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Bruce A. Measure
Montana

Rhonda Whiting
Montana

February 8, 2005

MEMORANDUM

TO: Fish and Wildlife Committee Members

FROM: Mark Fritsch, Project Implementation Manager

SUBJECT: Staff Issue Paper - Sekokini Springs Natural Rearing Facility and Educational Center Master Plan

Please find attached the draft cover letter and issue paper for the master plan associated with the proposal titled "Sekokini Springs Natural Rearing Facility and Educational Center." The master plan and support documents, received on November 3, 2004 from the Montana Fish, Wildlife & Parks, are intended to address the conditions placed on this project as part of the Major Project Review process.¹

The draft cover letter and issue paper are intended to solicit public comment, as part of the review of a master plan, by the ISRP and Council. At your meeting next week Council staff will present a review of the proposal and the issue paper. The Council staff is anticipating taking your recommendation to the full Council in March to consider the release of the issue paper and master plan for public comment.

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¹The Council (September 1997) adopted a policy that built upon the master plan element of the 1995 Program to ensure that 1) new artificial production projects would be considered by the Council while the Artificial Production Review was under way, 2) ensure that these projects would be considered in the context of their roles and potential impacts within specific subbasins, and 3) receive the detailed scrutiny recommended by the ISRP prior to approval. This policy was known as the "Three-Step Review." It called for "new production initiatives" to follow a basic development process that has three main steps or phases: (Step 1) conceptual planning, represented under the 1995 Program primarily by master plan development and approval; (Step 2) preliminary design and cost estimation, and environmental (i.e., National Environmental Policy Act and Endangered Species Act) review; and (Step 3) final design review prior to construction. In adopting the Three-Step Review process, the Council agreed with the ISRP's recommendation to make use of independent peer review for projects as they move through each stage of the process. On October 18, 2001 the Council adopted an updated review process called the Major Project Review process that incorporates the three-step review process (Council Document 2001-29).

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Dear Interested Party:

Montana Fish, Wildlife & Parks proposes to use facilities at Sekokini Springs to aid in the recovery of genetically pure westslope cutthroat trout populations in the Flathead River drainage. The proposed activities at Sekokini Springs are a component of Bonneville Project 1991-019-03 (*Hungry Horse Mitigation*), which addresses fishery losses caused by the construction and operation of Hungry Horse Dam in the Flathead Basin. This project also implements habitat restoration, fish passage improvement, off-site mitigation and monitoring pertaining to Hungry Horse Mitigation and includes enhancement and restoration at numerous tributaries in the basin.

A master plan, as the first step in the Major Project Review process¹ for this project, was prepared by Montana Fish, Wildlife & Parks and the Bonneville Power Administration and submitted to the Council on November 3, 2004. The proposed Sekokini Springs site will provide rearing areas for donor fish whose progeny will be released to targeted restoration streams. Additionally, the site will provide isolation facilities within which wild spawners can be held for collection of milt for infusion into the existing state broodstock to introduce additional genetic complement. In addition, there is an educational component of the project to promote public awareness of the conservation of native species, particularly westslope cutthroat trout.

Council staff has prepared an issue paper on the master plan that can be found on Bonneville's web site [????????](#). The Council invites comment on this issue paper and on the master plan. In particular, public comment is requested on key issues listed in the issue paper.

¹ The Council (September 1997) adopted a policy that built upon the master plan element of the 1995 Program to ensure that 1) new artificial production projects would be considered by the Council while the Artificial Production Review was under way, 2) ensure that these projects would be considered in the context of their roles and potential impacts within specific subbasins, and 3) receive the detailed scrutiny recommended by the ISRP prior to approval. This policy was known as the "Three-Step Review." It called for "new production initiatives" to follow a basic development process that has three main steps or phases: (Step 1) conceptual planning, represented under the 1995 Program primarily by master plan development and approval; (Step 2) preliminary design and cost estimation, and environmental (i.e., National Environmental Policy Act and Endangered Species Act) review; and (Step 3) final design review prior to construction. In adopting the Three-Step Review process, the Council agreed with the ISRP's recommendation to make use of independent peer review for projects as they move through each stage of the process. On October 18, 2001 the Council adopted an updated review process called the Major Project Review process that incorporates the three-step review process (Council Document 2001-29).

