

Hatchery Update

Spring Creek National Fish Hatchery



Introduction

The U.S. Fish and Wildlife Service (USFWS) operates 12 National Fish Hatcheries (NFH) 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 National Fish Hatchery

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. The hatchery is funded by the U.S. Army Corps of Engineers and the Mitchell Act, which is administered by the National Marine Fisheries Service.

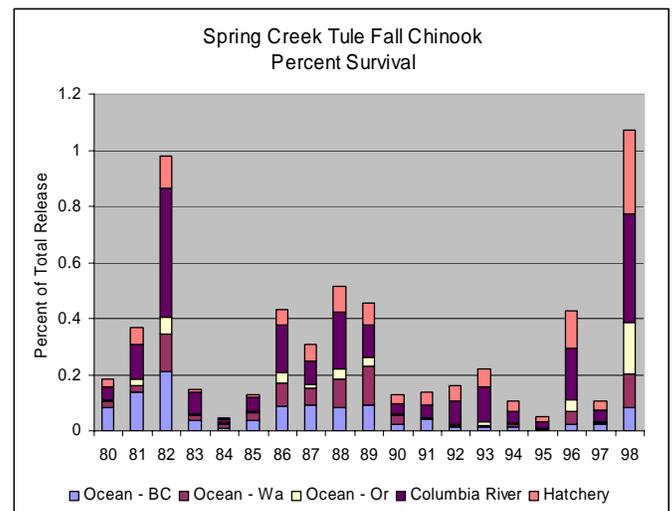
Spring Creek NFH has the capacity to incubate 60 million eggs and rear 15 to 16 million smolts in 44 rearing ponds. Subyearling fish are released during March, April, and May.

Adult Escapement Goal

A return of 7,000 (4,000 females) adult salmon is needed to collect enough eggs for production of 15.3 million fish.

Hatchery Goal

Spring Creek NFH was first established to supplement the commercial 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.

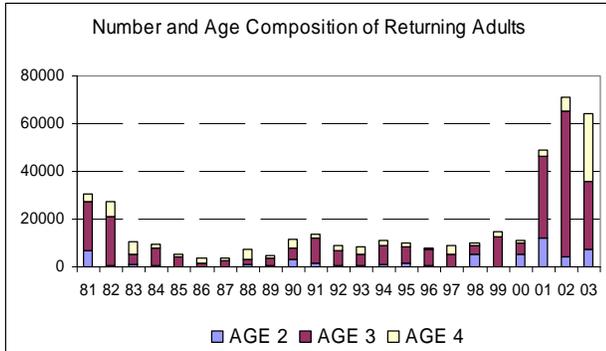


Sampling of Returning Fish

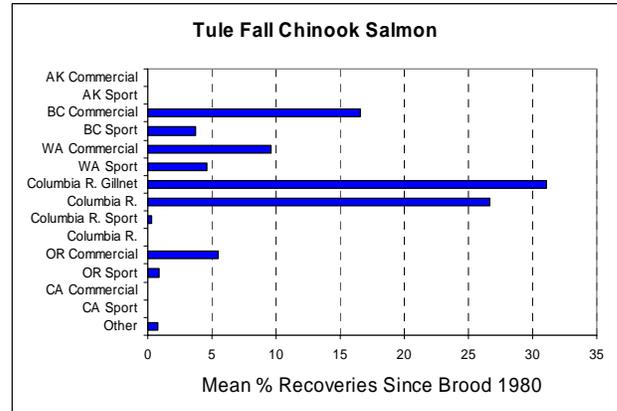
A proportion of returning adults are sampled at each hatchery. Sex and length are recorded and scales are collected so that age can be determined. By using sample information and the number of returning fish, it is possible to calculate the number of returning fish for each age group and, consequently, the number of fish returning from each brood year or release year. On average, since 1981, 13% of Spring Creek's adults return as two year olds, 65% return as three year olds, 21% are four years old, and less than 1% return as five year

olds. In 2003, almost 65,000 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.



in the river have on other fish populations. The study involves tagging adults prior to entering the hatchery with either radio tags or Peterson disc tags, allowing biologists to determine what happens to these fish when the ladder is closed and impacts to broodstock collection.



Contribution

The coded-wire tag marking program has made it possible to determine survival rates and contribution to fisheries. About 75% of the adult recoveries are from ocean or Columbia River fisheries. Spring Creek tulle 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 450,000 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.

Ladder Pulsing Project

Spring Creek National Fish Hatchery will be evaluating the effects of ladder pulsing, shutting the fish ladder off periodically, to control the number of adult tulle fall Chinook entering the hatchery this fall. In recent years, the number of adults returning to Spring Creek has averaged over 60,000 fish, far exceeding the 7,000 adults required to meet broodstock needs. Ladder pulsing would leave more fish in the river for recreational and tribal fisheries and provide management options during large return years. Previously, the fish ladder had remained open throughout the run and fish excess to the needs of the hatchery had been surplused either to the tribes or the Federal Prison System.

Two major concerns with ladder pulsing are the hatchery's ability to collect representative samples throughout the fish run to maintain the genetic integrity of our broodstock and what impact, both negative and positive, would those fish that are left

Outlook for the Future

Like wild salmon, the Spring Creek stock is dependent on healthy aquatic habitat and favorable environmental conditions. With an emphasis being placed on habitat protection and restoration, we believe the hatchery program can help rebuild this stock to its historic numbers.

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