

Fiscal Year 2012 Annual Report
Little White Salmon/Willard National Fish Hatcheries
Cook, Washington



Connecting *Everyone* with Nature and the Mission of the Fish & Wildlife Service

Cover: During 2012, Little Salmon NFH made significant efforts to improve accessibility to the facility and the surrounding natural environment for all groups, including those living with disabilities. One such event was the Free Fishing Day for the Paralyzed Veterans of America (PVA). Despite bone chilling winds, veterans braved the inclement weather to try their hand at fall Chinook fishing in Drano Lake, utilizing the ADA compliant ramp and fishing platform. Only one fish was landed at the event, but five Veterans were “connected” to the nature that the U.S. Fish & Wildlife is committed to protecting and enhancing (Photo Credit: Casey Risley, USFWS)

A Mitigation Hatchery: Producing Fish to Mitigate for Lost Habitat

The decline of Pacific salmon in the Columbia River Basin is the result of a series of events that have occurred over the last hundred years. Once the home to the most abundant run of salmon in the Pacific Northwest, the Columbia River system began to change with arrival of settlers from the East. By 1900, a fishery that once produced 18-24 million pounds of salmon

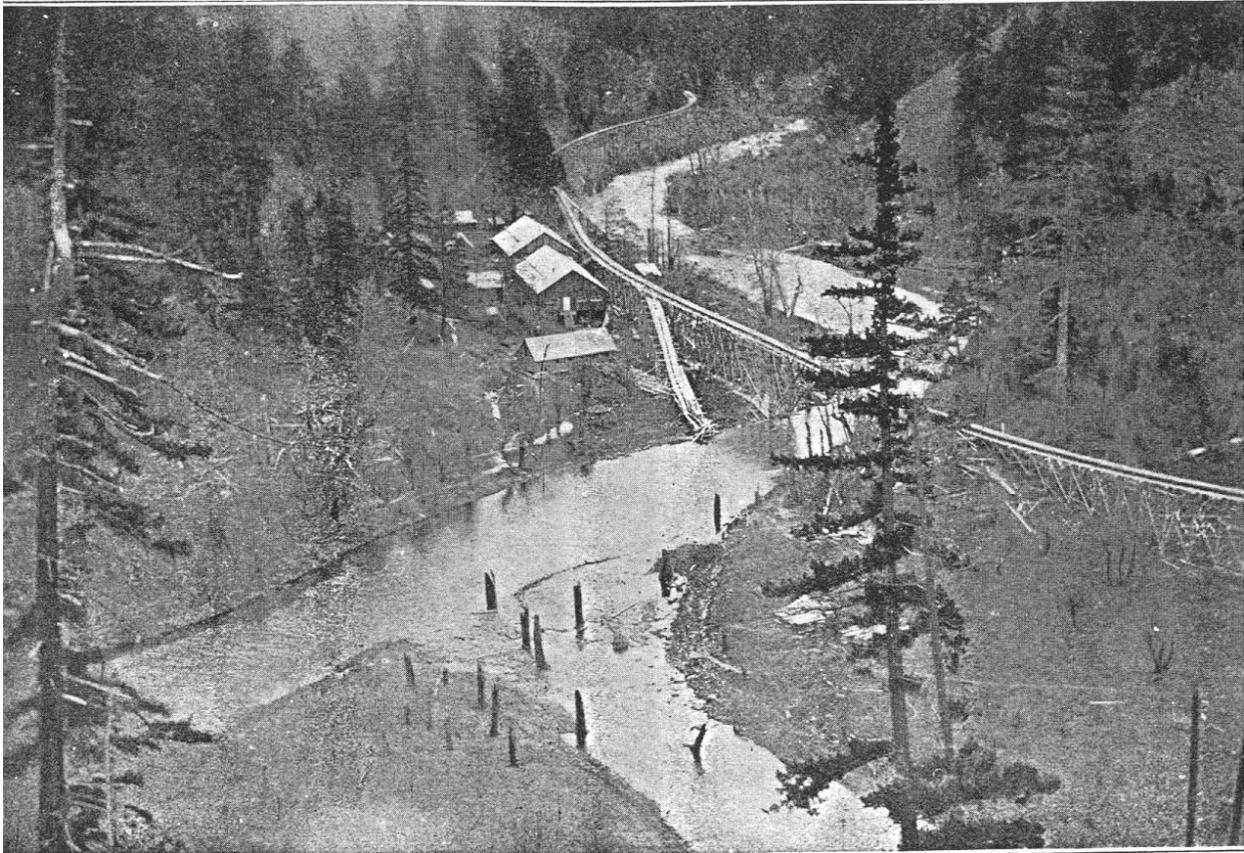


Intensive timber harvest in Columbia River tributary watersheds during the late 1800's and during the 1900's often resulted in degraded fish habitat. These log rafts in Drano Lake at the mouth of the Little White Salmon River are indicative of extensive logging during circa 1960

for Native Americans in the region had been replaced by canneries and an annual commercial harvest that peaked in 1883 at 43 million pounds of fish. This intensive harvest combined with population growth, development, and habitat alterations led to a serious decline in Columbia River salmon stocks.

Little White Salmon

The Little White Salmon National Fish Hatchery (NFH) was established in 1898 (although production began in 1896 on an experimental basis) to address the decline of tule fall Chinook, the native salmon stock that returned to the Little White Salmon River. This site was selected since it was considered one of the principal spawning areas of the quinnat or Chinook salmon. Assistant U.S. Fish Commissioner William Ravenel, describing the significance of the hatchery site, noted in 1898 that, “*During the season, the salmon appeared in such large numbers below the rack that the Indians often speared two and three at one cast of the spear.*”



The Little White Salmon National Fish Hatchery and lumber flumes as depicted in the 1898 Report of the U.S. Fish Commissioner.

The original hatchery was described as a rough wooden structure without a floor and lit by skylights. It was equipped with 50 troughs that were fed by water from a nearby stream. Other buildings included a mess-house and sleeping quarters for employees. Fall Chinook eggs were taken from adult fish that were captured in a downstream trap from mid-September through mid-October. It was noted in 1898 that the best “fishing” occurred at night about one hour after dark. Spawning began in the morning and continued until eggs had been removed from all ripe fish. Hatchery records indicate that an average 16.5 million eggs were taken annually between 1896 and 1915. These eggs were incubated in baskets, hatched and eventually released as fry. Once the fry were released the station was closed for the season. The cost of constructing and operating the hatchery during the first year was \$2,288.27.

Profound changes occurred in hatchery operations during the next 50 years. While the hatchery continued to produce the native tule fall Chinook salmon, production was expanded to include chum, Coho, sockeye and spring Chinook salmon. The completion of Bonneville Dam in 1938 was probably the most significant event of the time. Not only was the hatchery flooded by the rising Bonneville pool, but the average annual egg take of tule fall Chinook declined by 44%. The natural spawning grounds of this fish were lost as habitat at the mouth of the river was inundated by the Bonneville pool. As shown on a map prepared by the U.S. Army Corps of Engineers in 1935, the mouth of the Little White Salmon River extended nearly an additional half mile out and downstream of its current location on the Columbia River. This prime spawning habitat essential to the survival of naturally spawning tule fall Chinook was permanently lost following the completion of Bonneville Dam in 1938. The original spawning gravel is

now covered by excessive silt allowed to settle in the slack water of the Bonneville Pool.



The original spawning gravel located on the Little White Salmon River as it enters Drano Lake is now covered with years of accumulation of mud and silt resulting from intensive logging in the watershed and the slack water created by the Bonneville Pool (Photo Credit: Speros Doulos, USFWS)

It was during this time that the hatchery became part of the Mitchell Act program, producing fish to mitigate for lost habitat that resulted from the construction and operation of the fledgling Columbia River hydro system.



