

Snake River Fall Chinook Synergy and Hatchery Program Overview

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Synergy is the interaction of elements that when combined produce a total effect that is greater than the sum of the individual elements.

Management of Snake River fall Chinook involves many different legal directives, mandates, and agreements throughout the life history of the fish. This presentation provides an overview of the different legal agreements and mandates that impact Snake River fall Chinook and the complexity that the synergy of these management considerations pose.

SLIDE 1

The two foundational legal agreements/directives effecting Snake River fall Chinook are the:

- 1855 Treaties between the U.S. government and the Nez Perce, Umatilla, Yakama and Warm Springs Tribes, and
- The 1972 Endangered Species Act (ESA)

As a result of the Treaties and the ESA the following items, arranged by “H”, impact the management of Snake River fall Chinook salmon.

These legal agreements effect or direct the harvest rates of Snake River fall Chinook in the ocean and mainstem Columbia River.

- Pacific Salmon Treaty (Pacific Salmon Commission – PSC)
- Magnuson Act (Pacific Fishery Management Council – PFMC)
- *U.S. vs. Oregon* Management Agreement

These legal documents and agreements effect, direct and impact the freshwater habitat, migration of adults, spawning, incubation, juvenile rearing and emigration of Snake River fall Chinook.

- Federal Columbia River Power System Biological Opinion
 - Dworshak Dam
 - Snake/Columbia summer spill
- Federal Energy Regulatory Commission
 - Idaho Power Complex

These legal agreements and laws effect and direct the hatchery production of Snake River fall Chinook to mitigate for the impacts of the construction and operation of Snake and Columbia rivers mainstem dams.

- Idaho Power Company/Hells Canyon Settlement Agreement

- Lower Snake River Compensation Plan – Public Law 94-587, 99-662, 103-316
- Northwest Power Act
- *U.S. vs. Oregon* Management Agreement
- Columbia Basin Treaty Tribes Accords

SLIDE 2 – Harvest

Unlike spring Chinook and steelhead from the Snake River, fall Chinook are harvested in fairly large numbers in the ocean, Puget Sound, along the coast of Canada and up into Southeast Alaska. As such, the harvest of these fall Chinook are managed by the Pacific Salmon Treaty, Magnuson Act, and the *U.S. vs. Oregon* Agreement.

SLIDE 3 –

Fall Chinook (including Snake River falls) also provide a very important fishery for the Treaty Tribes in the Columbia River in Zone 6 (Bonneville Dam to McNary Dam). Fall Chinook typically compose more than all of the other species harvested added together – or over 50% of the total harvest. In 2013, the Treaty Tribes harvested almost 250,000 fall Chinook in Zone 6. When the Tribes are operating a commercial fishery and are able to sell fish at \$5/lb. this provides an extremely important economic benefit. Snake River fall Chinook are only a small component of this fishery – but the abundance of natural origin ESA listed Snake River fall Chinook can restrict this fishery and has been the subject of legal dispute effecting *U.S. vs. Oregon* Management Agreement, the Federal Columbia River Power System Biological Opinion and the Columbia Basin Treaty Tribes Accords.

SLIDE 4 – Hydro/Habitat

The dams built on the Snake and Columbia Rivers may have effected Snake River fall Chinook more than any other salmon population. The Idaho Power Complex dams on the Snake River blocked 1,600 miles of habitat, extirpated the two major Snake River fall Chinook populations in southern Idaho and dramatically impacts the remaining habitat (water temperature and flows) downstream of the complex.

- Brownlee – 1958, Oxbow – 1961, Hells Canyon 1965

Because fall Chinook are mainstem spawners, the dams on the mainstem Columbia and lower Snake river effect every stage of fresh water life history. Large impacts have occurred to adult migration, spawning, incubation, juvenile rearing and emigration. The historical habitat for Snake River fall Chinook has been reduced to only 15% of the historical habitat available.

- Bonneville – 1938, McNary 1954, The Dalles 1957, John Day 1971, Ice Harbor 1961, Lower Monumental 1969, Little Goose 1970, Lower Granite 1975

Operation of these hydropower projects are governed by the Federal Energy Regulatory Commission and the Federal Columbia River Power System Biological Opinion and Litigation.

SLIDE 5 –

When the lower Snake River mainstem dams were being considered for construction and going through the authorization process in Congress the U.S. government was fully aware that there would be impacts to the Snake River salmon populations. Warner W. Gardner, Assistant Secretary of the Interior, voiced the government's position on this potential impact by stating --- "the salmon run must, if necessary, be sacrificed," adding: "The government's efforts should be directed toward ameliorating the impact of this development upon the injured interest and not toward a vain attempt to hold still the hands of the clock". As a result, Congress authorized construction and operation of hatcheries to mitigate for the impact of the federal dam construction and operation and FERC approved the same for the Idaho Power Complex.

SLIDE 6 – Hatchery

As a result, Oxbow Hatchery (IPC), Lyons Ferry Hatchery (Lower Snake River Compensation Plan), Fall Chinook Acclimation Project and Nez Perce Tribal Hatchery (Northwest Power Act – Bonneville Power) were constructed and operated to mitigate for the hydropower dams. The production from these facilities are authorized and operated consistent with these legal agreements or laws.

