

# Chapter 1 Purpose and Need

In this Chapter:

- The Need for Action
- Finding Solutions
- Purposes
- Decisions to be made
- Other Issues

## ➔ For Your Information

*\*Words and acronyms in bold and italics are defined in Chapter 9, **Glossary and Acronyms**. Some are also defined in sidebars.*

***Naturally-reproducing*** salmon are adult fish that spawn in a stream or river.

***Wild*** salmon are defined in this document as fish that have not spent any part of their life history in an artificial environment, and are the progeny of naturally-reproducing salmon regardless of parentage. For example, the progeny of hatchery fish that have been raised in the wild are considered wild. This distinction is made so that spring chinook in the Clearwater can be defined as wild.

***Steelhead*** are the sea going rainbow trout, reclassified as Pacific Salmon in 1989.

***Anadromous fish*** migrate from fresh to saltwater when young, spend the majority of their adult life in the ocean, and then return to their ancestral drainage to spawn.

The ***Columbia River Basin*** is the drainage of the Columbia River which includes parts of Canada, the Pacific Northwest, and parts of Montana, Wyoming, and Nevada.

Chapter 1 explains a need to ***mitigate for naturally-reproducing\**** salmon in the Clearwater River ***Subbasin*** in north central Idaho. (See Map 1.) This chapter describes the conditions and actions that created the need for action. This chapter also describes how the Nez Perce Tribe (***NPT***), the Bonneville Power Administration (***BPA***), the Bureau of Indian Affairs (***BIA***), the Northwest Power Planning Council (***Council***) and other interested parties developed the Nez Perce Tribal Hatchery program to meet the need.

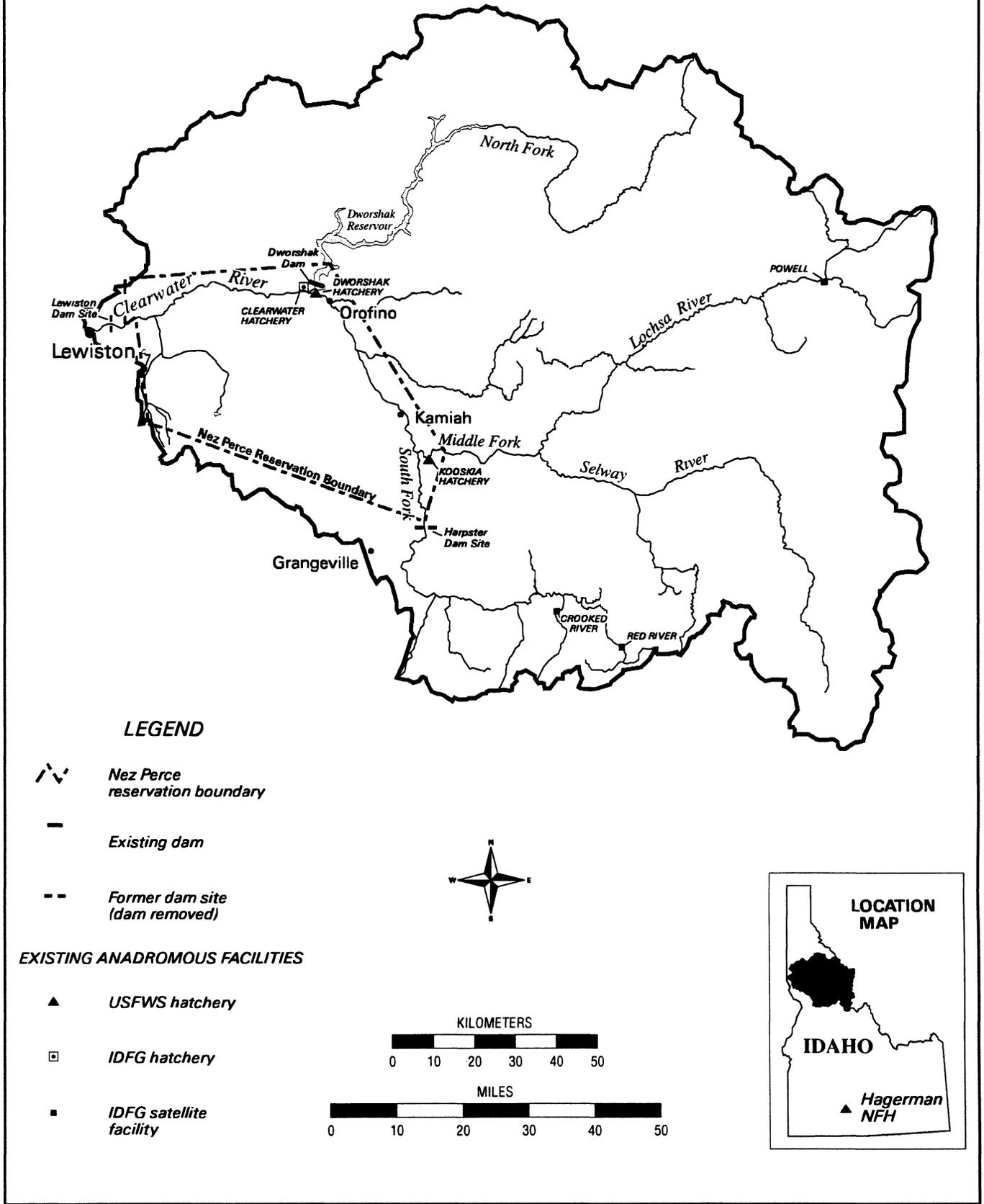
## 1.1 Need For Action

**The Nez Perce Tribal Hatchery program responds directly to a need to mitigate for naturally-reproducing salmon in the Clearwater River Subbasin.**

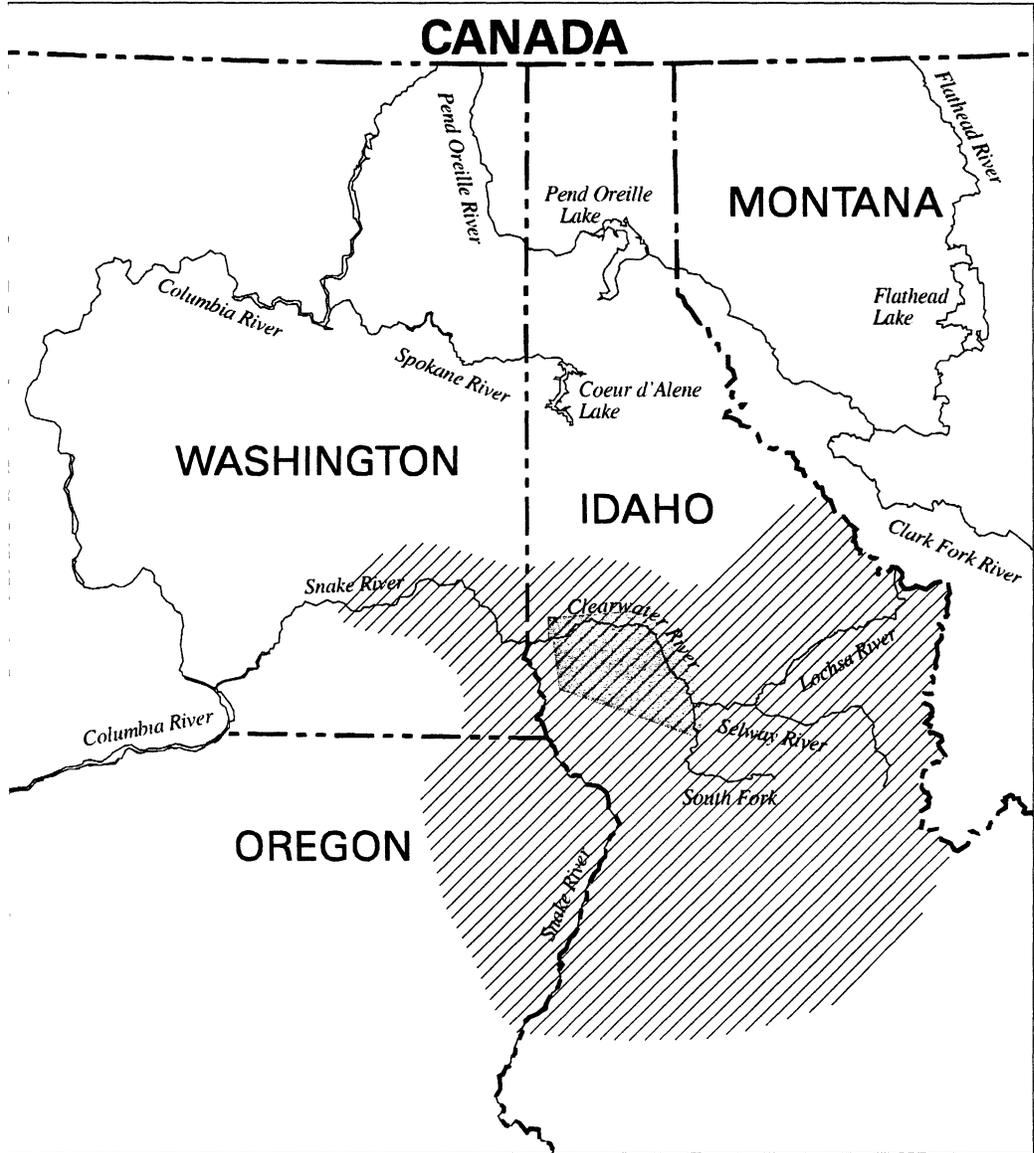
Salmon and ***steelhead*** are ***anadromous*** fish that migrate from freshwater to saltwater as juveniles, and back to freshwater again to spawn as adults. A century ago, as many as 16 million salmon and steelhead returned from the sea to spawn in the ***Columbia River Basin*** each year. Now, fewer than 2.5 million salmon and steelhead return annually: most return to hatcheries in the lower Columbia River; few return to spawn in the Clearwater River Subbasin.