The Little White Salmon River at low pool elevation during Fall 2010. Note the wild tule fall Chinook redds left “high and dry” by the low pool event, making deposited eggs easy forage for merganser ducks. This photograph was taken in the same area shown in the 1898 photograph above (Photo Credit: Speros Doulos, USFWS)

The hatchery is located in south-central Washington on the Little White Salmon River approximately one mile upstream from the Columbia River. The Little White Salmon River joins the Columbia River at river mile 162. Drano Lake, a natural impoundment at the mouth of the river, is a popular sport and tribal fishing area. The hatchery encompasses 432.59 acres of land including easements. The Annual Report of Lands Under Control of the U.S. Fish & Wildlife Service (Service) as of September 30, 2003 shows that 211.39 acres were acquired by other federal agencies, 1.34 by devise or gift, 202.44 acres purchased by the Service, and 17.42 acres by agreement, easement or lease.

The Washington Department of Fish & Wildlife (WDFW) law enforcement office for the Columbia River Gorge is also located on the grounds of Little White Salmon NFH. In addition, five government residences are located on Chinook Drive approximately 2 mile from the hatchery area.

Willard

Construction began at Willard NFH in 1951. The Willard facility was authorized by an amendment to the Mitchell Act to mitigate for fisheries lost due to the construction and operation of hydroelectric dams on the Columbia River. The earliest reports available regarding the Willard hatchery indicate that it was planned and constructed as a fall Chinook salmon production facility. Located above an



Fish are loaded onto distribution trucks at Willard National Fish Hatchery for transfer back to their native watersheds for acclimation and eventual release (Photo Credit: Speros Doulos, USFWS).

impassable natural waterfall, migrating adult salmon were unable to reach the Willard facility. Adult fish were collected and spawned at Little White Salmon and eggs shipped to Willard to initiate fish production. Co-located with the former Western Fish Nutrition Laboratory, this fish culture station was responsible for making significant early advances in fish nutrition. The laboratory building is now occupied by the U.S.

Geological Survey (USGS) Columbia River Research Laboratory, a substation of the Western Fisheries Research Center, Seattle, WA. In 1975, the Little White Salmon NFH and Willard NFH were administratively combined to form the Little White Salmon/Willard NFH Complex (Complex). Administration of the Complex occurs at the Little White Salmon facility. Complex facilities are managed, staffed, and budgeted as a single organization.

Willard NFH is located on the Little White Salmon River approximately 5 miles upstream from the Little White Salmon facility. The hatchery includes 80.10 acres of land purchased by the Service, and an additional 3.70 acres acquired by agreement, easement, or lease. A laboratory and associated buildings are located on the hatchery grounds. These facilities are now occupied by the USGS, Columbia River Research Laboratory. In addition, nine government residences are located adjacent to the hatchery on Coho Loop.

While habitat loss occurred throughout the Columbia River Basin as a result of Federal water resource development, the loss of spawning habitat on the Little White Salmon River is quite notable. As a result, the purpose of the Complex fish production program is to mitigate for fish losses in the Columbia River caused from Federal hydropower projects and other Federal water resource development.

Mitigation Production – Producing Fish for Harvest

Spring Chinook Salmon

The current spring Chinook salmon propagation program is entirely funded by the Mitchell Act, funding received from NOAA-Fisheries to help mitigate for fisheries lost due to the construction and operation of the Columbia River hydropower system. The original Mitchell Act funding agreements for the operation of Little White Salmon and Willard NFH include the original Mitchell Act, 52 Stat. 345, 05/11/1938 and an amendment to the Act, 60 Stat. 932, 08/08/1946.



The Yakama Nation tribal fishery in Drano Lake resulted in the harvest of more than 10,000 spring Chinook salmon in 2012 (Photo Credit: Speros Doulos, IISFW/S)

Production of spring Chinook at Little White Salmon NFH began in 1967 when fish of unknown origin returned to the hatchery. They were considered strays or descendants of previous releases (McKenzie River - 1916, Salmon River - 1925, and Carson stock reared at Willard - 1964). Others releases were made into the Little White Salmon River from a variety of sources, however, the current stock is considered a derivative of Carson stock spring Chinook. The Carson stock originated from collections of spring Chinook salmon at Bonneville Dam in the 1950s, which presumably contained a mixture of fish migrating to

various tributaries above the point of collection (primarily Snake River, Upper Columbia River tributaries, John Day River, Deschutes River, and Yakima River).

While propagation of this species is intended to mitigate for lost fisheries and habitat, it has in more recent times become an essential component of negotiations to reaffirm Native American Treaty-reserved fishing rights in the Columbia River Basin. As a result, spring Chinook salmon are released into the Little White Salmon River and Drano Lake to help fuel and intensive sport and tribal fishery. The reliable return of adult spring Chinook to the Columbia River and Drano Lake is recognized as a major contributor to these popular fisheries.

Upriver Bright and Tule Fall Chinook Salmon

Fall Chinook salmon are produced using mitigation funds from both the U.S. Army Corps of Engineers (John Day Dam Mitigation) and NOAA–Fisheries (Mitchell Act). The tule fall Chinook is the stock native to the Little White Salmon River. Production of this species began in 1896

and was an essential production component of the original and amended Mitchell Act programs. Production of tule fall Chinook continued until 1985 as the hatchery began to transition to the production of upriver bright fall Chinook.

The 1980's were a time of dramatic change with regard to Columbia Basin fisheries management. The U.S. Army Corps of Engineers (USACOE) ramped up hatchery construction and production to begin the process of mitigating for lost fisheries and habitat

resulting from the construction of John Day Dam (completed in 1971). Part of that construction included the modernization of Spring Creek NFH located 5 miles upstream of Little White Salmon NFH on the Washington shore of the Columbia River. Unique to Spring Creek was the recycled spring water supply used to produce approximately 15 million tule fall Chinook. Recognizing that the hatchery was located near the upstream limit of the historic tule fall Chinook range, the Treaty tribes requested that the USACOE diversify the hatchery program to also include the production of upriver bright fall Chinook, an upriver stock that seemed most appropriate for consideration as the species necessary to help achieve in-kind/in-place mitigation. While both stocks are of the same species, the run timing of tule and upriver bright adult fish can vary by as much as 2 months, with the tules return and spawning earlier than the upriver bright fish. This results in fry and juvenile fish of disproportionate size. Reared on a recycled water supply, the "smaller" juvenile fish (upriver brights) did not fare as well as their older and larger counterparts (tules) due to the metabolic load created by the recycled water system. The end result was a serious outbreak of bacterial gill disease that decimated the upriver bright population at Spring Creek NFH. Recognizing that only one stock could be reared on the Spring Creek NFH recycled water supply, a decision was made to transfer the responsibility of producing upriver bright fall Chinook to Little White Salmon NFH. In return, the responsibility of producing native tule fall Chinook at Little White Salmon was transferred to Spring Creek NFH creating a one-species production program using the hatchery recycled water supply. The transition was completed in 1988 when the upriver bright program was moved to Little White Salmon NFH. While the production programs were swapped, the funding tied to those programs remained at their respective stations. As a result, both hatcheries currently use a mix of funds received from the USACOE (John Day Dam mitigation) and NOAA-Fisheries (Mitchell Act) to accomplish program mitigation objectives.



Fish returning to Little White Salmon National Fish Hatchery fuel an intensive sport fishery on Drano Lake (Photo Credit: Speros Doulos, USFWS).



Upriver bright fall Chinook juveniles are captured by the hatchery underwater webcam (Photo Credit: Speros Doulos, USFWS).

Both stocks are major contributors to ocean harvest, ranging as far north as coastal British Columbia and Alaska. Tule fall Chinook are extremely important to the fishing economies of coastal Washington (e.g. Ports of Chinook, Ilwaco, Westport) and provide a tremendous sport fishery at Buoy 10 located at the mouth of the Columbia River. The Spring Creek tules are also an index stock as part of the U.S./Canada Treaty. Likewise, Little White Salmon NFH upriver brights migrate further north to provide contribution to coastal British Columbia and Alaska fisheries. Two floy tags were recovered from returning upriver bright fall Chinook collected at Little White Salmon

NFH in 1995. Data obtained from the returned tags revealed that these fish, originating from Little White Salmon NFH, were caught in experimental gear and tagged near Coho Point, Langara Island, Queen Charlotte Islands B.C. on August 27 & 28, 1995. Both tags were recovered at Little White Salmon NFH on November 8 & 13, 1995.

