

BLM SALMON FIELD OFFICE
SOUTH HALF TRAVEL
MANAGEMENT PLAN
Environmental Assessment



**United States Department of the Interior
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South Half Travel Management Plan**

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CHAPTER 1 - INTRODUCTION

Background

Over the past several decades, the public has increasingly relied on public lands for motorized recreational opportunities. Advances in vehicle technology and rapid population growth in the West have increased the use of remote public lands. New forms of transportation and their increasing use have out-paced agency transportation planning and the ability to effectively manage this use. Balancing public use and enjoyment of public lands along with protection of important resources requires more active and effective travel management. As a result, comprehensive travel management planning is currently one of the top priorities for federal land management agencies. The Travel and Transportation Management (TTM) process seeks to identify and understand the use of existing linear transportation features, incorporate the existing and future needs for transportation, access and recreational opportunities, and use an interdisciplinary planning process to develop appropriate travel networks and recreational opportunities that reflect designation criteria based on public needs, staff knowledge, goals and objectives identified in the land use planning process and the 43 CFR §8342.1 designation criteria.

The Bureau of Land Management (BLM) Salmon Field Office (SFO) first addressed the need for more active transportation management with the completion of the 2001 Lemhi Resource Management Plan Amendment (RMPA). Prior to 2001, public lands throughout the SFO were, for the most part, open to cross-country motorized travel. Decisions made within the RMPA resulted in limiting motorized travel within most of the SFO to “existing vehicle roads, ways and trails [2001 RMPA, pg 11]”; with subsets of the SFO “limited to designated roads and trails.”

Since the 2001 RMPA, the SFO has completed a comprehensive inventory of existing roads, primitive roads, and trails through the use of aerial photo analysis and ground verification. In 2004, the SFO published the “Salmon Area BLM Travel Guide”. This map shows current travel designations and restrictions, and is free to the public.

The RMPA guidance recognized that the existing network of inherited roads and trails might not necessarily be the most appropriate or desirable transportation system for the long-term, and directed the SFO to: “Reassess OHV [Off-Highway Vehicle] management throughout the Field Office area no later than 2007 to determine if changes in management would be appropriate to achieve the broadest range of use opportunities.”

In 2007, SFO staff started TTM planning by establishing two major Travel Management Areas (TMA) for public lands administered by the SFO. This established the North Half TMA and South Half TMA. The TMAs were delineated to aid in the manageability of the travel planning process by breaking the SFO into separate planning areas based on geographic boundaries. Areas of intensive use were addressed within each TMA, but were not isolated into separate planning areas. The Eighteenmile Wilderness Study Area (WSA) was excluded from the planning exercise because it is a separate TMA with a closed allocation which was designated in the RMPA in 2001.

The BLM transportation system is divided into three main categories: roads, primitive roads, and trails. A decision was signed in May of 2010 for the North Half TMA travel management plan that designated 366 miles of roads, primitive roads, and trails. These categories are defined as follows.

1. *Roads* are linear routes which are declared a road by the owner, managed for use by low clearance vehicles having four or more wheels, and maintained for regular and continuous use.
2. *Primitive Roads* are linear routes managed for use by four-wheel drive or high-clearance vehicles. These routes do not normally meet any BLM road design standards. User-created, primitive roads account for the majority of the transportation system in the SFO area.
3. *Trails* are linear routes managed for human-powered, stock, or OHV forms of transportation, or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles (Salt, et al., 2006). For this analysis, motorized trails are for OHVs and two-wheeled vehicles less than or equal to 50-inches wide.

The North Half TMP decision was signed in May of 2010. NMFS issued a Biological Opinion (BiOp) for the North Half TMP that directed the BLM to implement Terms and Conditions to ensure compliance with the Reasonable and Prudent Measures (USDC NMFS, 2011).

The U.S. Fish and Wildlife Service (USFWS) issued a BiOp for the North Half TMP (USDI USFWS 2011). The USFWS BiOp did not include any Terms and Conditions or Reasonable and Prudent Measures because no incidental take was anticipated.

The North Half TMA route network was signed with a route numbering system during the 2011 field season and a corresponding map was completed. Routes with mitigation measures such as vehicle restrictions or seasonal limitations were signed and depicted on the map.

