



Hatchery Update

Eagle Creek National Fish Hatchery



Introduction

The U.S. Fish and Wildlife Service (USFWS) operates 12 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 Eagle Creek National Fish Hatchery

The hatchery is located on Eagle Creek, 12.4 miles upstream from its confluence with the Clackamas River, in Clackamas County, Oregon. The facility began producing tule fall and spring Chinook salmon in 1956. The hatchery abandoned fall Chinook production very quickly, but continued to raise spring Chinook salmon until 1987, when production was discontinued due to funding and other production priorities. Eagle Creek NFH currently produces coho salmon and winter steelhead exclusively. Funding for the hatchery is through Mitchell Act funds, which are administered by NOAA Fisheries.

Rearing facilities at Eagle Creek NFH include 75 8'x80' raceways and one adult holding/rearing pond. The main water source for the hatchery is Eagle Creek.

Hatchery Goal

Today the U.S. Fish and Wildlife Service operates Eagle Creek National Fish Hatchery to restore extirpated coho salmon to the Yakima and Clearwater drainages and maintain coho salmon and winter steelhead to provide sport and commercial fisheries.

Hatchery Assessment

All hatcheries must consider their potential for adversely affecting the aquatic community. Wild steelhead in Eagle Creek are part of the Lower Columbia River population listed as threatened under the Endangered Species Act (ESA). To help us assess our impacts, we revised our Draft Hatchery and Genetic Management Plans for National Fish Hatcheries in the lower Columbia River, including Eagle Creek NFH, in 2004. These management plans are written to assess our program and meet ESA requirements. In addition to completing documentation to comply with our ESA responsibilities, we must also meet our mitigation responsibilities under the Mitchell Act as well as meet Tribal Trust and U.S. v Oregon obligations. In order to balance these sometimes conflicting mandates, we regularly meet with our co-managers to discuss operation and management of the hatchery. More research is needed to assess the impacts of both hatchery releases and natural spawning coho and winter steelhead on wild steelhead in Eagle Creek.

To help guide hatchery operations in Eagle Creek, the U.S. Fish and Wildlife Service initiated an internal review of the risks and benefits associated with the Eagle Creek hatchery program. The goal of this review is to ensure that Service hatcheries are operated in accordance with best scientific principles, and contribute to sustainable fisheries and the recovery of naturally-spawning populations of salmon, steelhead and other aquatic species.

Hatchery and Wild Fish Interactions

The Service has developed monitoring and evaluation programs to determine the extent of ecological interactions between fish released from the hatchery and wild fish populations in the Eagle Creek subbasin. For example, the presence of non-migrating and residual juvenile hatchery steelhead in upper and lower Eagle Creek was confirmed through radio-telemetry and snorkel surveys. A monitoring program is in place to (1) estimate the abundance and smolt to adult survival of juvenile wild steelhead in Eagle Creek and North Fork Eagle Creek using PIT (Passive Integrated Transponder) tags (2) estimate the reproductive success and contribution to smolt production of hatchery and wild fish using genetic analyses and (3) periodically collect fish health samples from hatchery and wild fish to monitor disease risks.



The CRFPO recently completed a five year evaluation of the ecological and genetic impacts between a hatchery stock of steelhead raised at Eagle Creek National Fish Hatchery for harvest and a U.S. Endangered Species Act threatened steelhead population in Eagle Creek, Oregon. The results from this study concluded that hatchery fish may pose an ecological risk to wild steelhead in Eagle Creek, particularly at the juvenile/smolt stage. Based on these findings, winter steelhead production at the hatchery has been reduced to minimize any future impacts to the natural population.

Reports on various hatchery evaluations and monitoring programs can be found on the web at: <http://www.fws.gov/columbiariver/>

Adult Escapement Goal

A return of 3,000 adult coho salmon is needed to collect enough eggs for a full production 350,000 fish for on-station release, in addition to a 1.05 million pre-smolt transfer for Tribal restoration programs in the Yakima and Clearwater rivers, above Bonneville Dam.

A return of 500 adult winter steelhead is needed to collect enough eggs for full production for the on-station forced release of 100,000 smolts.