Fewer salmon and steelhead return to the Columbia River Basin for many reasons. Natural events such as fire and floods altered the landscape, and streams and rivers used by fish. But human activities such as road building, mining, logging, land development, farming and ranching have caused the principal change in natural habitat used by fish and other species. Dams on the Columbia and Snake rivers and their tributaries created migration barriers for fish and permanently altered the free-flowing nature and environment of the largest Northwest rivers. Also

# Nez Perce Tribal Hatchery Project Study Area

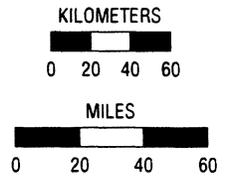


Map 1  
Clearwater River Subbasin



**LEGEND**

-  Nez Perce Reservation from Treaty of 1855.
-  Present day Nez Perce Reservation.



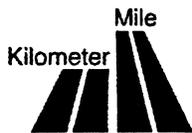
**Map 2**  
**Nez Perce Reservation**

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*Chinook salmon are the largest salmon. The chinook has a greenish back, silver sides and belly. Chinook are long distance swimmers and travel to the farthest reaches of the Columbia Basin to spawn. The fish return from the ocean to the Columbia River in the spring, summer, and fall and are differentiated by the time of year they return.*

*Coho salmon are also called silver salmon.*

*BPA uses metric measurements to comply with Public Law 100-418. See metric conversion chart on the inside of the back cover.*



*Riparian habitat occurs along the banks of natural watercourses. The quality of riparian habitat is important to fish production.*

*Substrate is the material on the bed of a stream.*

since the 1800s, commercial fishermen have overharvested *chinook, coho*, and to a lesser extent steelhead in the ocean and in the Columbia River. Many salmon runs were depleted by overfishing by the first half of the twentieth century. Harvest since the 1970s has been severely curtailed in the Columbia River.

### 1.1.1 The Clearwater River Subbasin

The Clearwater River empties into the Snake River, which flows into the Columbia River (see Map 2). Of course, all harvest impacts and changes in the migratory conditions of the river system downstream affected the runs in the Clearwater River Subbasin, but environmental conditions within the subbasin itself have acted to destroy the native anadromous fish runs.

Hydroelectric and flood control dams eliminated most of the Clearwater River salmon. In 1910, the Harpster Dam was built on the South Fork of the Clearwater River at Harpster (about 32 kilometers [20 miles] up the South Fork). Harpster Dam eliminated salmon runs from the high quality spawning areas in this major tributary. In 1927, Lewiston Dam was built at the mouth of the *mainstem* of the Clearwater River. Lewiston Dam prevented passage of spring, summer and fall chinook from at least 1927 to 1940, although steelhead were evidently able to pass. Passage facilities were upgraded in the 1950s, but counts of chinook salmon between 1950 and 1957 ranged from only 7 to 63 fish, indicating that the indigenous run was probably eliminated by then. Harpster Dam was removed in 1963, which reopened the South Fork Clearwater. But Dworshak Dam was built at the mouth of the North Fork Clearwater River in 1974 and it blocked fish passage from that large river. Lewiston Dam was eventually removed in the winter of 1972-73, making most of the Clearwater once again a free-flowing system.

Other human-caused and natural events have shaped the character of the Clearwater River Subbasin. Much of the upper, forested headwaters were burned by catastrophic fires from 1910 to 1930, which contributed to increased erosion and sediment in streams from the surrounding burned-over hillsides. Also, early in the century large scale mining operations scoured many of the best spawning areas of the South Fork and North Fork Clearwater. Agricultural activities are concentrated in the lower subbasin and have resulted in high runoffs, altered streamflows, increased sediments and nutrients, and reduced the amount of *riparian* habitat in the lower mainstem and its tributaries. Timber harvest, and the road construction associated with it, have concentrated on the unburned portions of the forested watersheds, and have caused detrimental impacts to riparian habitat, runoff and stream *substrate* quality.

### 1.1.1.1 *The Clearwater River Fish Community*

**There exists a biological need to restore salmon, a vital component of the Pacific Northwest ecosystem, back into the Clearwater Subbasin’s rivers and streams.**

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*salmonids belong to the family salmonidae, i.e., salmon, trout, steelhead, whitefish.*

Historically, *salmonids*, sculpins, dace, and suckers dominated the Clearwater River fish community. Because of their physical size and prolific nature, salmon and steelhead were the most abundant and visible aquatic residents. They, along with older bull and cutthroat trout, dominated the fish community from the mouth of the mainstem Clearwater River up into its upper tributaries. Salmon and steelhead would go as far into the tributaries as possible while resident fish, like smaller cutthroat and bull trout, would live above the log jams and waterfalls, deep within the myriad of smaller streams. Suckers, dace and sculpins were most abundant in the lower mainstem reaches and their tributaries.

The Clearwater River today has lost the diversity that was part of the historic fish community. Most notably, indigenous chinook salmon populations are gone from the Clearwater River. Cutthroat and bull trout populations are in decline. Formerly abundant, Pacific lamprey now return in very low numbers. Steelhead, which managed to hang on during the dam building era, are no longer abundant nor distributed as widely. In addition, non-native brook trout, non-native rainbow and cutthroat trout have been introduced in headwater streams to establish sport fisheries and have altered the fish community through competition, predation, and reproduction. In the lower mainstem, non-native predators such as bass are present.

*The loss of salmon has diminished the supply of nutrients in the Clearwater River.*

Salmon once had a major role in the ecosystem of the Clearwater River Subbasin. The loss of salmon from its role has had and will continue to have dramatic effects. The biological niche of young chinook as prey and competitor, and of adult chinook as a nutrient source remains vacant. The loss of biomass provided by large salmon carcasses has made the overall aquatic ecosystem less productive. For thousands of years, while salmon runs were plentiful, the Clearwater River was supplied with nutrients brought in by returning adults from July through December, year after year. Within the last 100 years, that organic source has been shut off and most nutrients are now derived solely from streamside sources. Aquatic and terrestrial organisms that had evolved to depend on that nutrient source have been affected.

