



Independent Scientific Review Panel
for the Northwest Power & Conservation Council
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Memorandum (ISRP 2007-13 Preliminary Review)

September 27, 2007

To: Tony Grover, Fish and Wildlife Division Director, Northwest Power and Conservation Council

From: Eric Loudenslager, ISRP Chair

Subject: Preliminary ISRP Review of Project 2007-405-00 Rufus Woods Supplementation and Creel Project

Background

At the Council's request of August 2007, the ISRP reviewed proposal 2007-405-00, *Rufus Woods Supplementation and Creel Project*. The Confederated Tribes of the Colville Reservation (Colville Tribe) propose to stock triploid rainbow trout into Lake Rufus Woods to provide increased tribal subsistence and tribal and non-tribal recreational harvest. In addition, the Colville Tribe proposes to evaluate stocking success with creel data collection.

The proposal was submitted to the Budget Oversight Group in early April as part of the third quarter review associated with Fiscal Year 2007. The request was presented to the Council at their August meeting, and they approved sending the proposal to the ISRP for review. The ISRP reviewed the proposal with the same criteria used during the FY 2007-09 project review. Based on a final ISRP review, the Council will make a funding recommendation on this project.

The proposal is available at:

www.cbfwa.org/mods/components/forms/DisplayWYOngoing.cfm?ModID=532&action=final

ISRP Recommendation and Summary

Response Requested: A revised proposal

The sponsors need to better structure and justify this proposed expansion of a put-and-take fishery using triploid rainbow trout. Triploid rainbow are used elsewhere in the Fish and Wildlife Program as a resident fish substitution species, so this aspect is science-neutral, unless (as mentioned below) there are native redband trout conservation risks posed by the project.

The proposal is not complete enough for the ISRP to determine whether the project meets the Fish and Wildlife Program review criteria.

The background doesn't describe the problem well, has a lot of non-related material in it, and doesn't justify the need for expansion of the ongoing triploid rainbow trout fishery.

From a simple logic standpoint, the proposal is several months premature – there is an important need to complete the creel census that is in progress. Without the information the creel census would provide, a rational assessment of the situation cannot be made.

A basic input/output analysis of trout stocks in Lake Rufus Woods is required, and it might be something like this. There seem to be four sources of rainbow trout in Lake Rufus Woods according to the subbasin plan (this information was not included in the proposal but needs to be added to a revised proposal). Entrainment, the major source, is large: an acoustics study in 1996-99 estimated 403,000 fish dropping into Rufus Woods per year from Lake Roosevelt. Rainbow trout make up an unknown fraction of that, and it is not clear whether those fish can be identified once caught in Rufus Woods. Some of these entrained fish are netpen-reared rainbows of “Spokane stock” that originated at the Spokane Tribal Hatchery. If the netpen release of rainbows into Lake Roosevelt is to be expanded by 50% to about 750,000 fish per year, as proposed for 2007-09 and reviewed favorably by the ISRP then entrainment of rainbows into Rufus Woods might also be expected to increase accordingly (and thus, in reality, achieve the goal of this Rufus Woods proposal). A second source of fish is that of “Trout Lodge stock” (triploid stock of mixed steelhead/rainbow), both those escaping from commercial netpens in Lake Rufus Woods and also those currently purchased and released into the reservoir by the Colville Tribe. A third source is up to 100,000 subcatchable Goldendale stock fish reared at the Colville Tribal Hatchery and stocked into Lake Rufus Woods. A fourth source would be any fish entering from tributaries to Rufus Woods, either of wild origin or some of those (number not given) stocked into the Nespelem River from the Colville Tribal Hatchery.

Output of trout from Lake Rufus Woods would include angler harvest, mortality from catch-and-release, natural mortality, and entrainment out of the reservoir. The proposal reports a creel census begun in November 2006, with data reported through February 2007 and presumably still in progress. From the number of anglers mentioned in the proposal the ISRP roughly estimates that 21,000 fish are harvested per year (based on catch for that four month period) if all anglers killed the 2 fish allowable. Effort was reported to have been increasing in March, and it will be important to see a full year's data. However, a Google search provided lots of angler stories and some helpful photos of the area. It seems the trophy fishery occurs primarily during the winter months.

The proposal appears to call for stocking 50,000 additional trout directly into the reservoir, with fish apparently about 1 lb each. However, there are some inconsistencies in the proposal that need to be clarified regarding the number and lbs of trout proposed for stocking. The proposal narrative refers to 50,000 lbs of trout, but the administrative proposal form refers to 50,000 trout. The proposal narrative work element B says “mark all fish and floy tag 24,000 fish per year and then plant fish into Lake Rufus Woods.” Thus, it is not clear to the ISRP whether 50,000 trout at 1 lb each, or 24,000 fish at about 2 lbs each are proposed.

