

memorandum

DATE: August 16, 1999

REPLY TO
ATTN OF: KEWI-4

SUBJECT: Supplement Analysis for Yakima Fisheries Project, DOE/EIS-0169-SA-02

TO: David Byrnes
Project Manager – KEWN-4

Proposed Action: Yakima Fisheries Project – Natural Spawning Channels, Increased On-site Housing, and Upgrades to the Prosser Hatchery

PL-6: F3204

Location: Cle Elum Supplementation and Research Facility, Cle Elum, Washington (CESRF) and Prosser Juvenile Research Facility, Prosser, Washington

Proposed by: Bonneville Power Administration (BPA) and Co-Managed by the Yakama Nation (YN) and the Washington Department of Fish and Wildlife (WDFW).

1. Introduction

The Bonneville Power Administration (BPA) is funding ongoing studies, research, and artificial production of several salmonid species in the Yakima and Klickitat river basins. BPA analyzed environmental impacts of research and supplementation projects in the Yakima basin in an Environmental Impact Statement completed in 1996 (USDOE/BPA 1996) and Supplement Analysis (DOE/EIS-0169-SA-01) completed in May 1999. The purpose of this Supplement Analysis is to determine if an EIS supplement is needed to analyze the construction of additional research facilities proposed as part of that project.

2. NEPA Analysis to Date

The Yakima Fisheries Project Final Environmental Impact Statement (YFP EIS) (USDOE/BPA 1996) analyzed impacts of undertaking fishery research and mitigation activities in the Yakima River Basin. The EIS focused on the impacts of construction, operation and maintenance of anadromous fish production facilities in order to conduct research designed to increase knowledge of supplementation techniques. Spring chinook were the priority species analyzed in the EIS. A Supplement Analysis (DOE/EIS-0169-SA-01) analyzed the potential impacts of fall chinook and coho supplementation research activities and evaluated a detailed monitoring program.

3. Description of the Proposed Action

The Yakima Fisheries Project is co-managed by the Yakama Nation (YN) and the Washington Department of Fish and Wildlife (WDFW). The project consists of the collection of salmonid broodstock, incubation of eggs and rearing of fry in hatcheries, the acclimation and release of

smolts, and related ecological studies in the study of natural production. The proposed actions to be analyzed under this Supplement Analysis are:

1. The construction and operation of two research spawning channels at CESRF. The purpose is to measure the reproductive success of individual hatchery and wild spring chinook and to correlate fish production with behavioral observations and phenotypic traits.
2. The construction of four modular homes at the CESRF to accommodate on-site housing for research facility staff.
3. An upgrade of the Prosser Juvenile Research Facility with electrical service, improved spawning workup area and the installation of a walk-in freezer for storage of bio-samples and frozen feed.

The proposed channel system design of the CESRF spawning channels includes two controlled-flow channels with each channel divided into three separate sections. Each channel would be 20 feet wide and approximately 150 feet long. The channels are polypropylene lined ditches filled to approximately 60-cm depth with washed gravel. With each channel there would be two screened perpendicular concrete dividers that partition the channel into equally sized sections. Each section would serve as a replicate experimental unit. At the head and tail of each channel would be a concrete barrier for the inflow and outflow support control. The water would be reuse water exiting from the juvenile rearing and adult holding ponds with a water depth ranging between 20 to 30 cm. Poole/riffle areas could be configured by shaping the existing gravel prior to placement of adults into the channel.

The study design calls for the construction of the channels in 1999 and placement of approximately 20 wild (10 males and 10 females) into a single section of one channel and behavioral observations. A number of precocial males would also be placed into the section, provided they could be obtained. This would allow a test of the channel system and development and refinement of sampling protocols prior to full study implementation with adult hatchery and wild fish in 2001. In addition, baseline information on wild spawning behavior in the channel and reproductive success would be gained from these pre-hatchery return studies.

In 2000, wild adults and precocial males would be placed into a single section of each of the two channels. Ten males and females would be placed into each section and observed spawning. This would allow the second channel to be tested and also provide replication in the design. A subsample of progeny would be trapped in 2000 and pedigreed using DNA micro-satellite analysis. The remaining fry production could be reintroduced back into the on-station hatchery population and/or used in juvenile interaction behavioral studies. Once adult hatchery and wild returns are available in 2001, all six channel sections would be used.

