

# **Grouse BMU Compliance Project**

## **Fisheries Resource Report**

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for:

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Idaho Panhandle National Forests

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## Introduction

This report has been included as part of the required analysis for the Grouse BMU Compliance Project (GBCP) on the Sandpoint and Bonners Ferry Ranger Districts. The focus of this report is to document existing conditions for the fish species and associated aquatic habitat in the project area and to analyze potential project effects to this resource. A complete and detailed description of the project area, purpose and need, and proposed project alternatives can be found in the Grouse BMU Compliance Project Environmental Assessment (EA).

The following list identifies the project components that will be analyzed for effects to the fisheries resource, which includes fish populations and aquatic habitat, in this analysis.

- *Road Storage* - Approximately 28 miles of road in the project area are proposed to be stored. Approximately 0.2 miles of currently opened road is proposed for storage. Only 7.7 miles of roads proposed to be stored are open for public motor vehicle travel from December 1 through March 31. The remaining miles of roads proposed for storage are not open to public motor vehicle travel.

Stored roads would no longer be drivable; they would be blocked with an earthen berm or a short section would be recontoured to match the original slope of the land. High-risk drainage structures would be removed and additional drainage, such as waterbars, would be installed. Culverts could be removed with machinery or by using explosives.

- Approximately 3.1 miles of undetermined roads would also be closed. Proposed work would remove any resource risks associated with these routes, and the road prism would be in an impassable state to discourage illegal use. Undetermined Roads identified for closure are: 215UC, 2636UC, 22656BUA, 2656BUAA, 2686AUA, 2686AUB, 2686AUC, 2686AUD, and 729UV. In addition, 1.3 miles of an unauthorized ATV road would be closed with this proposal.
- *Removal or replacement of culverts associated with storing roads and improving aquatic organism passage (AOP)* – This component will be important to analyze because it can lead to a short-term increase in sediment levels in a stream when culverts are being removed from the stream channel. This will be critical for habitat connectivity by reconnecting native fish populations to fragmented habitat.
- *Forest Service Road #280 Reroute and Decommission* – The re-route of a section of the Grouse Creek Road (Forest System Road #280), from the bridge over North Fork Grouse Creek to approximately the Wylie Knob trailhead, will address the long history of road failures and washouts where the road encroaches on the Grouse Creek floodplain. Additional benefits include safe and consistent access for several year-round residents upstream, lowered maintenance costs for the road, and reduced impacts to bull trout and bull trout critical habitat from persistent road surface erosion and periodic mass road fill failures delivering fine sediment into Grouse Creek.

## Regulatory Framework

The regulatory framework providing direction for the management of the fisheries resource and aquatic habitat on the Idaho Panhandle National Forests and relevant to this analysis includes the following:

## Land Management Plan for the Idaho Panhandle National Forests

The 2015 Idaho Panhandle National Forest Land and Resource Management Plan (the Forest Plan) provides standards and guidelines for aquatic habitat and aquatic species and all projects and activities authorized by the Forest Service must be consistent with the applicable plan components. Plan components that may be applicable to aquatic habitat and aquatic species are found on pages 26-29 of the plan and project consistency with all applicable Goals, Objectives, Desired Conditions, Standards, and Guidelines from the Forest Plan have been addressed (more information is available in the project record).

## Federal Law

Federal law providing direction for the management of the fisheries resource and aquatic habitat on the Idaho Panhandle National Forests and relevant to this analysis includes the following.

### *Endangered Species Act (ESA)*

Section 7 of the ESA requires Federal agencies to consult with the U.S. Fish and Wildlife Service to insure that any action authorized, funded, or carried out by them is not likely to jeopardize the continued existence of listed species or destroy or adversely modify their critical habitat.