The issue paper is not intended to constrain alternatives the Council may consider or limit Council action on this project. Copies of the issue paper are available by calling the Council's central office in Portland (1-800-452-5161) and requesting Council Document 2005-??.

Oral comments on the issue paper can be made at the Council's April 12 - 14, 2005 meeting in Boise, Idaho, and at the Council's May 10 - 12 meeting in Walla Walla, Washington. Written comments will be accepted through May 13, 2005. Comments should be mailed to Mark Walker, Director of Public Affairs, at the Council's central office in Portland referencing Council Document 2005-??. In addition, the master plan has been submitted to the Independent Scientific Review Panel (ISRP), and their review is anticipated in April. Based on comments and reviews received, Council staff will develop a list of alternative actions that will be considered by the Council. At the July 12 - 14, 2005 meeting in Portland the Council will consider whether to approve the Sekokini Springs Natural Rearing Facility and Educational Center Master Plan (see attachment).

Thank you for your interest in the Council's review of this project.

Sincerely,

Stephen L. Crow
Executive Director

Step 1 Review Process - Sekokini Springs Natural Rearing Facility and Educational Center Master Plan

<u>Week²</u>	<u>Description</u>
1 (November 3, 2004)	Montana Fish, Wildlife & Parks submits Master Plan to NPCC
2 (November 18, 2004)	BPA/NPCC initiates Peer Review
13(February 8, 2005) ³	NPCC staff Comments regarding Master Plan and draft Issue Paper to Fish and Wildlife Committee (packet)
2- 18	Additional materials provided to Peer Review, if necessary
14 (February 15, 2005)	NPCC Fish and Wildlife Committee reviews the Master Plan and draft Issue Paper
17 (March 8, 2005)	Fish and Wildlife Committee Recommendation to Council (packet) regarding draft Issue Paper
18 (March 15 - 17, 2005)	NPCC considers releasing Master Plan and Issue Paper for review and comment
20 (April 1, 2005)	Peer Review findings submitted to NPCC
22 (April 12 - 13, 2005)	NPCC takes comments on Master Plan at Council Meeting
26 (May 10 - 12, 2005)	NPCC takes public comments at Council Meeting
26 (May 13, 2005)	Due date for all written comments on Master Plan
23-30	NPCC staff prepares a summary of comments and potential alternatives for decision
30 (June 7, 2005)	NPCC staff provides summary of comments and potential alternatives to Fish and Wildlife Committee to consider recommendation (packet)
31 (June 14, 2005)	Fish and Wildlife Committee considers potential alternatives for recommendation
34 (July 5, 2005)	NPCC staff provides Decision Memo with Fish and Wildlife Committee recommendation to Council (packet)
35 (July 12 - 14, 2005)	Council considers approval of Master Plan

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² Due to the needed coordination with Fish and Wildlife Committee and Council meetings, this schedule is based on the minimum amount of time required.

³ Due to the December '04 Council agendas with subbasin plans and the backlog of reviews for the ISRP, this period of the schedule was extended.

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ISSUE PAPER

Sekokini Springs Natural Rearing Facility and Educational Center Master Plan¹

(draft version February 8, 2005)

Council Document 2005-??

¹ The master plan was prepared for Bonneville Power Administration by Montana Fish, Wildlife & Parks (Project # 1991-019-03, Hungry horse Mitigation). You may obtain a copy of the master plan and support documents from Bonneville Power Administration's web site. www.bpa.gov. These documents can be viewed or downloaded for printing. If you do not have access to the Internet, please call Ron Morinaka at 503-230-5365.