The hatchery housing plans include the clearing of 1.25 acres, gravel surfacing for building sites and access roads, placement of four 1,400 to 1,700 square foot modular homes, fencing, hydroseeding slopes, expansion of the domestic water supply and wastewater collection and disposal system, and the installation of power and telephone.

The proposed upgrades at the Prosser Hatchery would provide adequate electrical service to accommodate the hatchery operations without threatening the Chandler and US Bureau of Reclamation projects. Improvements include a transformer and backup generator. Also, additional space is needed for the spawning operations. Therefore, the proposal includes a covered cement slab approximately 30x35x0.5 feet to improve existing facilities. Gill problems

at Prosser continue, therefore, a walk-in freezer would be added to store moist feed and any medicated feed needed for operations. Furthermore, bio-samples and frozen feed could be more readily stored.

Table 1: Activities Required for YKFP Project

Activity	Sitework	Impacts
CESRF Housing	Clear 1.25 acres for placement of four 1400-1700 square foot homes	<p>Cultural survey completed during EIS process. If during construction, previously unidentified cultural resources are identified which would be adversely affected by the proposed project, BPA would follow the procedures set forth in EIS Section 5.7.2 Discovery Situations so as not to affect the resource.</p> <p>All wetlands in the project area would be avoided. There is no instream work to be done.</p> <p>Site clearing would be minimized to reduce the potential for air quality impacts during construction due to dust and vehicle exhaust.</p> <p>The hatchery site supports second-growth ponderosa pine/Douglas fir upland forest. Black cottonwood also grows abundantly throughout the area. Understory vegetation is sparse. There would be limited tree removal for a minimal impact to existing wildlife. No unusual or rare habitat types would be affected as a result of these activities. Minimal impacts. No adverse effects.</p> <p>Specific recommendations for wildlife mitigation at the CESRF have been developed. Wildlife mitigation has been defined as achieving and sustaining the levels of habitat and species productivity for the habitat units lost as a result of construction and operation of the YFP facilities and interpretive trails. HEP habitat units will be used in wildlife mitigation accounting.</p>
	Ground fill for roads and sites; gravel surfacing.	Three of homes located in culdesac next to M&E area. One home is stand-alone adjacent to Chinook Way and the main hatchery facility. Construction BMP's as identified in EIS will be used. No adverse affects of construction and operation on surface or groundwater quality, including treatment of runoff from access roads and other impervious surfaces are expected. Minimal impacts. No adverse effects
	Modify existing fence.	No impacts.
	Hydroseed slopes.	Revegetate disturbed grounds with native and non-native grasses. No adverse effects.
	Domestic water supply.	Increase in the domestic water use will stay within allowable limits. No adverse effects.
	Wastewater collection and disposal.	Expansion of the septage drainfield includes increased sand system, modification of the pump discharge piping, placement of four individual septic tanks, and addition of sewer line. Minimal impacts. No adverse effects.
	Power and telephone.	Installation of new transformer and underground conductors and telephone lines. Minimal impacts. No adverse effects.
CESRF Spawning Channels	Construction of two controlled-flow experimental spawning channels.	This is an upland, disturbed site adjacent to the established hatchery raceways. Channels would be approximately 20 feet wide and 150 feet long. Each channel is a

		<p>polypropylene lined ditch filled to approximately 60-cm depth with washed gravel.</p> <p>Little or no vegetation exists; no tree removal is necessary.</p> <p>All wetlands in the project area would be avoided.</p> <p>There is no instream work to be done.</p> <p>Site clearing would be minimized to reduce the potential for air quality impacts during construction due to dust and vehicle exhaust.</p> <p>There would be no loss of wetland or riparian habitat.</p> <p>Cultural survey completed during EIS process. BPA would follow the procedures set forth in EIS Section 5.7.2</p> <p>Discovery Situations in the event of unexpected discovery.</p> <p>Minimal impacts. No adverse effects.</p>
	Add or modify existing fence.	Minimal to no impacts. No adverse effects.
	Water supply.	Water will be reuse water exiting from the juvenile rearing and adult holding ponds. Water depth in the channel should range between approximately 20 to 30 cm. No impacts.
Prosser Hatchery Upgrades	Power Service.	Establish the hatcheries own separate electrical service by installing a transformer and service panel. System includes a back up generator placed near the existing office building on the same cement slab established for the spawning area upgrade. A 3-foot deep trench from the new electrical pole to the existing building would be needed. Current power supply inadequate for hatchery operations. This is a disturbed site. No wetlands would be impacted. Minimal impacts. No adverse effects.
	Improved Spawning Workup Area and Walk-in Freezer	Build additional space for spawning work. This consists of a covered cement slab approximately 30x35x0.5feet adjacent to the existing building. The slab will be sloped away from the building to allow for drainage. An awning will be built over the top for cover and would create a more sanitary area for the entire spawning operation. A walk-in freezer for bio-samples and frozen feed would also be placed on a cement slab, approx. 20x20x0.5 feet between the road and the water chiller. This site is a disturbed area from the former pond and ditch excavation. No wetlands present. No impacts.
	Add or modify existing fence.	Minimal to no impacts. No adverse effects.

