Lower Snake River Compensation Plan or LSRCP

LSRCP Fish Hatchery

The heart of the program is ten hatcheries: two national (Dworshak and Hagerman), two Washington, three Oregon, and three Idaho.

LSRCP Satellite Facility

14 satellite facilities are key places where adults are trapped and juvenile fish (smolts) are acclimated to their river of origin before release.

LSRCP Fish Health Lab

There are four fish health labs that work with the hatcheries to keep fish thriving. The goal is to release healthy fish into the wild rivers.

LSRCP Monitoring & Evaluation Facility

Data gathering is the primary task of these seven facilities. Tagged fish (Coded Wire, PIT and genetic Parental Based Tags) are tracked from river to ocean and back.

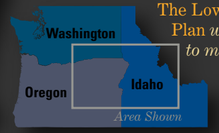
LSRCP Administrative Office

All the parts above report to the LSRCP office in Boise where six full-time staff work.

Web: http://www.fws.gov/office/lower-snake-river-compensation-plan

Funding for the LSRCP comes from the Bonneville Power Administration.

The LSRCP program is administered by the U.S. Fish & Wildlife Service



The Lower Snake River Compensation Plan *was authorized by Congress in 1976 to mitigate for the adverse impact four lower Snake River dams had on commercial, recreational and tribal fisheries. Our hatcheries and evaluation programs are conducted under Cooperative Agreements with the States of Idaho, Oregon and Washington, the Nez Perce, Shoshone-Bannock and Confederated Umatilla Tribes, and the Pacific States Marine Fisheries Commission and Service hatcheries and field stations.*

LSRCP yearly adult PRODUCTION:

91,500	Fall Chinook
293,500	Summer/Spring Chinook
165,300	steelhead…

for harvest in the ocean and Columbia below McNary Dam and to escape Chinook and steelhead adults along the lower Snake River. Subtract return goal (below) for coast wide harvest.

LSRCP yearly adult RETURN GOALS:

18,300	Fall Chinook
58,700	Summer/Spring Chinook
55,100	steelhead…

returning above McNary Dam to the LSRCP project or above.

LSRCP facilities raise 86,000 pounds of rainbow trout for local recreational fishing in Washington and Idaho.

NOAA's National Marine Fisheries lists Snake River Chinook and steelhead as threatened and sockeye as endangered. The LSRCP supports recovery of these endangered stocks through outplanting juvenile and adult fish.

Clearwater Fish Hatchery LSRCP goals: 14,000 steelhead and 12,000 spring/summer Chinook returning each year

1. Clearwater Fish Hatchery traps adult fish at Powell, Lower Crooked River and Red River satellite facilities. Anglers, at times, assist with the taking of adults used for spawning.
2. The broodstock goals for Clearwater Fish Hatchery : B-runsteelhead is 386 or 193 pair; spring Chinook, 2,244 or 1,122 pair; and, summer Chinook, 462 or 231 pair of adult fish.
3. Broodstock needs are met through cooperative agreements with Dworshak and Kooskia National Fish Hatcheries, and the Nez Perce Tribal Hatchery programs.
4. The Lewiston Dam erected in 1927 blocked access to all anadromous fish (salmon and steelhead) on the Clearwater River; therefore their unique populations went extinct.
5. In the 1990s, Clearwater Hatchery reduced production of steelhead to make room for more spring Chinook.
6. Developing a locally adapted run of summer Chinook on the Powell River has been made possible by eggs supplied by the McCall Hatchery taken from South Fork Salmon River adults.

Cover image © K. Peterson

U.S. Fish & Wildlife Service

Clearwater
Fish Hatchery

Clearwater Fish Hatchery
Box 1021
Ahsahka, ID 83520

208/476-3331
http://idfg.idaho.gov

U.S. Fish & Wildlife Service
http://www.fws.gov/lsnakecomplan/

December 21, 2023

Part of the ~
LOWER SNAKE RIVER COMPENSATION PLAN

Welcome to Clearwater Fish Hatchery

Open daily 9 to 3. Arrange for guided group tours by calling (208) 476-3331.

