



# Hatchery Update

## *Willard National Fish Hatchery*



**New snow roofs and interpretive panels were added this past year to enhance visitor orientation and safe entry into the main hatchery building.**

### **About Willard National Fish Hatchery**

Willard National Fish Hatchery (NFH), established in 1952, is part of the Columbia River Gorge NFH Complex. The Willard hatchery is located in Washington State five miles north of Highway 14 up the Cook-Underwood Road on the Little White Salmon River.

### **Mid-Columbia Coho Reintroduction: Willard NFH Coho for the Wenatchee River Basin**

Willard NFH is an integral component of the Yakama Nation Mid-Columbia coho salmon reintroduction effort with a goal of re-establishing self-sustaining populations of coho salmon in the Wenatchee River Basin of north central Washington. A total of 650,000 juvenile coho salmon were reared at the hatchery and were derived from a locally adapted stock of fish returning to and spawned in the Wenatchee River, WA. They are reared at Willard NFH and transferred to the Wenatchee River watershed for acclimation and release by the Yakama Indian Nation. This partnership is a cost share production program and by agreement, the Yakama Nation provides 60% of the operational costs at Willard NFH using Bonneville Power Administration funds while the U.S. Fish and Wildlife

Service (Service) contributes the remaining 40% with reimbursed Mitchell Act funds administered by NOAA-Fisheries.

Initially, lower Columbia River stock coho from Willard NFH were used for the reintroduction effort with the hope of transitioning to a more locally adapted stock in the future. This came to fruition in the early 2000's when sufficient adult coho returned to the Wenatchee River. Collected at Dryden Dam by Yakama Nation staff, eggs from these fish are now transferred to Willard NFH for hatching and early rearing. After 18 months the fish are transferred back to release sites within the Wenatchee and Methow River Basins by tribal staff.

This Service and Tribal partnership is more than just a harvest augmentation program; it exemplifies the use of new science to transition to locally adapted fish stocks for reintroductions. These stocks pose less risk of harmfully interacting with naturally spawning and endangered species act (ESA)-listed fish within the Basin. This Mid-Columbia coho reintroduction effort has received praise from the congressionally-mandated Hatchery Scientific Review Group and the Service's Hatchery Review Team. Both groups supported the science behind this program and did not recommend any changes. Once again, coho salmon are returning to the waters of north central Washington due to the wise use of a Service hatchery in combination with tribal fish and habitat restoration efforts.

### **Drano Lake Spring Chinook: Mitchell Act Funded Mitigation**

A total of 300,000 spring Chinook are reared and released from Willard National Fish Hatchery with funds provided by the National Marine Fisheries Service under authority of the Mitchell Act. Adult fish returning to Drano Lake, an impoundment at the mouth of the Little White Salmon River, are the perfect example of a successful mitigation program. In this case, mitigation funding secured through the authority of the Mitchell Act is used to produce spring Chinook at both Willard and Little White Salmon NFHs. These fish are released into Little White Salmon River and Drano Lake where the returning adults provide sport and tribal harvest opportunity by mitigating for fisheries lost due to the

construction and operation of the Columbia River Hydro System.

These adult salmon provide an intensive sport fishery that also "shares the wealth" with a one-day per week tribal gillnet fishery. The Drano Lake fisheries focus effort on a hatchery produced stock of fish returning to a terminal area. Tribal gillnets are set in Drano Lake, reducing the potential incidental take of wild and ESA-listed fish in the mainstem Columbia River. In this case fish produced at a Mitchell Act-funded mitigation hatchery allows harvest in a terminal fishery while minimizing impact to wild salmon that migrate further up the Columbia River. Few hatchery programs can espouse the benefit of simultaneously providing tribal harvest and conservation opportunities for ESA listed fishes.



## Bull Trout: Experimental Investigation and Adaptive Management

In 2011 and 2012, naturally fertilized bull trout eggs were collected from the Metolius River Basin, Oregon and transferred to Willard NFH and Oregon State University's (OSU) Fish Performance and Genetics Laboratory. The goal of this project is to investigate the potential for NFHs to support recovery efforts of this native trout. Willard NFH is an ideal facility for this program because it provides a cold, clean water source and the ability to quarantine effluent.

Bull trout are listed as threatened under the ESA and populations are depressed over their entire range. They require clean, cold water for spawning and early rearing and highly connected complex habitats to express their diverse life history. Recent literature suggests that significant portions of bull trout habitat could be lost due to climate change in the next 50 years and current populations may serve as donor stocks for reintroduction efforts. Few robust donor populations exist to support reintroduction efforts and maximizing the recovery benefits from these valuable resources is a priority.

Young life stages experience the highest mortality in the wild. As such, collecting eggs for a captive rearing program will have a minimal impact on recruitment of the donor population while at the same time maximize per capita juvenile production for a potential reintroduction program.

Bull trout captive rearing, recovery, and reintroduction are uncertain. The best method to understand management actions shrouded in uncertainty is with a Structured Decision Model (SDM) utilizing Adaptive Management and Strategic Habitat Conservation. This program will combine our current knowledge of bull trout performance in captivity, impacts of removals to donor populations, and the pros and cons of alternative reintroduction strategies to determine the best reintroduction strategy to meet FWS conservation and recovery objectives. Additional research will be conducted in areas of high uncertainty, thereby continually adapting and refining the SDM, ultimately resulting a biologically sound and enduring bull trout reintroduction and recovery program.



## Willard NFH Volunteers

The Willard Fish Hatchery volunteers are individuals who want to give back to their communities by setting an example of proper land stewardship.. They are concerned citizens of all ages who want to learn more about conservation, and are passionate people who enjoy the outdoors and want to spread the word about America's greatest natural treasures.

Volunteers at the Willard Hatchery contributed over 1,200 hours in 2012 performing a broad range of activities.



Ice storm damage cleanup was a major volunteer initiative completed with the assistance of the Boy Scouts of America Troop 389 of White Salmon, WA. A catastrophic ice storm left the fish hatchery without line power for ten days and damaged numerous structures across the facility, leaving one residence uninhabitable, and causing extensive damage to trees across the Willard NFH. Boy Scouts, with the assistance of troop leaders and parents, cut and loaded more than 75 pickup loads of firewood some of which was provided to indigent households in need of winter heat and some as a fundraiser to support Scout attendance at summer camps and rafting activities.

Another notable volunteer program consisted of twenty-eight high school students and staff from the Forest Youth Success Program who spent a week at the Hatchery clearing brush & trees along the entrance road, making improvements to a hatchery trail, clearing woody debris left from the winter ice storm and removing noxious weeds across 80 acres of Service lands. While at Willard NFH, The Forest Youth Success crew was presented with various educational opportunities provided by hatchery employees. One of these opportunities involved dissections of adult spring Chinook and coho

salmon. Another educational program presented to the crew was a slide show and group discussion centered on choosing a career and setting goals to reach that objective.



Additional volunteers assisted the hatchery by trimming trees, helping with fish culture activities and by providing office clerical assistance.

### **Building Face-Lift**

The Willard NFH receives considerable snowfall producing snow and ice accumulation on the hatchery building's roof. When the snow and ice slides off the roof in front of the building entrances it creates a life and safety risk. The snow hazard was relieved by constructing two entry roofs over the south facing entrances of the hatchery building adding to the architectural interest and providing a focal point to direct visitors to our new interpretative panels.

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