Summary

Purpose of and Need for Action

Need for Action

The South Fork Flathead River drains 1,681 square miles of land on the Flathead National Forest and is apportioned into several land use areas: the Bob Marshall Wilderness, the Great Bear Wilderness, and the Jewel Basin Hiking Area (all of which are administered by the Forest Service). The South Fork drainage has 355 lakes and approximately 1,898 miles of stream habitat. The South Fork drainage was isolated in 1952 by the construction of Hungry Horse Dam approximately five miles upstream of its mouth.

The South Fork Flathead River, above Hungry Horse Dam, contains one of the largest genetically pure populations of native westslope cutthroat trout in the nation. The South Fork Flathead is a critical stronghold for this species, representing 50 percent of the statewide range for genetically pure large, interconnected populations. The South Fork drainage is protected from invasion by non-native fish because of the barrier created by Hungry Horse Dam. However, historic stocking has introduced non-native trout species (primarily rainbow trout and Yellowstone cutthroat trout) into some headwater lakes that were historically fishless. By the late 1950's, fish managers became aware of the negative impacts that past stocking could have on native westslope cutthroat trout, and shortly thereafter changed to stocking native trout. Over time many of the fish in these lakes have hybridized (the crossbreeding of two or more dissimilar stocks).

The underlying need for action is to preserve the integrity of the genetically pure populations of native westslope cutthroat that currently exist in the South Fork Flathead River Watershed by removing the threat of future hybridization with non-native trout that currently inhabit lakes in the South Fork River drainage.

Purpose of Action

The purpose statement includes goals to be achieved while meeting the need for the project. These goals are used to evaluate alternatives proposed to meet the need. Bonneville Power Administration (BPA) will use the following purposes to select among the alternatives:

- Helps BPA fulfill its obligation to protect, mitigate, and enhance fish and wildlife affected by the development of Hungry Horse Dam in a manner consistent with the goals and objectives of the Council's Columbia Basin Fish and Wildlife Program.
- Enhances administrative efficiency and cost-effectiveness.
- Avoids or minimizes adverse environmental impacts.
- Provide the potential to achieve the following biological objectives:
    - Preserve genetically pure westslope cutthroat trout populations in the South Fork drainage (including fluvial, adfluvial and resident life history forms).
    - Eliminate from headwater lakes and their outflow streams, to the extent possible and in a timely manner, the non-native trout that threaten genetically pure stocks of westslope cutthroat trout.

Key Resource Issues

The scoping process (agency and public involvement to determine the range of issues to be addressed) identified several potential effects that may result from the proposed project. Comments were received from numerous individuals, organizations, and agencies that had interest in the proposed project. This information was used to focus the draft environmental impact statement (DEIS). These comments were synthesized into several broad issue categories for analysis in this DEIS. The issues of concern include:

- Impacts to quality of fisheries and angling opportunities may be caused by proposed action. What is the extent and duration of such impacts?
- The proposed action may impact non-target species (particularly bull trout populations). Should the westslope cutthroat be preserved at the risk of losing other fish and angling opportunities?
- Will the removal of all hybrids and other non-natives and the use of the M012 genetic stock may create an undesirable monoculture in the South Fork?
- Will the proposed action affect aquatic-dependent organisms such as plankton, insects, and amphibians? Will threatened, endangered, and sensitive species be impacted?
- How will dead fish impact lake habitat and wildlife?
- Will the use of fish toxins impact water quality in the watershed, including drinking water for humans and animals?
- Is the use of fish toxins appropriate in the management of wilderness areas?
- Should the use of aircraft, outboard motors, or any other motorized/mechanized equipment in wilderness be authorized under the administrative exemption clause to expedite the process?
- What economic impacts will be sustained by commercial outfitters? What will be the short- and long-term effects to the local tourism industry?

Decisions to be Made

The decisions to be made include determining the method and extent of fish removal in lakes and streams; seasonal and long-term timing of the action; method of transport for materials, equipment, and personnel; and whether to restock each lake and stream following the removal of fish. Because some lakes occur within wilderness and the Jewel Basin Hiking Area, methodologies and activities selected for implementation must conform to special land use restrictions as much as possible. Based on the environmental analyses presented in this document: BPA will determine whether to fund the program; Montana Fish, Wildlife, and Parks (MFWP) will determine when to implement the selected alternative;; U.S. Forest Service (FS) will decide whether to approve the use of fish toxins within wilderness and whether to approve the short-term use of aircraft, outboard motors, pumps, and mixers in the wilderness area and Jewel Basin Hiking Area.