The Little White Salmon NFH upriver bright fall Chinook are Pool Upriver Brights, a subcomponent of the Mid-Columbia Bright stock of fall Chinook that represent fish reared and released between Bonneville and McNary Dams. Beginning in 1977, upriver bright fall Chinook were trapped from Bonneville Dam fish ladder and spawned at Bonneville Hatchery. These trapped fish were used to establish a brood stock and evaluate their use in mitigating loss of spawners in the John Day Pool. As a result, the current stock at Little White Salmon NFH is a mix of fish originating from above Bonneville Dam.

Reprogrammed Upriver Bright and Tule Fall Chinook



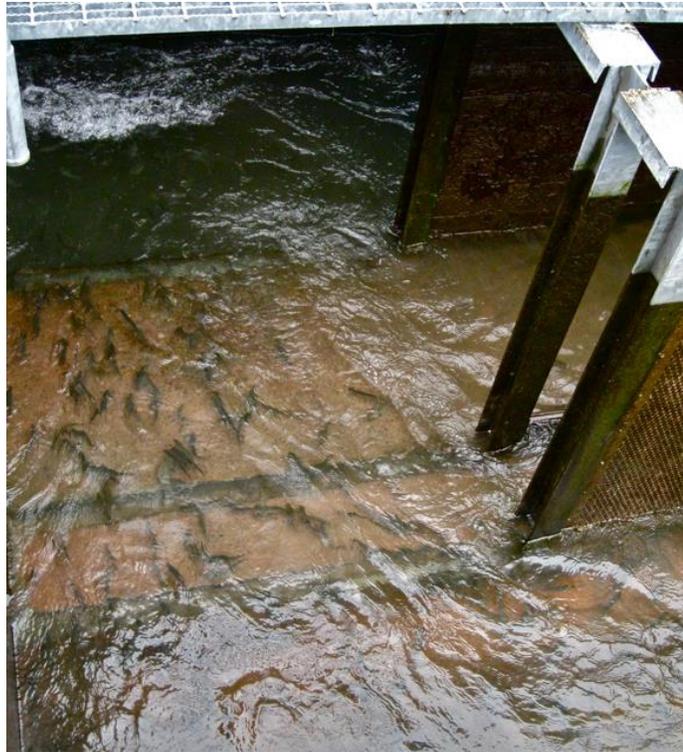
A total of 2.5 million upriver bright fall Chinook are transferred from Bonneville Hatchery to Little White Salmon NFH for acclimation and release as part of the Spring Creek reprogramming agreement (Photo Credit: Speros Doulos, USFWS).

The fall Chinook mitigation program at Little White Salmon NFH changed dramatically in 2009 as a result of the Spring Creek Reprogramming Memorandum of Agreement, a collaborative partnership between the Bonneville Power Administration (BPA), USACOE, NOAA-Fisheries, Oregon Dept. of Fish & Wildlife (ODFW), and the Service. It is now obvious that production at both Little White Salmon and Spring Creek NFH's is inextricably linked to fisheries and habitat mitigation in the lower Columbia River. In this case fish production programs were redefined for three hatcheries to eliminate the continued need to request spill at Bonneville Dam to enhance the survival of outmigrating

Spring Creek tules. Spill is generally believed to be the most benign route of passage at dams for outmigrating juvenile salmon. Elevated rearing densities involved with rearing 15 million tule fall Chinook on the recycled water system at Spring Creek NFH necessitates three release periods with the first occurring in early March. This release historically occurred before the April Biological Opinion-mandated spill operations at Bonneville Dam to promote the survival and outmigration of Endangered Species Act (ESA) – listed fish. As a result, the Service had to request special spill conditions every year to help move the Spring Creek March release fish downriver. This led to contentious negotiations since the Action Agencies, namely the USACOE, BPA and Bureau of Reclamation) felt that spill outside the normal spring spill program for ESA-listed fish has the potential to prove harmful by:

- Creating elevated total dissolved gas levels that can harm ESA-listed chum salmon that spawn and rear naturally as well as other aquatic organisms in shallow water habitat below Bonneville Dam
- Increasing river flow volumes that could be reserved for later ESA species flow management needs,
- Decreasing the survival of hatchery released Spring Creek fish, and
- Reducing power generation revenue.

The Spring Creek Reprogramming MOA is the resulting management proposal crafted by all of the involved agencies, a document that balances the need for power and fish. In essence, the fish production programs at three hatcheries were redefined, moving the March release group of tule fall Chinook from Spring Creek to Bonneville Hatchery. These fish are released below Bonneville Dam and do not require spill as a means to enhance survival. To offset the rearing of additional fish at Bonneville Hatchery, a similar number of URB fall Chinook, displaced by the Spring Creek fish, were moved to Little White Salmon NFH (an increase of 2.5 million upriver bright fall Chinook at Little White Salmon NFH). An additional group of tule fall Chinook are transferred from Spring Creek to Little White Salmon as well to maintain overall tule production numbers within the Basin (an additional program and increase of 1.8 million tule fall Chinook at Little White Salmon NFH). While there is a substantial increase in the Little White Salmon NFH fall Chinook production program, the most significant change will be the increase in returning adult fall Chinook that will include two different stocks with overlapping run timing. This will seriously complicate fall hatchery operations at Little White Salmon NFH with the first return of these fish in 2013. Regardless, benefits of the MOA and increase in Little White Salmon NFH production include:



Acclimated fish as part of the Spring Creek reprogramming agreement are released after the start of normal spring spill at Bonneville Dam precluding the need to request special spill to safely move fish downriver at an earlier date (Photo Credit: Orlanda John, USFWS).

- Provides greater tribal access to upriver bright fall Chinook and more fully achieves John Day Dam mitigation “in-place/in-kind” responsibilities with additional upriver bright production released above Bonneville Dam.
- March spill/special flow operations are ended saving power generation revenues.
- Production levels for all fall Chinook stocks (tules and upriver brights) are maintained within the Basin.
- Uses existing/proven facilities for best suited stocks and minimizes additional costs of the program (e.g. maintains tules at Spring Creek NFH and upriver brights are expanded at Little White Salmon NFH; tules have performed well at the Bonneville Hatchery in the past).
- Maintains a reduced upriver bright fall Chinook program at Bonneville SH as a contingency backup brood stock collection location in years of low return.
- Provides the potential to reduce hatchery impacts on ESA listed stocks of concern (e.g., reducing impacts from out-of-ESU upriver bright fall Chinook strays) via brood stock collection and tributary fishery management strategies (targeted terminal fisheries) in Drano Lake and at Little White Salmon NFH.
- Creates a funding and management partnership between the Action Agencies and fishery co-managers to achieve mutual objectives.

This mitigation program is an excellent example of how a hatchery can rear multiple species of Pacific salmon, for multiple purposes, to help resolve a contentious fishery issue and continue to provide harvest opportunities resulting from the operation of the Columbia River hydropower system.

Coho Salmon



Fish Culturist Pat Cushman ponds fish in Willard NFH nursery tanks (Photo Credit: Steve Wingert, USFWS).

Coho salmon production currently occurs at Willard NFH. The original Coho salmon production program, peaking at 2.5 million smolts annually, was the direct result of mitigation funding obtained through the Mitchell Act's Columbia River Fishery Development Program. Adult Coho were collected at Little White Salmon NFH, spawned, and eyed eggs shipped to Willard NFH to initiate production. Up until 1994, freshly fertilized Coho eggs collected at Little White Salmon NFH were shipped to Carson Depot Springs to circumvent the cold water temperatures characteristic of Willard NFH. Carson Depot Springs is a separate substation of the Little White Salmon and Willard NFH's. Located approximately 9 miles west of Little White Salmon NFH, this facility has a water supply and space for egg incubation. The U.S. Fish and Wildlife Service has an indefinite lease with Burlington Northern Railroad for use of this 55' X 100' land parcel. This area includes a spring water supply and a small building equipped with 50 -16 tray incubators for egg incubation. Carson Depot Springs historically had been used for incubation of Coho salmon eggs prior to shipment to Willard NFH and for various research activities requiring egg isolation (quarantine to prevent the spread of fish disease

for eggs from outside the Little White Salmon River watershed). Rehab of the Little White Salmon NFH well during 1995 produced an adequate supply of groundwater for the early incubation of Willard NFH Coho salmon eggs. The additional warmer groundwater available at the Little White Salmon facility precluded the need to use Carson Depot Springs in support of Willard operations.