Spring

Steelhead adults return to the Clearwater Basin & are spawned

March

18 month old Chinook & 12 month old steelhead smolts are released

March-April

eyed egg

hatchling (new germ)

May-June

Steelhead egg & remain in egg trays until they have used up their yolk sac

sac fry (alevin)

Summer

Swim-up fry eat pellet food once their yolk sac is gone

July

Steelhead & Chinook smolts adipose fins are clipped; they are moved to the outside raceways

Fall

PIT tag diagram

Some Chinook/steelhead fingerlings get *Passive Integrated Transponders* or PIT tags in their abdomens

October

Tags loaded here

PIT tag receivers come in many forms

PIT tags are inserted into the body cavity using an injector

Winter

Growth and health have been assessed monthly since June

Benchmark weights & lengths indicate overall brood health

late February

Pre-release health checks are completed 3 weeks prior to release

A healthy smolt

Robert Monge

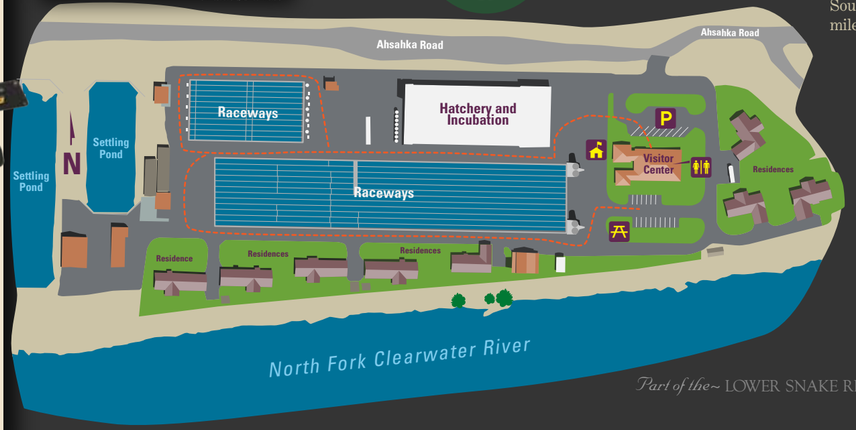
The habitat remains: Lewiston Dam blocked nearly the entire Clearwater Basin. In 1973 when it came down, prime salmon habitat was opened up again.

Spring/Summer Chinook

Steelhead

THE HATCHERY GROUNDS

Fish illustrations, © Paul Waters



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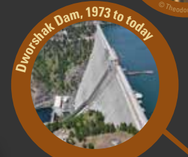

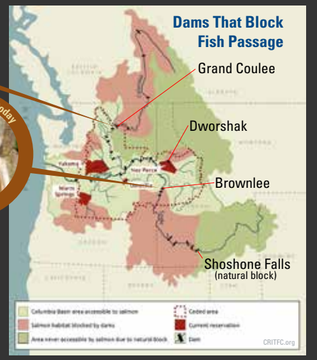

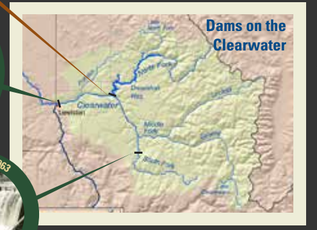

Internal GPS

Our Summer Chinook migrate 1,000 miles from the northern Pacific, returning with pinpoint accuracy to our weir on the Lochsa River.

First, they dead reckon across a featureless ocean using magnetism. Small magnetite particle chains in the fish allow alignment relative to the earth's geomagnetic field. Specialized nerve receptors monitor tiny shifts in the fish's own magnetic field in relation to the planet's. Coupled with the sun's position and patterns of polarized light in the sky, the salmon navigates, not randomly, but directly to the Columbia River.

Once in the river's estuary, magnetism gives way to smell. Like living spectrometers, salmon detect extremely diluted particles. Adult fish smell their way home following a chain of chemical signposts imprinted on their outbound journey as juveniles. Their olfactory-brain leads them "home," a migration strategy millions of years old.

Blocking Passage

But, what if the way home is closed? Starting in 1927, passage into the Clearwater River was blocked by the Lewiston Dam. Every salmon run on the river went extinct. Eventually in 1973 Lewiston Dam came down and Dworshak Dam went up, re-opening the Middle and South Forks of the river as well as two miles of its North Fork.