Staff Issue Paper²

Sekokini Springs Natural Rearing Facility and Educational Center Master Plan

I. Introduction

The master plan, submitted by Montana Fish, Wildlife & Parks, proposes to use the Sekokini Springs site to aid in the recovery of genetically pure westslope cutthroat trout (WCT) populations in the Flathead River drainage. The Sekokini Springs site will provide rearing areas for donor fish whose progeny will be released to targeted restoration streams. Additionally, the site will provide isolation facilities within which wild spawners can be held for collection of milt for infusion into the existing state broodstock to introduce additional genetic complement. In addition, there is an educational component of the project to promote public awareness of the conservation of native species, particularly the westslope cutthroat trout.

II. Relationship to the Council's Fish and Wildlife Program

This project is part of the Hungry Horse Mitigation Program (HHMP) funded by Bonneville Power Administration (BPA). In 1991, the *Fisheries Mitigation Plan for Losses Attributable to the Construction and Operation of Hungry Horse Dam* (Mitigation Plan) was prepared by Montana Fish, Wildlife, & Parks (MFWP) and the Confederated Salish and Kootenai Tribes (CSKT). This Mitigation Plan provided the Council with documentation of fisheries and habitat losses associated with construction and operation of Hungry Horse Dam (HHD) and a flexible strategy to mitigate for those losses. It addressed six specific program measures identified in the 1987 Columbia River Basin Fish and Wildlife Program and subsequent program amendments. The Council approved the loss statement, including annual fisheries losses of 250,000 juvenile bull trout (*Salvelinus confluentus*) and 65,000 migratory westslope cutthroat trout (WCT, *Oncorhynchus clarki lewisi*) from the Flathead Lake populations. In addition, an estimated 175,483 adfluvial WCT juveniles were lost in tributary reaches of the Hungry Horse Reservoir (HHR) and Flathead Lake due to construction of the HHD. The Mitigation Plan identified 77 miles (124 kilometers (km)) of critical, low gradient spawning and rearing habitat in streams that were inundated and lost when HHR filled.

The *Hungry Horse Dam Fisheries Mitigation Implementation Plan* (Implementation Plan) was adopted by the Council in 1993 and funded by the Bonneville Power Administration (Bonneville). The Implementation Plan describes specific measures to protect and enhance resident fish and aquatic habitat affected by Hungry Horse Dam that do not require changes in Hungry Horse Dam operation. The hatchery portion of the HHMP is transitioning to

² This issue paper was prepared by the staff of the Northwest Power and Conservation Council.

experimental culture of native species as directed by the Mitigation Plan and the Implementation Plan. The Council approved the plan and amended it into the 1994 Fish and Wildlife Program (Measure 10.3A).

A decision tree in the Implementation Plan directs the cooperating agencies to experiment with artificial propagation of native species to facilitate species restoration. Work at the Sekokini Springs site addresses artificial propagation of WCT. The site offers a unique combination of a small hatchery facility and pond habitat suitable for rearing native WCT in a controlled naturalized environment.

Mitigation projects under the Hungry Horse Mitigation Plan by MFWP and CSKT have parallel charges and have been implemented consecutively on several objectives during recent years. Sekokini Springs is a component of BPA project 1991-019-03 (*Hungry Horse Mitigation*), which addresses fishery losses caused by the construction and operation of Hungry Horse Dam in the Flathead Basin. This project implements habitat restoration, fish passage improvement, off-site mitigation and monitoring pertaining to Hungry Horse Mitigation and includes enhancement and restoration at numerous tributaries in the basin. In association with this effort, BPA project 1991-019-01 (*Research, Monitoring, and Restore Native Species*) included both stream restoration projects and monitoring within the Flathead Basin to verify responses of native fish communities, including WCT, to Hungry Horse Dam mitigation measures.

III. Historical and Current Status and Management of Westslope Cutthroat Trout

A. Status

The Flathead River is a major subbasin in the Columbia River Basin of northwestern Montana. Principal tributaries of the Flathead River are the North Fork Flathead, Middle Fork Flathead, South Fork Flathead, Stillwater, Swan and Lower Flathead rivers. The Flathead River flows into Flathead Lake. Historically, it is believed that WCT occupied all of the streams and lakes to which they had access in the Flathead River subbasin.