Proposed Action and Alternatives

Scope of Project

At the time of the preparation of this draft environmental impact statement (DEIS), 21 specific lakes and their designated stream segments are targeted for treatment. Additional information about the sites including location, size, and specifics about the methods of and procedures proposed for treatment can be found in Appendix C. Although there is no specific information indicating other hybrid lakes and streams are present in the South Fork, if any other lakes and streams in the South Fork Flathead are discovered at some time in the future to contain hybrid trout, these would also need to be treated. A list of lakes currently under consideration follows:

- Black
- Blackfoot
- Clayton
- George
- Handkerchief
- Koessler
- Lena
- Lick
- Lower Big Hawk
- Lower Three Eagles (genetic analysis pending)
- Margaret
- Necklace Chain of Lakes ("Smokey Creek Lakes") – total of four
- Pilgrim
- Pyramid
- Sunburst
- Upper Three Eagles
- Wildcat
- Woodward

The determination to treat lakes and streams other than those 21 listed above would be made only if hybridization was determined through genetic analysis.

Alternatives Under Consideration

BPA is considering the following alternatives:

- Alternative A: (No Action) Status Quo Management
- Alternative B: (Proposed Action) Fish Toxins-Combined Delivery and Application Methods
- Alternative C: Fish Toxins-Motorized/Mechanized Delivery and Application Methods
- Alternative D: Suppression Techniques and Genetic Swamping

The No Action alternative would maintain current management practices, including current fish stocking practices, angling regulations, and future fish stocking. BPA would make no effort to affect the westslope cutthroat population in the South Fork which would provide no means to prevent hybrid trout from moving downstream to pioneer new areas. These hybrid trout would continue to compromise the genetic integrity of the genetically pure westslope cutthroat trout by interbreeding and likely creating new hybrid

populations in the South Fork Flathead drainage. If Alternative A: No Action is implemented, hybridization would continue to threaten the genetic purity of the westslope cutthroat populations and could also lead to future restrictions on angling, affect angling opportunities, and management for this species. The No Action Alternative could also lead to an Endangered Species Act (ESA) listing of the westslope cutthroat trout and more severe restrictions for all activities affecting the species in the subbasin.

Alternative B would use a combination of motorized/mechanized (i.e., aircraft, motor boats) and non-motorized/non-mechanized (i.e., livestock, hiking) means to access all project sites and apply fish toxins to remove hybrid trout from the lakes and designated portions of the outflow streams, and then restock the lakes and streams with genetically pure westslope cutthroat trout.

Before re-stocking with fish, Montana Fish, Wildlife and Parks Department (MFWP) would install sentinel fish cages in each lake to determine if the water conditions are appropriate, and if so, the lake and stream would be stocked in order to establish genetically pure cutthroat populations in sufficient quantities to dominate any hybrid fish that might remain, and to re-establish the fishery. MFWP would determine future stocking amounts and frequency on a case-by-case basis.

Monitoring of the restocked fish would continue for several years to determine population viability and associated characteristics, determine program success such as presence and degree of natural reproduction, genetic purity, angling quality, and growth rates of fish.

Alternative C is similar to Alternative B in all respects, but differs in the method used to transport materials, equipment and supplies to the project sites and in the application of fish toxins to the lakes. The main difference is in the use of aircraft as the sole means of transport.

Alternative D proposes the combined use of two or more mechanical removal strategies to reduce hybrid trout numbers in an effort to protect downstream genetic purity of the westslope cutthroat. This alternative would rely on the use of mechanical fish collection methods as a means to suppress the hybrid trout populations by removing as many fish as possible. When population levels are adequately reduced, intensive fish stocking would commence on a “frequent or annual” basis (swamping) in an attempt to dominate the remaining hybrid trout in the lakes.

Comparison Summary of Alternatives

Alternative A: No Action or Status Quo Management

Under Alternative A, current management practices would continue to guide activities in the project area. No action would be taken to remove or depopulate hybridized westslope cutthroat populations in the South Fork drainage. This alternative would not address the objectives of the project, and would not satisfy MFWP goals for future conditions. However, this alternative is analyzed in detail as a baseline for comparison with the other alternatives.

Alternative B: (Proposed Action) Fish Toxins – Combined Delivery and Application Methods

Direct and Indirect Effects

The direct and indirect impacts of this alternative vary by resource. The application of piscicides would impact fisheries for 1-3 years. The ESA listed bull trout is not present in any of the lakes proposed for treatment. However, bull trout do occur in the associated drainages downstream of 13 of the lakes proposed for treatment. Any effects would be minimized or negated because of the natural detoxification of the piscicide that occurs as streams drop in elevation and through the use of potassium permanganate to detoxify.