The supposition made by the proposal's sponsor seems to be that stocking additional triploid rainbow trout will increase angler catch and therefore draw new anglers into the fishery. Nothing was provided in the proposal to substantiate that supposition. Based on the current stocking and entrainment of trout, it is likely that such an increase in stocking would be so minor as to be undetectable, but that is certainly open to debate. A better approach would be to complete the year of creel census and use this to gain an understanding of (a) current catch rates (including the ratio of fish caught to those released) and other valuable harvest metrics, especially for those trout stocked into Rufus Woods, and (b) the relative sources of the fish being caught. THEN it might be possible to modify the stocking program (as proposed, or in some other manner) to have some specific goals, with progress being conducive to monitoring. It will also be possible to estimate the cost per fish that returns to the creel for the trout that would be stocked into Lake Rufus Woods, an important issue that is not addressed in the proposal.

The stocking proposal needs to be justified using data on trout production in Lake Rufus Woods and reasonable metrics of angler success. Additionally however, artificial production actions within the Fish and Wildlife Program need to conform to the native species conservation guidelines established in the Artificial Production Review (NWPC 99-15). In several places in the narrative the Colville Tribe states that triploid rainbows are a temporary species for angler harvest until they increase propagation and release of "native redband stock" for harvest at some future time. This raises additional questions. First, the very large size of the rainbows in Lake Rufus Woods suggests that they may prey upon many of the hatchery kokanee that pass through the Grand Coulee powerhouses on Lake Roosevelt. Second, will proceeding with a hatchery program for native redband lead to unwanted genetic or ecological changes in this stock? The sponsor should evaluate the alternative of using triploid rainbow trout for harvest and leave the natives under natural production. Third, will it even be possible for the fishery managers to maintain a 1 fish-per-hour catch rate and 5 lb-per-fish average size once they wean themselves away from the triploids and onto native redband trout? Are there other lakes or reservoirs in the region where a similar strategy has been tried?

In any case, a revised proposal should provide the information to answer the questions below:

1. Clarify the trout rearing and release program now conducted by the Colville Tribe at the Colville Hatchery. Specifically, the proposal indicates that the Colville Tribe has transitioned from rearing coastal rainbow trout to rearing redband trout since the discovery of this resident form in Bridge Creek in 2001. Are the redband trout reared at the Colville Hatchery derived from a stock established from Bridge Creek?
2. On page 6, the proposal indicates that triploid rainbow trout are being produced and released by the Colville Tribal Hatchery. Is the Colville Tribal Hatchery producing triploid redband trout?
3. The proposal notes that two aquaculture operations exist on Lake Rufus Woods, and they produce five million pounds of trout annually. Please provide additional details on the nature of the operations. Are they net-pens? Are these Tribal businesses? The proposal indicates that a processing plant is planned for the near future. What is the anticipated

4. What is the current stocking program for Lake Rufus Woods? Please clarify whether both triploid rainbow trout and native redband are being propagated and stocked? Is the proposal to add additional stocking or to take on the program the Colville Tribe is currently supporting from other sources?
5. The proposal seeks to purchase 50,000 pounds of trout for stocking. What size and numbers of trout will be stocked? What is the anticipated stocking schedule? What is the rationale for the stocking schedule?
6. What is the rationale for stocking 50,000 pounds of trout? Why not more? Why not less? What is the carrying capacity of Lake Rufus for stocked rainbow trout? For other sport fishes?
7. Additional detail is needed on the creel census to determine that it is sufficient to provide the monitoring of all the metrics identified in the proposal.

Finally, the sponsors use the term supplementation in the title of their proposal, but the artificial production they describe is harvest augmentation. As developed elsewhere in the Columbia Basin, supplementation is proposed to increase the naturally reproducing population of a specific watershed to a level at which it will sustain itself. The idea is to use the adults from within a watershed as parents for hatchery production of young, and then release those young into the same stream with the objective that some will then spawn and increase that watershed's natural production.

The ISRP encourages sponsors to use a title to reflect that this is a harvest augmentation project. Something like: "Lake Rufus Woods Resident Fish Substitution Project Using Triploid Rainbow Trout." This is not a supplementation project.

Specific Comments

1. Technical and/or scientific background

The Abstract indicates that there are two commercial fish farms producing 5 million lbs of salmonids annually. Are they producing triploids or some other stock? These aquaculture programs need to be described in the background section.

The summary of the location and hydrodynamics of Lake Rufus Woods is sufficient. The goals for the fishery and the rationale of why 50,000 pounds of triploid rainbow trout will accomplish the goal need to be more thoroughly developed. This development should address questions 1 through 6 listed above in the response requested recommendation summary.