- Idaho Power Company/Hells Canyon Settlement Agreement
- Lower Snake River Compensation Plan – Public Law 94-587, 99-662, 103-316
- Northwest Power Act
- *U.S. vs. Oregon* Management Agreement
- Columbia Basin Treaty Tribes Accords

SLIDE 7 –

Hatchery production of Snake River fall Chinook totals approximately 5.5 million annually. Mitigation for the Idaho Power Complex is 1.0 million subyearlings and for the mainstem Columbia and Snake dams is 2.2 million subyearlings and 900,000 yearlings from Lyons Ferry Hatchery and 1.4 million subyearlings from Nez Perce Tribal Hatchery. These hatchery facilities and their production are operated as a highly integrated and coordinated program...as a result of litigation.

SLIDE 8 –

The current Snake River fall Chinook hatchery program was shaped by an *U.S. vs. Oregon* Agreement.

In 1995, the return of natural origin Snake River fall Chinook was so small that NOAA Fisheries told the Treaty Tribes they would need to restrict their Treaty fisheries – and bear the conservation burden for natural origin Snake River fall Chinook. This argument was over 18 fish – and set up potential litigation of Treaty Rights vs. Endangered Species Act in *U.S. vs. Oregon* court. In order to settle this dispute the U.S. vs. Oregon parties agreed to an abundance based harvest rate scale in the Columbia mainstem fisheries and a supplementation program (using hatchery production to boost natural spawning) above Lower Granite Dam. Prior to 1995, the hatchery program for Snake River fall Chinook was only Lyons Ferry Hatchery (located below Little Goose Dam) with all releases below Lower Granite Dam.

SLIDE 9 –

The supplementation program started in 1997 with the construction of the Fall Chinook Acclimation Project and acclimated releases above Lower Granite Dam. Full implementation of hatchery production results in 450,000 yearlings and 200,000 subyearlings below Lower Granite and 450,000 yearlings and 4.4 million subyearlings above.

SLIDE 10 & 11 –

The U.S. vs. Oregon Agreement specifies numbers, location, age, and priority for production of Snake River fall Chinook across all the hatchery facilities and programs in the Snake River. In addition, a comprehensive marking program was developed so the hatchery production can be evaluated and run reconstruction can be accomplished for natural and hatchery origin fish.

For six years and additional 327,000 subyearlings were produced for a transportation study – priority 12 and 14. These fish were grown smaller, more similar to natural origin fall Chinook to act as a surrogate for natural fish and all of them were PIT tagged. Fish transported were compared to those fish left inriver to migrate on their own. The last year of these releases were 2011.

SLIDE 12 –

As a result of the marking strategy 76% of the fish have some type of physical mark (ad clip, coded wire tag, PIT tag). Approximately 50% of the fish are adipose fin clipped. Until recently only non-selective fisheries have occurred on fall Chinook. Washington and Oregon are proposing mark selective fisheries in the Lower Columbia River and the state of Idaho and Washington currently manage a mark selective fishery on fall Chinook in the Snake River. All of the hatchery origin Snake River fall Chinook are marked genetically – through parental based tagging.

SLIDE 13 – Overview of Snake River fall Chinook hatchery program

The main rearing facilities that production Snake River fall Chinook are Lyons Ferry Hatchery, Nez Perce Tribal Hatchery, Irrigon and Umatilla hatcheries, and Oxbow Hatchery

SLIDE 14 – Broodstock collection

Broodstock collection is intended to occur primarily at Lower Granite Dam adult trap. This is to collect fish across the run and the only feasible location to collect natural origin fish to include in the broodstock. Adults are transported to Lyons Ferry Hatchery (70%) and Nez Perce Tribal Hatchery (30%) where they are held for spawning. If necessary both of these facilities also have a ladder and a trap and can collect broodstock if Lower Granite trapping is not sufficient. This occurred in 2013 when water temperatures at Lower Granite were so warm that trapping was not able to occur (water temperatures greater than 70 degrees F) until September 23 – when 70% of the run had already passed the dam.

SLIDE 15 – Juvenile rearing

Egg incubation and juvenile rearing occurs at Lyons Ferry Hatchery and Nez Perce Tribal Hatchery (and satellite Sweetwater Springs). Lyons Ferry provides eggs to fulfill the Idaho Power Program – incubation and rearing at Umatilla/Irrigon and Oxbow hatcheries. Also, during the transportation study Dworshak Hatchery provided some fall Chinook rearing.

SLIDE 16 – Acclimation sites

The Fall Chinook Acclimation Project sites, Big Canyon on the Clearwater River and Pittsburg Landing and Captain John Rapids on the Snake River, acclimate and release yearlings and subyearlings from Lyons Ferry Hatchery.

Nez Perce Tribal Hatchery has three acclimation facilities, North Lapwai Valley on Lapwai Creek, Cedar Flats on the Selway River and Lukes Gulch on the South Fork Clearwater. On site releases at Nez Perce Tribal Hatchery also occur from a natural rearing pond.

