to determine survival rates and Spring Creek NFH's contribution to commercial, sport and tribal fisheries. For broodyear 2004, 72% of the adult recoveries were from ocean or Columbia River fisheries. Less than one percent of the total release was recovered. Spring Creek tule fall Chinook serve as an index stock for estimating ocean exploitation rates for the Pacific Salmon Commission's treaty between Canada and the United States.

Information recovered from the tules marked each year with coded wire tags provides harvest managers with information about the condition of the tules and other stocks of salmon that migrate in the same area of the Pacific Ocean.

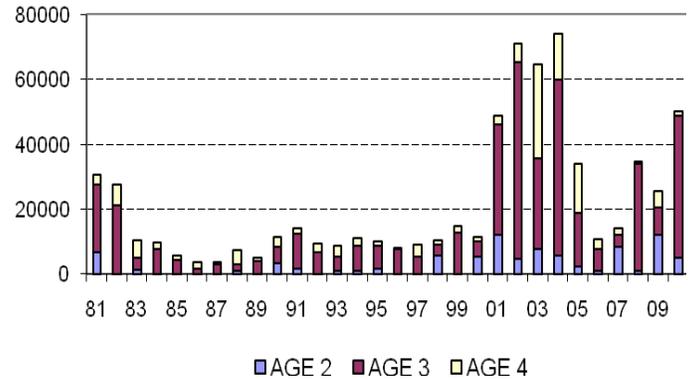
ARRA (American Recovery and Reinvestment Act)

The hatchery received funding under the American Recovery and Reinvestment Act, ARRA, for two projects that were completed in 2010.

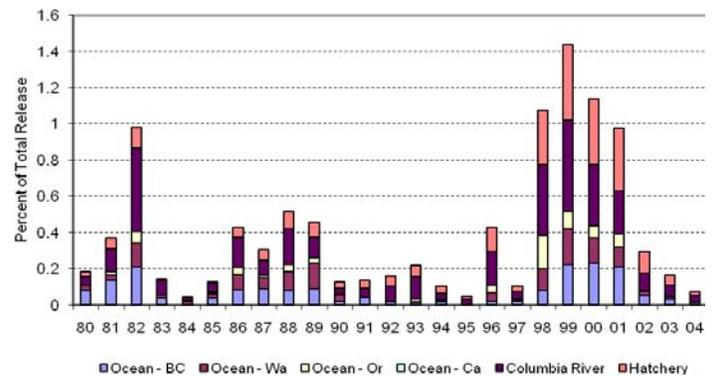
The first project is replacing all the pumps utilized in the biological reuse system. These fourteen pumps were replaced with more efficient units that include variable speed drives to provide energy cost savings and improve water management capabilities. The electrical portion of the pumping system was upgraded to improve the reliability of transfer to emergency power when commercial power is lost.

The second project restored riparian habitat along upper reaches of Rattlesnake Creek, Castle Springs Area. Funding was provided to the Underwood Conservation District through a cooperative agreement to implement this project. This project will help to improve water quality, reduce stream bank erosion, and increase storm flow holding capacity to promote higher summer flows that would result in lower summer water temperatures. Rattlesnake Creek is a primary tributary to the White Salmon River and will provide important spawning and early life stage rearing habitat for salmonid species once Condit Dam is removed.

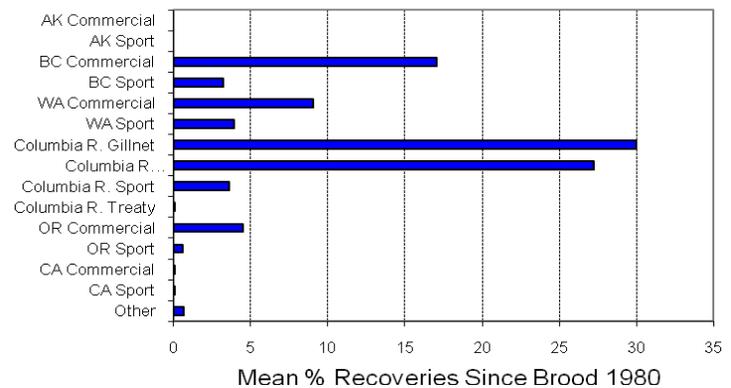
Number and Age Composition of Returning Adults



Spring Creek Tule Fall Chinook Salmon Percent Survival



Tule Fall Chinook Salmon



Visitor Facilities

The hatchery public use facilities were enhanced this year with the remodel of the visitor center and installation of over a mile of new asphalt paving

along the hatchery entrance road. Visitors now have a smooth ride into the hatchery and are welcomed by new state-of-the-art interpretive displays located in the visitor center. A pedestrian walkway included in the new asphalt project is a welcome addition to hikers, cyclers and runners. In addition, the planned interpretive trail project leading from the entrance road through the forested banks of the Columbia River will provide additional hiking opportunities for visitors. Planned for construction during 2011, the new interpretive trail will offer informational exhibits and highlight the unique riparian area Oregon white oak habitat characteristic of the Columbia River Gorge.



Entrance to Spring Creek NFH



A video capture of a migrating tule fall Chinook salmon in the White Salmon River during 2009.

Condit Dam on the White Salmon River

The White Salmon River is located 0.5 miles from Spring Creek National Fish Hatchery. Condit Dam, a barrier to fish passage, is located 3.3 miles upstream in the White Salmon River and is scheduled for removal by PacifiCorp as part of a settlement agreement. With the scheduled removal of Condit Dam in 2011, nearly 16 miles of spawning habitat will become available for Chinook, steelhead and other salmon species. The Service has been working with co-managers and fisheries agencies to develop restoration strategies for species that historically utilized the White Salmon River.

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