### 1.1.1.2 *Hatchery Fish Production in the Clearwater Subbasin*

Many attempts have been made to increase the populations of salmon and steelhead in the Clearwater River Subbasin.

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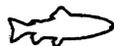
All hatcheries in the Clearwater River Subbasin are shown on Map 1.

**Outplanting** is the process by which artificially propagated fish are released into a natural system.

**Eyed-eggs** are the life stage of a fertilized egg between the time the eyes become visible and hatching occurs.

**Fry** emerge from the yolk sack after the yolk is gone and are about 40 mm (1.6 inch) long.

**Fingerlings** are juvenile fish varying in length from 38 mm to 114 mm (1.5 to 4.5 inches).



Fingerling

**Smolts** are young salmon that are physiologically ready for the transition to saltwater.

See Section 1.6.4 for more discussion of the Lower Snake River Compensation Plan.

**Presmolts**

Juvenile spring chinook salmon that are 100-150 mm (4-6 inches) long in the fall. They smolt and migrate to the ocean the following spring.



Presmolt

Beginning in the 1950s, spring, summer, fall chinook and coho salmon were **outplanted** in the subbasin in an attempt to reintroduce these runs. Primarily **eyed-eggs** were planted, but **fry**, **fingerlings** and **smolts** were also planted. Although reintroduction attempts met with some success, runs declined after stocking ceased.

**Kooskia National Fish Hatchery** — Major hatchery construction began in the Clearwater River Subbasin in the 1960s. In 1966, Kooskia National Fish Hatchery was built near the mouth of Clear Creek on the Middle Fork Clearwater River. Kooskia National Fish Hatchery is within the Nez Perce Reservation boundary. (See Map 1.) The hatchery is a congressional appropriations facility and its purpose is to facilitate restoration of nationally significant fishery resources. Kooskia Hatchery is operated by the U.S. Fish and Wildlife Service (**USFWS**) and was originally designed to produce 2 million spring chinook smolts and 1 million steelhead smolts. Water quality and quantity problems, however, limit production to 800,000 chinook smolts (Nez Perce Tribe and Idaho Department of Fish and Game, 1990). Since 1978, Kooskia Hatchery has been operated as a complex with Dworshak National Fish Hatchery, sharing space to rear and hold chinook salmon and steelhead. In general, chinook are reared in the hatchery until smolt stage (1-1/2 years) and released directly into Clear Creek. Six hundred adults are needed to fully seed the hatchery. From 1984 to 1994, returns have ranged from 232 to 1,180, with an average of about 600, indicating that the hatchery is just meeting its broodstock production goals.

**Dworshak National Fish Hatchery** — Dworshak National Fish Hatchery is also operated by the USFWS and was built in 1969. Its purpose is to mitigate for the fish that spawned and spent the freshwater part of their life cycle in habitat of the North Fork Clearwater River no longer available because of the construction of Dworshak Dam. The hatchery is on the north bank of the Clearwater River just upstream of the mouth of the North Fork. Dworshak National Fish Hatchery is within the Nez Perce Reservation boundary. Originally built to produce only steelhead, it was expanded in 1981 under the Lower Snake River Compensation Plan (**LSRCP**) to rear chinook smolts as well. LSRCP production is intended to mitigate for anadromous fish losses caused by four Snake River dams. Slated production is for 2.3 million steelhead smolts and 1.3 million chinook smolts. In most years, chinook smolts are released at Dworshak in order to return enough adults to fill hatchery production. When surplus fry, **presmolts** or smolts are available, releases have been made in Lolo Creek and tributaries of the South Fork Clearwater River. Steelhead releases have also been predominantly at the hatchery with surplus production distributed primarily in the South Fork Clearwater River.

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**Egg take** is the number of eggs needed to produce the next generation of adults.

**Acclimate** is to subject fish to environmental conditions for a period of time so the fish can adapt, and obtain and develop the capability to return as adults to their natal stream. Environmental conditions include temperature, chemical smells, and visual, celestial, and geomagnetic cues.

**Harvest augmentation** is producing fish principally for harvest.

Over the years, Dworshak steelhead returns have been good, averaging about 6,000 fish. Under ideal situations, Dworshak's steelhead egg-take needs are 3,000–4,000 adults when spawning ratios of 1:1 are used. However, the hatchery has managed with as few as 1,800 adults by using males 2-3 times. This number fills not only Dworshak, but also provides 1.6 million eggs to Magic Valley State Hatchery and 1.1 million eggs to the LSRCP Clearwater Hatchery (U.S. Department of the Interior, Fish and Wildlife Service, February 1996).

Chinook returns to Dworshak have been slightly less than the numbers needed for eggs. From 1984 to 1994, numbers of adult chinook returning to Dworshak ranged from 74 to 2,042, with an average of 900 fish. About 1,200 adults are needed to meet the egg take. Dworshak's mitigation goal under the LSRCP is to return 9,135 spring chinook back to the Snake River and upstream.

**Clearwater Fish Hatchery** — Clearwater Fish Hatchery was constructed as a mitigation hatchery under the LSRCP and is operated by the Idaho Department of Fish and Game (*IDFG*). It is a relatively new hatchery completed in 1992. Its major facility is a central incubation and rearing hatchery located across the North Fork Clearwater from Dworshak Hatchery. Clearwater Fish Hatchery is within the Nez Perce Reservation boundary. It also has three satellite rearing ponds at Powell, located in the headwaters of the Lochsa River, and at Crooked River and Red River, which are in the headwaters of the South Fork Clearwater River. A specific production plan for the hatchery has not been developed, but the design criteria for the LSRCP gives an indication of general production goals.

Clearwater Hatchery is slated to produce about 1.3 million spring chinook smolts and 1.7 million steelhead smolts. Its mitigation goals under the LSRCP are to return 11,910 spring chinook and 14,000 steelhead to the Snake River and upstream. The satellite ponds were built to receive and **acclimate** all of the spring chinook and a portion of the steelhead from the central incubation and rearing facility. Some chinook are transported to the acclimation facilities to be reared and released as presmolts and others are to remain at the facility and be transferred to the satellites for release as smolts. Salmon transported prior to smolting are more likely to return to the release site than to the site of their initial rearing. Broodstock for the hatchery will come from adults returning to the satellites. Steelhead will be outplanted in the Clearwater River. Adult steelhead broodstock will be captured from the satellite sites and surplus adult returns to Dworshak Hatchery.

**Hatchery Practices** — Conventional hatcheries, such as Dworshak and Kooskia, focus on **harvest augmentation**. Adults are available to be harvested in the mainstem river corridors and ocean when forecasted adult returns exceed hatchery broodstock needs. Such hatchery operations do not emphasize rearing or spawning in the natural environment. Typically, most steelhead

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*Homing is navigational behavior that guides species during migrations.*

*Imprinting is the physiological and behavioral process by which migrating fish assimilate environmental cues to aid their return to their stream of origin as adults.*

*Supplementation is the use of artificial propagation to maintain or increase natural production while maintaining the long-term fitness of the target population, and while keeping the ecological and genetic impacts on non-target populations within specified biological limits (U.S. Department of Commerce, NMFS, 1995).*

*Map 2 shows the Nez Perce territory and present day reservation.*

*Section 3.1, **Nez Perce Tribe** has a description of the importance of salmon to the Nez Perce Tribe.*

adults do not return to the hatchery because they are harvested by sportsmen and tribal fishers. To date, the vast majority of spring chinook return to hatcheries because there is no significant directed harvest (U.S. Department of Interior, Fish and Wildlife Service, February 1996). **Homing** in anadromous fish is acute, and adults that return to the hatchery are spawned and continue the cycle.