Seventy-seven miles (124 km) of high quality, low gradient spawning and rearing habitat were lost due to inundation when Hungry Horse Reservoir filled. Hungry Horse Dam is located on the South Fork Flathead River 5.3 miles (8.5 km) above the confluence with the mainstem of the river. The dam was completed in September 1952, and is operated for flood control and power production. The dam eliminated access to about 42 percent of the traditional spawning grounds in the South Fork for westslope cutthroat and bull trout. In total, habitat degradation and fish passage barriers have eliminated nearly 60 percent of the habitat once available to native westslope cutthroat and bull trout in the Flathead subbasin upstream of Flathead Lake.

Currently the WCT populations in the Flathead subbasin occupy a small percentage of their historic range and have been listed as a Fish Species of Special Concern in Montana and a sensitive species by Region I of the U.S. Forest Service (USFS), and the U.S. Fish and Wildlife Service (USFWS) has recently determined that the WCT is not warranted for listing at this time.

Nonnative species or environmental damage in some locations threatens remnant populations of genetically pure WCT, creating a need to conserve the genetic integrity and

diversity of the species. Genetic inventories of existing stocks of WCT have revealed that hybridized/introgressed populations in headwater lakes are threatening pure populations downstream.

Recent studies have determined that hybridization of WCT and rainbow trout has occurred in 55 and 56 percent of sites studied in the North and Middle forks of the Flathead River, respectively. Temporal comparisons of these results indicate that hybridization has spread upstream within North Fork tributaries since 1984.

The Sekokini Springs facility is located near the mainstem Flathead River, within which genetically pure WCT abundance has shown a steady decline in recent years. Genetic introgression and competition with nonnative trout species has also been documented in tributaries of the Flathead River subbasin. Although the state's captive brood stock is available to re-establish WCT in many areas, a source of genetically pure WCT from "nearest neighbor" wild sources within the Flathead River subbasin is desired to replace certain populations locally.

B. Management

In the mid 1960s it was determined that WCT were highly vulnerable to angling, which was thought to be a contributing factor to their decline. Over time, angling limits for WCT have become much more restrictive. Angling for cutthroat trout is catch-and-release, except for the Middle Fork Flathead and the Great Bear Wilderness, and South Fork tributaries and lakes upstream of Hungry Horse Reservoir and the Bob Marshall Wilderness, where it is legal to harvest three fish if they are less than 12 inches in length. Since the early 1970s, additional harvest management protection has been afforded to WCT as managers developed a policy of not planting exotic fish species in areas where they would compete with native species. Additionally, since 1982 a policy has restricted the use of non-native fish in private ponds connected to the Flathead Lake and river system. Currently, there is no allowable harvest in the contiguous Flathead subbasin.

IV. Summary of the Proposed Production Plan

The Sekokini Springs site will be used in the restoration of WCT in the Flathead subbasin by preserving and replicating pure genetic stocks from donor populations within the Flathead to preclude potential listing under the Endangered Species Act (ESA). Wild juveniles from endemic donor populations would be raised in created natural rearing habitat at the site to preserve behavioral traits and provide gametes for re-establishing progeny in selected areas where the species has been impacted or extirpated. The Sekokini Springs site will also conserve remnant populations that are threatened by nonnative species or environmental damage.

The offspring of wild WCT reared at Sekokini Springs will be used primarily to initiate wild spawning runs in restored or reconnected habitat. Once spawning runs are established, harvest will be controlled through fishing regulations. Additionally, surplus fish could be outplanted into lakes being chemically rehabilitated as part of the WCT conservation program, and in closed-basin lakes to provide angler harvest as part of Montana's Family Fishing program.

All fish planted from Sekokini Springs will be marked (e.g. fin clips, otolith, fluorescent pigments or chemical markers). Because there is limited information on appropriate stocking densities into streams and tributaries fish, from Sekokini Springs will normally be released to targeted recovery streams at a density not to exceed the maximum density of wild trout in a comparable stream order, gradient, and flow range. Experiments to examine stocking densities and determine the appropriate stocking levels may occur. Target streams to be stocked include previously fishless and degraded habitats within the historic range of WCT that have been recently recovered, or vacant habitats that have been blocked to fish passage by man-made obstacles. To be considered for stocking, all target streams must be absent of WCT, Yellowstone cutthroat trout and rainbow trout, or isolated from wild spawners to minimize the expansion of introgressed or hybridized stocks in the Flathead subbasin.