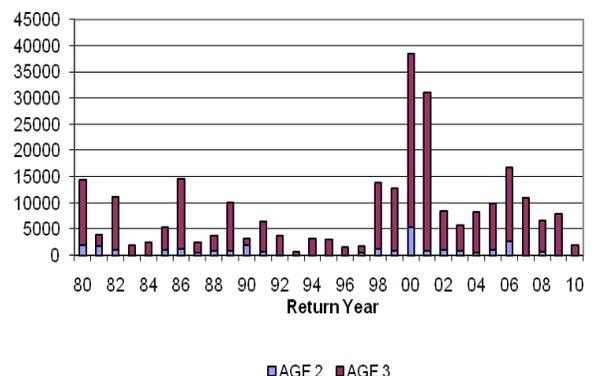
Sampling of Returning Fish

A proportion of returning adults are sampled at the hatchery for biological information. Sex and length are recorded and scales are collected so that age can be determined. Fish are also sampled for coded-wire tags implanted in the snouts of fish during juvenile rearing. 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. In 2010, almost 90% of the Eagle Creek coho returned as 3 year old fish. That same year, 95% of Eagle Creek winter steelhead returned as 3 year old fish with the remainder as 4 year old fish.



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 Coho Salmon Adults

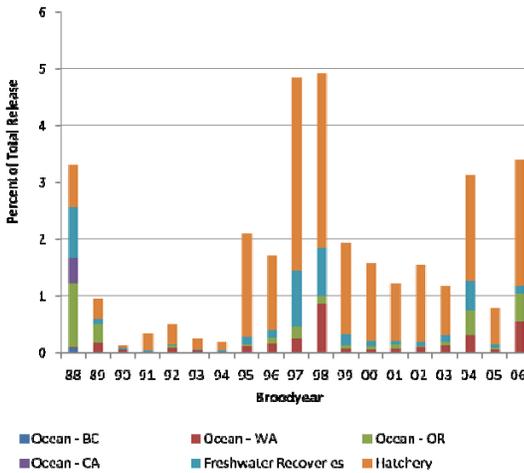


Contribution

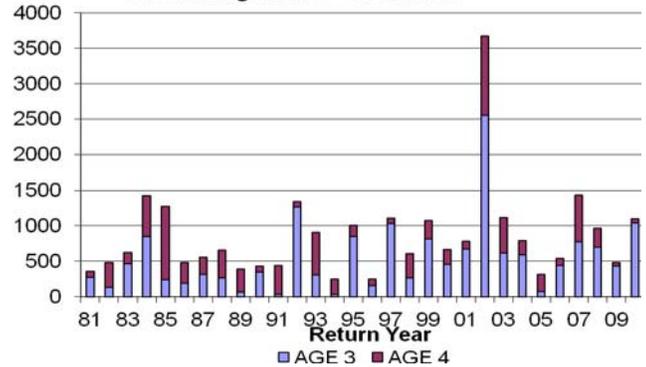
The coded-wire tag marking program makes it possible to determine total survival rates and contribution to several fisheries. In 2010, 3.5% of the total coho releases were recovered. Of these, over 65% of the Eagle Creek coho recoveries were to the hatchery while 30% were harvested in the ocean sport and commercial fisheries. The remaining recoveries of Eagle Creek coho occurred in the lower Columbia River and tributary fisheries.

Eagle Creek winter steelhead, contribute significantly to recreational fisheries in the lower Columbia, Willamette, Clackamas Rivers and Eagle Creek. Past studies have indicated that for every fish returning to the hatchery another two to three fish are caught in the sport fishery.

**Eagle Creek Coho Salmon
Percent Recoveries**



**Number and Age Composition of
Returning Winter Steelhead**



For more information, please contact:

Larry Telles, Hatchery Manager
Eagle Creek National Fish Hatchery
34288 S.E. Rainbow Rd.
Estacada, Oregon 97023
503-630-6270 or email larry_telles@fws.gov

Maureen Kavanagh, Hatchery Assessment Team
Columbia River Fisheries Program Office
1211 S.E. Cardinal Court, Suite 100
Vancouver, WA. 98683
360-604-2500 or email maureen_kavanagh@fws.gov



*Produced by Donna Allard
Information and Education
Database maintained by Stephen Pastor
<http://www.fws.gov/columbiariver>*