Dworshak Dam went up as the last of four new Lower Snake River dams neared completion. In 1991, Clearwater Hatchery began raising steelhead and spring/summer Chinook salmon to replace losses due to those dams as part of the Lower Snake River Compensation Plan. The hatchery reintroduced fish where they'd disappeared.

Part of the~ LOWER SNAKE RIVER COMPENSATION PLAN

Spring Chinook can be very large. A hatchery worker takes a break from spawning activities to hold up this impressive male.

IDFG

IDAHO • OREGON • ALASKA
PACIFIC STATES MARINE FISHERIES COMMISSION
WASHINGTON • CALIFORNIA

Pacific States Marine Fisheries Commission mark hatchery fish for various programs so they can be tracked.

Spring Chinook

Spring Chinook with similar genetics for the re-population came from the Lower Salmon River and the Wind River in the Columbia Gorge. Collection of the descendants of this population occurs at three satellite facilities each over 120 miles away in the Clearwater system.

Spring Chinook migrate to Idaho as early as March and as late as September. Adults trapped at Red and Crooked River are transported throughout the summer to the hatchery. Trapping, holding, and spawning activities happen on site at the Powell satellite facility. The green or "water hardened" eggs are transported from Powell to the hatchery in special bags and tubes.

In August and September, the Clearwater staff spawns these Chinook – one female to one male, taking steps to prevent inbreeding problems and insure genetic diversity. Females with bacterial kidney disease or poor quality eggs are culled.

Summer Chinook

There is anecdotal evidence that a summer run of Chinook salmon was present in the Clearwater River basin prior to the construction of Lewiston Dam. Following extirpation, IDFG established a summer Chinook program at Clearwater Hatchery with eggs sourced from the South Fork Salmon River. The program was initiated with the first smolt releases in 2011 in Crooked River, a tributary of the South Fork Clearwater River. The program was unsuccessful in Crooked River and smolt releases were relocated to the Lochsa River at the Powell satellite facility in 2014. The goal of the program is to use localized returns to reestablish Summer Chinook in the Clearwater Basin to provide ecosystem and fishery benefits from this previously extirpated stock.

Working with the Nez Perce tribe, the goal is to create a locally adapted run, and the Crooked River satellite facility is in just the right place. Incubated and reared at Clearwater, summer Chinook are released into the Powell River. Once established in the Powell, the summer run will be spread out into more river miles on the South Fork Clearwater and Selway Rivers. Eggs will stop coming from McCall when the locally adapted broodstock is dependable.

© Ben Pinkard

One of our fish? Maybe...

© Sean Dahlquist

Steelhead fishing boosts local Idaho economies in a myriad of ways.

IDFG

This healthy steelhead smolt was no accident. The science of fish culture makes for viable fish.

B-run Steelhead

The Clearwater Fish Hatchery utilizes anglers to collect a locally adapted brood-stock on the South Fork of the Clearwater River. 843,000 steelhead are raised at the hatchery and released back into the South Fork. The hatchery also incubates Dworshak B-run eggs to eye up for Magic Valley Fish Hatchery.

Smolting and Release

The hatchery needs to release juvenile Chinook and steelhead before they imprint on hatchery water. They need to imprint on "home" streams in the Clearwater system. Using a variety of acclimation and direct release schedules, we truck spring Chinook and young steelhead to their respective release sites.

When proper size, age, the sun's location in the sky, and day length align, physiological changes cue the juvenile migration to saltwater. Called smolts, they imprint the 600-mile journey on their brains, especially the olfactory, like a road map. At the same time their kidneys and gills are changing to saltwater mode, and they venture into the Pacific Ocean to grow large. In three to four years, give or take, they return home. Some will be trapped as hatchery broodstock. Some will be allowed to spawn naturally. Either way, the cycle begins anew.

A combination of many things created the extinction or near extinction of salmon and steelhead in these rivers. With guidance from multiple agencies, tribes and the public, LSRCP's goal is to recreate a strong fish run allowing sport and tribal fisheries are being realized.