The Willard NFH Coho production program designated for release into the Little White Salmon River was reduced to 2.0 million smolts and then later to 1.0 million smolts because of high rearing density concerns and in recognition of Mitchell Act funding cuts. Mitchell Act funding continued to degrade, and the Coho mitigation production program at Willard NFH was terminated in 2004. As a result, there are no Coho salmon releases into the Little White Salmon River; however, Coho are still produced at Willard NFH for off-station transfer and release in support of other mitigation programs.

The current Coho salmon propagation effort at Willard NFH supports the Yakama Nation Mid-Columbia Coho Reintroduction Project. Following the termination of the Willard NFH on-station release, the Service and Yakama Nation negotiated a cost share agreement using BPA and Mitchell Act funds to cover operational costs at Willard NFH. Currently adult Coho are collected in the upper Columbia and spawned at either Winthrop or Leavenworth NFH and the resulting eyed eggs are shipped to Willard NFH for hatching and rearing. Pre-smolts are transferred back to upper Columbia River sites for acclimation and release. While this effort is meant to restore an extirpated species of fish to the upper Columbia River and tributaries, adult fish have to circumvent 7 main stem Columbia River dams to reach

the Wenatchee River Basin (Leavenworth NFH) and 9 main stem dams to reach the Methow River Basin (Winthrop NFH). These fish passage obstacles combined with program funding received (in part) by the BPA reinforce the continued mitigation effort at Willard NFH.

Little White Salmon and Willard National Fish Hatcheries - Fish Production Program Summary for Fiscal Year 2012

Current Fish Production Program



Fish Biologist Peter Long sorts spring Chinook salmon at Little White Salmon NFH (Photo Credit: Speros Doulos, USFWS).

The current Complex production program is guided by specific fish production goals identified in the recently negotiated 2008-2017 United States v. Oregon Management Agreement. The purpose of the Management Agreement is to provide a framework within which the Parties (the State of Washington, the State of Oregon, the State of Idaho, the United States, the Shoshone Bannock Tribes, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes of the Umatilla Indian Reservation, the Nez Perce Tribe, and the Confederated Tribes and Bands of the Yakama

Nation) may exercise sovereign powers in a coordinated and systematic manner in order to protect, rebuild, and enhance upper Columbia River fish runs while providing harvests for both treaty Indian and non-treaty fisheries. The primary goals of the Parties are to rebuild weak runs to full productivity and fairly share the harvest of upper river runs between treaty and non-treaty fisheries in the ocean and Columbia River Basin. As a means to accomplish this purpose, the Parties intend to use habitat protection authorities, enhancement efforts, and artificial production techniques as well as harvest management to ensure that Columbia River fish runs continue to provide a broad range of benefits in perpetuity. Fish production goals specific to the Complex and agreed to by the Parties include:

Little White Salmon NFH

- 750,000 yearling spring Chinook salmon released on site.
- 150,000 endangered White River spring Chinook pre-smolts for transfer, acclimation, and release into the White River, Washington.
- 4.5 million sub-yearling URB fall Chinook released on site.
- 1.5 million sub-yearling URB fall Chinook released off site on the Yakima Indian Reservation as mitigation for John Day Dam.
- 4.5 million URB fall Chinook eggs for transfer to the Yakama Nation Klickitat Hatchery.
- 1.7 million sub-yearling tule fall Chinook salmon released on site.
- 3 year classes of endangered White River spring Chinook captive brood stock for spawning, second generation juvenile production, and to prevent the extinction of this population of fish.

Willard NFH

- 650,000 yearling Coho salmon released off site in the Wenatchee and Methow Rivers, Washington for the Yakama Indian Nation using locally adapted fish stocks. This joint Bonneville Power Administration and Mitchell Act-funded restoration effort has been implemented to restore an extirpated stock of Coho salmon to the Wenatchee and Methow River Basins.
- 250,000 yearling spring Chinook released on site.

Drano Lake Spring and Fall Chinook: Mitchell Act Funded Mitigation

During Fiscal Year 2012, a combined total of 1,005,665 spring Chinook were released from Little White Salmon and Willard, and an additional 2,095,675 upriver bright fall Chinook salmon were reared and released from Little White Salmon NFH 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 authority of the Mitchell Act is used to produce 1.0 million



Larry Leighton holds up an impressive 34 lb spring Chinook that returned to Little White Salmon during the 2012 season (Photo Credit: Orlanda John, USFWS).

spring Chinook and 2.0 million upriver bright fall Chinook at the Little White Salmon/Wand tribal fisher harvest opportunity by mitigating for fisheries lost due to the construction and operation of large scale hydropower projects on the Columbia River. Returning adult fish fuel 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 main stem Columbia River. In this case fish produced at a Mitchell Act funded mitigation hatchery allows harvest of hatchery fish in a tributary stream/lake

(i.e. the terminal fishery) while minimizing impact to wild fish that migrate further up the Columbia River. Few hatchery programs can espouse the benefit of simultaneously providing both tribal harvest and a conservation opportunity.

John Day Mitigation: Upriver Bright Fall Chinook for Drano Lake and the Yakima River

Returning adult upriver bright fall Chinook provide mitigation fishery opportunities in the Columbia River and Drano Lake, but are also an important brood stock source for the USACOE John Day Mitigation program. Additional eggs are collected from returning fish to initiate production at the Yakama Nation Prosser Hatchery located in Prosser, Washington. During Fiscal Year 2012 a total of 1,507,117 upriver bright fall Chinook were reared at the Little White Salmon National Fish Hatchery and transferred by Service personnel to the Prosser tribal hatchery on the Yakima River. This program is a critical component of the Service's obligation under the U.S. v Oregon agreement to assist with the development of naturally spawning fish populations on tribal lands in the mid-Columbia River Basin.

Funding received from the USACOE is used to provide feed to the tribal fisheries program to assist with the off-site rearing of these fish following transfer and during the acclimation period. Returning adult fish are mitigation for adult fish lost due to the construction and operation of John Day Dam, and intended to develop tribal harvest opportunities in upriver areas.

Spring Creek NFH Reprogramming: Drano Lake URB and Tule Fall Chinook

The Complex fish production program increased dramatically during 2012. An additional 2,573,802 upriver bright fall Chinook and 1,678,676 tule fall Chinook were acclimated and released from a new acclimation pond located at the Little White Salmon facility. 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 during the March release of Spring Creek NFH tule fall Chinook salmon smolts. The Agreement moved a portion of Spring Creek NFH production to Bonneville Hatchery and moved additional production of upriver bright fall Chinook salmon to Little White Salmon NFH. Little White Salmon National Fish Hatchery plays a key role in the newly signed Agreement by acclimating and releasing 1.7 million tule fall Chinook salmon in April and an additional 2.5 million upriver bright fall Chinook salmon in June. Adult fish generated by this increase in production will provide even greater tribal harvest opportunities during future Drano Lake sport and tribal gillnet fisheries.



*Mid-Columbia Coho Reintroduction:
Willard NFH Coho for the Wenatchee
and Methow River Basins*

Tyson Lankford pulls dam boards from the tail end of the acclimation pond. The water is drawn down gradually as Tule fall Chinook sub-yearlings leave the pond and begin their migration to the Pacific Ocean (Photo Credit: Casey Risley, USFWS).