4. New Activities and Circumstances Since Earlier NEPA Documents

The new facilities proposed in conjunction with these research activities include the design and construction of two experimental spawning channels on the grounds of the Cle Elum hatchery in which reproductive success and behavior of hatchery and wild fish can be carefully observed and measured. A major uncertainty in supplementation is the ability of hatchery-reared adults to reproduce naturally. Hatchery-reared fish may be less effective in competing for mates, in constructing redds, or in protecting redds. Thus is essential that we can accurately estimate the reproductive competence of both hatchery reared and wild spawners in a controlled experimental setting. The addition of four modular homes on site at the hatchery is to accommodate research facility staff and provide effective and efficient operation of the CESRF.

The upgrades at the Prosser Hatchery will establish a separate electrical service, which would include a back up generator. The current power system is shared with Chandler and US Bureau of Reclamation screens and is pushing the limits of the on-line power capacity. In the event of a power outage, the entire system could be overloaded and possibly shut down all of the Chandler

operations. The new transformer and service panel will accommodate the need for increased capacity from the addition of a walk-in freezer for bio-samples and frozen feed. The additional space upgrade for spawning consists of a concrete slab and awning for fish spawning work. The covered area will create a more sanitary condition for the entire spawning operation.

- Impacts of constructing the CESRF natural spawning channel and increased staff housing, as well as upgrades to Prosser facility are similar to those specifically evaluated in the EIS for hatchery facilities construction. All proposed construction is on disturbed sites and would pose no additional impacts.
- The addition of the CESRF spawning channels will allow natural spawning studies to continue, however, the numbers of research fish will not exceed the level identified in the YFP EIS and approved by the Northwest Power Planning Council's Columbia Basin Fish and Wildlife Program.
- The supplementation program, including broodstock collection, acclimation, releases, and monitoring, has been evaluated in detail in the YFP EIS and SA-01.

6.0 Findings

As documented in this Supplement Analysis, the potential impacts from the construction and operation of the spawning channels and construction of the four additional hatchery houses at the CESRF, and the facility upgrades at Prosser, are not substantially different from those discussed in the Yakima Fisheries Project EIS (DOE/EIS-0169), ROD, Supplemental Analysis (SA-01), and related biological assessments and biological opinions. No additional impacts would occur in connection with these activities. There are no new circumstances or information relevant to environmental concerns and bearing on the proposed actions or their impacts. Therefore, a supplement to the YFP EIS is not needed.

Patricia R. Smith
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Environment, Fish and Wildlife Group

Concur: _____ Date: _____
Thomas C. McKinney
NEPA Compliance Officer

Documentation on file:

- BPA, YIN, WDFW (Bonneville Power Administration, Yakama Indian Nation, Washington Department of Fish and Wildlife). 1999a. Biological Assessment on Bull Trout for the Yakima/Klickitat Fisheries Project 1999-2004. March 1999.
- BPA, YIN, WDFW. 1999b. Biological Assessment on Mid-Columbia River Steelhead for the Yakima/Klickitat Fisheries Project 1999-2004. April 1999.
- NMFS. 1999. Biological Opinion on Artificial Propagation in the Columbia River Basin. National Marine Fisheries Service, Northwest Region, Portland, OR.
- USDOE/BPA (United States Department of Energy, Bonneville Power Administration). 1996. Yakima Fisheries Project Final Environmental Impact Statement. DOE/EIS-0169. Portland, OR
- USDOE/BPA (United States Department of Energy, Bonneville Power Administration). 1999. Supplement Analysis for Yakima Fisheries Project, DOE/EIS-0169-SA-01. Portland, OR

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- Official File - KECN (EQ-14)