### *National Forest Management Act (NFMA)*

NFMA requires that projects "provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives" in the Plan area (16 USC §1604 NFMA § (g) (3) (B)). The "Plan Area" in this respect applies to the Forest Plan for the Idaho Panhandle National Forests. Section 6 of NFMA also requires that all projects and activities authorized by the Forest Service must be consistent with applicable Forest Plan components Sec. 6(i) and (36 CFR 219).

### *Inland Native Fish Strategy (INFS)*

INFS (USDA Forest Service 1995) guidance has been incorporated into the Forest Plan and is therefore addressed under Forest Plan consistency (above).

## Executive Orders

### *Invasive Species, EO 13112 of February 3, 1999*

*Federal Agency Duties.* (a) Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

### *Recreational Fishing Opportunities, EO 12962 of September 26, 2008.*

*Federal Agency Duties.* Federal agencies shall, to the extent permitted by law and where practicable, and in cooperation with States and Tribes, improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities by one or more methods identified under this executive order.

## State and Local Law

### *Idaho Stream Channel Protection Act*

The Idaho Stream Channel Protection Act requires that the stream channels of the state and their environment be protected against alteration for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty and water quality. The Stream Channel Protection Act requires a stream channel alteration permit from Idaho Department of Water Resources before any work that will alter the stream channel, such as a culvert replacement, may begin. Although this project is located in the State of Washington, this act is relevant to the downstream impacts and cumulative effects associated with the action alternatives. The State of Washington does not have a similar Act.

### *Idaho Forest Practices Act*

The Idaho Forest Practices Act regulates forest management on all ownerships in Idaho, including National Forest System lands (IDAPA 20.02.01). The Forest Service has an agreement with the State of Idaho to use best management practices for all management activities that will meet or exceed guidelines described in the Soil and Water Conservation Handbook (Forest Service Manual 2509.22). Following these best management practices will help achieve the water quality protection elements of the Idaho Forest Practices Act.

## Topics and Issues Addressed in this Analysis

### **Purpose and Need**

The aquatics component of this project is important to the purpose and need for the GBCP. Whereas the condition of the fisheries resource in the project area is mostly intact and functioning appropriately, opportunities for improvements do exist and will be addressed with the action alternative.

### **Issues**

Two aquatics-related issues were identified during field reviews and data collection efforts prior to this analysis. They include:

- The need to reduce the risk of sediment from entering project area streams from roads in the RHCA's and lacking adequate and consistent maintenance.
- The need to address several culverts considered impediments, or complete barriers, for fish to access beneficial upstream habitat.

### **Resource Indicators and Measures**

The fisheries resource in the GBCP area includes fish populations and their associated aquatic habitat. Table 1 displays two principal *Resource Elements* of the fisheries resource, the three primary *Project Activities*, and the *Habitat Indicators* used to facilitate the effects discussion. The list of habitat indicators is not inclusive of all components of beneficial cold water habitat for fish and other aquatic organisms. Only those habitat indicators with the greatest potential to be affected by activities associated with this project are included in Table 1 and will be addressed in this analysis. Further, this analysis will focus on effects to just westslope cutthroat trout, a listed sensitive species, because no other sensitive species are known to exist in the project area. This does not preclude the potential for other cold-water fish species (i.e. rainbow trout and brook

trout) to be present in the watershed. However, if present, effects and impacts to those species would likely be similar to that of westslope cutthroat trout. Bull trout, a threatened species, have also been documented in Grouse Creek but effects to this species will be addressed in a separate Biological Assessment (BA) to meet requirements of the Endangered Species Act.

**Table 1. Principal elements and relevant indicators for the fisheries resource**

Resource Element	Project Activity	Habitat Indicators
Aquatic habitat	Road storage	<ul style="list-style-type: none"> <li>• Changes to sediment levels in streams</li> </ul>
Westslope cutthroat trout.	Decommission and reroute of FSR #280	<ul style="list-style-type: none"> <li>• Changes to habitat connectivity</li> </ul>

## Methodology

The objective of this analysis is to disclose the potential impacts or benefits of the project alternatives on the fisheries resource in the project area. Each alternative is analyzed based on the potential to change the *Habitat Indicators* (Table 1) from their existing condition. Potential direct and indirect effects associated with the project, as well as cumulative effects associated with past, present, and reasonably foreseeable activities throughout the analysis area, are analyzed to disclose the potential effects on the fisheries resource.