A total of 609,023 Brood Year 2010 Coho salmon derived from a locally adapted fish returning to and spawned at Leavenworth and Winthrop NFH's, were reared at Willard National Fish Hatchery and transferred to the Wenatchee and Methow River watersheds for acclimation and release by biologists



Fish Culturist Bryan Charlton cares for Coho salmon at Willard NFH (Photo Credit: Steve Wingert, USFWS).

from the Yakama Nation. This partnership is a cost share production program with the goal of reintroducing extirpated Coho salmon to the Wenatchee and Methow River Basins in north central Washington. By agreement, the Yakama Nation provides 60% of the operational costs at Willard NFH using Bonneville Power Administration funds while the 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 derived from these fish are now transferred to Willard NFH for hatching and the fish reared over an 18-month period for transfer back to selected release sites within the Wenatchee and Methow River Basins by tribal staff. This Service/Tribal partnership is more than just a harvest augmentation program. It exemplifies the use of evolving science to transition to locally adapted fish stocks that are at less risk for harmfully interacting with naturally spawning and ESA-listed fish within the Basin. This became evident when the Mid-Columbia Coho reintroduction effort received praise following review by the Congressionally-mandated Hatchery Scientific Review Group and the Service's Hatchery Review Team. Both groups supported the science behind this Service/Tribal partnership and made no hatchery reform recommendations regarding this program at Willard NFH. 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.

Providing Eggs to the Yakama Nation Klickitat Hatchery: A Mitchell Act Partnership

Large surpluses in returning adult upriver bright fall Chinook allowed the hatchery to increase the fall season adult fish escapement goal. The Service and Yakama Nation agreed to this increase in escapement and subsequent spawning of additional fish to provide 4.5 million additional eggs to the Yakama Nation Klickitat Hatchery. Managed as a natural spawning area, tribal hatchery facilities on the Klickitat River lack the infrastructure necessary to adequately collect adult fall Chinook. Since both watersheds contain genetically similar fish, the Service agreed to collect these additional eggs to show support for tribal restoration efforts in an adjacent watershed. A total of 4,183,590 green and eyed eggs were provided to the Klickitat Hatchery during Fiscal Year 2012.



Yakama Nation staff assisted with the spawning of upriver bright fall Chinook (Photo Credit: Speros Doulos, USFWS).

Endangered Species Recovery: A Partnership for the Future

The White River (Washington) spring Chinook spawning aggregation is severely depressed and



Staff from Little White Salmon NFH, Lower Columbia River Fish Health, and WDFW work together to sort White River broodstock, identifying maturing females by ultrasound, and injecting the fish with an antibiotic to control BKD (Photo Credit: Casey Risley, USFWS).

persistently experiences escapement levels below critical population thresholds. This population is within the Upper Columbia River Spring-run Chinook Salmon ESU which is listed as Endangered (FR Vol. 64, No. 56, March 24, 1999). The goal of this program is to prevent the extinction of, conserve, and ultimately restore the naturally spawning White River spring Chinook salmon spawning aggregation (Wenatchee River watershed). This recovery program has been incorporated into the mitigation responsibilities of Public Utility District No. 2 of Grant County (Grant County PUD) through their Biological Opinion (dated

May 3, 2004). Grant County PUD, through the Priest Rapids Coordinating Committee – Hatchery Subcommittee, requested U.S. Fish & Wildlife Service assistance to rear fish for this recovery program. Due to program changes at Willard National Fish Hatchery, the Little White Salmon and Willard NFH’s had adequate space to assume responsibility for rearing up to 150,000 White River spring Chinook pre-smolts and multiple brood years of captive brood stock to assist with recovery efforts. A total of 16,580 F2 generation smolts were transferred to net pens on Lake Wenatchee for acclimation and release, and 27,723 F2 generation fed fry were released into the head waters of the White River, a tributary to Lake Wenatchee during Fiscal Year 2012.

The White River spring Chinook production program was initiated at Little White Salmon NFH following the transfer of juvenile fish from AquaSeed, Inc., Rochester, WA during May 2006. These fish were subsequently reared at Little White Salmon NFH and produced the first viable release of second generation juveniles derived from captive brood stock since the program began in 1998. Current production is initiated following the spawning of F1 generation captive brood stock. The transfer of the entire captive brood program from AquaSeed to Little White Salmon NFH was completed during Fiscal Year 2009. Brood years 2005-2008 were held and sorted and/or spawned at Little White Salmon NFH during the year. The 2009 F1 brood year, derived from redd pumped eggs on the White River, were transferred to Willard NFH for hatching and initial rearing. The last of the captive brood fish were transferred from Willard NFH to Little White Salmon NFH during the spring of 2011.

Grant County PUD is fully reimbursing the Service for fish production, health services, and marking to support this recovery program. As a result, in addition to the Little White Salmon NFH, the Columbia River Fishery Resource Office and Lower Columbia River Fish Health Center provide support for the White River spring Chinook program. Service involvement in the multi-partner White River spring Chinook program is aligned with ESA recovery objectives that are an essential component of the Service mission. This has diversified a traditional mitigation facility to include the production of an ESA-listed stock to achieve recovery.

Hatchery Operations – Using the Best Science to Raise Fish

Mitigation Production – Producing Fish for Harvest

The fiscal year began with a projected strong return of URB fall Chinook to the hatchery. To help minimize excess fish at the hatchery, the Yakama Nation scheduled a fall tribal gillnet fishery in Drano Lake targeting fish returning to Little White Salmon NFH. The following summarizes the tribal catch during the fall 2011 Drano Lake tribal gillnet fishery:

<u>Fishing Date</u>	<u>Fall Chinook</u>	<u>Coho</u>	<u>Steelhead</u>
4-Oct	1063	784	93
Total Harvest	1063	784	93

The fall fishery was closed after the first gill-netting event due to the number of group B steelhead caught during this event. Both hatchery produced and wild/natural origin fish are protected by the

Endangered Species Act. As a result, all returning B-run steelhead are managed as a constraint to other Columbia River fisheries. Harvest managers carefully forecast the B-run steelhead return to manage other tribal and sport fisheries to assure that ESA harvest impacts are not surpassed, and to avoid over-harvest that could jeopardize the future recovery of these listed fishes. Of the 93 steelhead, 17 were identified as group B. As a result, the Yakama Nation felt it was necessary to close the remainder of their fall fishing season within Drano Lake.

The annual spring tribal fishery in Drano Lake resulted in the harvest of 1819 Chinook. The Service has encouraged the Yakama Nation to hold these Drano Lake lottery gillnet fisheries during the spring and fall to help reduce the number of fish that are excess to hatchery escapement goals. In addition, terminal area fisheries similar to the Drano Lake spring and fall tribal fisheries emphasize the harvest of hatchery fish while avoiding the potential impacts on wild and ESA-listed stocks that occurs in main stem Columbia River mixed stock fisheries. The Yakama Nation lottery fishery occurs one day per week (Tuesday night thru Wednesday noon) coincident with a one day sport fishing closure. A total of 20 randomly drawn tribal fishermen are limited to 150-feet of gillnet during each fishing period. The following summarizes the spring Chinook tribal gillnet fishery in Drano Lake during 2012:

<u>Fishing Date</u>	<u>Spring Chinook</u>
8-May	385
15-May	493
22-May	753
<u>29-May</u>	<u>188</u>
Total Harvest	1819

In addition, 10,954 fall Chinook, Coho, and spring Chinook salmon carcasses were donated to the Yakama Nation, Confederated Tribes of the Warm Springs Reservation, and Coastal Harvest (formerly Grays Harbor) Food Bank. This included 2,899 spring Chinook, fall Chinook, and Coho salmon excess to hatchery needs to support the Yakama Nation and Warm Springs tribal nutrition programs.



Tribal fishing platforms constructed on Drano Lake during May 2011 (Photo Credit: Speros Doulos, USFWS).

On May 31, 2011 the Yakama Nation Fish, Wildlife and Law and Order Committee authorized the construction of tribal fishing platforms along the shoreline of Drano Lake. The tribal opening of the platform/hook & line fishery, in addition to the existing spring and fall lottery gillnet fishery, is intended to maximize harvest opportunity for spring Chinook especially when there are surplus fish returning to Little White Salmon NFH and available for harvest in Drano Lake. A total of 17 fishing platforms had

been constructed by the end of Fiscal Year 2011, and several more were constructed over the spring and summer of Fiscal Year 2012. To date, USFWS has received very little feedback as to how successful these platforms are or how much they contribute to the overall harvest of salmon from Drano Lake. It is noteworthy, however, that in the two years that the Yakama Nation have been utilizing these platforms in Drano Lake, very little conflict has arisen between user groups. This lack of conflict is indicative of the strong agency partnership that exists in the Columbia River Gorge. This partnership effort not only shows a willingness to constructively work together for shared use of scarce bank fishing areas upstream of Bonneville Dam, it also assures equal bank fishing opportunities for all anglers regardless of their physical limitations.