Over the years, conventional hatchery practices have been found to have drawbacks. Hatchery practices have altered genetic and morphological characteristics by selecting against natural traits. For example, hatchery practices have affected spawn timing, size and age at return, and ability to migrate long distances. Raceway rearing domesticates fish, reducing their ability to forage or seek protection in the natural environment. In the past, when fish have been released off-site, they have been released at inappropriate times, in unsuitable habitat, and with little or no acclimation. As a consequence, early mortality has been substantial and homing **imprinting** has been incomplete. The proportion of hatchery adults that stray into different watersheds increases as a result. Conventional hatchery practices have not been an effective means of restoring runs into the natural environment.

**There exists a need for new technology to increase runs of naturally-reproducing salmon with the aid of hatcheries.**

The need for novel rearing and breeding techniques is stated clearly in the *Draft Recovery Plan for Snake River Salmon* (U.S. Department of Commerce, National Marine Fisheries Service (NMFS), 1995) and the *Tribal Restoration Plan (Nez Perce Tribe, et al., 1995)*. These plans suggest that conventional hatchery practices may not be the most effective means to restore natural populations. Rather, these plans and others have supported restoring natural populations using hatcheries in conjunction with well-defined **supplementation** programs. NMFS suggested revising rearing and breeding techniques to improve the quality of smolts. Such strategies include manipulating water temperatures, and diets to emulate natural growth patterns during rearing. NMFS also suggests decreasing rearing densities, using acclimation ponds and voluntary release strategies, and incorporating shade, substrate, cover, and structure in rearing containers. Training fish to forage, evade predators, and use other post-release survival skills is also suggested.

### 1.1.2 The Nez Perce Tribe

The Nez Perce once were one of the largest Plateau tribes in the Northwest (Walker, D., 1978). They occupied a territory of over 5 million hectares (13 million acres) that included what is today north central Idaho, southeastern Washington and

northeastern Oregon. The Nez Perce Tribe is a federally-recognized tribe with sovereign status over its lands, people and resources. The Tribe's governmental rights and authorities extend to any natural resources which are reserved or protected in treaties, executive orders and federal statutes. The United States has a trust obligation toward the Nez Perce Tribe to protect these rights and authorities.

Salmon and other migratory fish species are an invaluable food resource and an integral part of the Nez Perce Tribe's culture. Anadromous fish have always made up the bulk of the Nez Perce tribal diet and this dependence on salmon was recognized in the treaties made with the Tribe by the United States. In 1855, representatives of the United States government negotiated a treaty with the Nez Perce in which the Tribe reserved:

the exclusive right of taking fish in all the streams where running through or bordering said reservation is further secured to said Indians; as also the right of taking of fish at all usual and accustomed places in common with citizens of the Territory; (Treaty with the Nez Perce, 12 Stat. 957).

No subsequent treaty or agreement between the Nez Perce Tribe and the United States altered or affected this treaty-reserved right. These treaty-reserved fishing rights are the legal basis for the Tribe's involvement, as co-managers, in salmon restoration efforts. Thus, the legal, historic, economic, social, cultural, and religious significance of the fish to the Nez Perce Tribe continues to this day, which makes the decline of fish populations in the Columbia River Basin a substantial detrimental impact to the Nez Perce way of life.

**Therefore, the Nez Perce Tribe has a legal, historic, economic, social, and cultural need to restore salmon runs.**

## 1.2 Finding Solutions

In 1980, Congress passed the Northwest Power Act. The Northwest Power Act created the Northwest Power Planning Council and directed the Council to develop the Columbia River Basin Fish and Wildlife Program. The program is designed primarily to address the impacts of the federal hydroelectric system on the fish and wildlife resources of the Columbia River Basin.

BPA has become the primary funding and implementing agency of the program. Under the Act, BPA has the responsibility to protect, mitigate impacts to, and enhance anadromous fish populations in the Columbia River Basin.

The Council recognized the opportunity to mitigate impacts to salmon runs in the Clearwater River Subbasin. In 1982, the Council authorized design and construction plans for fish production facilities on the Nez Perce Indian Reservation, and listed the facility in the Council's *1987 Fish and Wildlife Program* (Action Item 703(g)(2)).

The Council then established an interim goal of doubling current salmon and steelhead runs to 5 million adult fish in the Columbia River Basin without losing biological diversity. The Council asked fishery agencies and Indian Tribes to develop plans and management strategies to achieve the Council's interim goal. The Nez Perce Tribe played a key role in this process. The fishery agencies and Tribes produced an Integrated System Plan in June 1991.

The Integrated System Plan, though not formally adopted, included a strategy for the Salmon and Clearwater rivers. A part of the strategy was to try using a central hatchery to artificially propagate fish, and smaller satellite facilities to rear the fish. The Nez Perce Tribe then developed the *Nez Perce Tribal Hatchery Master Plan* (Larson and Moberg, 1992). The Master Plan describes the Nez Perce Tribal Hatchery (*NPTH*), which uses supplementation in its program.

Supplementation is a mechanism of intervening in a natural population with the purpose of halting decline or increasing natural production (U.S. Department of Commerce, NMFS, 1995). The basis for supplementation is that hatcheries can provide a higher survival in the egg-to-fry and egg-to-smolt life stages than occurs naturally (U.S. Department of Commerce, NMFS, 1995; Nez Perce Tribe, et al., 1995).

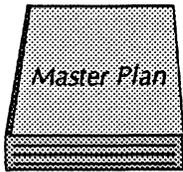
In May 1992, the Council approved the *Nez Perce Tribal Hatchery Master Plan*. The Council called on BPA and the Tribe to resolve some technical uncertainties before carrying out the Master Plan. The Council also asked the Tribe and agencies to begin the environmental analysis process to evaluate environmental impacts as required by the National Environmental Policy Act of 1969 (*NEPA*).

BPA and the Tribe met the Council's requirements. In 1992, the Tribe completed the *Genetic Risk Assessment of the Nez Perce Tribal Hatchery Master Plan, (NPTH GRA)* (Cramer and Neeley, 1992). The NPTH GRA assessed the genetic origins and uniqueness of the chinook population in each of the major Clearwater tributaries. It also identified genetic risks of the proposed supplementation program and offered recommendations for reducing those risks.

In 1994, the *Nez Perce Tribal Hatchery Predesign Study* (Montgomery Watson, 1994) was completed. The study evaluated proposed sites for the capability of the sites to grow fish. The

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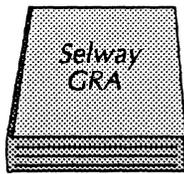
*Icons represent the many reports developed for this program and are added beside information from a specific report.*



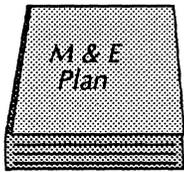
*NEPA requires that proposed major federal actions which may have significant impacts on the environment be examined in an environmental impact statement. NEPA helps public officials make decisions that consider environmental consequences.*



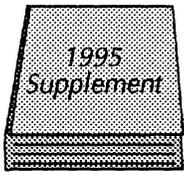
study also defined preliminary development costs for carrying out the program.



In 1995, the Tribe completed the *Selway River Genetic Resource Assessment (Selway GRA)* (Cramer, 1995a). The Selway GRA assesses the genetic origins and uniqueness of the chinook populations in the Selway River Subbasin, and identifies the possible genetic risks from operation of hatchery satellite facilities in that subbasin. It serves as a supplement to the NPTH GRA.



The Tribe also developed the *Nez Perce Tribal Hatchery Monitoring and Evaluation Plan (M & E Plan)* (Steward, 1996). The M & E Plan describes short- and long-term monitoring and evaluation activities to help managers decide how effective supplementation is in restoring chinook salmon production in the Clearwater River Subbasin. Monitoring needs, procedures, and products are discussed as they relate to supplementation theory, program goals and objectives, and to program-specific performance criteria.



In 1995, the Tribe evaluated new information from the NPTH GRA, the Selway GRA, the Predesign Study, the M & E Plan, and an Endangered Species Act (*ESA*) listing (see Section 1.6.1, **Endangered Species Act**) and made changes to the Master Plan. These changes are described in the *1995 Supplement to the Master Plan (1995 Supplement)*.

Finally, analysts used the information from these studies to refine the supplementation program and to complete the environmental analysis.