Most of the technical and scientific background section is a cut and paste from the subbasin plan and doesn't make a good case for expanding an ongoing triploid rainbow artificial production program and fishery. On the third page of the background section, the sponsors indicate that a strong fishery for these triploids has already developed and two state records for rainbow have been produced, with a mail-in creel survey indicating that Rufus Woods ranks in the top three popular fishing sites in the state of Washington. The sponsors need to make a better case for expansion of this fishery and determine if the Rufus Woods forage base is adequate to support an additional large number of these large triploid trout (see above regarding carrying capacity). The sponsors also need to address potential impacts on listed bull trout and other focal species in the Subbasin Plan.

On the third page of the background the sponsors indicate that their long-term goal is to move to exclusive stocking of native redband trout which is a major objective in the Subbasin Plan but this seems to be dropped until the tribal hatchery is expanded. A better plan for following through on native redband trout restoration should be included.

Several places in the proposal the sponsor states that there are few published data from Rufus Woods on the "physical or biological characteristics, abundance or distribution of the fish populations, origin of the stocks, extent and use of the fishery, or economic significance." They then seem to imply that a creel survey will provide much of this. It will not. It appears that some kind of a broad fisheries survey or study is needed to better understand the current status of the major species of fish populations in this mainstem reservoir. Information is also needed on the entrainment of fish into Wells Reservoir because water retention time is short in Lake Rufus Woods (2-4 days) and residence time (especially for juvenile fish) may be temporary.

2. Rationale and significance to subbasin plans and regional programs

Increasing the catch of large trout to bolster tourism is probably consistent with the subbasin plan; from the appended letters of support from the state and counties, it is supported regionally.

The sponsor provided information indicating a lack of previous studies in Lake Rufus Woods. The ISRP appreciates the sponsor's perspective on inattention to this reservoir by the Fish and Wildlife Program. However, what is requested here are elements from the subbasin plan, the Council Fish and Wildlife Plan, or other regional management plans. As an example, stocking triploid rainbow trout could potentially be an activity supported by the resident fish substitution components of the Council Fish and Wildlife Plan. Does the Colville Tribe have a fish management plan that includes actions and goals for Lake Rufus Woods? Does the State of Washington have fish management plans for redband trout, reservoirs, walleye, kokanee, or sturgeon that endorse the tasks in this proposal? Are there any management plans that would be disrupted by undertaking the fish stocking in this proposal?

This section should describe how this project relates to the subbasin plan or other regional plans (the Fish and Wildlife Program provisions for resident fish substitutions could/should certainly be referred to and discussed).

3. Relationships to other projects

More detail on the specific tasks undertaken by the Colville Tribal Fish Hatchery #198503800 is needed. How many fish are being reared and released from the Colville Tribal Fish Hatchery? Will this production replace some of current production? The proposal states that #198503800 monitors and evaluates hatchery activities and impacts of resident fish substitution on native wild populations. A summary of those evaluations and how they inform the creel census proposed here would help the ISRP establish the sufficiency of the monitoring of the triploid production under this proposal.

4. Project history

NA, this is a new project, but it appears that it is an expansion of an ongoing tribal project so providing some background of that project would be desirable.

5. Proposal biological objectives, work elements, and methods

The proposal is to stock 50,000 more trout (presumably annually), but there is no basis provided for choosing that number. A creel census would be conducted but details are too sketchy to enable any review of its efficacy.

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There is no real monitoring and evaluation in this proposal, other than the creel program which is not described in sufficient detail (mostly stated as will follow American Fisheries Society defined methods). A detailed description of the methods of the creel program needs to be included in the proposal.

The sponsor proposes to use stable isotope analysis (SIA) as a method to “to gain understanding of the movement of fish throughout the lake.” No details are given, and at any rate results from SIA would be equivocal if migration was being investigated.

6. Key personnel, facilities, and equipment

Additional clarification is needed. One person (Ed Shallenberger) is identified. A brief resume should be provided. A creel clerk, project biologist, and Hatchery project biologist are mentioned. If these positions are currently staffed, please identify the personnel and provide brief resumes.

7. Information Transfer

Only Quarterly and Annual Reports to BPA briefly mentioned.

8. Benefits to Fish and Wildlife

There might be future benefits accruing to the community from increased tourism and to the private hatchery owners from increased sales of fish, but benefits to fish, especially native fish, would be likely nonexistent or negative. There is a desire expressed to stock native redband trout, but the logic behind that under these circumstances seems highly suspect without supporting information. There is no indication from the proposal or from the subbasin plan that redband are present any longer in Lake Rufus Woods proper, and while re-establishing them might be a worthy goal, this proposal does not adequately describe future restoration plans. If, as proposed, 60% of the production from the Colville Tribal Hatchery will be of native redband origin and this stocking into Lake Rufus Woods is at least in part to establish and perpetuate a self-sustaining redband population in the reservoir, then supporting information would be needed before such an effort would seem feasible and supportable.

The direct benefits will be to subsistence and sport harvest. There could be indirect benefits to wildlife from predation on stocked fish. This topic is not well developed in the proposal.