A. Production Strategies

The proposed Sekokini Springs facility will incorporate two conservation strategies into the program. The first component is the collection of juveniles from donor streams for production of progeny to be outplanted into restoration streams and lakes. The second component is the collection of milt from wild spawners for infusion of genetic material into the state's existing WCT captive broodstock. These strategies are described below.

1. Juvenile Donor Stock Collection - - Creation of Progeny from Local Stock Conservation Strategy

There are two options for collection of a donor stock at the Sekokini Springs facility. The preferred option is to collect juvenile WCT from local streams that have been genetically tested and determined to contain WCT that are 100 percent genetically pure. The donor populations would also be required to have a history of fish pathogen testing, and a negative record for pathogens of concern.

If juvenile collection does not allow for the appropriate number of donor fish required for the program, the second option, collecting gametes from wild spawners, may be considered. Because the program necessitates collection every year and access issues make gamete collection difficult, juvenile collection is preferred for the establishment of a "nearest neighbor" stock.

No more than 25 percent of the juvenile population in a given reach will be collected for donor stock. If the number of juveniles within a population decreases, as evidenced through monitoring and evaluation procedures (population estimation through electroshocking assessments), fewer fish will be removed, or collection will be stopped.

The specific number of juvenile donor fish to be collected is dependent upon several factors, one of which is the estimated mortality rate of wild donor fish as they acclimate to conditioning ponds. Other factors that contribute to the number of juveniles to be collected include the relative abundance of juvenile WCT within the donor populations, the carrying capacity of the proposed recipient streams, and known survival percentages of various life stages of reared WCT.

Collected juveniles will be reared to maturity within ponds that hold each collection year/genetic stock. Upon maturation, a false-attraction weir will be used to collect maturing adults from the conditioning ponds. These fish will then be spawned adjacent to the ponds. Mature fish will not be transferred to the hatchery building. An alternative method for adult collection will be to draw down the pond, collect fish, and sort for ripeness. Females will be live-spawned, and sperm from two males, one as a primary source and one as a “back up” would be used to fertilize each egg lot.

2. Milt Collection - - Infusion of New Material into the State’s Existing WCT Captive Broodstock Strategy

The Sekokini Springs facility will be used to hold wild spawners for collection of genetic material. This genetic material, in the form of milt from spawning males, will be infused into the state’s captive broodstock. The infusion of new genetic material into the captive broodstock is considered to be an important component of WCT conservation to increase the genetic diversity of the state’s stock. Because the transfer of live fish to hatcheries is prohibited in Montana, milt is the best option for infusion. Milt is preferred for this activity because it is the easiest to obtain and the collection is less disruptive to wild runs. The collection of gametes is a difficult task and will take place only when genetic infusion is deemed necessary by managers.

Infusion of new genetic material into the captive broodstock, although part of this Master Plan, is separate from establishing the “nearest neighbor” stocks. The Sekokini Springs facility was utilized in 2003 to infuse wild gametes into the captive broodstock for the first time since the stock was established in 1983 – 1984.

Adults collected for milt collection will be captured randomly during the migration period. Fish would be transported to Sekokini Springs for holding until they spawn. Milt will be collected from ripe males and transported in individual containers with oxygen, and on ice, to the hatchery facilities producing the captive broodstock.

B. Facilities

The proposed action at the Sekokini Springs site will modify existing facilities and structures and construct new facilities and rearing habitat for the conservation-based production program. Site elements have been identified as either priority or for future development. The sponsor is hopeful that some of the future elements will be completed through non-Bonneville funded efforts. These future elements of the site development were selected to assist with budgeting and are considered not essential to establishing fish rearing on-site, but are a component of additional educational facilities that are necessary to meet the primary objectives of this project.