### 1.2.1 Nez Perce Tribal Hatchery Program

The Nez Perce Tribal Hatchery Program was developed using the results of the Tribe's studies. NPTH would use supplementation to rebuild natural runs of chinook salmon. NPTH would use innovative incubation and rearing techniques to provide as much survival benefit as possible when fish are released into the wild (See Sections 2.1.3.3, **Rearing Techniques** and 2.1.3.4, **Release Techniques**). Water temperatures, rearing environment, and size of life stage of fish when released would be controlled to best fit with existing natural conditions. Fish would be released in under-used stream or river habitat and would return to spawn in that habitat rather than return solely to spawn in a hatchery.

The mating protocols for spring chinook would mix returns from hatchery releases and naturally-spawning fish to maintain the **long-term genetic fitness** of the spring chinook population. At the same time, release numbers from NPTH would be controlled to keep ecological and genetic impacts to other fish populations within acceptable limits.

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Chapter 2, **Proposed Action and Alternatives**, has a complete description of the supplementation program.

**long-term genetic fitness** is a measure of the ability of a population to survive natural selection over a number of generations.

NPTH would be a long-term supplementation program. It is designed to aid natural production until such time that runs can perpetuate themselves and provide a harvest.

NPTH managers would try to produce enough salmon returning to spawn within 20 years after the start of the program so that some salmon could be harvested. Twenty years was selected as the goal because it is four chinook generations and it is a reasonable milestone for financing and expected harvest. To meet this goal, enough spring/summer and fall chinook would need to disperse into suitable habitats, survive to spawn in the wild, and produce enough viable offspring to allow some harvest.

### **1.3 Purpose**

Decision makers will use these purposes to evaluate the alternatives proposed to meet the need:

- Protect, mitigate, and enhance Columbia River Basin anadromous fish resources.
- Develop, increase, and reintroduce natural spawning populations of salmon within the Clearwater River Subbasin.
- Provide long-term harvest opportunities for Tribal and non-Tribal anglers within Nez Perce Treaty lands within four salmon generations (20 years) following project completion.
- Sustain long-term fitness and genetic integrity of targeted fish populations.
- Keep ecological and genetic impacts to non-targeted fish populations within acceptable limits.
- Promote Nez Perce Tribal management of Nez Perce Tribal Hatchery facilities and production areas within Nez Perce Treaty lands.

### **1.4 Scoping and Major Issues**

Scoping refers to a time when the public has a chance to express which issues they think should be considered in an environmental impact statement (*EIS*). BPA and BIA jointly published a Notice of Intent on April 29, 1994 to prepare an EIS, to provide notification for Floodplain and Wetlands Involvement, and to conduct public scoping meetings for the program (59 FR 22155). Public scoping meetings were held on May 24, 1994, in Boise, Idaho, and on May 25, 1994, in Spalding, Idaho. About 15 people attended each of the public meetings. BPA and BIA

received 28 sets of written comments during scoping. Commentors raised these issues:

- The possibility that the program would fail if mainstream Columbia River juvenile and adult passage problems are not solved.
- Genetic risks and the potential impact of the program on the genetic diversity of wild fish stocks, particularly ESA-listed Snake River salmon species.
- Hatchery fish may adversely impact wild anadromous and resident fish stocks through competition for space and food and transfer of diseases in the natural environment.
- The effectiveness of supplementation technology.
- Water quality impacts from hatchery effluent and construction.
- The effect of excessive ocean and in-river harvest practices on the survival of weak stocks.
- The cost effectiveness of undertaking such a mitigation program given that anadromous fish runs continue to decline in the region.

Mainstem passage is being addressed in many other forums (see Section 1.7, **Issues Beyond the Scope of this EIS**). Consequently, an analysis and discussion of mainstem passage issues are not included for detailed evaluation within the scope of this EIS. Also, acclimation facilities in the Salmon River Subbasin have been eliminated from consideration in this EIS because of complications with salmon stocks listed as threatened under the Endangered Species Act. (See Sections 1.6.1, **Endangered Species Act**, and 2.3, **Alternatives Eliminated From Consideration**.)

Other issues raised during scoping and many added concerns are addressed in Chapter 4, **Environmental Consequences**.

Issues identified during the scoping process were discussed in the Draft EIS. The Draft EIS was distributed to agencies, groups, individuals and libraries in June 1996. A 45-day public review period ended on August 16, 1996. Two public meetings with an open house format were held in Boise and Lapwai, Idaho to review and receive comments on the Draft EIS. An additional comment period was opened on December 13, 1996 and ended January 27, 1997. Chapter 10 of this Final EIS records and provides responses to the comments on the Draft EIS. This Final EIS also provides updated information developed as a result of the comments received on the Draft EIS.

## 1.5 Decisions to be Made

When a project or program could involve more than one federal agency, those agencies work together during the planning and decision-making process. BPA and BIA are co-lead federal agencies on this program. The Nez Perce Tribe, though not a federal agency, acts as the primary cooperating agency. The U.S. Forest Service (*USFS*) and the USFWS are cooperating federal agencies.

A program of this size contains different alternatives and options for decision makers to consider. For this program, the following decisions must be made.

- BPA must decide whether to fund construction, operation, and maintenance of program facilities.
- BIA, as trustee for tribal trust resources, must decide whether to fund cyclical maintenance and rehabilitation of hatchery facilities. The decision whether to fund will be based on annual budget constraints and availability of funds.
- The Nez Perce Tribe must decide whether to accept the outcome in the Record of Decision developed after the environmental impact statement is completed.
- The USFS (Clearwater and Nez Perce National Forests) must decide if the program complies with currently approved forest plans and if special use permits for construction, operation, and maintenance of program facilities should be approved. If the program does not comply, forest plan(s) may need to be amended. The effects to other national forest uses, such as recreation, timber, mining, and grazing are discussed under land use in Chapter 4, **Environmental Consequences**, of this EIS.
- The USFWS will assess the impacts of the program on listed wildlife and plant species as written in a **Biological Assessment** and will determine if they concur with the assessment of the level of impacts on listed species.
- Though the NMFS is not a cooperating agency, it will review the determination of effect on listed populations of Snake River chinook salmon addressed in a Biological Assessment.

### ➔ For Your Information

Two **Biological Assessments** are part of the final EIS. See Appendices A and B.

See Chapter 5 for consultation and permits requirements specific to NPTH.

More information about federal, state, and local consultations and permits for this program is in Chapter 5, **Environmental Consultation Review and Permit Requirements**.

## 1.6 Relationship to Other Fish Plans, Programs and Projects Affecting the Clearwater River Subbasin

Many plans, programs and projects are related to this program. These are described in this section.

### 1.6.1 Endangered Species Act

In June 1990, NMFS was petitioned to list Snake River populations of spring, summer, and fall chinook as threatened and endangered under the Endangered Species Act. In their status review, NMFS determined that the abundance of Snake River spring/summer chinook (the two races were determined by NMFS to be a single species under the ESA) and fall chinook had declined to levels warranting protection under the Act. After initially being listed as threatened, Snake River spring/summer and fall chinook were reclassified as endangered species on August 18, 1994 (*Federal Register*, August 1994). When this emergency rule expired, their listed status reverted to threatened.

#### ➔ For Your Information

***Evolutionarily significant unit*** is a population or group of populations that is considered distinct for purposes of conservation under the ESA.

***Critical habitat*** is the minimum amount of habitat necessary for survival and enough area for the species to expand and recover to healthy population levels.

NMFS finds that the Snake River fall chinook ***Evolutionarily Significant Unit (ESU)*** is made up of a single population which spawns in the mainstem Snake River and in the lower reaches of major tributaries downstream from Hells Canyon Dam, including the Clearwater River. The Lyon's Ferry Hatchery fall chinook population, which was derived from natural stock, is also considered part of the ESU. NMFS designated the section of the Clearwater River extending from its mouth upstream to Lolo Creek (about 85 km [53 miles]) as ***Critical Habitat*** for fall chinook.