Wildlife impacts would be minimal. Gathering and sinking the dead fish in the treated lake would stimulate plankton growth as a food source for restocked westslope cutthroat the following growing season, and deter opportunistic scavenging by wildlife. Minimal and short-term impacts would occur to some amphibians and invertebrates. Mammals in general exhibit low susceptibility. Organisms killed by antimycin or rotenone would not be a threat to other animals if consumed.

The effects on water quality from the application of piscicides and potassium permanganate would be temporary and would become undetectable after detoxification.

No direct or indirect effects on soil resources are anticipated. Minor soil compaction and abrasion may occur as a result of trail use by pack animals and associated camping near treatment sites. However, this is a traditional means of transportation in a primitive area.

It is not likely that the piscicides would have a negative impact on plant species. Both rotenone and antimycin have been shown to have minimal, if any, effect on vegetation. Based on the fact that rotenone is commonly used in gardening and antimycin is used to control fungus on living rice plants without apparent damage and that the concentrations used to kill fish are very low, it is unlikely that there would be any effects on vegetation in the project area.

Since antimycin requires less volume per area treated, than other piscicides, fewer aircraft trips and pack animals are required, which limits associated impacts. The wilderness experience (e.g., solitude) of users in the area may be affected during the time of delivery and application. This includes the intrusion of additional people, stockpiling of material for those areas delivering material by traditional means (stock), setting up campsites, and the sight and sound of aircraft and other motorized equipment. These impacts would also occur in non-wilderness areas.

To reduce the number of aircraft trips, single-engine aircraft tanker (SEAT) aircraft, instead of helicopters, would be used for non-wilderness applications where possible. Most lakes and associated stream segments would be treated over a three to four day period of time. There would be moderate short-term adverse impacts on proposed wilderness due to noise and disturbance from flights.

Humans in the flight paths or areas near lakes and streams being treated could find noise and visual effects from aircraft, motor boats, humans, and pack animals bothersome. These impacts would be temporary and minimal. Noises and odors from motorboats, pump motors, and aircraft during application would be limited to the duration of treatment (i.e., several days in the fall of a single year).

Cumulative Effects

There is expected to be a cumulative effect on regional guides and outfitters and associated tourism during the periods proposed for treatment. There would be an opportunity cost to guides and outfitters as potential tourists, adjusting for changes in expectation and experience, choose to delay their travel plans, visit other locations, or book expeditions through other guides and outfitters.

Angling opportunities on lakes scheduled for treatment may be temporarily improved as restrictions (i.e., size and catch limits) would be lifted for a season or two prior to treatment. After treatment, angler displacement would likely occur until fishing opportunity is restored at each lake (usually one year but possibly up to three years). Individual lakes and portions of their outlet streams would be unable to serve outfitters and guides for angling until a sport fishery is restored.

Alternative C: Fish Toxins – Motorized/mechanized Delivery and Application Methods

Direct and Indirect Effects

The direct and indirect effects from Alternative C would be very similar to those listed for Alternative B. The only environmental effects that would differ are those associated with the use of livestock in wilderness areas and the increased use of aircraft at wilderness lakes.

Cumulative Effects

Cumulative effects would be similar to those listed under Alternative B.

Alternative D: Suppression Techniques and Genetic Swamping

Direct and Indirect Effects

The most important direct effect of Alternative D would result from fish suppression efforts. Fish removal using mechanical methods (gill nets and trap nets) would result in a long-term (5 to 10 years) reduction in large trout, which are most vulnerable to capture. The intentional reduction in fish numbers would impact fishing opportunities for humans and potentially, fish-eating birds.

One of the primary direct effects of Alternative D is the loss of quality angling opportunities for an extended period of time. Another direct effect of Alternative D is the long-term and high volume stocking of lakes. The intentional overpopulation of westslope cutthroat using this method would increase competition and inbreeding as intended, but also may reduce growth rates, reduce the overall size of fish, and enhance the potential for downstream migration because of population pressure.

The suppression techniques used at each lake may differ based on the site characteristics, but the impacts to soil and vegetation resources would be similar. Suppression techniques, such as gill-netting or trapping, would require long-term camping near lakeshores, use of motor boats to set and check nets or traps, and travel to and from the lake. Each of these activities would likely be continued for several years. Long-term camping and storage of equipment would lead to trampling of vegetation, soil compaction, loss of vegetation cover, and ultimate site degradation. This would also likely impact the recreational desirability of the lake and surrounding areas during that time.

The use of the suppression techniques of gill netting involve long periods of trapping and netting that require the use of an outboard motor and boat. Alternatives B and C would apply similar motorized use for several rather than the entire season as Alternative D does.

Cumulative Effects

The cumulative effects would be very similar to Alternative B, except that fishery quality and angler displacement would be extended several years.

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