The priority project elements:

- Construction of new incubation facilities in the existing hatchery building.
- Modification and conversion of two existing earthen ponds into four donor fish and juvenile rearing ponds.

- Construction of a concrete pad near the rearing ponds for a spawning area.
- Construction of educational trails, and associated interpretive signage, that comply with the Americans with Disabilities Act.
- Construction of a trap/fish barrier at the outfall stream reach to prevent fish from escaping into the Flathead River or entering the facility from the river.
- Construction of an education facility, parking area and USFS, approved vault toilet.
- Construction of a new duplex for personnel, including a drinking water supply well and septic field.
- Upgrade of the electrical service.
- Installation of a pre-fabricated storage facility.
- Addition of a new shed roof extension.
- Construction of a water control structure on an existing drained pond to restore wetland conditions.
- Installation of a false-attraction weir within each brood pond to aid in collection of broodfish,

The future development project elements:

- Construction of an overlook on the lower stream at an oxbow bend.
- Creation of two viewing windows, installed below the waterline, to serve as educational tools.
- Construction of a wetland area access path and viewing platform.
- Construction of a natural-type stream habitat, from the existing hatchery building and ending at the Flathead River.

C. Capital Costs

The total cost associated with the proposed Sekokini Springs Natural Rearing Facility and Educational Center is \$2,586,545³. As proposed, the construction could occur over a five-year period, but higher-prioritized elements of the project may be completed sooner than scheduled if funding becomes available. Some modifications to existing structures were completed in 2001 and 2002⁴. The highest-priority elements are to remodel the hatchery building, develop water conveyance channels, and construct the ponds so that fish rearing can be initiated. The total cost associated with this phase is \$2,043,261. The future development phase that includes stream channel habitat and viewing windows is estimated to cost \$543,284.

The proposal as defined in the master plan is not expected to go through additional step reviews (i.e., combination type step review) unless critical uncertainties are not adequately addressed during this review. This is primarily based on the degree of anticipated engineering and design associated with the proposed project.

³ This cost includes an anticipated cost associated with final designs and permitting of \$318,018 and construction management of \$148,408.

⁴ Some repairs and remodeling to the hatchery building have already been accomplished by MFWP.

Annual operation and maintenance costs after all facilities are fully developed would be approximate \$250,000 annually. Monitoring and evaluation is estimated to cost about \$90,000 annually.

V. Key Questions and Issues

The Council invites comment on any aspect of the issue paper or master plan. Particular emphasis is encouraged on the following questions:

1. Concept

Montana Fish, Wildlife & Parks undertook an intensive planning process using existing knowledge of the habitat and native fish stocks. The master plan has focused and elaborated on two conservation production strategies. Do the potential benefits from the project outweigh the potential genetic and ecological risks? Are the risks associated with no action equal or greater than what might be expected from the proposed project? Are there other lower-risk alternatives that Montana Fish, Wildlife & Parks should consider that would meet its management goals? Are there less-costly alternatives?

2. Habitat Restoration

Is the habitat capability in these targeted streams sufficient to initiate and sustain wild spawning runs as outlined in the master plan? Is the timing of the actions complementary?

3. Educational Elements

Is it appropriate for the fish and wildlife program to fund the education component of the proposal to promote public awareness of the conservation of native species? In the past, the program usually has treated these elements as a discretionary; should priority be placed on the artificial production component of the proposal and any decision on the education component postponed to a later date?

Oral comments on this issue paper can be made at the Council's April 12 - 14, 2005, meeting in Boise, Idaho, and at the Council's May 10 - 12 meeting in Walla Walla, Washington. Written comments will be accepted through May 13, 2005. Comments should be mailed to Mark Walker, Director of Public Affairs, at the Council's central office in Portland referencing Council Document 2005-???. In addition, the master plan has been submitted to the Independent Scientific Review Panel (ISRP), and its review is anticipated in April. Based on comments and reviews received, Council staff will develop a list of alternative actions that will be considered by the Council. At the July 12 - 14, 2005, meeting in Portland, the Council will consider whether to approve the Sekokini Springs Natural Rearing Facility and Educational Center Master Plan.