NMFS also determined that the Snake River spring/summer chinook is an ESU. The run is made up of more than 30 subpopulations located in 12 major subbasins and Salmon River tributaries. NMFS concluded that populations of spring chinook that exist in the Clearwater River are not part of the Snake River ESU and therefore are not subject to the provisions of the Act (Matthews and Waples, 1991). Clearwater River spring chinook were excluded because the indigenous populations had been eliminated by Lewiston Dam. The spring chinook found in the drainage today can be traced to ancestors from outside the Clearwater River Subbasin (see Section 3.6, **Fish**). NMFS also elected not to designate portions of the Clearwater River Subbasin as Critical Habitat for spring chinook because "... the spring and summer chinook salmon inhabiting the Clearwater River Basin are not considered part of the evolutionary significant unit comprising Snake River spring/summer chinook listed under the ESA." (*Federal Register*, December 28, 1993.)

Other than Snake River fall chinook (found in the lower Clearwater River), no other species of fish residing in the

Clearwater River Subbasin has been listed as threatened or endangered. Summer steelhead populations within the Snake River drainage, including the Clearwater River Subbasin, are proposed for listing as a threatened or endangered species. Steelhead have been classified as *Sensitive* by the USFS and as a *Species of Concern* by IDFG. Cutthroat trout and bull trout are considered Species of Special Concern by IDFG and a Sensitive Species by the USFS.

Bull trout have been proposed for listing as a threatened species. No formal federal restoration effort has yet been developed (See Section 3.6.2.4, Bull Trout).

## 1.6.2 The Proposed Recovery Plan for Snake River Salmon

The ESA requires that recovery plans be developed and implemented for threatened and endangered species. NMFS is the agency responsible for developing a recovery plan for Snake River salmon and issued its Proposed Recovery Plan in March 1995. A final Recovery Plan is expected to be issued in 1997, and it will contain provisions to prevent further declines in the near term and affect the recovery of the species in the long term.

In order for the Recovery Plan to yield at least a stable, non-declining run, there must be an improvement made in the relationship between the number of smolts that leave the system to the number of adults that return. This smolt-to-adult survival rate for salmon must be increased by at least two fold. Improvements in smolt-to-adult survival will naturally focus on those aspects of the environment that humans control, such as harvest rates and downstream and upstream passage over dams. The efforts made to improve survival for listed endangered stocks will benefit hatchery and non-listed stocks in the same manner.

The success of the NPTH, other upriver hatchery or natural runs of salmon, whether the salmon are listed or not, ultimately depends on salmon recovery efforts (including the Snake River Recovery Plan, the Tribal Restoration Plan, and the Fish and Wildlife Program of the Northwest Power Planning Council).

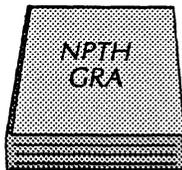
The NPTH was designed assuming smolt-to-adult survival rates would be better than existing rates. Now that regional salmon recovery efforts have come to the forefront, and deliberate attention will be focused on improving survival, the prospects for rebuilding a naturally-reproducing spawning population by jump starting populations in underseeded habitat in the Clearwater River Subbasin have an improved potential for success.

The NPTH program is consistent with many of the principles of the proposed Recovery Plan, supporting several of its objectives, but it is also at odds with a few specific measures. Because the

### ➔ For Your Information

*Jump start* Starting or setting in motion a stalled system or process.

measures included in the final Recovery Plan are unknown, further discussion on consistency is premature. However, some underlying principles of the Recovery strategy addressed by NPTH are:



- The Recovery Plan calls for limitation of releases of anadromous salmonids from Snake River hatcheries to 20.2 million smolts but that "... Production to support recovery (currently 1.24 million fish) is exempt from this limit." Production of fall chinook from Lyon's Ferry Hatchery is designed to support natural production of endangered Snake River salmon and is exempt from the limit (NMFS, September 5, 1996). Spring chinook production is included within the hatchery cap.
- The Recovery Plan calls for fisheries agencies and Tribes to design and carry out production-scale experiments at appropriate Columbia River Basin hatcheries to test individual release strategies and evaluate smolt quality indices believed to improve smolt quality. Such alternative release strategies and evaluations are an integral part of the NPTH Master Plan and M & E Plan.
- The Recovery Plan calls for reintroduction of spring/summer chinook salmon in the Lochsa and Selway rivers once an appropriate stock is identified. As a part of the NPTH planning process, two GRAs have been completed that present detailed evaluations of the stock histories and genetic risks associated with alternative brood sources for spring/summer chinook in the Clearwater River Subbasin. The 1995 Supplement stipulates that brood sources and brood-taking guidelines recommended in these genetic risk assessments would be adopted.

The Nez Perce Tribe, BPA, BIA, and others will continue to consult with NMFS as this EIS progresses, and as the Proposed Recovery Plan is reviewed and revised. (See Section 5.2, **Endangered and Threatened Species**, for more information about consultations.) Broodstock sources, construction and operation of facilities and other program-related activities would be evaluated in formal consultation with NMFS to determine whether they constitute a threat to the continued existence or habitat of listed species, or in some way interfere with their recovery. Impacts expected to any listed species are identified in Chapter 4, **Environmental Consequences**, and the Biological Assessments (see Appendices A and B).

### **1.6.3 Interactions of Hatchery and Naturally Spawning Salmon and Steelhead in the Columbia River Basin Programmatic EIS**

A draft CEA EIS was prepared by NMFS, USFWS, and BPA in coordination with the Columbia Basin Fish and Wildlife Authority (CBFWA). CBFWA is a coordinating body for fish and wildlife agencies and the Native American Tribes who have fisheries management authority in the basin.

The draft EIS has been published for public comment. The draft EIS proposed to assess the cumulative impacts of all anadromous fish culture programs in the Columbia River Basin on natural production of salmon and steelhead. It focused on mainstem Columbia and Snake rivers. Its purpose is to examine strategies for outplanting of artificially produced salmon and steelhead in the Columbia Basin that better allocate the Basin's fish production capabilities while eliminating or minimizing risks to stock biodiversity. Its preferred alternative would result in substantially increasing the production of fish for supplementation in all portions of the Columbia River Basin and reducing the amount of fish released for conventional mitigation purposes.

Tribal organizations, environmental groups, and the Council's Independent Scientific Advisory Panel submitted highly critical comments on the draft CEA EIS. The comments criticized, among other things, the range of alternatives, the extent of the impact analyses, the limited geographic scope, and the analysis of connected actions. Many comments suggested the draft CEA EIS be completely redone. The federal sponsors of the draft CEA EIS have not decided whether to proceed with a final CEA EIS, and if so, how they would address the comments received.

If the federal agencies proceed with the CEA process, it would not be done for over a year. It would address the impacts of the Basin's anadromous fish production programs, and examine whether the federal fisheries managers should shift hatchery emphasis from providing harvest to rebuilding stocks through supplementation. If the CEA EIS is finalized, this NPTH EIS would not prejudice the outcome for a number of reasons. Those reasons include the fact that the CEA's primary goal would be to examine the cumulative impacts of hatcheries and harvest, and that the relatively small number of smolts released, and adults harvested from NPTH facilities are unlikely to have a statistically significant effect on the CEA cumulative impact analysis. In addition, if BPA issues a Record of Decision adopting an alternative under the CEA that requires changes in this program, this program would be changed to comply with the CEA decisions.

This NPTH EIS can proceed in the absence of a Record of Decision in the CEA process because the NPTH program is covered by a separate EIS. Moreover, the NPTH has purposes

independent from those of the CEA. The NPTH's independent purposes include, but are not limited to 1) developing, increasing, and reintroducing natural-spawning populations of salmon within the Clearwater River Subbasin, and 2) sustaining long-term fitness and genetic integrity of targeted fish populations. The CEA EIS does not propose actions for meeting either of these purposes. Therefore, BPA concluded the NPTH EIS can proceed concurrently with the CEA process.