The Fiscal Year 2012 concluded with the first full run of age 2, 3, and 4 year old returning Tule fall Chinook to Little White Salmon NFH. The adult ladder was opened intermittently to collect a portion of these fish to reduce the potential of straying.



WDFW biologist implants a PIT tag into an adult Tule fall Chinook to be re-released into the Columbia river (Photo Credit: Casey Risley, USFWS).

However, because these fish are not spawned at our facility, the fish were either killed as excess fish or provided to WDFW for research. A total of 510 Tule fall Chinook were provided to WDFW Fisheries Biologist, Josh Holowatz, for research in which these fish were PIT-tagged and re-released into the lower Columbia river, near the mouth of the Washougal river. Josh's research was aimed at evaluating potential effects of alternative commercial fishing gear on returning adult salmon and how these alternative gear(s) may be used in conjunction with catch and release regulations such that hatchery origin fish may be harvested without harming wild origin fish during commercial fishing seasons.

The following table summarizes the Fiscal Year 2012 spawning season at the Complex:

Species	No. Adult Fish Needed ¹ (Escapement Goal)		No. Adult Fish Spawmed		Eggs Collected	% Eye-Up
	Male	Female	Male	Female		
Fall Chinook	913	849	1762 ²	1762	8,851,200	95.4
Coho ³	0	0	0	0	0	0
Spring Chinook	327	608 ⁴	320	320	1,280,000	96.6
Tule fall Chinook ⁵	0	0	0	0	0	0

¹ Due to varying sex ratios, adult escapement needs are calculated to assure a 1:1 paired mating scheme.

² Includes 2 jacks spawned.

³ The Complex Coho program has been terminated due to Mitchell Act funding shortfalls. A total of 1,070 stray (out-of-basin) Coho returned during Fiscal Year 2012 that were killed as excess fish.

⁴ Extra adult fish are spawned to allow culling of 9% eggs with a detectable level of bacterial kidney disease. In addition, the historic return of 65% females to 35% males requires the collection of additional female fish to assure a 1:1 spawning ratio.

⁵ Little White Salmon does not spawn adult Tule fall Chinook, however adults return to the facility as a direct result of the acclimation and release of 1.7 million sub-yearlings from Spring Creek NFH. A total of

1,084 fish were collected during the Fiscal year 2012 and were either killed as excess fish or provided to WDFW for research purposes.

Kidney samples are collected from all spawned spring Chinook females to help determine the incidence of bacterial kidney disease. Historically, the enzyme linked immunosorbent assay (ELISA) laboratory technique allowed categorization of progeny from all spawned female spring Chinook to assist with the segregated rearing of the various kidney disease titer groups. ELISA segregated rearing has been used at the Complex for years and results have recently come to fruition. Years of healthy fish releases, the result of isolating eggs and fish with a high risk for contracting bacterial kidney disease, have dramatically reduced the numbers of returning adults from the higher titer (risk) categories. The reduced incidence of returning high titer adults allowed the hatchery spring Chinook rearing program to transition from segregated rearing of the various ELISA titer groups to culling (destroying) eggs from females with detections over the Not Detected and Very Low categories. The use of cutting edge fish health technology has essentially eliminated one of the most problematic fish diseases from the Complex spring Chinook rearing program.

The following table summarizes the ELISA results for spring Chinook females spawned during Fiscal Year 2012:

ELISA Category	No. Females	Percent	Optical Density Range
Not Detected	302	94.67	Not detected
Very Low	17	5.33	Not detected – 0.099
Low	0	0	0.100 – 0.199
Medium	0	0	0.200 – 0.499
High	0	0	0.500 – 0.999
Very High	0	0	>1.00
	319		

More importantly, the historic use of ELISA-based segregation and culling has led to a dramatic reduction in the use of antibiotics at the Complex. The practice of prophylactic feeding of erythromycin medicated feed has been abandoned. Complex staff continues to inject returning adult spring Chinook with erythromycin 30-days before spawning to protect maturing adult fish and their newly hatched fry. However, the successful use of the ELISA technique and management concern for the unnecessary accumulation of antibiotics within fish tissue and the environment has led to a greatly reduced use of drugs at the Complex.

Fish Released and Transferred –Assuring the Return of Future Generations

	Species	Number	Weight	Release Site or Receiving Facility	Agency	State	Program Goal
<i>Little White Salmon – Fish Distribution</i>	Spring Chinook	759,161	50,644	Little White Salmon River (Drano Lake)	USFWS	WA	Mitigation
	Spring Chinook	302,211	274	Willard NFH (for Drano Lake release)	USFWS	WA	Mitigation
	Spring Chinook (F2 generation)	16,580	705	Lake Wenatchee	GPUD	WA	Recovery
	Fall Chinook (URB)	1,507,117	3,311	Yakima River, Prosser Hatchery	YN	WA	Mitigation
	Fall Chinook (URB)	4,669,477	52,487	Little White Salmon River (Drano Lake)	USFWS	WA	Mitigation
	Fall Chinook (tule)	1,678,676	17,560	Little White Salmon River (Drano Lake)	USFWS	WA	Mitigation
Little White Salmon Total		8,933,222	124,981				
<i>Willard – Fish Distribution</i>	Coho	609,023	22,433	Wenatchee & Methow River Basins	YN	WA	Restoration
	Spring Chinook	246,504	15,975	Little White Salmon River (Drano Lake)	USFWS	WA	Mitigation
Willard Total		855,527	40,408				
Complex Total – Fish		1,748,849	165,389				
<i>Little White Salmon – Egg Distribution</i>	Fall Chinook	3,189,137		Klickitat Tribal Hatchery	YN	WA	Tribal Trust
Complex Total – Eggs		3,189,137					

Agency Codes

CTUIR – Confederated Tribes of the Umatilla Indian Reservation

YN – Yakama Nation

USFWS – U.S. Fish & Wildlife Service

USGS – U.S. Geological Survey

COE – U.S. Army Corps of Engineers

GPUD – Public Utility District No. 2 of Grant County

NMFS – National Marine Fisheries Service

HATCHERY PRODUCTION SUMMARY (Intensive Culture)										
Station: Little White Salmon NFH					Period Covering: October 01, 2011 through September 30, 2012					
Species/Strain and Lot Number	Fish on Hand Last Day of Period					To Date This Fiscal Year				
	Number	Weight	Length	D.I.	F.I.	Weight Gain	Feed Expended Pounds Costs		Conver- sion	Percent Survival
SCS-WRW-08-LWS-05	139	339	17.990	0.003	0.03	974	34	\$1,368.0	1.40	36.1%
SCS-WRW-07-LWS-09	1	5	22.490	0.000	0.00	735	1,438	\$1,927.6	1.96	2.9%
SCS-WRW-09-LWS-13	657	416	11.480	0.007	0.05	573	784	\$1,116.3	1.37	74.1%
SCS-LWW-10-LWS-20	759,161	50,654	5.70	0.253	1.51	50,056	49,686	\$51,728.4	0.99	100.0%
SCS-WRW-10-LWS-29	16,610	725	4.905	0.027	0.04	703	1,193	\$1,586.7	1.70	85.8%
FCS-URB-11-LWS-31	1,995,627	23,071	3.631	0.236	1.69	24,496	12,432	\$20,623.1	0.51	99.2%
FCS-BNN-11-LWS-33	2,573,802	28,252	3.569	0.235	1.95	7,640	7,474	\$6,068.6	0.98	99.9%
FCS-SPC-11-LWS-32	1,679,529	17,568	3.249	0.161	1.44	9,898	7,350	\$5,784.4	0.74	100.0%
SCS-LWW-11-LWS-27	725,047	27,955	4.75	0.168	1.01	27,375	22,956	\$32,085.3	0.84	97.4%
SCS-WRW-11-LWS-29	145,566	4,046	4.257	0.078	0.35	4,319	4,492	\$5,684.1	1.04	98.0%
SCS-LWW-10-WI-19	246,504	15,975	5.641	0.085	0.31	7,373	7,040	\$6,265.6	0.95	99.9%
SCS-LWW-11-WI-26	301,342	9,848	4.409	0.072	0.24	9,588	8,228	\$9,364.3	0.86	99.1%
COS-WEN-10-WI-22	609,023	22,433	5.145	0.161	0.58	10,157	8,668	\$7,857.5	0.85	99.9%
COS-WEN-11-WI-30	647,854	16,527	4.26	0.127	0.43	15,868	12,540	\$15,728.0	0.79	98.4%
	9,700,862	217,814	XXXXX	XXXX	XXXX	169,755	144,315	167,188	0.85	XXXXX