## Information Sources

Data and documents used to support this analysis include:

- Project proposal and associated alternatives
- Sandpoint and Bonners Ferry District files and databases
- Grouse BMU Compliance Project hydrologic analysis report
- Published and unpublished literature
- Aerial photographs
- Geographic information systems (GIS) files
- Fish distribution surveys
- General stream and habitat surveys
- Road and culvert surveys
- Historical records.

There always remains some level of uncertainty with any analysis that attempts to predict the effects of management activities on the natural environment. Ecological components, including habitat and the species it supports, can have highly complex relationships that continue to evolve and are not always consistent from one area to the next. These inconsistencies make it difficult to understand and disclose all potential interactions. To help alleviate some of this uncertainty, this analysis will use the most applicable scientific literature and the best available data for this area.

## Spatial and Temporal Context for Effects Analysis

### Direct, Indirect, and Cumulative Effects Boundaries

The spatial boundaries for analyzing the direct, indirect, and cumulative effects to the fisheries resource are several smaller watersheds found in the project area. These include Grouse Creek, North Fork Grouse Creek, Trail Creek, Rapid Lightning Creek, and Trapper Creek. This scale is

considered appropriate because it includes accessible habitat capable of supporting westslope cutthroat trout populations and there is hydrologic connectivity between these watersheds.

The temporal boundaries for analyzing the direct, indirect, and cumulative effects will be considered short-term, those occurring within five years of the GBCP, and long-term, those lasting greater than five years.

## Affected Environment

### Analysis Area

The analysis for this report focuses on the geographic area and streams that could be affected by the proposed action of this project. For the fisheries resource, those streams will include Trail Creek, Cone Creek, North Fork Grouse Creek, BRC Creek, Grouse Creek, Rapid Lightning Creek, Chess Creek, Candle Creek, and Trapper Creek.

### Existing Condition

#### Fish Species Distribution and Status

Literature reviews, agency databases, electrofishing surveys, and personal contacts were used to help determine the potential fish species composition and distribution in the project area.

The primary and most significant fish bearing streams in the GBCP project area include North Fork Grouse Creek, Grouse Creek, and Rapid Lightning Creek. However, most of the smaller tributaries that flow into these larger streams also support fish populations. Fish distribution records for the Idaho Panhandle National Forests, data from Idaho Department of Fish and Game, and recent electrofishing surveys conducted in 2017 indicate species diversity in these streams is comprised of westslope cutthroat trout, rainbow trout, brook trout, bull trout, longnose dace, mountain whitefish, northern pikeminnow, redbreast shiner, and sculpin. Hybrids between westslope cutthroat trout and rainbow trout are also known to be present.

#### Endangered, Threatened, and Sensitive Species

Guidance provided in the Forest Service Manual directs the Forest Service to identify and prescribe measures to prevent adverse modification or destruction of critical habitat and other habitats essential for the conservation of endangered, threatened, and proposed species (FSM 2670.31 [6]). Additionally, the Manual directs the Forest Service to manage the habitat of species listed on the Northern Region Sensitive Species List to prevent further decline in their populations, which could lead to Federal listings under the Endangered Species Act. Bull trout is the only endangered or threatened species to exist in the project area and westslope cutthroat trout is the only sensitive species to known occur in the project area. As mentioned previously, the effects analysis for bull trout will occur in a separate Biological Assessment. As a result, this analysis will focus on just westslope cutthroat trout.

#### Management Indicator Species – Focal Species

Management Indicator Species (MIS) were identified in the Forest Plan Revision process and were proposed because they represented an issue or concern. On June 23, 2016, the IPNF administratively changed the monitoring under the Plan to comply with the 2012 Planning Rule. At that time, MIS were removed and aquatic macroinvertebrate assemblages were added as Focal Species to monitor the desired conditions for aquatic habitat and the ecological health of

waterbodies and streams on the Forest. The PACFISH/INFISH Biological Opinion (PIBO) implementation and effectiveness monitoring team will use the River Invertebrate Prediction and Classification System score as the indicator for the Forest. This monitoring will occur every 5 years and will not occur at the project level.

## Environmental Consequences

The following section of this report provides information and discussion regarding the potential direct, indirect, and cumulative effects of the no action and action alternative to the fisheries resource in the project area. A detailed description of the action alternative (alternative 2) can be found in the Grouse BMU Compliance Project Environmental Assessment.

### Effects of Alternative 1 (No Action)

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**Summary:** Under this alternative, road storage and decommissioning, road reroute, and the removal of some culverts blocking fish passage would likely not occur. The condition of aquatic habitat and health of westslope cutthroat trout populations in the various streams in the project area would likely follow existing trends and remain relatively unchanged. However, deteriorating road conditions, threats of chronic sedimentation, and occurrences of mass road failures would likely increase as road maintenance would not occur at levels needed to reduce risk. Further, because culverts would not be removed from the roads proposed for storage in alternative 2, habitat connectivity would remain fragmented. This would likely present a moderate risk of altering beneficial aquatic habitat.

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### Direct, Indirect, and Cumulative Effects

Under the no action alternative, the extent of activities proposed in alternative 2 would not occur (as described in the EA). As a result, there would be no direct, indirect, or cumulative effects associated with this alternative. In general, if no project components are initiated and completed under the Grouse BMU Compliance Project, existing trends and conditions for this area would likely prevail. However, selecting alternative 1 would not preclude accomplishing other management activities that have already been approved, or will be approved in the future, in the project area.

### Condition of Habitat Issue Indicators based on Existing Trends

The following discussion will identify the potential for change of existing conditions for the *Aquatic Habitat Indicators* (Table 1) based on selecting the no action alternative and how this could affect aquatic habitat and westslope cutthroat trout populations in the project area. Keep in mind, the occurrence of some natural events and activities can be hard to predict (wildfire, 100-year floods, blow-downs, etc.) while others can be fairly certain (road use, trail use, rain on snow, high-water events, weed suppression, barrier culverts, etc.).

**Changes of sediment levels in streams** – Because the chances for hillslope erosion, debris slides, streambank failures, road use, and road failures are all expected to continue to occur in the project area, sediment will continue to be delivered into area streams. Whereas some sediment delivery to streams is a natural process and beneficial to aquatic ecosystems, forest roads and associated sedimentation are considered some of the most critical components affecting the aquatic environment (Gresswell 1999, Trombulak and Frissell 2000, Gucinski et al. 2001, Grace and Clinton 2007), even more so than fires and logging (Rieman and Clayton 1997). Poor road location, lack of sufficient road maintenance, and increased use above original design specifications can lead to increased sediment delivery to waterbodies (Grace and Clinton 2007,

Luce et al. 2001) and increase the potential for detrimental impacts to aquatic organisms and habitat.

Based on current and predicted future funding allocated for road maintenance on the IPNF, the condition of forest roads in the project area will continue to decline. As a result, chronic sedimentation and periodic road failures, particularly in Grouse Creek along FSR #280, will continue to increase sediment levels in streams above natural levels and be a concern for the fisheries resource in project area streams.

Changes to habitat connectivity – Both natural and man-made fish passage barriers exist in the project area. All natural barriers are serving a purpose and will be left in place. At least six culverts exist that are impeding, or completely blocking, fish passage in streams crossed by roads proposed for storage under alternative 2. If alternative 1 is selected, these roads would likely stay in their current condition and the culverts blocking fish passage would also likely remain. Connectivity between upstream beneficial habitat and the lower stream reaches in these streams would remain fragmented.

### Determination of Effects on Aquatic Habitat from Alternative 1

Selecting alternative 1 would be expected to have moderate impacts to the existing condition of aquatic habitat in streams in the project area. The lack of appropriate levels of road maintenance in these drainages means chronic sediment delivery to area streams will continue and likely present the greatest risk to altering existing aquatic habitat conditions. Also, fragmentation of beneficial stream habitat will likely persist at most of the culverts identified as fish passage barriers and new fish passage barriers could occur as culverts in fish-bearing streams left in place could plug with debris and cause new barriers.

### Determination of Effects on Westslope Cutthroat Trout from Alternative 1

Alternative 1 may have an indirect impact on westslope cutthroat trout in the project area streams due to chronic sedimentations from existing roads, an increased risk of mass road failures, and the persistence of several culverts fragmenting beneficial habitat but would not likely lead to a trend that would warrant federal listing for the population.

## **Effects of Alternative 2 (Proposed Action)**

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Summary: When considering the influences from direct and indirect effects of the action alternative, in conjunction with cumulative effects from past, ongoing, and reasonably foreseeable activities, alternative 2 is expected to improve existing aquatic habitat, and access to additional habitat, for fish populations in streams of the Grouse BMU Compliance Project area. A short-term increase in sediment yield in certain streams would be expected from certain project activities, such as culvert removals and other activities associated with road storage or decommissioning, but the long term benefits to the fisheries resource would far outweigh these minor short-term impacts. The removal of at least six culverts currently impeding or completely blocking fish passage would have the most beneficial effect on local fish populations by improving upstream access to additional beneficial spawning and rearing habitat. As a result, when considered with other activities occurring in the cumulative effects area, the Grouse BMU Compliance Project is not expected to negatively impact aquatic habitat and fish populations in the watershed.

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As mentioned previously in this document, this analysis will focus on the potential project impacts to only two aquatic habitat indicators (Table 1). These two habitat indicators are a subset of a larger list of habitat indicators thought to be important to beneficial cold water habitat.

However, it is these two that are thought to be at the greatest risk of being altered by GBCP activities. The remaining aquatic habitat indicators will not be discussed in this effects analysis because they present a very low risk of being altered by project activities.

### Fisheries Project Design Features mandatory for both Action Alternatives

Standards and guidelines for aquatic resources from the IPNF Forest Plan, best management practices (BMP's), and design features would be applied to the project action alternative (alternative 2) to eliminate or reduce potential impacts to aquatic habitat and westslope cutthroat trout. This effects analysis for the fisheries resource is based on the premise that BMP's and design features will be mandatory and implemented correctly. A complete list of these design features can be found in the Grouse BMU Compliance EA.

### Direct and Indirect Effects

#### *Alternative 2 Activity - Road Storage*

Changes of sediment levels in streams – Road-associated activities proposed in alternative 2 certainly have the potential to initially generate sediment that may reach streams and impact aquatic habitat in the project area. However, employing the mandatory use of BMP's and project design features would greatly reduce the quantity and duration of sediment generated (Seyedbagheri 1996; Keller and Ketcheson 2015). Further, drainage ditch and culvert clearing, at all locations where culverts will be left in place, can significantly reduce the risk of erosion and road failures (Burroughs and King 1989; Sugden and Woods 2007). Waterbars will be constructed in most cases where culverts are left in place to effectively convey water across the road surface should the culvert opening become plugged with debris. This will help reduce the occurrence of mass road-fill failures.

All culverts passing perennial streams under stored roads will also be removed to allow streams to function properly and eliminate the possibility of becoming plugged. Research of removing culverts from road systems by Folz et al. (2007) suggests that the average sediment delivery of an unmitigated culvert removal (150 pounds) can be reduced to about 3 pounds with the use of appropriate best management practices. Further, the same study documented that sediment levels exceeding criteria known to cause stress to adult fish at unmitigated culvert construction sites had an average duration of only about 5 hours, as measured about 65 feet downstream of the activity. As a result, short-term increases of sediment delivered to aquatic habitat from road storage activities may occur but would be far outweighed by the long term benefits of reducing chronic sediment and reducing the chances for road-fill mass failures. This activity is not expected to jeopardize the existence of fish species and beneficial aquatic habitat in the project area.

Changes to habitat connectivity – At least six culverts passing perennial fish-bearing streams under various roads proposed for storage are impeding or completely blocking fish passage to beneficial upstream habitat. However, because all culverts passing perennial streams will be removed, these passage barriers will be eliminated. Removal of these culverts could have short-term (less than 1 day) impacts to habitat connectivity as a result of the heavy equipment displacing fish from the immediate area. However, these impacts would not be long-lasting and the long-term benefits of providing enhanced connectivity to additional upstream habitat would far outweigh any short-term complications. As a result, habitat connectivity will be improved under alternative 2 and will increase access to additional beneficial aquatic habitat and improve conditions for westslope cutthroat trout and other stream fishes.

### *Alternative 2 Activity – Decommissioning and Reroute of FSR#280*

Changes of sediment levels in streams – The initial work associated with decommissioning a section of FSR #280 could create a short-term scenario where an increase of sediment may reach Grouse Creek. Because heavy equipment will be used to remove all drainage structures (culverts), recontour parts of the road, and decompact the road surface, this initial unconsolidation of the road surface materials leaves them more susceptible to transport after a heavy rain event or high water event. To minimize sediment transport and the potential impacts to the fisheries resource, BMP's for road decommissioning will be used, slash, mulch, and seeding will be placed on the road, and work will occur during summer months weather conditions are driest, when water levels in Grouse Creek are lowest, and when most fish species are upstream in the cooler headwater reaches.

The reroute construction of approximately two miles of FSR #280 would also certainly disturb a substantial amount of land and increase the amount of exposed bare soil. However, the rerouted portion of the road would occur closer to a ridgeline, well away from Grouse Creek, and construction would be required to incorporate mandatory BMP's for road construction. These BMP's have been shown to be effective in protecting water quality and beneficial uses (Seyedbagheri 1996) and would therefore minimize or eliminate sediment yield and the potential to impact the fisheries resource in Grouse Creek.

Changes to habitat connectivity – Decommissioning this section of FSR #280 will neither improve nor impede fish passage and habitat connectivity in the area as no fish bearing streams pass under this section of road. Likewise with the construction of the reroute, no fish bearing streams occur in the proposed location so available aquatic habitat will not be affected.

## Cumulative Effects – Alternatives 2

### Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

A list of past, present, and reasonably foreseeable actions that could be considered in the cumulative effects analysis has been included in the Grouse BMU Compliance Project EA. However, not all of these listed actions are relevant to the discussion of the fisheries resource. Those that have the potential to have considerable effects to aquatic organisms or their habitat, when combined with direct and indirect effects associated with this project, are discussed in greatest detail. For the purpose of this analysis, the actions that are considered most critical are timber harvest, road maintenance and decommissioning or storage, wildfires, and fire suppression.

### Cumulative effects of Past Actions to the aquatic habitat indicators

#### *Past Timber Harvest Activities*

In the past, timber harvest practices were not always conducted in ways that protected aquatic habitat and species (fish populations, fish habitat, and riparian areas) as the impacts of these activities on the aquatic resources were not well understood. Many timber operations would harvest trees right down to the stream edge and culvert placement in roads built to transport the wood to the mill was rarely adequate to pass fish upstream. This has likely occurred in the cumulative effects area in the past and as a result, riparian function, aquatic habitat, habitat connectivity, and fish populations were likely compromised. However, because the Idaho Forest Practices Act is now in place to restrict such activities in riparian areas and require riparian

habitat conservation area buffers on Federal, State, and private lands, timber harvest no longer has the same level of impacts to aquatic resources that it used to have. Impacted riparian areas are either on the mend or have completely recovered, and when considered cumulatively with the action alternative, detrimental changes to sediment levels in streams and habitat connectivity are not expected.

#### *Past Road Decommissioning, Maintenance, and Reconstruction*

Roads are considered one of the greatest threats to aquatic ecosystems because of the potential to transport large quantities of sediment into streams all at once (mass failures) or smaller chronic inputs lasting for years. The Hydrology Specialist Report goes into greater detail about the physical processes and risks associated with roads and therefore will not be repeated here. Roads can also fragment stream habitat by poorly designed and constructed culverts blocking upstream fish passage. However, when roads are removed from the transportation system through decommissioning or storage, problem culverts are removed and sediment levels associated with poorly maintained roads tend to be reduced. Under the action alternative, approximately 28 miles of road would be stored, 3.1 miles of U roads would be closed, 1.3 miles of Unauthorized ATV trail will be closed, and approximately 1.5 miles would be decommissioned. Additionally, at least six culverts impeding upstream fish migration will be removed to help restore aquatic habitat connectivity. The GBCP Hydrology report has determined that these actions will help reduce sediment delivered to streams over existing condition of roads in the cumulative effects area. Therefore, when considered with the action alternatives for the proposed GBCP, impacts associated with past transportation system modifications will likely improve the existing risks of detrimental changes in sediment levels in streams and habitat connectivity.

#### *Past Wildfires and Fire Suppression*

The last large stand-replacing wildfire in the area occurred in 1910 when approximately 27,000 acres burned. It is unknown what the impacts were to the fisheries resource and whether these effects, if any, are still present.

Of greater concern is the effect past fire suppression has had on the condition of the vegetation in the area. Fire suppression allows forest vegetation to reach climax conditions. This can lead to greater risk for trees dying from insects and diseases in existing stands and can lead to a trend of shorter lived shade-tolerant trees dominating the understory. As a result, an increase of dead and dying vegetation continues to accumulate and add to fuel loads in the area. Without treatment, the potential for a stand-replacing fire increases with each season of accumulation. If a large high-intensity fire does occur, fish populations and aquatic habitat in the cumulative effects area would likely be negatively impacted. However, the action alternation for this project will not contribute to an increased or decreased risk of continued impacts to the fisheries resource when considered cumulatively with past wildfires and fire suppression.

### Cumulative effects of Current and Future Actions to the aquatic habitat indicators

#### *Present and Foreseeable Timber Harvest Activities*

Timber harvest on National Forest System managed lands, as well as State and private lands, in the cumulative effects area is occurring and expected to occur over the next 10 years, and beyond. As previously mentioned in the “Past Actions” discussion, the Idaho Forest Practices Acts will require the use of appropriate riparian buffers and other best management practices during timber harvest and vegetation management projects. Further, any newly placed culverts passing fish bearing streams under any roads on Forest Service-managed lands are required to have a design

that will pass all life stages of fish to upstream habitat. Therefore, when considered with ongoing and future timber harvest, the GBCP will not contribute cumulatively to detrimental increases of *sediment levels in streams* and *habitat connectivity* in the cumulative effects area.

#### *Present and Foreseeable Road Storage, Decommissioning, and Maintenance*

Road maintenance, storage, and decommissioning tend to be beneficial to aquatic resources and are presently scheduled and expected to continue in the cumulative effects area in the future. When considered cumulatively with the proposed road storage, road decommissioning, road maintenance, and culvert removals proposed for the GBCP, benefits to the aquatic resources are expected to increase by reducing existing *sediment levels in streams* and improving *habitat connectivity* in project area streams.

#### *Present and Foreseeable Wildfires and Fire Suppression*

Obviously, it would be hard to predict when a large wildfire might occur in the cumulative effects area. However, because fire suppression will likely continue in the future, the potential impacts to the fisheries resource as a result of a high intensity wildfire will remain a very realistic threat. The proposed activities associated with the GBCP will not act cumulatively to increase or reduce the potential for impacts that could occur as a result of wildfires or fire suppression.

### Determination of Effects on Aquatic Habitat from Alternative 2

The direct, indirect, and cumulative effects of alternative 2 would not be expected to have substantial or measurable negative impacts to the existing condition of aquatic habitat or fish populations in the Grouse BMU Compliance Project area or the cumulative effects area. The removal of several culverts passing fish-bearing streams under stored roads will certainly reduce habitat fragmentation and improve upstream access to beneficial spawning and rearing habitat. The storage of these roads, and especially the decommissioning and relocation of FSR #280, will provide a relief to chronic sedimentation into streams and reduce the chances for larger road fill failures. Reducing sedimentation into Grouse Creek will improve conditions for bull trout and their designated critical habitat and provide safer and more consistent access to residents that have homes in the area.

### Determination of Effects on Westslope Cutthroat Trout from Alternative 2

The direct, indirect, and cumulative effects of alternative 2 would likely not have a measurable negative impact on the resident population of westslope cutthroat trout in the Grouse BMU Compliance Project area or the cumulative effects area. The removal of several problem culverts will allow greater access for these fish to beneficial headwater habitat. An initial increase in sedimentation into the stream may occur as a result of the culvert removal, but effects would be very short term, limited to a few individual fish, and would not likely lead to a trend that would warrant federal listing for the species.

## **Compliance with Forest Plan and Other Relevant Laws, Regulations, and Policies**

#### Idaho Panhandle National Forests Revised Forest Plan (2015)

This project meets the goals, desired conditions, objectives, standards, and guidelines of the Idaho Panhandle National Forests Revised Forest Plan for aquatic habitat and aquatic species.

### Endangered Species Act

All alternatives meet requirements of the Endangered Species Act. An effects determination for bull trout and designated critical habitat will be provided separately in a Biological Assessment. Further, project activities have been designed to reduce impacts and improve conditions for sensitive species, such as westslope cutthroat trout, which should benefit existing local populations and help prevent future ESA listing.

### National Forests Management Act

Best Management Practices for soil and water conservation and Inland Native Fish Strategy guidelines and standards would be applied under the action alternative insuring that project activities would be carried out in a manner so as to protect soil, watershed, and fish resources.

### Idaho Forest Practices Act

Best Management Practices needed to meet or exceed guidelines described in the Soil and Water Conservation Handbook would be applied under all action alternatives. These practices would help achieve the water quality element of the Idaho Forest Practice Act. A recent audit of BMPs pertaining to water quality indicates the USFS averaged 99 percent compliance with BMP rules since 1996 (IDEQ 2009, 2012).

### Executive Order 12962 Recreational Fisheries

Alternatives 2 is consistent with Executive Order 12962 regarding aquatic systems and recreational fisheries. Short-term impacts may affect westslope cutthroat trout, rainbow trout, and brook trout individuals but would not lead toward a trend in federal listing that would prohibit harvest of these species. Long-term effects such as reduced habitat fragmentation achieved by replacing barrier culverts and net reduction in sediment as a result of road storage and decommissioning are expected to benefit westslope cutthroat trout survival and habitat and therefore maintain or improve recreational angling opportunities.

### Executive Order 13112 – Invasive species

The Forest Service and this project are compliant with this order as new invasive species are not expected to be introduced as a result of implementation of any of these project alternatives.

### Idaho Stream Channel Protection Act

The only stream channel alteration being proposed by alternatives of this project consists of removing culverts that prevent upstream fish migration. This is considered a beneficial alteration as the activity would allow the stream to function naturally and allow fish access to beneficial upstream habitat.

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