#### **1.6.4 Lower Snake River Fish and Wildlife Compensation Plan (Additional Mitigation of Upstream Spawning)**

A portion of the fall chinook production occurring at Lyon's Ferry Fish Hatchery has been slated to go upstream in an effort to improve the run of naturally-reproducing fish above Lower Granite Dam. A cooperative proposal was developed by NPT, USFWS and the Washington Department of Fish and Wildlife to acclimate fish to the river reaches using temporary acclimation facilities. Yearling smolts, which are larger than the fall chinook proposed in NPTH, would be released. They exhibit much higher adult return rates than do subyearling smolts, and would rebuild the runs more quickly. Acclimation facilities are being considered in the Snake and Clearwater rivers. In 1996, the Corps of Engineers distributed an environmental assessment describing the impacts of developing two fall chinook acclimation facilities: one on the Clearwater River at the confluence with Big Canyon Creek, and one on the Snake River at one of two sites about 32 km (20 miles) south of Clarkston, Washington.

During the spring of 1996, the Tribe and Corps of Engineers set up a satellite rearing facility at Pittsburg Landing on the Snake River. Approximately 113,000 yearling chinook from Lyon's Ferry Hatchery were acclimated and released at the site.

During the spring of 1997, the Tribe and Corps set up an additional satellite rearing facility at Big Canyon Creek on the Clearwater River. Planned fall chinook releases in 1997 are for 150,000 yearlings each at Pittsburg Landing and Big Canyon Creek, 270,000 subyearlings at Big Canyon Creek, and 50,000 subyearlings at Pittsburg Landing. Should this program to release fall chinook upstream of Lyon's Ferry continue into the future, the proposed central incubation and rearing facility at Cherrylane could be a candidate for a release site. If Cherrylane is a candidate, its environmental effects would be evaluated in a separate NEPA document by the funding agency.

### 1.6.5 Idaho Department of Fish and Game Anadromous Fish Management Plan

Supplementation of chinook populations in the Clearwater River Subbasin is part of the IDFG's *Anadromous Fish Management Plan for 1992-96*. There are differences and areas of consistency between the plan and NPTH. The management plan was developed with the proposed NPTH in mind, and consequently, IDFG specifically mentioned supporting tribal hatchery operations in the watersheds originally slated for production, that is, Lolo Creek and Newsome Creek. The Management Plan does not mention fall chinook production in the Selway or South Fork Clearwater or mainstem Clearwater.

Where hatchery production is discussed, an emphasis of the plan is to "... Work with the Nez Perce Tribe to develop hatchery fish release programs that preserve and protect genetic resources of naturally spawning chinook and steelhead populations." The Tribe has investigated the most appropriate stocks to use for the NPTH (Cramer, 1992 and 1995a) in the Clearwater River Subbasin and believes this goal is met. NPTH fall chinook broodstock would be taken from the existing Snake River Basin population. After initial stocking, spring chinook broodstock would come from locally adapted stocks.

A difference in management strategies regarding hatchery production in Fish Creek may occur in the future. The Management Plan specifically calls for not supplementing Fish Creek with either chinook or steelhead. Fish Creek has been designated as a control stream for NPTH, and as such, would not be outplanted during the near term. However, if supplementation proves effective, the Tribe may choose to use Fish Creek in the future. The Tribe would coordinate with IDFG on hatchery production.

### 1.6.6 Idaho Salmon Supplementation Studies

The Idaho Salmon Supplementation Study (*ISS*) is closely aligned with and partially dependent on the proposed NPTH program, but evaluation and production strategies differ between the two programs. The ISS is a cooperative effort among state, federal, and tribal agencies to assess what broodstock and release strategies are best for supplementing natural or depleted spring and summer chinook salmon populations, and what effect supplementation has on these populations. Evaluation of treatment and control streams focuses on *parr* densities, juvenile yield, and *redd* counts. NPTH would facilitate the studies by providing supplementation fish to Newsome Creek and Lolo Creek.

The NPTH M & E Plan would use some of the control streams used by the ISS, but methods of evaluation differ. Additionally,

#### ➔ For Your Information

**Parr** Juvenile salmonids develop bar-shaped marks on their sides called *parr marks*, between becoming fry and smolting.

**Redd** The reproductive nest dug in gravels by the female fish.

outplanting strategies, species reared, and rearing techniques proposed for NPTH are different from those used by the ISS. Control streams would not be planted until some determination of program success is made. See Section 2.1.5, **Monitoring and Evaluation Plan.**

### **1.6.7 Columbia River Fish Management Plan (CRFMP)**

The Columbia River Fish Management Plan is a court-approved settlement between the parties in *U.S. v. Oregon*, a case addressing treaty fishing rights in the Columbia River Basin. The signatories to the settlement are the United States of America acting through the Department of the Interior and the Department of Commerce; the Nez Perce Tribe; the Confederated Tribes of the Umatilla Indian Reservation; the Confederated Tribes of the Warm Springs Reservation of Oregon; the Confederated Tribes and Bands of the Yakama Indian Nation; and the states of Oregon and Washington. The plan is a framework for these parties to protect, rebuild, and enhance Columbia River fish runs while providing fish for both treaty Indian and non-Indian fisheries. The agreement establishes procedures to facilitate communication and resolve disputes through a Policy Committee composed of the parties. Two technical committees have been set up to guide management decisions of the Policy Committee. The Production Advisory Committee (PAC) responds to hatchery production issues; the Technical Advisory Committee (TAC) responds to harvest issues. The NPTH program would be undertaken as a measure under the Northwest Power Act and is separate from the United States' CRFMP duties, although operation and management of the hatchery must be consistent with the Plan.

The NPT, as proposed NPTH managers and CRFMP signatories, would be responsible for consultation with the other parties to CRFMP to ensure that hatchery management and operations are in compliance with the CRFMP with regard to production issues, harvest in the ocean and mainstem Columbia River and harvest in the Clearwater River in Idaho.

BPA is not a party in *U.S. v. Oregon* or CRFMP. Consequently, BPA would not undertake the NPTH as part of the *U.S. v. Oregon* settlement. Instead, BPA would proceed with this measure under its Northwest Power Act authority to protect, mitigate, and enhance anadromous fish in the Columbia River Basin affected by the Federal Columbia River Power System.

➔ For Your Information

**Biological Opinion** Document stating the opinion of the USFWS or NMFS on whether a federal action is likely to jeopardize a listed species, or destroy critical habitat.

**Jeopardy** To jeopardize the continued existence of or to reduce the likelihood of the survival and recovery of a listed species.

### 1.6.8 Biological Opinion on 1995-1998 Hatchery Operations in the Columbia River Basin

NMFS' approach for determining whether a proposed action jeopardizes the continued existence of listed Snake River salmon is described in this Biological Opinion. NMFS determined that proposed hatchery operations described by USFWS, NMFS, BPA, the Corps, and BIA at federal hatcheries are likely to jeopardize the continued existence of listed Snake River sockeye salmon, Snake River spring/summer chinook salmon, and Snake River fall chinook salmon. NMFS described a reasonable and prudent alternative to hatchery operations that will reduce impacts on endangered chinook and sockeye salmon. The alternative included those measures addressed in the Proposed Recovery Plan for Snake River Salmon.

NPTH was not included in the Biological Opinion, and therefore another Biological Opinion must be filed by NMFS.

### 1.6.9 PACFISH

PACFISH is a management strategy developed by the USFS and the U.S. Bureau of Land Management for anadromous fish-producing watersheds on federal lands (U.S. Department of Agriculture, U.S. Forest Service, 1995). PACFISH established goals to maintain or restore water quality, riparian areas, and associated fish habitats in order to provide healthy, functioning watersheds. Interim Riparian Management Objectives (*RMOs*) for stream channel conditions were defined to provide the criteria which "attainment, or progress toward attainment, of the riparian goals is measured." Interim Riparian Habitat Conservation Areas (*RHCA*) were established for all perennial and intermittent streams to achieve riparian management goals and objectives. PACFISH limits most riparian alterations (i.e., vegetative removal and soil disturbing activities) within 300 feet of perennial fish bearing streams and 150 feet of smaller non-fish bearing perennial streams. PACFISH states that modifications to the RHCA's usually requires completion of a Watershed Analysis to provide the ecological basis for the change.