Species/Strain Codes & Hatchery Codes

SCS – Spring Chinook Salmon

FCS – Fall Chinook Salmon

COS – Coho Salmon

WRW – White River Strain

LWW – Little White Salmon Strain

WEN – Wenatchee Strain

URB – Upriver Bright Strain

BNN – Bonneville Strain

SPC – Spring Creek Strain

LWS – Little White Salmon NFH

WI – Willard NFH

Administration: The Business Side of Rearing Fish

The Complex had 10 employees at the end of the fiscal year. The following table summarizes Complex staffing during the last year:

<u>Name of Employee</u>	<u>Functional Title</u>	<u>Period Worked</u>
Speros Doulos	Complex Manager	10/1/11 – 9/30/12
Jim Rockowski	Hatchery Mgr. – Little White Salmon	10/1/11 – 12/3/11
Casey Risley	Hatchery Mgr. – Little White Salmon	2/13/12 – 9/30/12
Steve Wingert	Hatchery Mgr. – Willard	10/1/11 – 9/30/12
Lori Orr	Administrative Officer	10/1/11 – 9/30/12
Peter Long	Fish Biologist	10/1/11 – 9/30/12
Orlanda John	Fish Biologist - (SCEP Trainee)	3/24/11 – 9/30/12
Bryan Charlton	Fish Culturist - Willard	10/1/11 – 9/30/12
Patrick Cushman	Fish Culturist - Willard	10/1/11 – 9/30/12
David Frost	Fish Culturist	10/1/11 – 9/30/12
Tyson Lankford	Fish Culturist	10/1/11 – 9/30/12
Larry Leighton	Maintenance Worker	10/1/11 – 9/30/12

Notable personnel actions this year included the retirement of Hatchery Manager, Jim Rockowski at the beginning of December 2011. Casey Risley, Fisheries Biologist assigned to Spring Creek NFH was



USFWS staff say farewell to Jim Rockowski who retired on December 3, 2011 as Hatchery Manager of the Little White Salmon NFH (Photo Credit: Cheri Anderson, USFWS).

promoted to the position of Hatchery Manager, and moved to Little White Salmon NFH in February 2012. Orlanda John also joined the staff at Little White Salmon NFH as a Student Career Experience Program (SCEP) participant in March 2012. Orlanda is pursuing a degree in biology from Portland State University and will be converted to a permanent Fisheries Biologist at Little White Salmon NFH upon successful completion of her degree and SCEP program requirements in June 2016.

The Fiscal Year 2012 budget for the Little White Salmon and Willard NFH's totaled \$1,581,395 from all fund sources. Reimbursable funds from other agencies accounted for a majority

of the operational budget with most of these funds coming from the NOAA - Fisheries Mitchell Act appropriation. These funds reimburse the operating agencies (in this case the U.S. Fish & Wildlife Service) for fish production to mitigate for fish losses associated with the operation of hydroelectric dams on the Columbia River. Remaining reimbursable funds are for fish reared for specific programs such as the Bonneville Power Administration reimbursed Mid-Columbia Coho Reintroduction (Wenatchee and Methow Basin) Project, a cost share with Mitchell Act; U.S. Army Corps of Engineers

John Day mitigation program; and the Grant County PUD-funded White River Recovery program. Additional funds were received from the Service’s deferred maintenance account to help correct maintenance deficiencies at both Little White Salmon and Willard NFH’s.

In addition to an extremely complicated hatchery production program, administration of the Complex also includes the management of 14 government residences, the largest government housing program in the National Fish Hatchery System. Rent paid for occupying a government residence is deposited into a dedicated account for use in maintaining residential facilities. Although these funds are shown as a Complex fund source, monies generated from rental receipts are not used to support fish production efforts. A total of \$16,000 was spent operating government quarters at the Complex during Fiscal Year 2012.

The following table summarizes the Little White Salmon/Willard National Fish Hatchery Complex funds and expenditures (less indirect costs) during Fiscal Year 2012.

Fund Source	Little White Salmon	Willard	Total
NOAA - Mitchell Act	\$590,477	\$125,161	\$1,739,200
COE – John Day Mitigation	163,824		836,671
Grant PUD	333,719	63,385	397,104
Bonneville Power Administration		191,098	202,879
USFWS Deferred Maintenance	56,866	56,865	252,137
Total	\$1,144,886	\$436,509	\$3,427,991

Fish hatchery expenditures focus on three critical areas and include staff salaries, fish food, and maintenance of facilities required to maintain an adequate and healthy rearing environment. Salaries and fish food alone comprised 75% of the Complex budget during Fiscal Year 2012 (salaries 65%; fish food 10%).

Unfortunately the trend of eroding NOAA-Fisheries Mitchell Act funding continues at the Complex. Although originally established prior to the construction of large hydropower projects on the Columbia River, Little White Salmon NFH assumed a mitigation responsibility under the original Mitchell Act of 1938 immediately following the construction of Bonneville Dam. Willard NFH was authorized by an amendment to the Mitchell Act (60 Stat. 923, August 8, 1946). Regardless, reimbursable funding for operations as authorized by the Mitchell Act continues to decline. Once 100% funded by the Mitchell Act these funds now account for only 45.3% of the total hatchery budget.

Construction and Maintenance: Providing a First Class Environment for Fish

Willard National Fish Hatchery (NFH) receives considerable snowfall producing snow and ice accumulation on the hatchery building's roof. When the snow and ice slide off the roof in front of the building entrances it creates a life and safety risk.



New entryway snow-roofs at the Willard NFH (Photo Credit: Steve Wingert, USFWS).

This construction project involved relieving the snow hazard by installing two entry roofs over the south facing entrances of the hatchery building.

Constructed in 1952, the Willard National Fish Hatchery – US Geological Survey Columbia River Research Laboratory building, which is owned by the USFWS, sits on a concrete slab with no under floor crawl space. As a result, the drinking water supply line is buried beneath the concrete and penetrates the slab to enter the building. Over the course of months, the Willard NFH staff saw a marked increase in the amount of domestic water being utilized. During February of 2012 staff

conducted a series of tests to determine if a leak in the water system could be the cause of the otherwise unexplained increase in water usage. The tests were conducted by isolating portions of the supply water lines during controlled conditions and measuring the water use over a 24 hour period. The results of the tests pointed to a leak located somewhere under the Laboratory building. The calculated size of the leak was estimated to be approximately 13 gallons per minute or 62% of the total water usage for the fish hatchery, housing complex, and the Laboratory combined. This leak posed a significant threat to building stability and public health. Running water beneath the building concrete slab had the potential to seriously erode the building foundation. This happened in the past resulting in structural damage and cracked interior and exterior block/brick. The potable water pipe was also exposed to soil that could result in drinking water contamination. This is a serious public health risk because the Willard National Fish Hatchery drinking water system is a Group A Community water system regulated by the Washington Department of Health. This system provides drinking water to the Willard NFH hatchery building with 3 employees, 9 government residences, and to the co-located U.S. Geological Survey Columbia River Research Laboratory that employees 150 staff during peak work load. Contamination of the hatchery drinking water pipeline threatened the safety of hatchery and laboratory employees, government residents and their families, along with the visiting public. Emergency work was contracted to locate and repair the leak under the concrete slab.



Storm damage to GFQ at Willard NFH (Photo Credit: Steve Wingert, USFWS).