SLIDE 17 – Direct Release

Fish are also released directly in a few locations. The fish produced for Idaho Power mitigation are released at Hells Canyon Dam. There is a direct stream release of fish in the Grande Ronde River and a release at Couse Creek on the Snake River that is compared to the acclimated release of fish from Captain John Rapids. Stuart Rosenberger will be presenting information regarding this study.

SLIDE 18 – Transportation Study

The fish reared for the transportation study or the surrogates are released in two locations – one in the area of Big Canyon Creek on the Clearwater River and the other in the area of Couse Creek on the Snake River.

SLIDE 19 –

The Snake River fall Chinook hatchery program is highly integrated and coordinated. It involves three states (ID, WA, and OR), primarily two Indian Tribes (Nez Perce and Umatilla) but also the other two Treaty Tribes (Yakama and Warm Springs) through the *U.S. vs. Oregon* Agreement, three federal agencies (U.S. Fish and Wildlife Service, NOAA Fisheries, and the U.S. Army Corps of Engineers, also Bonneville Power Administration, Idaho Power Company, University of Idaho, and scientific consultants.

Representatives from these parties coordinate regularly and meet at biannual Fall Chinook Coordination meetings and Annual Operation Plan meetings for the hatchery facilities. In addition, the co-managers have weekly conference calls during the adult return, broodstock collection, and harvest season to coordinate management and activities.

The operation of these hatchery programs are so coordinated that the operators of the programs co-developed and submitted collaborative HGMPs (Hatchery Genetic Management Plans) for the program and recently received Section 10 Permits for their operation.

SLIDE 20 –

Operation of the Snake River fall Chinook hatchery program and potential ESA take or impacts is considered in the *U.S. vs. Oregon* Management Agreement. Changes to the program must be considered and analyzed by all the *U.S. vs. Oregon* parties along with other actions (hydrosystem actions) that effect abundance, productivity, spatial structure, and diversity.

SLIDE 21 –

The Columbia Basin Treaty Tribes Accords also contains a provision concerning the Snake River fall Chinook program. The Tribes established their expectation that the Lyons Ferry hatchery program would remained stable and substantially unaltered for the term of the Agreement. If that did not occur then the Tribes would consider withdrawal from the Agreement.

SLIDE 22 – 26

The Snake River fall Chinook hatchery program – all of the production – exists solely to mitigate for the hydrosystem dams that were constructed and operated on the Snake and Columbia rivers. When the dams were built there was full acknowledgement that the salmon runs would be impacted. The promise was made that hatcheries would mitigate for those losses. I close this presentation with a story from 1945 at a meeting in The Dalles, Oregon where the U.S. Army Corp of Engineers were meeting with the Tribes about the proposed The Dalles Dam. This encounter was documented by Francis Seufert, a local fish buyer.

“The Indian chiefs were all old men, very dignified. Each of the old chiefs came forward, one at a time, shook the colonel’s hand and talked through an interpreter giving the Indians’ story of their dependence on Columbia River salmon, and the serious effect that the building of the dam at The Dalles would have on the Indians’ livelihood. The old chiefs made many references to the Indian Treaty of 1855, the terms of the treaty and the obligations of the U.S. government to uphold the sacredness of the treaty and not build The Dalles Dam.

The elegance and dignity of the old Indian chiefs in stating the Indians’ case, their choice of words, the beautifully put phrases, excellent prose, their poetic way of using picturesque and yet descriptive speech, was something that no one present would ever forget. The simplicity of the old chiefs’ speech was a moving thing to hear. I was impressed with the respect that the old chiefs were held in by the younger Indians.

I had never seen anything like it before. After all the old chiefs had spoken, a number of the old women also addressed the colonel, these old Indian women

telling the Indians' side of the story of previous promises, and only receiving broken promises and excuses from the U.S. government. These old women pleaded with the colonel not to let that history from the Indian standpoint repeat itself again.

After the old chiefs and the old Indian women had all had their say, the good colonel expressed extreme sympathy for the Indians, and wanted them to know that the Army Engineers would have nothing to do with the decision to build a dam at The Dalles, only Congress could do that.

As I left the meeting and walked down the stairs, I couldn't help feeling I had witnessed another bit of history in our government's dealing with the American Indian, and I was sure of one thing at the time: if local merchants saw a chance to make money through the building of a dam at The Dalles, then nothing as simple as an Indian treaty signed some 90 years before was going to stand in the way."

I share this story remind us all that this Snake River fall Chinook hatchery program and the fish it produces represent a promise. A promise made by the government and people that constructed the dams that so changed this basin and the habitat the salmon depend upon. A promise to produce fish that were lost as a result of the habitat destruction and inundation. As long as the dams are in place there is a legal obligation to provide fish. Congressionally mandated mitigation obligations associated with the dams are substantial and are not supplanted by the need to comply with the Endangered Species Act

We, the people in this room today, can not go back and undo the broken promises of the past. But it is our job to make good on implementing those promises now and in the future. So, as you listen and review the Snake River fall Chinook hatchery program – keep in mind it's not IF this program is operated...it's HOW.