The PACFISH Amendment, now part of the Nez Perce and Clearwater Forest Plans, applies to all proposed projects and ongoing projects and activities that pose an unacceptable risk to anadromous fish. This directive supersedes the existing forest plan where the amendment provides more protection for anadromous fish habitat.

The Lochsa, Selway and South Fork Clearwater rivers and Lolo Creek are considered anadromous watersheds under PACFISH. Construction of some proposed facilities could require removing vegetation and disturbing soil in riparian conservation areas on federal land, an activity regulated by PACFISH guidelines.

Construction activities proposed on national forest land would be evaluated at each site to determine if the specific activities meet PACFISH objectives. However, because both PACFISH and NPTH have the mutual goal of increasing natural production, it is unlikely that they would conflict. The Tribe would work with the USFS while designing and locating the proposed facilities. Special use permits would be obtained and PACFISH management objectives would be met (See Section 5.5, State, Areawide and Local Plan and Program Consistency).

#### **1.6.10 Summary of Upstream Salmon Report**

On November 8, 1995 the National Research Council, part of the National Academy of Sciences, released a scientific study on Pacific salmon with recommendations for establishing a sustainable future for salmon in the Pacific Northwest. The study emphasizes the importance of genetic diversity. With respect to hatcheries and supplementation, the report calls for changing roles of hatcheries from mitigation for dam mortality and production for fisheries to assisting recovery and providing an opportunity for genetic expression of wild populations.

NPTH is consistent with this recommendation as its emphasis is to supplement naturally-reproducing populations.

#### **1.6.11 Wy-Kan-Ush-Mi-Wa-Kish-Wit: The Columbia River Anadromous Fish Restoration Plan of the Nez Perce Tribe, Umatilla, Warm Springs, and Yakama Tribes**

This Tribal Restoration Plan (Nez Perce Tribe, et al., 1995) focuses on restoring salmon runs to the rivers and streams of the Columbia River system and embodies the tribal management philosophy of gravel-to-gravel management. This approach differs from many of the existing state and federal plans which are focused more on providing fish for sport and commercial harvest and returning fish to concrete hatcheries. The plan recognized the need to ensure that all of the salmon life cycle from the freshwater to the ocean are protected, managed or restored.

A key element in the restoration is to use hatchery technology to supplement the natural runs rather than supplant the natural runs as currently occurs with state and federal hatchery programs. Supplementation as defined in the Tribal Restoration Plan is the act of releasing young, artificially propagated fish into natural spawning and rearing habitat. As adults, these fish will return to spawn naturally in the stream where they were released rather than returning to the propagation facility. The NPTH is one of the supplementation hatcheries proposed in the plan.

### **1.6.12 Integrated Hatchery Operations Team**

The Integrated Hatchery Operations Team (IHOT) was formed as a result of the Northwest Power Planning Council's amendments of the Fish and Wildlife Program. Section 6.2B in the Strategy for Salmon Volume II (1992) created the IHOT which is comprised of fisheries co-managers and cooperating entities.

IHOT's purpose is to improve salmonid propagation at existing and future facilities in the Columbia River Basin. To accomplish this, IHOT developed *Policies and Procedures for Columbia Basin Anadromous Salmonid Hatcheries* (1994). The purpose of this document is to provide regional guidelines for operation of all anadromous fish hatcheries. The Nez Perce Tribe is signatory to this document along with other Columbia River Basin state, tribal and federal fishery co-managers. Major issues include: regional hatchery coordination, hatchery performance standards, fish health, ecological interactions, and genetics. Hatchery operations covered are broodstock collection, spawning, incubation of eggs, fish rearing and feeding, fish release, equipment maintenance and operation, and personnel training.

### **1.6.13 Return to the River: Restoration of Salmonid Fishes in the Columbia River Ecosystem**

In 1994, the Northwest Power Planning Council called on BPA to fund the Independent Scientific Group (ISG) to develop a conceptual foundation for the fish and wildlife program, to provide an overall set of scientific principles and assumptions on which the program and fish and wildlife management activities basinwide could be based, and against which they could be evaluated (ISG, 1996). *Return to the River* was the resulting document of the ISG efforts. The conceptual framework that was established is analogous to the picture which comes with a jigsaw puzzle. It can be used to guide fisheries managers in assembling the restoration of salmon in the Columbia River.

*Return to the River* attempts to identify ecological processes that require restoration, as opposed to identification of technological fixes. The ISG stresses the restoration of a normative ecosystem, one that provides the essential ecological conditions and processes necessary to maintain diverse and productive salmonid populations. It recognizes that the normative ecosystem falls along a continuum of conditions from slightly better than the current state of the river at one end to nearly pristine at the other end. It also recognizes that the region, through its policy representatives, will have to decide based on its economic, cultural, and ecological values, how far it will move the river along the normative continuum. *Return to the River* is

not an implementation plan for salmon per se, but does establish the basic principles upon which restoration actions should be evaluated in their attainment of the overall conceptual framework.

In relation to supplementation programs, *Return to the River* finds that this new aspect of hatchery production is largely untested and that supplementation should be accompanied with a well designed and adequately funded monitoring and evaluation program. It finds that supplementation should be considered an experimental treatment in an integrated regional rebuilding program and may be useful for rebuilding depressed stocks in some localities. NPTH typifies such a supplementation program.

## **1.7 Issues Beyond the Scope of this EIS**

During scoping, several concerns were raised about fish passage in the mainstem of the Columbia River. Specific comments were received about the need to improve passage, survival, and transportation technology (barging) for juvenile and adult salmonids on the Columbia River to successfully enhance fish runs in the Columbia Basin. Though mainstem passage is fundamental to the long-term success of the NPTH program, it is a difficult issue to analyze in the context of this EIS and it is outside the scope of this EIS. Many fisheries and other management agencies are directing studies about this issue and substantive improvements in mainstem passage conditions are expected:

- The System Operation Review, developed by BPA, the Corps and the Bureau of Reclamation;
- The System Configuration Study, developed by the Corps;
- The Lower Granite Dam Experimental Drawdown EIS, developed by the Corps and NMFS;
- The Supplemental EIS on Interim Columbia and Snake River Flow Improvement Measures for Salmon, developed by BPA, the Corps of Engineers and the Bureau of Reclamation; and
- The NMFS Biological Opinion on Federal Columbia River Power System Operations.

Concerns were also expressed during scoping about hydropower production at dams on the Columbia River and about fish habitat. Decisions about hydropower production are made in other forums; land management agencies and private landowners make decisions about habitat management. These issues are outside the scope of this EIS.

Also outside the purview of this EIS is a concern about how harvest limits of chinook salmon in the ocean and the Columbia

Basin are determined. Harvest limits in the ocean and Columbia River are outside the direct control of the BPA and BIA.

## 1.8 Organization of the Draft EIS

This environmental impact statement includes information necessary for public officials to make decisions based on the environmental consequences of federal actions.

Federal regulations specify the kinds of information decision-makers should have to make good decisions. This document follows those recommendations.

- Chapter 1 states the purpose and need for the program. Alternatives are evaluated based on the purpose and need.
- Chapter 2 describes the alternatives, including taking no action and summarizes the differences among alternatives, especially in potential environmental impacts.
- Chapter 3 describes the state of the existing environment that could be affected by the program. The existing environment includes human, natural and other resources.
- Chapter 4 describes the possible environmental consequences of the alternatives. Impacts can range from no or low impact to high impact.
- Chapter 5 reveals the licenses, permits and other approvals or conditions the alternatives must obtain or meet.
- Other chapters list individuals who helped prepare the EIS, references used, individuals, agencies, and groups the EIS will be sent to, a glossary, and an index. Supporting technical information is in appendices.