During January of FY12 the Willard NFH was hit with a major ice storm. The damage incurred during the ice storm was extensive and involved fallen trees that ravaged facilities across the hatchery, damaging one residence beyond repair. Additionally, power lines and poles were taken out leaving the hatchery without line power for 10 days. The lines supplying power to two well pumps that provide water for the fish hatcheries egg incubation and early fish rearing were taken down. Work was contracted to repair the overhead electrical lines while maintaining power to the wells with minimal

interruption. The work included replacing 3 spans of overhead line, replacing damage weather heads, and resetting the poles.



Storm damage to GFQ at Willard NFH (Photo Credit: Steve Wingert, USFWS)

The following table summarizes major maintenance projects at the Complex completed during Fiscal Year 2012 from a variety of fund sources:

Facility	Project	Cost
Little White Salmon	Completion of ADA compliant wheelchair access ramp on Drano Lake fishing beach ¹	\$39,765
	Restoration of native forest and grassland habitat – Phase II ²	\$35,000
	Purchase new incubators	\$24,889
	Purchase new vehicle	\$23,200
	Subtotal	\$178,632
Willard	Ice Storm damage clean-up	\$23,100
	Repair and replace overhead electric lines	\$7,711
	USGS domestic water line repairs	\$4,976
	Entry way snow roof instillation	\$51,000
	Subtotal	\$86,787
	Total	\$209,732

¹ The design and construction of the ADA compliant wheelchair access ramp and fishing platform on Drano Lake was funded during Fiscal Year 2011, however the ramp was completed and dedicated during Fiscal Year 2012.

² Phase II of The Restoration of the native forest and grassland habitat was funded during Fiscal Year 2011, however because the nature of this project and the work to be completed was very dependent upon weather conditions, the work was carried out during the summer of Fiscal Year 2012.

Connecting *Everyone* with the Mission of the Service

During the Fiscal Year 2012, Little White Salmon/Willard NFH took great strides in providing opportunities for visitors to experience what we do at our complex, and how we work within the Service to conserve, protect, and enhance fish, wildlife, and the nature that belongs to everyone.

Of particular importance to Little White Salmon NFH is offering opportunities to those people that may face physical barriers to experiencing nature and having outdoor adventures due to limited mobility. The “stage was set” with the completion and formal dedication of the Little White Salmon NFH ADA compliant access ramp and fishing platform on July 19, 2012. This ramp is the first site in Washington that enables people using wheelchairs to gain access to fishing in the Bonneville pool, and it’s located at a premier fishing location in Drano Lake.



USFWS Diversity & Civil Rights and State of Washington Recreation & Conservation Offices help in the dedication of the ADA compliant access ramp and fishing platform at Drano Lake, Wa. (Photo Credit: Cheri Anderson, USFWS).

In August, the United Cerebral Palsy (UCP) Association of Oregon and SW Washington joined USFWS personnel at Little White Salmon NFH for a fishing day at Drano Lake.



(Photo credit: Cheri Anderson, USFWS).

Due to a high amount of volunteer help from USFWS Regional Office personnel and our sister hatcheries within the Complex, anglers were afforded 1 on 1 support to maximize their chances of catching a steelhead. Brian Lawler of USFWS-DCR coordinated with Washington Department of Fish & Wildlife and obtained one-day fishing licenses at no cost for all the participants and Brian’s office also covered the expense of fishing gear that could be used by the group. No fish were caught, but no one seemed to mind. Spring Chinook spawning at the hatchery was also taking place so the group was able to learn a little about the hatchery and the production processes. The event was hugely successful, and Little White Salmon anticipates that the UCP will make their fishing day at Drano Lake an annual event.



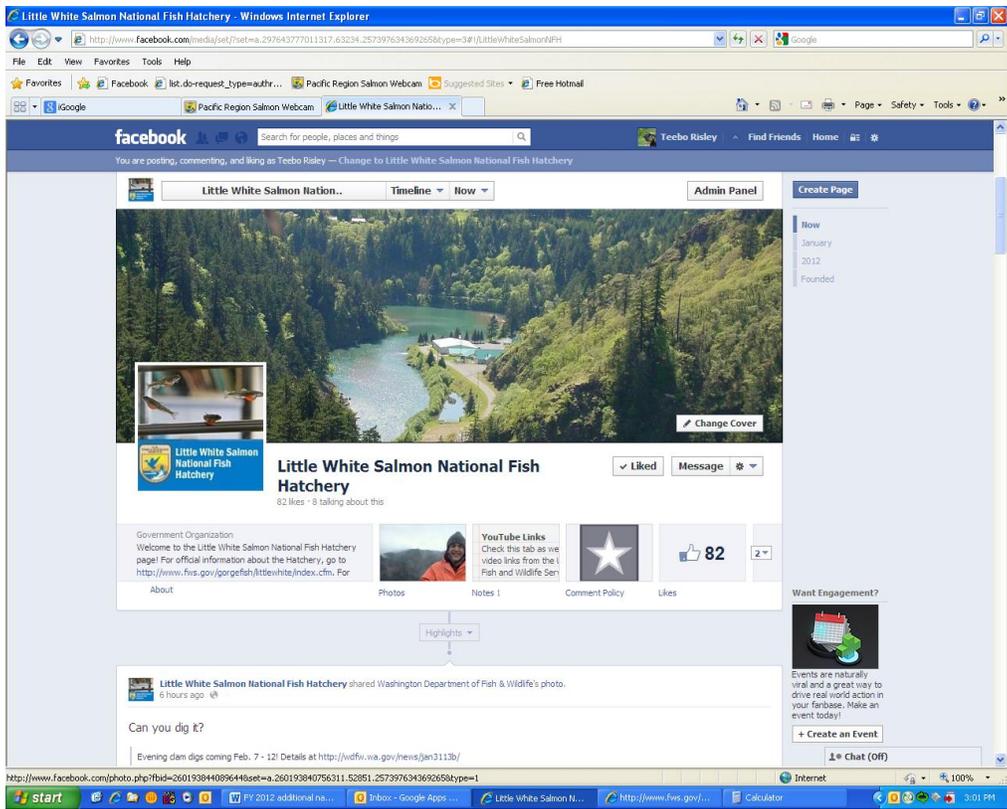
The United Cerebral Palsy (UCP) Association of Oregon and SW Washington at Drano Lake, Washington (Photo Credit: Casey Risley, USFWS).

At the conclusion of Fiscal Year 2012, Little White Salmon NFH hosted a group from the Paralyzed Veterans of America (PVA) for a chilly morning of fishing. The group was small in number but big in enthusiasm. Many in the group were experienced fishermen, but none had visited Drano Lake prior to this event because the lake is otherwise inaccessible to people who use wheelchairs. The upriver bright fall Chinook are known for being elusive and hard to catch in Drano Lake, but our visitors knew what they were doing. Several bites were had, and one fish was landed.



PVA member and visitor to Little White Salmon shows off his catch at Drano Lake (Photo Credit: Casey Risley, USFWS).

Little White Salmon NFH also reached out to a much larger audience in Fiscal Year 2012 when a Facebook page was created for the facility. Since it was launched in April 2012, 82 people have added Little White Salmon NFH to their regular news feed, receiving updated posts each time the page is updated. Our posts have reached as many as 117 people at one time, in 4 different countries. We are still developing our skills in using new media as an outreach tool, but we expect that our audience will continue to grow as we make ourselves more available and accessible.



(Image Credit: Casey Risley, USFWS).

Columbia Gorge Information and Education Office



The Columbia Gorge Information and Education Office (I&E) generates increased public awareness through expanded community outreach efforts and on-site visits. The I&E Manager continues to participate in off-site natural resource education events which generates support for Service programs. Our Service programs strive to meet the needs of our local and visiting public. The office provides outreach services for the Columbia River Gorge National Fish Hatchery (NFH) Complex which includes: Carson, Little White, Spring Creek and Willard National Fish Hatcheries and the Lower Columbia River Fish Health

Center. The I&E staff coordinates with the Columbia River Fisheries Program Office on special projects and events.

To adequately describe and report their activities and services provided to our hatchery facilities, a supplemental report has been made available for Fiscal Year 2012.