



Hatchery Update

Spring Creek National Fish Hatchery



Introduction

The U.S. Fish and Wildlife Service (USFWS) operates 9 National Fish Hatcheries (NFH), one Fish Health Center, 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. These fish are native to 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.

Reprogramming of Spring Creek NFH

Historical production at Spring Creek NFH was to release 15.1 million fish annually in March (7.5 million), April (4.3 million) and May (3.3 million), but has changed to releasing 10.5 million fish with the implementation of Spring Creek Reprogramming.

In October 2008, a Memorandum of Agreement was signed by the Service, Bonneville Power Administration, U.S. Army Corps of Engineers, and the National Marine Fisheries Service to implement changes in fish production at Federally-funded mitigation hatcheries in the Columbia River Gorge. The Agreement eliminated the need to request spill



at Bonneville Dam for fish passage for the March release from Spring Creek NFH. The three year Agreement, 2009-2011, moves a portion of

Spring Creek NFH production to Bonneville Hatchery and moves additional production of upriver bright fall Chinook salmon above Bonneville Dam. Spring Creek NFH now releases 6.0 million sub-yearling tule fall Chinook salmon during April and 4.5 million fall Chinook in May. Additionally, the hatchery transferred 1.7 million tule fall Chinook salmon in March to Little White Salmon NFH for acclimation and release and 3 million tule fall Chinook salmon eggs to Bonneville Hatchery, operated by Oregon Department of Fish and Wildlife, for eventual release below Bonneville Dam.

Adult Escapement Goal

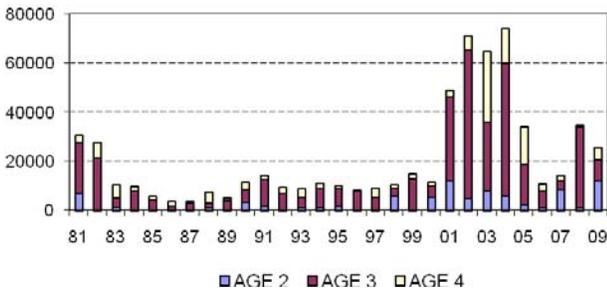
A return of 7,000 adult salmon is necessary to achieve the collection goal of 19 million eggs to meet an on-station release of 10.5 million smolts and transfers of 1.7 million juveniles to Little White Salmon NFH and 3 million eggs to Bonneville Hatchery, operated by Oregon Department of Fish and Wildlife.

Sampling of Returning Fish

A proportion of returning adults are sampled at the hatchery. Sex and length are recorded and scales are collected 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. On average, since 1981, 14% of Spring Creek's adults return as two year olds, 64% return as three year olds, 21% are four years old, and less than 1% return as five year olds. In 2009, over 25,687 adults returned to the hatchery.

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.

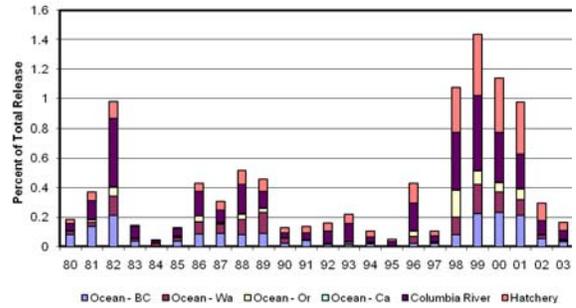
Number and Age Composition of Returning Adults



Contribution

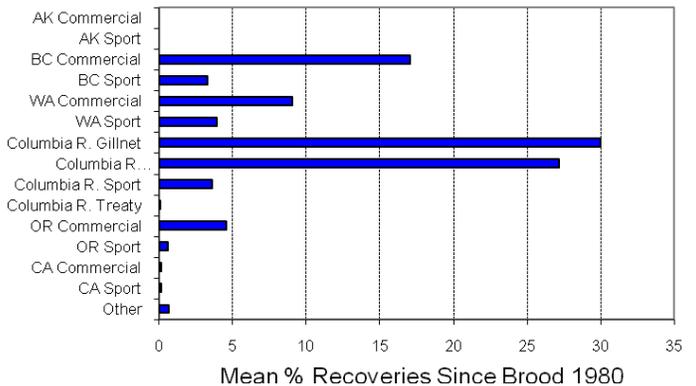
A coded-wire tag marking program has made it possible to determine survival rates and Spring Creek NFH's contribution to commercial, sport and tribal fisheries. For broodyear 2003, 66% of the adult recoveries were from ocean or Columbia River fisheries. Spring Creek tule fall Chinook serve as an index stock for estimating ocean exploitation rates for the Pacific Salmon Commission's treaty between Canada and the United States.

Spring Creek Tule Fall Chinook Salmon
Percent Survival



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.

Tule Fall Chinook Salmon



ARRA (American Recovery and Reinvestment Act)

The hatchery received funding under the American Recovery and Reinvestment Act, ARRA, for two projects in 2009 with expected completion dates in 2010.

The first project is replacing all the pumps utilized in the biological reuse system. These fourteen pumps will be 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 will be upgraded to improve the reliability of transfer to emergency power when commercial power is lost.

The second project is to restore 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. Expectations are to improve water quality, reduce stream bank erosion, 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.

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 2010, 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. This has been in addition to juvenile salmon population estimation and genetic projects coordinated by the Service with the U.S. Geological Survey-Biological Resources Division and Abernathy Fish Technology Center.

Outlook for the Future

Spring Creek NFH will continue meet its mitigation goals while looking to participate in restoration programs on the White Salmon River once Condit Dam is removed by utilizing it's substation located within that watershed.

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