In February of 2012 the SFO staff began TTM planning for the South Half TMA. Through a series of meetings and field tours, SFO staff and an employee from Lemhi County Road and Bridge with cooperating agency status completed the route evaluation process on 1,005 miles of inventoried routes located in the South Half TMA. Recommended route designations for four alternative route networks were completed and would be further analyzed within this Environmental Assessment (EA). The public was encouraged to participate and comment on both the process and the designations through a number of outreach efforts including public scoping meetings, face-to-face meetings, and field visits. The SFO accepted comments throughout the entire planning process. The types of comments received included identifying mistakes in the inventory; describing the kind of travel system that best suits their needs; administrative access needs; vehicle restriction classifications; areas of concern; and areas with high recreation values.

During the North Half TMP process the SFO utilized a Travel Plan webpage to post and track progress of travel planning. Planning efforts for the South Half TMP also utilized this page to communicate with the public and agency partners.

The webpage can be found at:

http://www.blm.gov/id/st/en/prog/planning/Travel_Management.html

In January of 2009, the Salmon Valley Stewardship (SVS), a local non-profit organization, recruited and organized a travel planning work group made up of a diverse cross-section of local citizens, resource, and user advocate groups; local government officials; and commercial interests. The work group held a series of six meetings that continued through the spring 2009. The BLM was invited to attend the afternoon work group sessions and provided an opportunity to hear, in detail, the diverse issues, and concerns surrounding public access. This group developed a set of guiding principles for the BLM to consider during their planning process in both TMAs. The identified guiding principles are summarized below.

1. *Maintaining motorized recreation opportunities and administrative access:* Comments received at the public open house meetings focused on the need to maintain existing motorized access to public lands. These comments reflect a tradition and emphasis on motorized recreational use in Lemhi County. Many non-motorized users also recognized the need to continue this use within the constraints of a designated route system. Several comments came from public land grazing permittees stating their need to maintain access for administrative purposes such as maintaining fences and livestock watering facilities.
2. *Protecting the planning area's natural and cultural resources:* Public and internal comments emphasized the need to limit access and reduce route density where appropriate to protect a variety of resource values. Comments noted the planning area serves as important winter range for a variety of wildlife species and accelerated erosion can occur due to the steep roads located on erosive soil types. Recommendations to achieve these goals included eliminating: 1) steep routes wherever possible, 2) duplicate or redundant routes, 3) routes no longer demonstrating use, and 4) short, abbreviated segments of road pioneered from regularly traveled routes with no apparent recreation or administrative value.
3. *Providing for a designated route system which is implementable, maintainable, and manageable:* Throughout the public outreach and planning process, comments included public concern regarding the BLM's lack of ability to effectively sign, maintain, and enforce travel regulations and restrictions within the SFO.
4. *Providing for a designated route system which is adaptable to meet the area's current and future recreation and non-recreation motorized and non-motorized demands:* Interdisciplinary Team and public comments emphasized the need to provide for a travel route system which can adapt to new information and future recreation and non-recreation needs.
5. *Providing public access to public lands where restricted or blocked by private land:* Throughout the public scoping process, local residents expressed concern about the

increasing number of BLM roads and large blocks of public lands no longer accessible to motorized use due to gated or posted closures on private lands.

6. *Providing non-motorized trails and opportunities for mountain bike riding:* For several years now, a number of residents from the city of Salmon have expressed interest in having some of the more popular, existing single track bike trails designated as limited to non-motorized use.

While completing the North Half TMP several members of the public and agency partners brought up validating R.S. 2477 assertions during the planning process. Bureau guidance states that a TMP is not intended to provide evidence bearing on or addressing the validity of any R.S. 2477 assertions. R.S. 2477 rights are determined through a process that is entirely independent of the BLM's planning process. Consequently, travel management planning should not take into consideration R.S. 2477 assertions or evidence. Travel management planning should be founded on an independently determined purpose and need that is based on resource uses and associated access to public lands and waters. At such time as a decision is made on R.S. 2477 assertions, the BLM would adjust its travel routes accordingly.

Purpose and Need

The purpose of this planning effort is to implement the 2001 Lemhi Resource Management Plan Amendment (LRMPA) decision to reassess current TMP route designations. The objectives are to determine if changes in management are needed and to apply current national management strategies, guidance, and policy for off-highway vehicle use on public lands.

This planning effort is based upon the need to:

1. change from the "limited to existing routes" designation to the "limited to designated routes" designation for motorized travel in the SFO;
2. minimize impacts to cultural and natural resources from roads and trails;
3. provide a transportation system that meets the needs of public land users by considering enhancing recreation access and opportunity for both motorized and non-motorized recreation; and
4. minimize conflicts associated with private and public lands interface and user groups.

Location

The South Half TMA is located in the southern half of the SFO area and includes approximately 317,332 acres of public lands located in Lemhi County, