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Environmental Assessment

Pole Creek Road Reroute

Prepared for review during the 36 CFR 218 Objection Period

Sawtooth National Recreation Area
Sawtooth National Forest
Blaine County, Idaho

(Sections 17, 19 & 20, T 7 N, R 15 E, B.M.).

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USDA FOREST SERVICE MISSION STATEMENT

The mission of the USDA Forest Service is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

Table of Contents

Tables

Figures

Abbreviations and Acronyms

ESA	Endangered Species Act
NEPA	National Environmental Policy Act
NFS	National Forest System
NFSR	National Forest System Road
NRA	National Recreation Area
MIS	Management Indicator Species
MPC	Management Prescription Category
PL	Public Law
RCA	Riparian Conservation Area
ROS	Recreation Opportunity Spectrum
SOPA	Schedule of Proposed Actions
TEPC	Threatened, Endangered, Protected and Candidate (species)
TES	Threatened, Endangered, and Sensitive (species)

CHAPTER 1 – INTRODUCTION

The Sawtooth National Forest proposes to relocate approximately 1.3 miles Pole Creek Road (FS# 70197) which is located within the Riparian Conservation Area (RCA) of Pole Creek (Sections 17, 19, and 20, T 7 N, R 15 E, B.M.). Once the existing route is relocated it would be closed and rehabilitated. This proposed action would also authorize the replacement and relocation of two culverts on Twin Creeks, which have been identified as a fish barrier, in order to facilitate the new Pole Creek Road crossing as well as close approximately 0.25 miles Twin Creek Loop Road (FS #70412) which will no longer be needed due to the Pole Creek Road relocation (NW¼, Sec 20, T7N, R15E, B.M.).

Additional documentation, including initial assessments of project-area resources, may be found in the project file located at the Sawtooth National Recreation Area, Ketchum, Idaho.

Background

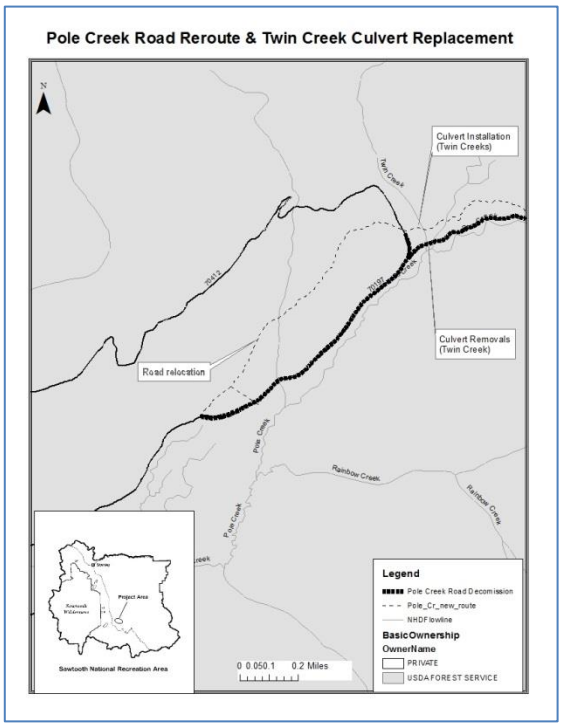
The current alignment of the Pole Creek Road, although unimproved, has likely existed in its near present-day location since the early 1900s. The roads primary purpose during its "conception" was to access a number of mineral claims in the upper part of the Germania Creek watershed as well as several claims within the Pole Creek watershed. A 1924 memo from the US Forest Service suggested improving the route due to the watersheds "attractive nature as well as the prospect of large amounts of ore in the Germania basin". Later in the mid-1970s and 1980s the primary use of the route was for recreation purposes as well as to access several logging units. More recently dispersed camping, non-motorized and motorized recreation and firewood cutting seem to be the primary activities occurring within the watershed.

While the current alignment of Pole Creek Road has existed for a long period of time in its current location, it is considered a moderate/high risk for failure from a high water event and is likely a key limiting factor in ecological processes (temperature, sediment and streamside shading) that occur within the RCA of Pole Creek and the stream itself. Since the travel routes inception in the early 1900s, Chinook salmon, steelhead, and bull trout have been listed for protection under the Endangered Species Act. All species are believed to have been historically present in Pole Creek and its tributaries which were subsequently listed as critical habitat.

The principal objectives of this project are to: relocate the Pole Creek Road outside the RCA; close and rehabilitate the portion of Pole Creek Road which has been relocated; and relocate and replace two culverts on Twin Creeks in order to facilitate the road relocation as well as allowing the passage of fish in all life stages. These changes are intended to address key limiting stream and streamside factors within the Pole Creek drainage, building on the earlier and on-going restoration efforts over the past few years. The planning and surveying for this project is on-going and the Sawtooth National Recreation Area (NRA) proposes to begin implementation during the summers of 2014 and 2015 (Figures 1 &2).

Figure 1. Vicinity Map

Figure 2. Project Area



Purpose and Need for Action

The purpose of the proposed *Pole Creek Road Reroute* project is to improve riparian conditions and water quality associated with the Pole Creek road. It would address the unsustainable and damaging location of the existing Pole Creek road alignment where it passes through the RCA. There is a need to address these chronic resource and infrastructure impacts while providing continued safe access to the destinations served by the route. Currently this section of Pole Creek Road is entirely within the RCA and is contributing a moderate amount of fine sediment to Pole Creek, is interacting with stream and RCA processes and is a moderate risk for failure from a high water event in Pole Creek.

The Proposed Action is anticipated to address the Purpose and Need by focusing on key limiting habitat conditions within the Pole Creek and Twin Creek Drainages and building on the past restoration efforts. This would also address both general and specific goals and objectives outlined in the Sawtooth National Forest Land and Resource Management Plan, as amended (Forest Plan, 2012), and help move the Management Area toward the desired conditions described within the Plan.

Proposed Action

Under the proposed action, the Sawtooth NRA proposes to relocate approximately 1.3 miles of Pole Creek Rd (FS #70197) which is located within the Riparian Conservation Area (RCA). Once the existing route is relocated it would be decommissioned and rehabilitated. Additionally, this proposal would close and rehabilitate approximately 0.25 miles of Twin Creek Loop Road (FS #70412) which will no longer be necessary due to the relocation of the Pole Creek Road. In order to facilitate the relocation of Pole Creek Road this project will also remove two culverts on Twin Creeks, which have been identified as a fish barrier, and replace them with "fish friendly" culverts at the site of the new Pole Creek Road crossing. Following the removal of the culverts on Twin Creeks, these sites will be rehabilitated to simulate natural instream conditions. (See Figure 3).

Decision Framework

We have prepared this document to describe the purpose and need for the action and to discuss and disclose the details of the proposed action. Given the purpose and need, the deciding official will review this assessment, and the project record, in order to make the following decisions:

- Whether the proposed activities would accomplish the Sawtooth National Forest Land and Resource Management Plan, as amended (USDA Forest Service 2012) objectives and meet the purpose and need for the project.
- Whether the proposed activities comply with Public Law 92-400.
- Whether or not to approve implementation of the proposed action, or an alternative to the proposed action.
- If implementation of an action is approved, what operating standards, design features, and monitoring activities should take place before, during, and after the activities occur.

The deciding official will also decide if further analysis in an Environmental Impact Statement will be required.

Management Framework

The Sawtooth National Recreation Area (Sawtooth NRA) was created in 1972 from National Forest System lands, and remains the largest NRA in the National Forest System. Enabling legislation (Public Law 92-400 1972) states the special designation is given "*to assure the preservation and protection of the natural, scenic, historic, pastoral, and fish and wildlife values and to provide for the enhancement of the recreation values associated therewith.*" These are key values that may not be substantially impaired by any Sawtooth NRA management activities.

The Sawtooth Forest Plan serves as the guiding direction for on-the-ground project planning and implementation. In addition to Forest-wide standards and guidelines, the Sawtooth Forest Plan also provides specific management direction within local management areas, as well as specific to the Sawtooth NRA which provides the land allocation and resource decisions for management directed by PL 92-400.

The proposed project falls within an area designated by the Sawtooth Forest Plan as *Management Area 2, Upper Salmon River Valley*. Within Management Area 2, the project falls under a specific management prescription of: *Active Restoration and Maintenance of Aquatic, Terrestrial and Hydrologic Resources*. The objective of this prescription is to actively restore or maintain conditions for fish, wildlife, and botanical resources, through a combination of management activities and natural processes.

The *Pole Creek Road Reroute* project (Proposed Action) has been designed, in part, to achieve the goals and objectives described in the Forest Plan.

Public Involvement

The proposed action has been listed in the quarterly Sawtooth National Forest Schedule of Proposed Actions (SOPA) since January, 2014. The SOPA provides the public a list of proposals that are undergoing environmental analysis. The SOPA is posted on the World Wide Web (http://www.fs.fed.us/sopa/forest-level.php?110414).

In November, 2013, information letters were mailed to individuals, organizations, agencies, and area landowners and permittees, describing the action under consideration, and requesting comments. Feedback from staff and the public (9 individuals or organizations) was received and is included in the project record. On February 20th 2014, a legal notice of the proposed action was published in the *Challis Messenger* newspaper based in Challis, Idaho. No comments were received during this scoping period. The feedback received from all these efforts was reviewed and considered by the interdisciplinary team and the deciding officer. As a result, the proposed action was further refined and clarified, alternatives to the proposed action were considered, and issues for the analysis were identified.

Issues

Through review of the internal and external feedback received regarding the proposal, key issues considered central to the analysis were identified.

Issue 1. Fish, Water, and Aquatic Habitat

Relocation of the road, removal and replacement of the culverts, as described in the proposed action, for Pole and Twin Creeks could affect aquatic habitat and fish, including the quantity and quality of downstream habitats, and the accessibility of upstream habitats.

Indicators:

- Estimates of available and accessible habitat
- Acres of roadway in wetland, streamside, or instream habitats.
- Water Quality-stream temperature and sediment yield.

Other Topics of Interest

Feedback to the initial proposal also identified other considerations that helped refine the action and frame the analysis, though not specifically *issues*. The following resource concerns are important and were considered when determining key issues. They were, however, determined to be requests for information or other process concerns, were already

resolved through existing law, regulation, or policy, or are beyond the scope of this analysis. Some are already addressed through other processes such as the Forest Plan. In some cases, the concern was addressed through mitigation. As such, these issues and concerns are beyond the scope of this project and will not be carried forward as a Key Issue in this analysis.

Idaho Roadless Area & Wild & Scenic Rivers

The project includes approximately 0.9 miles of actions within the Boulder-White clouds Inventoried Roadless Area (IRA). The Special Area theme of the IRA within the project area is "Forest Plan Special Area". This theme relates to the eligibility of the Salmon River for designation as a Wild and Scenic River. Both an Idaho Roadless Evaluation and a Wild & Scenic River Report were prepared for this project to evaluate the effects on Roadless and Wild & Scenic River qualities. (Project Record) It is anticipated the proposed actions would not affect the eligibility of river segment for Wild and Scenic River status, nor therefore detract from the connected attributes of the IRA. The Idaho Roadless Rule defines Forest Plan Special Area as: "Certain lands identified on the Idaho Roadless Area Maps, § 294.22(c) and listed in § 294.29 shall be managed pursuant to applicable land management components. These lands include areas such as research natural areas, designated and eligible wild and scenic river corridors, developed recreation sites, or other specified management Purposes…". Further, under the 2008 Idaho Roadless Rule, 36 CFR 294.28 (f) This subpart shall not apply to Forest Plan Special Areas within Idaho Roadless Areas. These conclusions were reviewed by the Idaho Roadless Commission (Roadless Commission May 15, 2014 – Project Record). For this reason, these issues will not be further evaluated in the document.

Noxious Weeds & Non-Native Plants

Noxious weeds occur throughout the project area. Noxious weeds and non-native plants pose serious threats to biodiversity, the integrity and health of native plant communities, and wildlife habitat. Yellow toadflax and spotted knapweed are known to be present in the Pole Creek drainage. The use on roads and trails are the most common vectors of weed transportation and establishment. Most existing weed infestations are along road, trails, and parking areas. Ground disturbances provide suitable areas for these species to colonize, and ongoing use of these areas may spread noxious weeds into currently unoccupied areas. Specific project design criteria, ongoing treatments and mitigations outlined will help reduce the spread of these noxious species. Therefore Noxious Weeds & Non-Native Plants will not be carried forward as a key issue in this analysis.

Recreation

The project area is popular for recreationists due to its diverse motorized and non-motorized opportunities. During initial scoping a group raised concerns over losing dispersed camping opportunities. The group also suggested building new trails to connect to the already extensive network of trails within the watershed. This project will not affect dispersed camping opportunities. Some of the existing dispersed campsites within the RCA may no longer be accessible due to the relocation of the designated route however, motor vehicles will continue to be allowed to travel up to 300' of a designated route for the purpose of dispersed camping. The development and planning of new trails is outside the scope of the proposal and thus will not be addressed. For these reasons, Recreation was not carried

forward as a Key Issue in the analysis. However, a summary of effects to/from this resource is included in Chapter 3.

Cultural Resources

The project area contains cultural resources. These resources may include known and unknown historic, architectural, and archeological sites, as well as traditional lifeway values and places of traditional cultural use. For the project area, field survey and site monitoring found that there are currently no known historic properties. Locations on the National Forest where new facilities are being proposed were surveyed and no cultural sites were discovered. If cultural resources are located during implementation, work would cease in that area and avoidance and/or mitigation of potential impacts would be developed in consultation with appropriate Tribes and the Idaho State Historic Preservation Office. Therefore Cultural Resources will not be carried forward as a Key Issue in this analysis.

Wildlife Habitat

Terrestrial Management Indicator Species (MIS), ESA Threatened and Proposed, and Region 4 Forest Service Sensitive (TES) species occur in the project area. Of those species that could be affected, those effects are anticipated to be minor and further reduced from potential negative effects with specific project design criteria and mitigations. Because these design criteria satisfactorily address the minor potential effects to these wildlife species, an issue regarding the effects to wildlife and their habitat is not a key issue. However, a summary of effects to this resource is included in Chapter 3.

Off Road Vehicle Management / Roads

Travel Management is an important issue on the National Forest, thus in 2005 the 36 CFR 212 regulations were implemented to address travel management. The proposed activities in all alternatives are in compliance with the the Travel Management Rule (36 CFR 212, Subpart B, Designation of Roads, Trails, and Areas for Motor Vehicle Use). The analyses will consider the existing motorized routes (system and nonsystem) in the cumulative effects, where appropriate. Therefore Travel Management will not be carried forward as a Key Issue in this analysis.

Vegetation – ESA and R-4 Sensitive Plants; Noxious & Invasive Species

The Sawtooth National Recreation Area provides habitat for one federally listed threatened plant species and has known occurrences of one Candidate terrestrial plant species. Ute ladies'-tresses orchid are not known to occur within the project area and the riparian areas are not considered to be potential habitat based on field surveys for Ute ladies'-tresses orchid. Whitebark pine does occur in the Pole Creek Watershed Project area, however early identification would limit disturbances due to activities associated with the Pole Creek Road Relocation. The Sawtooth National Recreation Area has known occurrences and/or provides habitat for 34 Sensitive and Watch plant species. Sensitive plant records do not indicate any known occurrences of Sensitive or Watch plant species and no occurrences were located during field surveys within the Project area. Therefore it will not be carried forward as a Key Issue in this analysis.

CHAPTER 2 – ALTERNATIVES

Alternative 1 – No Action

Under the No Action Alternative, the current road location within the RCA of Pole Creek and culverts on Twin Creeks would not change. The existing alignment of the Pole Creek road within the RCA would remain in its current location and continue to adversely affect the instream and near stream ecological processes. The culverts on Twin Creeks would also remain in their same location and would continue to act as a barrier to salmonids.

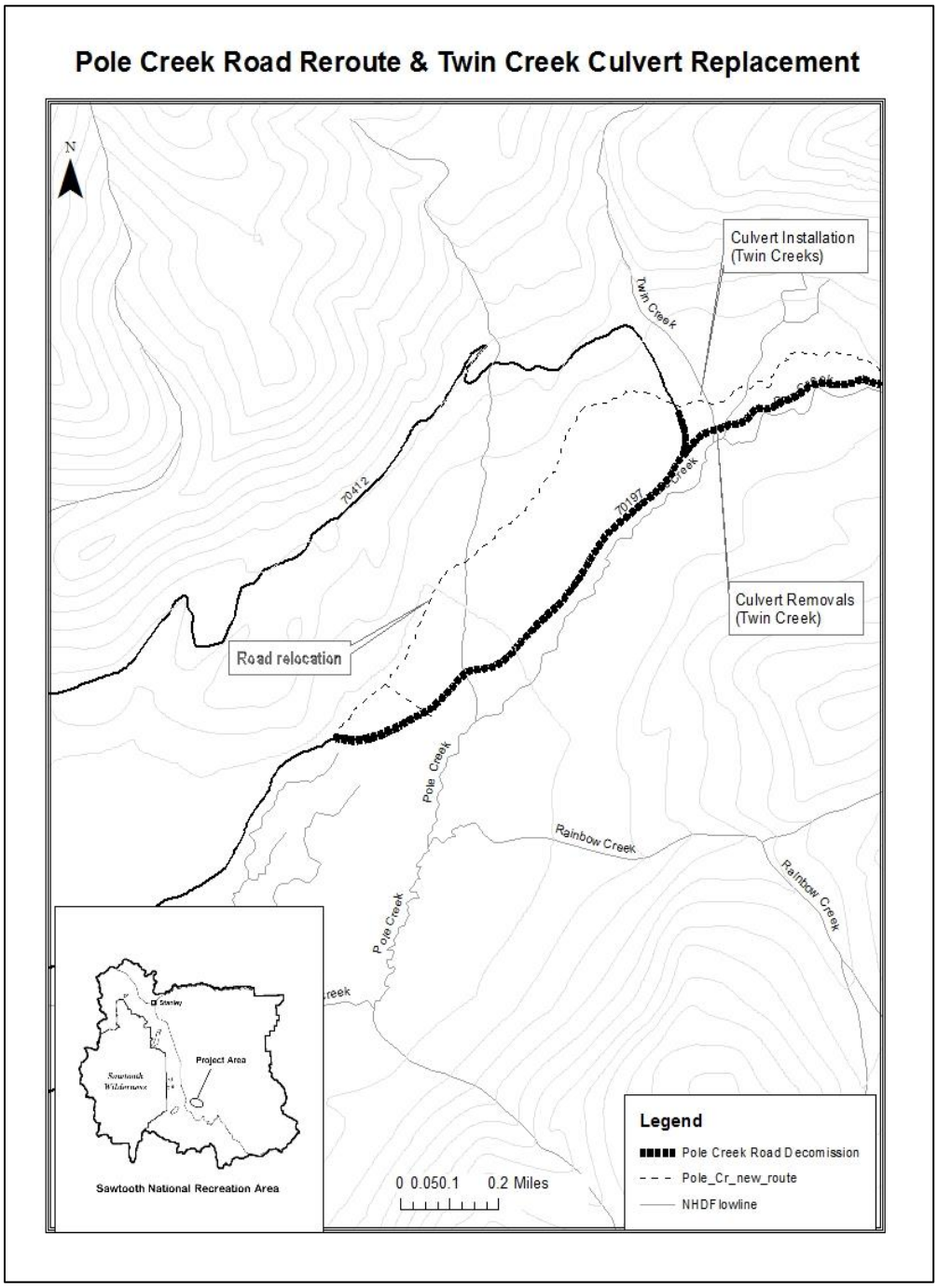
Alternative 2: Proposed Action – Authorize Relocated Route

The Proposed Action was developed to specifically address the Purpose and Need for this project. The primary objective of this proposal is to improve riparian conditions and water quality in Pole and Twin Creeks by relocating and rehabilitating segments of the Pole Creek and Twin Creeks loop road. From road mile 1.6 to 2.9 of Pole Cr Rd. (FS #70197) this section of road is entirely within the RCA and at many areas along the route, Pole Creek and the road essentially act as "one". This section of road is at moderate/high risk for failure from a high water event, is interacting with stream and RCA processes and contributes a moderate amount of fine sediment to Pole Creek. This section of road would be relocated approximately 500-700 feet to the north on the valley floor, where it would be outside the RCA. Additionally, this proposal would close and rehabilitate approximately 0.25 miles of Twin Creek Loop Road (FS #70412) which will no longer be needed due to the relocation of the Pole Creek Road. The former road template would be decommissioned and rehabilitated using an excavator or other similar equipment. All new road construction would occur outside the RCA except for a short section which would need to cross Twin Creeks. Standard and specific design and implementation practices would be implemented in order to minimize unintended effects from this activity.

This project also proposes to remove the two existing 3-foot wide culverts on Twin Creeks, excavate the road fill on both sides of the culvert to natural channel dimensions (e.g. bankfull stream width≈10 feet), and then replace the culverts upstream in order to facilitate the Pole Creek road relocation. Replacement of the culvert to provide for fish passage would require installation of a larger culvert structure with a simulated natural stream bottom. This has been done successfully at many sites across the Forest in recent years. Prior to construction, electrofishing would take place to relocate any fish within a short distance of the crossing. The stream crossing would be dewatered and water routed around the construction site. The fill and culvert would then be removed. Once the instream work is completed, the streambank restoration activities would be completed from dry land outside of the stream channel. At the new upstream culvert sites, the fill will be removed from the streambank and a foundation would be set on both sides of the stream channel for support of the new squash culvert. A natural stream bottom with substrate sized to fit natural flow levels would be set into the channel through the culvert's full length. The culvert would be designed to accommodate a minimum of a 100-year flood event. The instream work would take

approximately 8 workdays to complete during the low flow period of August 15th through October. Travel between lower Pole Creek and upper Pole Creek watershed **would not** be restricted at any time during the construction and the rehabilitation activities described above.

Figure 3. Road Reroute and Culvert Replacement Map



Management Direction

Management activities previously approved by other environmental analyses and decision documents would also continue to be implemented. Current management plans would continue to guide management of the project area, such as direction from the Forest Plan listed below.

Table 1. Specific Forest-wide or Management Area 2 direction

Number	Management Area Direction Description
0226	Road construction or reconstruction may only occur where needed: a) To provide access related to reserved or outstanding rights, or b) To respond to statute or treaty, or c) To address immediate response situations where, if the action is not taken, unacceptable impacts to hydrologic, aquatic, riparian or terrestrial resources, or health and safety, would result.
0228	Management actions, including salvage harvest, may only degrade aquatic, terrestrial, and watershed resource conditions in the temporary (up to 3 years) or short-term (3-15 years) time periods, and must be designed to avoid degradation of existing conditions in the long-term (greater than 15 years).
0230	Road construction or reconstruction may only occur where needed: a) To provide access related to reserved or outstanding rights, or b) To respond to statute or treaty, or c) To support aquatic, terrestrial, and watershed restoration activities, or d) To address immediate response situations where, if the action is not taken, unacceptable impacts to hydrologic, aquatic, riparian or terrestrial resources, or health and safety, would result.
0248	Reduce road- and grazing-related sediment delivery within southern and eastern drainages, including Fisher Creek, Upper Salmon River, Fourth of July Creek, Pole Creek, Frenchman Creek, Smiley Creek, and Beaver Creek. Fisher Creek subwatershed and Upper Salmon River subwatershed are the priorities.
0249	Modify localized portions of roads and trails within Salmon River headwaters, Frenchman Creek, Pole Creek, Fisher Creek, Alturas Lake Creek, Boundary Creek, Nip and Tuck Creek, Iron Creek, and Fourth of July Creek drainages to reduce accelerated contributions to instream sediment, eliminate impairments to proper floodplain function, and restore water quality and geomorphic integrity.
0254	Remove man-made fish migration barriers and resolve instream flow conflicts, with emphasis on the eastern tributaries of the Salmon River.
TEB03	Identify and reduce road-related effects on TEPC species and their habitats using the Watershed and Aquatic Recovery Strategy (WARS), *the Vegetation and Wildlife Habitat Restoration Strategy and Source Environment Restoration Strategy*, and other appropriate methodologies. (**Modified** as part of the 2012 Forest Plan Amendment for WCS)
SWG002	Provide for stream channel integrity, channel processes, and the sediment regime under which the riparian and aquatic ecosystems evolved.
SWOB12	Design and implement management actions so they do not fragment habitat for native and desired non-native fish species. Restore connectivity in currently fragmented habitat where the risk of genetic contamination, predation, or competition from exotic fish species is not a concern.
SWOB14	Prioritize improvements to existing culverts, bridges, and stream crossings identified for fish passage and associated bedload and debris problems, based on the Watershed Aquatic Recovery Strategy (WARS) Map, fine-scale analyses and/or project-level priorities..

Consistency with other applicable Plan direction would also be assured, including: TEGO03, TEGO04, TEOB09, SWGO02, SWGO03, SWGO04, SWGO10, SWGO11, SWST04, LSGO04, SNGO01, and 0268

Implementation

If the Proposed Action is approved, construction activities associated with the relocation of Pole Creek Road and replacement of Twin Creek culverts would not be expected to begin any earlier than the late summer or fall of 2014-2015.

Comparison of Alternatives

Table 2 provides a summary of the effects of implementing each alternative relative to the issues and measures identified. Chapter 3 contains further description and discussion of these conclusions, as well as additional contrasts of the potential effects to other resources and uses.

Table 2: Comparison of Alternatives.

	Alternative 1 (No Action)	**Alternative 2**
Issue: Fish, Water, and Aquatic Habitat		
Indicator: Water Quality(Stream Temperature & Sediment Yield)	Under this alternative, we would anticipate water quality to continue to degrade due to disturbances within the RCA as well as sediment being delivered the streams via the current Pole Creek Road alignment.	Under this alternative we anticipate to see improvements in the Water Quality. More specifically, stream temperatures are likely to show improvements due to fewer disturbances within the RCA as well as a decrease in sediment yield due to the road being moved out of the RCA (greater buffer capacity).
Indicator: Acres of roadway within RCA	Under this alternative, we would see no decrease in the amount of road within the RCA.	Under this alternative, we would see a decrease of approximately 4.72 acres of road within the RCA.
Indicator: Accessible Salmonid stream habitat	Under this alternative, we will see no change in the amount of accessible stream habitat.	Due to two culverts which would be removed and replaced with “fish friendly” culverts on Twin Creek, we would see an increase of approximately 2.3 stream miles of accessible stream habitat to salmonids.

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter summarizes the existing environment of the affected project area and discloses the potential effects of implementing the alternatives presented in Chapter 2. The analysis that follows primarily considers effects in relation to the key issues identified in Chapter 1, but also the effects to the key values intrinsic to the purpose of the Sawtooth NRA.

Typically, within each topic, the conditions of the particular resource that may be affected (i.e. affected environment) is described first, including relevant Forest Plan direction, followed by consideration of the potential effects to the particular resource. To avoid redundancy, some analysis builds on that which precedes it. As such, the analysis is intended to be considered in its entirety for a full understanding of the potential effects.

Within each topic, the *No Action* alternative is described first, providing a baseline for evaluation and comparison of the Action alternatives that follow. The analysis presented is a summary of the specialist report findings. The project record contains the reports in full, as well as a "substantial impairment review" which provides specific consideration of compliance with PL 92-400.

Overview of Affected Area

The Pole Creek drainage contains three main Creeks (Pole Creek, Twin Creek and Rainbow Creek). Several smaller tributaries and springs are present in the Pole Creek drainage. The lower reaches of Pole Creek lie in the Salmon River valley which gives way to confined stream reaches towards the headwaters. The lower reaches riparian areas are dominated by willow, sagebrush, sedges and grasses. The upper reaches of Pole Creek riparian areas are dominated by lodgepole pine, douglas fir, sub alpine fir, willows, and sedges. Twin Creek and Rainbow Creek are Rosgen B channels towards their mouths which give way to high gradient/confined A channel types. Riparian areas along these creeks are dominated by lodgepole pine, douglas fir, sedges and grasses.

Streams within the project area, generally flow through valleys that are V-shaped at higher elevations and confined with slopes of 10 percent or more towards the headwaters of Pole Creek, but there are specific areas where gradient and confinement are less and a B channel type is more pronounced. These stream channel types transport high sediment loads and are subject to occasional debris torrents in response to heavy rain or rain-on-snow events. At lower elevations in the project area, Pole Creek flows through the Sawtooth Valley where it meets with the Salmon River.

Current disturbances within the Pole Creek drainage include historic mining activities, present and historic grazing, roads, diversions and private property. Stream attributes most affected by these activities, both directly and indirectly, include water temperature/quality and instream sediment.

1. Water Temperature

Salmonids (salmon, trout and char – including bull trout) require cool, well-oxygenated water to survive. The maximum temperature that salmonids can tolerate varies with species, life stage (e.g., fry, fingerling or adult), prior acclimation, oxygen availability, duration of warmer temperature, and the presence of pollutants. Given the opportunity, juvenile and adult salmon will occupy water that is 13-18º C (55-64º F), with the warmer water selected only if excess food is available. Water temperatures of approximately 23-25º C (73-77º F) are lethal to salmon and steelhead, and genetic abnormalities or mortality of salmonid eggs can occur above 11º C (52º F).

Many laboratory studies have shown that elevated water temperatures can have a number of negative effects on salmonids. While laboratories cannot duplicate the complex situations that salmonids encounter in nature, they do offer a picture of some of the harmful effects of warm water on salmonids. Below the effects are outlined:

1. **Decreased supply of oxygen**. Higher water temperatures lower the availability of dissolved oxygen by reducing its solubility. Higher temperatures also increase the rate of organic decomposition, further decreasing available oxygen levels. When dissolved oxygen levels are low, fry emerge late, are smaller and less healthy, and have reduced survival rates due to predation, disease and starvation.

2. **Disrupted metabolism.** Elevated temperatures accelerate the metabolism, respiration, and oxygen demands of fish and other aquatic life. Respiration rates nearly double with a 10º C rise in water temperature, thereby increasing food and oxygen needs. The increased need for food forces salmonid fry to spend more time feeding and thus they are exposed to predators for longer periods. Also, since warmer water holds less oxygen, salmonids increased oxygen needs may not be met.

3. **Increased susceptibility to toxins**. The toxicity of many substances to salmonids intensifies as water temperature rises. One example is the rapid increase in the toxicity of nickel and chlorine to juvenile salmonids exposed to increased temperatures.

4. **Increased vulnerability to disease**. Many fish diseases spread more rapidly at higher temperatures. A substantial amount of research demonstrates that many fish diseases become considerably more virulent at water temperatures over 16º C (61º F). Additionally, salmonids are weakened by higher temperatures and are more susceptible to disease. Even if infected fish do not die from the disease, they are more susceptible to predation.

5. **Reduced food supply.** Many of the aquatic insects that salmonids prefer for food cannot live at elevated water temperatures. In warmer waters, desirable salmonid food sources such as mayfly, stonefly and caddisfly nymphs die off and are replaced by other insects (e.g., midges and mosquito larvae) that are much less desirable as food for salmonids.

Results for temperature monitoring on Pole Creek are presented in table 3 below:

*Table **3**: Stream Temperatures for Pole Creek*

Stream Name	Year	Upstream Diversion?	Season Max	MWMT
Pole Creek	2001	yes	25.3	23.8
Pole Creek	2001	yes	26.6	24.9
Pole Creek	2001	yes	25.4	23.8
Pole Creek	2001	yes	21.3	20.2
Pole Creek	2001	No	16.5	15.5
Pole Creek	2002	No	14.1	13.4
Pole Creek	2002	No	12.7	12
Pole Creek	2005	No	14.8	11.8
Pole Creek	2005	No	11.9	11.6
Pole Creek	2006	No	12.8	14.2
Pole Creek	2007	No	15.3	14.1
Pole Creek	2009	No	12.9	10.8
Pole Creek	2010	No	13.6	13.3

Stream temperatures below the diversions represented in the table above consistently exceeded the threshold for temperatures in which salmonids can tolerate. Pole Creek is generally well shaded in the upper watershed and stream temperatures are not compromised. Temperature conditions rapidly change in the lower reaches on private land where reduced instream flows, lack of cover/overhanging vegetation, and irrigation returns which heat stream water during the summer months. These diversions are used to irrigate non--FS land for agricultural purposes.

A non-spatial stream temperature model was built to predict stream temperatures across the Sawtooth National Forest. This temperature model is a multiple regression model used to assess temporal and spatial across river networks. Predictor variables were used to describe spatial or temporal attributes associated with the stream network that may affect stream temperature. These variables included categorical predictors, climatic predictors and geomorphic predictors.

Geomorphic predictors.—the digital stream network and DEM was used to quantify a variety of different geomorphic predictors that may affect stream temperatures. For the purpose of our model, we used contributing area, channel slope, and elevation.

Climate predictors.—climatically influenced factors like air temperature and stream flow may create considerable inter-annual variation and have important consequences for stream temperatures. Air temperature affects stream temperature through convective heat exchange near the surface of the stream and by influencing temperatures of near-surface groundwater, which is an important component of summer flows. Stream flow determines the volume of water available for heating, with larger flows having greater flow velocities and thermal capacities, which make them less responsive to heating. It will often be impractical to measure climatic variables at individual thermograph sites, but these data can be derived from weather or flow gaging stations in or near the study area.

Categorical predictors.—in some instances, discrete landscape features (e.g., a large lake, riparian alterations associated with a wildfire boundary, diversions) can have pronounced effects on local stream temperatures. The potential effects of such features are difficult to measure with a GIS. One solution was to treat these features as categorical predictors by coding the effect as present (1) or absent (0) within different portions of the stream network.

Our model predicted stream temperatures with moderate accuracy (R^2=.45). For the lower portion of Pole Creek (below the diversions) the model predicted a MWMT in 2040 of 18.7 ^{o}C and in 2080 20.0 ^{o}C. Well above ideal water temperatures for salmonids.

Instream sediment

Excess sediment can profoundly affect the productivity of a salmon or trout stream. In a healthy stream, young salmon and trout hide in the interspatial spaces between cobbles and boulders to avoid predation. In streams that get extremely cold in winter, young steelhead may actually burrow into the streambed and spend the winter in flowing water down within the gravel. The area of the stream where flowing water extends down into the gravel is also extremely important for aquatic invertebrates, which supply most of the food for young salmon, steelhead and cutthroat trout. If fine sediment is clogging interspatial spaces between streambed gravel, juvenile salmonids lose their source of cover and food.

Salmon, steelhead and coastal cutthroat trout are also very susceptible to sediment pollution because they build their nests in the stream bottom. The eggs, buried one to three feet deep in the gravel redd, rely on a steady flow of clean, cold water to deliver oxygen and remove waste products. In coastal streams the eggs usually hatch in about 30 days, depending on water temperatures. Eggs hatch into alevin and remain in the gravel another 30 days or so, living on the nutrients in their yolk sacs. As they develop into fry, the yolk is used up, and the fry must emerge through spaces in the gravel to take up life in the stream. During the 60 day period when eggs and alevin are in the gravel, major shifts of the stream bottom can kill them (Nawa and Frissell, 1993.)

Data from PIBO field surveys in 2005 and 2010 indicate that fine sediment (<6mm.) is meeting riparian objectives <38 (28 - 48) on the forest. Observations on this low gradient C channel estimated that the percent fine sediment was 7% in 2005 and 28% in 2010. No survey data exists for stream reaches on Pole Creek on Private land (near the mouth). It is anticipated that these stream reaches have elevated sediment conditions due to past and present activities within the headwaters and private land in the Pole Creek drainage. These elevated sediment conditions on private land are likely a result of intensive grazing, diversions which limit the flushing capacity of the fine sediment, and unauthorized/authorized roads throughout the drainage.

Status of Aquatic Species in the Project Area

In general, stream habitat within the Project Area is capable of supporting viable populations of fish. Exceptions include the lower reaches of Pole Creek where diversions may produce a thermal barrier or less suitable conditions for certain life stages during the summer months.

The majority of fish observed in recent electrofishing surveys within the project area have been brook trout.

Snake River Sockeye Salmon: Snake River sockeye salmon are currently listed as an endangered species in the Salmon River basin. The species is not found in any stream in the project area but may be present in the mainstem Salmon River during their migration to Alturas Lake. This species was once widely distributed throughout the Snake River and many of its tributaries, including the Salmon River.

Snake River Spring/Summer Chinook Salmon: Spring/summer Chinook salmon are listed as a threatened species. Spring/summer Chinook salmon are widely distributed throughout the Snake River basin, including the Salmon River, and are the salmon most commonly observed in the Salmon River and its tributaries. Adults bound for the Salmon River cross Bonneville Dam on the Columbia River from February through March, arriving at their natal tributaries from June through August. Spawning occurs in August and September.

Numerous chinook have been observed in Pole Creek during IDFG transect monitoring in 1986 through 1996. These observations were likely the result of supplementation efforts. More recent sampling by the SNRA in 2009-2010 has observed no Chinook salmon within the Pole Creek drainage. However, in 2013 a snorkeling survey by IDFG observed juvenile Chinook 2.5 miles further upstream than in their previous surveys and at much high densities (128.9 fish/100 m^2) where stacked against the face of the Pole Creek diversion

Snake River Steelhead: Steelhead are an anadromous form of rainbow/redband trout. Currently steelhead are the most widely distributed anadromous salmonid, but are extinct within a large portion of their historical range. The Snake River steelhead is currently listed as a threatened species.

Numerous steelhead have been observed in Pole Creek during IDFG transect monitoring in 1986 through 1996. These steelhead/rainbow trout were observed towards the mouth of Pole Creek. More recent surveys in the general vicinity of the project area observed a limited number of juvenile steelhead during recon surveys in 2000. Electrofishing surveys conducted by the Sawtooth NF in 2009 and 2010 indicate that that steelhead/rainbow trout may be absent from the upper reaches of Pole Creek.

Columbia River Bull Trout: Columbia River bull trout are listed as a threatened species. Bull trout are present throughout the mainstem Salmon River and spawn and rear in many tributaries. The entire Salmon River has been designated as a recovery unit for bull trout by the U.S. Fish and Wildlife Service. Within the Salmon River, bull trout core areas and local populations were identified. The Pole Creek project area is included within the Upper Salmon River Core Area Critical habitat has been identified within the project area, more specifically Pole Creek.

Bull trout had not been documented in any stream in the project area during recent surveys in 2009 and 2010. A sub-adult bull trout was documented in lower reaches of Pole Creek during

a 2012 electrofishing survey by IDFG. It is possible that bull trout were historically present in the upper reaches of Pole Creek and may have been out-competed by brook trout.

Westslope Cutthroat Trout: Westslope cutthroat trout are a Region 4 Forest Service sensitive species and have been considered for listing under the Endangered Species Act. They are not currently listed.

Westslope cutthroat trout were once abundant throughout much of the north and central portions of the Columbia River basin, including the Salmon River and many of its tributaries. Although still widely distributed, individual populations may be compromised by habitat loss, hybridization with hatchery trout, competition with non-native species, and loss of connectivity.

A limited number of cutthroat trout were observed by Idaho Fish and Game during the 2004 field season. More recent electrofishing surveys in 2009 and 2010 did observe westslope cutthroat trout in the general vicinity of the project area, more specifically Twin Creek.

Issue: Fish, Water, and Aquatic Habitat

Alternative 1 – No Action

Direct and Indirect Effects

Under this alternative, it is assumed the Pole Creek road will continue to reside in its current location. It is anticipated that vehicle use along the current alignment will remain unchanged although the amount of camping in the riparian area will likely increase due to the recent construction of trails within the area as well as restoration efforts which have reduced access to established dispersed camping opportunities and will therefore lead to new disturbance within the RCA. These uses will continue to degrade stream habitat conditions, especially in areas where dispersed campsites are within the riparian area and the road parallels Pole Creek. The dispersed camp sites as well at the current alignment of Pole Creek road were not constructed to meet resource needs. This degradation in streamside habitat is anticipated to cause an increase in sediment yield, and degradation in streamside vegetation within the Pole Creek drainage. This anticipated degradation in streamside vegetation will increase the amount of solar radiation which reaches the stream surface and therefore cause slight localized increases of stream water temperatures. For the reasons stated above it is anticipated that this alternative will degrade certain watershed indicators over time but would not adversely affect TES listed species and their critical habitat

Alternative 2 – Proposed Action

Direct and Indirect Effects

For the proposed activities within the Pole Creek drainage, which includes the relocation of the Pole Creek Road, rehabilitation of the ‘old’ Pole Creek Road template, and relocation and rehabilitation of two culvert sites on Twin Creek, little in the way of direct effects to aquatic species or their habitat are anticipated. A moderate amount of near stream/instream work is

proposed under this alternative which in the temporary term (< 3 months) will lead negligible adverse effects in many watershed conditions. Another mechanism for the potential direct injury or mortality to listed fish or degradation of aquatic habitat would be the transmission of toxic substances (heavy metals, gasoline, oil, grease, etc.) into streams from fuel spills or leaky equipment, but because of the mitigation measures and the distance of the route and proposed work within the Pole Creek drainage to live water, such contaminants should have little potential to enter project area streams at greater concentrations or in a more impacting manner than are now occurring. In addition, TES listed fish species are very rare in project area due to two culverts which act as a partial barrier to certain life stages of salmonids. There is also one diversion on Pole Creek which currently limits their ability to become distributed in the project area. For the reasons stated above it is anticipated that direct effects from this alternative to TES listed species would be inconsequential.

Potential indirect effects from the proposed actions within the Pole Creek drainage include the mobilization of sediment during the rehabilitation of Pole Creek Road, road construction activities, and replacement of the culverts on Twin Creek. Some fine sediment would likely become mobilized during these activities as well as the culvert removal and installation and therefore may reach live water within the Pole Creek drainage. These amounts of sediment that are anticipated to reach live water are negligible, due to mitigation measures which will be instituted during near and instream activities. Rather, it is anticipated that with the relocation of Pole Creek road and the rehabilitation of the route and related dispersed campsites a net annual improvement in woody debris ratio and reduction in sediment yield will occur within the drainage.

This action will also increase the amount of available habitat for salmonids due to the replacement of the culverts on Twin Creek which will be constructed to pass all life stages of salmonids.

For the reasons stated above it is anticipated that indirect effects from this alternative to TES listed species would be inconsequential and have no likely to adversely effect on listed species and their designated critical habitat

Cumulative Effects -- Alternatives 1 and 2

Past, present, and reasonably foreseeable projects that have occurred, or are occurring will be considered in this section. The project area has experienced a variety of land disturbing activities over the past 40 years, including timber harvest for firewood, road construction, road maintenance, trail maintenance, and fire suppression activities. The project area has been grazed by domestic livestock over this time period. Use of all-terrain vehicles for recreation purposes has become ubiquitous over the past 10 years where terrain allows cross country travel, and new, user-created trails have become established.

In addition, all watersheds in the project area have been affected by a moderate amount of activities and development of private land downstream of the National Forest boundary. These activities include, road construction, domestic livestock grazing, various types of recreation, building construction, concentrated livestock feeding during the late fall and

winter, water development/spring development, and water diversion for irrigation and domestic use.

The existing condition of the watersheds in and downstream (private land) of the project area reflects this level of development. Sediment levels are generally high and number of pools is moderate.

The effects of vehicle use on National Forest lands probably contribute a negligible fraction of the total impacts that occur throughout these watersheds. Undoubtedly a measure of sediment is transported downstream and contributes to the overall condition, but the significance of this sediment to fish and other resources would be considered small. Alternative 2 would be expected to result in an improvement in several watershed condition indicators. Alternative 1 would result in a degrading existing condition.

Despite the level of development on private lands within the watersheds, fish continue to persist in Pole Creek.

Foreseeable actions in the Pole Creek watershed include moving and authorizing an irrigation system which is considered a barrier to certain life histories of TES species as well as is adversely affecting instream and near stream habitat conditions. This will improve the connectivity of Pole Creek and will provide these fish species with a greater amount of available quality habitat for spawning and rearing.

Cumulative Effects on TES fish

Fine sediment deposition and riparian area alteration is believed to present the greatest effects to fish from this proposed action. It is anticipated that these effects would occur within Pole and Twin Creek from the Grand Prize trail ford downstream to the Rainbow Creek confluence. Activities currently occurring in the project area include the diversion of water on private land for irrigation purposes, illegal use of unauthorized routes for recreation purposes, gathering of firewood and grazing on private and public land. These activities undoubtedly have affected TES fish species in the project area and continue to do so. Implementation of the proposed action would likely add negligible amounts of sediment and an inconsequential amount of riparian habitat will be disturbed in the short term (less than 1 year). In the long term (greater than 1 year), it is anticipated that sediment yield and riparian habitat within the project are will improve due to the restoration activities. Therefore, it is anticipated that this proposed action will add cumulatively to the effects on TES fish species in the short term, although inconsequential. But an anticipated decrease in the effects to TES fish species from this proposed action is anticipated in the long term due to restoration activities (relocation of Pole Creek Road, installation of new culverts).

Forest Plan Consistency – Alternatives 1 and 2

The No Action alternative would be in compliance with the Forest Plan, but would not contribute towards attainment of Forest Plan goals and objectives for streams, fish, and RCAs. As such, it would be inconsistent with the MPC 3.2 prescription, as well as with the goals and objectives, including the ACS and WARS priority emphasis. Failure to take

action to address a known chronic impact to RCAs would fail the stewardship commitments and emphasis prescribed for the watershed: *Active Restoration and Maintenance of Aquatic, Terrestrial, and Hydrologic Resources*. It would also fail to implement the specific Forest Plan objectives for Pole Creek described in 0249, 0252, and 0275.

Alternative 2 would fully implement Forest Plan direction for the project area.

Other Effects

Based on the scoping responses, it was determined that public disclosure of the effects to terrestrial Endangered, Threatened, and Sensitive and MIS wildlife species was important as well as recreation. Those resources were analyzed in detail in a specialists report in the project record, and are briefly summarized here.

Wildlife

Threatened, Endangered, and Candidate Species

The Sawtooth NRA provides habitat for one Endangered Species Act (ESA) listed wildlife species, Canada lynx, one proposed ESA threatened species, wolverine, and two candidate species including greater sage-grouse and yellow-billed cuckoo. The project area does not provide habitat for sage-grouse or yellow-billed cuckoo. The project would have no effect on these species so no further analysis will be described. The project area provides habitat for Canada lynx and wolverine and this section provides information on the habitat requirements and status for these species on the Sawtooth NRA and discusses effects of the proposed project and no action alternatives.

Canada Lynx (*Lynx canadensis*)

Habitat and Life History Factors

Canada lynx are found in boreal forests and are closely associated with the snowshoe hare, their primary prey. In southern boreal forests, lynx are found in subalpine fir, Engelmann spruce, and lodgepole pine forests. Average home range sizes in southern boreal forest (which includes the north end of the Sawtooth National Forest) for males is approximately 58 square miles and 28 square miles for females. Ranges increase in size during periods of low prey availability (Aubry et al. 2000). Lynx diets are dominated by snowshoe hare, however, in southern boreal forests alternate prey, especially red squirrels, as well as other small mammals and grouse, are important to lynx diets (Aubry et al. 2000). Snowshoe hare prefer diverse, early successional forests with stands of conifers for cover and shrubby understories (Monthey 1986; Koehler and Aubry 1994). Lynx usually concentrate their foraging in areas where hare numbers are high, but they also require late successional forests with downed logs and windfalls to provide cover for denning sites, escape, and protection from severe weather (McCord and Cardoza 1982). Mating generally occurs in March and April and kittens are born late May to early June.

Existing Condition

The project area is located in the Pole-Germania Lynx Analysis Unit (LAU) within the

Canyon-East Fork Salmon Biological Assessment area. Watershed biological assessments of the effects of ongoing projects to Canada lynx were completed in February 2003. As part of these analyses, baseline conditions for each LAU were described and evaluated as to their ability to conserve lynx. The baseline matrix, describing existing conditions of lynx habitat within the LAUs can be found in the Biological Assessment of Effects of Ongoing Federal Actions for the Canyon-East Fork Salmon watershed, which is on file at the Sawtooth NRA headquarters office and at the Boise Field Office of the U.S. Fish and Wildlife Service.

No lynx populations have been documented recently within the Sawtooth NRA. From 1999 – 2001 the National Lynx Detection Protocol was conducted within the Sawtooth NRA in the Sawtooth Valley and Stanley Basin. All hair samples collected from this survey were determined to be negative for lynx hair. There are no Idaho Natural Heritage database records of lynx within this LAU. The closest records to the project area within this database include a specimen from 1896 and two unconfirmed sightings in the 1970's all approximately 5 to 6 air miles northwest of the project area. The most recently confirmed sightings of lynx tracks in the Sawtooth NRA occurred during the winter of 1997 near the Fishhook Creek drainage and 1998 in the Alturas Lake Creek drainage above Alturas Lake (approximately 8 miles from the project area). Trapping records from the 1960's and 1970's show that lynx occurred throughout the Salmon River watershed on the Sawtooth NRA.

Both the existing road section proposed for reroute and the proposed reroute travel through lynx habitat. The travel routes and associated human activity in the project area have resulted in reduced habitat quality and quantity for lynx. Effects of the action on lynx are evaluated in relation to the baseline conditions using the pathways and indicator categories (underlined and italicized below) that are addressed in the baseline matrix.

Direct and Indirect Effects

Alternative 1 - No action
Under this alternative, there would be no change from existing condition as described in the baseline for the Pole-Germania LAU.

Alternative 2 - Proposed Action
Population Characteristics for Lynx and Prey
If lynx are in the area, disturbance during road construction and rehabilitation may result in temporary avoidance of the areas of activity. It is anticipated that human use of the area after route construction would not change from current use levels so that the probability of lynx using the areas would not change. If a lynx den is discovered, the Sawtooth FLRMP standard TEST12 would be applied.

Snowshoe hare, dusky grouse, and red squirrels all occur within the project area. The combination of road relocation and rehabilitation would result in a short-term decrease in lynx habitat of approximately 4.7 acres. However in the long-term there would be no net change in habitat would occur as the vegetation returned to the rehabilitated road miles. The overall result of the project would be no change in the amount of habitat snowshoe hares, red squirrel, and forest grouse.

Habitat Elements

The combination of road relocation and rehabilitation would result in a short-term decrease in lynx habitat of approximately 4.7 acres. However in the long-term there would be no net change in habitat as the vegetation returned to the rehabilitated road miles. Neither the existing or proposed road sections are within lynx denning habitat. The project would not result in greater than 30% of predicted lynx habitat in unsuitable condition within this LAU as directed by Sawtooth Forest Land and Resource Management Plan TEST15.

Disturbance Regime

Within the Pole-Germania LAU, there has been no commercial harvest of trees and no fires since baseline was described. In 2013 approximately 50 acres of upper Rainbow Creek within this LAU (approximately 35 acres in lynx habitat) were treated by felling and leaving subalpine trees around whitebark pine trees. Ongoing personal use firewood cutting continues to occur throughout the LAU where roads are present. Most of this LAU is open to personal use fuelwood cutting. Livestock grazing and recreation pressure also contribute to disturbance history within this LAU.

This action would result not result in a change in summer travel management or a change in road density. Summer time visitor use patterns of the area would change due to the change in location of the road and resulting dispersed camping locations but no increase in visitor number is expected as a result of the project. This action would not result in a change in winter travel management or result in an increase in the amount of groomed or designated routes in the LAU.

Integration of population, habitat, and disturbance indicators

There would be a short-term reduction in lynx foraging habitat until the rehabilitated section revegetates and then there would be no change in habitat. Human disturbance is not expected in increase nor would road density or compacted snow change. The project would not result in a barrier to lynx movements within the LAU or among LAUs. Because the project area and this LAU currently do not support a lynx population, the short-term negative effect is insignificant (defined as not reaching the scale where take occurs).

Wolverine (*Gulo gulo*)

Habitat and Life History Factors

Home range sizes of wolverines are highly influenced by prey remains and other food sources. Individual animals generally have very large ranges and can cover large distances in very little time. In central Idaho, home ranges average 384 square kilometers (148 square miles) for females and 1,582 square km (582 square miles) for males and may have overlapping ranges. In Norway, researchers found that wolverine home ranges were associated with relatively low or no human development (May et al. 2006). They use a variety of habitats and have been located in low-elevation, forested drainage bottoms up to high-elevation, sparsely-timbered cirque basins. In a study conducted in central Idaho wolverine tended to use areas of high elevation, north aspects, and whitebark pine habitat during summer. In winter stayed relatively high elevation but shifted to lodgepole and Douglas-fir habitats (Copeland et al. 2007). Two natal den sites were located in central

Idaho in subalpine cirque areas on north-facing slopes suggesting that this type of habitat is critical to wolverines in central Idaho (Copeland 1996). Wolverines are primarily scavengers and forage on carcasses of ungulates such as elk, deer, mountain goats, and bighorn sheep. They also may hunt for snowshoe hares, marmots, mice, voles, ground squirrels, and grouse but will also eat fruits, berries, and insects when other prey is unavailable (Hash 1987).

Existing Condition

Population trend for this species is unknown within the Sawtooth NRA. Wolverines occur in all the mountain ranges in the Sawtooth NRA. A study is currently under way in central Idaho investigating the influence of backcountry winter recreation on wolverine movements and reproductive denning. The Sawtooth National Forest is part of this study and during the winters of 2012 and 2013 data on wolverine movements was collected. The Sawtooth study area includes the Pole Creek Road Relocation project area. One male wolverine used the project area as part of its home range and two subadult wolverines also used the area. The project area provides habitat for wolverines but does not provide reproductive denning habitat.

During winter, wolverines may avoid areas where recreation occurs (Krebs et al. 2007). Additionally, female wolverines are sensitive to disturbance during mid-February through May while they are searching for, establishing, and occupying their reproductive dens. During this time females are lactating, and disturbance, which leads to increased energy expenditure, can be very detrimental. It is a critical time for females because they must maintain energy levels in order to properly nourish their kits during a time when food is scarce. During studies in Alaska and Idaho females were documented moving kits after encounters with researchers (Magoun and Copeland 1998).

During winter, wolverines may avoid areas where recreation occurs (Krebs et al. 2007). Female wolverines are sensitive to disturbance during mid-February through May while they are searching for, establishing, and occupying their reproductive dens. During this time females are lactating, and disturbance, which leads to increased energy expenditure, can be very detrimental. It is a critical time for females because they must maintain energy levels in order to properly nourish their kits during a time when food is scarce. During studies in Alaska and Idaho females were documented moving kits after encounters with researchers (Magoun and Copeland 1998).

During summer in the central Idaho study it was found that wolverines showed no attraction to or avoidance of trails, although they avoided roads (Copeland et al. 2007). It was not determined whether the apparent indifference to trails was due to the low frequency of trail use by recreationists, or whether wolverines were insensitive to human presence during summer. The travel routes and associated human activity in the project area have resulted in reduced habitat quality for wolverine during the winter and spring when the area is accessed over snow.

Direct and Indirect Effects

Alternative - No action
Under this alternative, there would be no change to wolverine habitat or in levels of human disturbance from the existing condition.

Alternative 2 - Proposed Action
There would be no net change in wolverine habitat or road density in the long-term. This action may effect movements of individual wolverines during the road construction and rehabilitation in but would not likely jeopardize the continued existence of the species.

Cumulative Effects for Wildlife

The primary federal activities that have impacted terrestrial species of concern and their habitats on the Sawtooth NRA as well as within the north end of the Sawtooth Forest include construction and use of system and non-system roads, past and present livestock grazing, pesticide and herbicide application, recreation and nonrecreation special use permitted activities, developed recreation, water diversion structures and their operation, current and past timber harvest, current and past mining activity, personal use firewood cutting, and dispersed recreation (including skiing and snowmobiling). The cumulative effects area contains many potential human-caused sources of mortality for birds such as window strikes, power line collisions, fence collisions, vehicle collisions, and pesticide exposure.

Within the Pole Creek watershed, the primary federal activities that have impacted wildlife species of concern and their habitats are system and nonsystem roads, past timber harvesting, dispersed recreation, special use permitted diversion and ditches, and firewood cutting.

The project area is within the Salmon-Pole-Champion Sheep Allotment. The area is used by two ewe/lamb bands from 7/27 to 8/9 (384 Head Months) and by 2 ewe bands from 8/12-10/16 (3255 Head Months). Historic livestock uses caused loss of top soil, degraded soil conditions, areas of denuded vegetation, reduced native species diversity, and introduced non-native plant species.

The Sawtooth NRA has been implementing several restorative objectives within the upstream watershed, due, in part, to the collaborative efforts that identified the primary limited factors within the watershed. In 2008 a prescribed burn was conducted in the lower end of the Pole Creek drainage to enhance aspen. Approximately 300 acres of aspen and sagebrush burned. In 2010 five miles of unauthorized routes in the Pole Creek area were rehabilitated. Restoration emphasis was also added recently when the Pole Creek drainage was identified as a *Focus Watershed* within the Agency's Watershed Condition Assessment. In 2012 a travel management decision was made which has resulted in the closure and rehabilitation over 12 miles of unauthorized routes, including several (>10) damaging fords. In 2013 approximately 50 acres of upper Rainbow Creek in the Pole Creek watershed were treated by felling and leaving subalpine trees around whitebark pine trees. An additional 50 acres of this same treatment are planned for 2014. Also in 2013 two main transportation

culverts intersecting Pole Creek, that had been determined to be barriers to fish migration during some seasons and/or life stages, were also replaced with bridges.

Future actions include the issuance of special use permits authorizing: operation and maintenance of an existing irrigation diversion on National Forest System (NFS) lands; operation and maintenance of associated ditches, pipes, and access routes, on NFS lands; continued irrigation of less than 75 acres of isolated NFS lands; maintenance and use of ranch roadways on NFS lands; and operation and maintenance of related utility lines on NFS lands. Operation and maintenance of the water diversion and associated utilities would include relocation of the point of diversion and access route slightly upstream to (NW¼, Sec 25, T7N, R14E, B.M.); reconstruction of the fish bypass system, headgate, and flow measuring devices; and installation and maintenance of associated underground power and water supply pipelines within the isolated NFS parcels. The uses to be permitted occur below (west) of the Pole Creek Road Relocation Project and are associated with existing privately held water rights originating from Pole Creek.

Of these activities, livestock grazing, ongoing hazard tree removal, roads and trails (both permitted and unpermitted), and dispersed recreation have altered habitat for species of concern in the area by removing or degrading potential foraging, denning, and nesting habitat. The herbicide application likely has had some negative effect on for birds, amphibians, and small mammal prey species that may consume contaminated vegetation or contaminated insects, as well as amphibians which may experience direct effects from herbicide exposure. The existing routes and the associated human activity have also contributed to the reduced habitat quantity and quality of the area for all species addressed in this analysis.

No Action
There would be no cumulative effects from this alternative because no activities would occur.

Proposed Action
The project would potentially contribute to temporary negative cumulative effects to spotted bat, Townsend's big-eared bat, and spotted frog during road construction and rehabilitation activities and culvert removal and replacement. These temporary effects would be additive to the impacts from livestock grazing on meadow and riparian habitat.

The project would potentially contribute to short-term negative cumulative effects to gray wolf, wolverine, fisher, bald eagle, and peregrine falcon. The habitat changes from new road construction would be additive to the effects of livestock grazing, firewood cutting, and dispersed recreation in the area.

The project would potentially contribute to long-term negative cumulative effects to northern goshawk, great gray owl, flammulated owl, boreal owl, northern three-toed woodpecker, pileated woodpecker, and migratory birds. The habitat changes from new road construction would be additive to the effects of livestock grazing, firewood cutting, and dispersed recreation in the area.

Because the project is not expected to cause any negative effects to pygmy rabbit, bighorn sheep, common loon, greater sage-grouse, mountain quail, and white-headed woodpecker it would not contribute cumulative effects to these species.

Recreation

Affected Environment

The Sawtooth National Recreation Area is an internationally recognized recreation destination with heavy recreation use, particularly during the summer season. The project area includes dispersed recreation that primarily centers around what is known as the Pole Creek Corrals area, though the sheep corrals that gave the area its name were removed long ago. The project area receives heavy use by firewood cutters, hunters, ATV users, and driving for pleasure on the Pole Creek road is popular. Hikers, equestrians, mountain bikers and two-wheel motorized users generally pass through the area on the road to access system trails such as the Pole Creek ATV trail network, Grand Prize, Twin Creek, Champion Creek and Germania Creek trails

Forest Plan Direction for the Recreation Resources

Recreation Opportunity Spectrum

The Forest Plan broadly delineates areas with differing goals for the recreation experience. The range of defined classes is known as the Recreation Opportunity Spectrum or ROS. The ROS for the area is a combination of inventoried classes.

The first approximately three miles of the Pole Creek road corridor is classified as Roaded Natural, which should be managed to "provide for a wide range of recreation activities that are generally focused along the primary and secondary travel routes in a natural-appearing, roaded, motorized setting. Recreation facilities are provided to facilitate recreation use. There may be a moderate to high degree of user interaction, as well as the sights and sounds of other users, depending upon the facilities provided (Sawtooth Forest Plan, Volume 2, Appendix F, p. F3)."

The remaining approximately three miles of the Pole Creek road and the first approximately 1 ¾ mile of the Grand Prize Gulch trail are classified as Roaded Modified. The unroaded area to the south of the Pole Creek Road is classified as Semi-primitive Motorized, and the unroaded area to the north of the Pole Creek Road is classified as Semi-primitive Non-motorized. The use of the area is consistent with this Forest Plan direction.

Environmental Consequences

The ROS classifications within the project area would not be affected under any alternatives. All alternatives would also remain consistent with existing ROS winter classifications of Semi-Primitive Motorized.

None of the alternatives would affect how winter access is managed. Existing closures will remain in effect. Forest Plan direction for winter recreation would be met.

All alternatives are also consistent with forest-wide Forest Plan direction REOB07 and REGU06.

Alternative 1 – No Action

Under the No Action Alternative, the current road location within the RCA of Pole Creek and culverts on Twin Creeks would not change.

Direct and Indirect Effects

The existing alignment of the Pole Creek road within the RCA would remain in its current location and no change in recreation opportunities or experiences would occur. Dispersed camping opportunities would continue to be limited to drier upland sites and no new dispersed camping sites would be allowed to develop along the southeast side of Pole Creek road.

Cumulative Effects

Since there are no direct effects as a result of not implementing the proposed action, there are no cumulative effects either.

Forest Plan Consistency

Alternative 1 would be consistent with Forest Plan management direction for recreation resources in the project area.

Alternative 2 – Proposed Action

Direct and Indirect Effects

Motorized Recreation and Dispersed Camping

The effects on motorized recreation in the project area would be slight. The total road distance for the new road alignment would be the same as the old alignment so there should be little effect on travel time for those proceeding through the area to access other recreation opportunities. Under the proposed action views of Pole Creek itself along the new road alignment would be eliminated, but new scenic vistas for those driving for pleasure would be available with the new alignment.

The new road alignment would provide more opportunities for dispersed camping. Under travel management regulations for the project area recreationists can travel up to 300' off Forest system roads for the purpose of dispersed camping unless so long as they do not cause resource damage. Due to the road's current location within the RCA, new campsites will not be allowed along the southeast side of the road due to its proximity to Pole Creek. The proposed action would eliminate resource damage created by dispersed camping in RCAs due to the new road location's distance from the RCA. Dispersed camping is permitted along both sides of the new road so long as unacceptable resource damage does not occur.

The proposed action would eliminate impacts on campers at the Corrals Trailhead and dispersed camping area from traffic on the Pole Creek Road. Currently the road passes very

near the trailhead and dispersed campsites. The proposed location would provide enough separation that road noise and dust from road traffic would be eliminated.

Cumulative effects

Within the project area the *Pole Creek Travel Management Project*, which was designed to improve recreation opportunities and correct resource damage, has recently been implemented. The overall effect of this project has been to limit the impacts from unregulated off-road travel by motorized vehicles and dispersed camping on RCAs within the project area. Implementation of the proposed action will likely continue this trend by moving the Pole Creek Road well out of the RCA making it more difficult for motorized recreationists and dispersed campers to access the stream banks while creating more opportunity for dispersed campers.

Livestock grazing has some effect on recreationists as sheep trail through the area mid-summer. These effects are ephemeral and usually brief in duration.

The cumulative effects of past, current and foreseeable future actions on recreation have resulted in improved resource conditions and better managed recreation opportunities. The proposed action should continue to move in that direction.

CHAPTER 4 - CONSULTATION AND COORDINATION

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of this environmental assessment.

Interdisciplinary Team Members:

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Federal, State, Local, and Tribal Entities:

US Fish and Wildlife Service
National Marines Fisheries Service
Army Corps of Engineers
Idaho State Historic Preservation Office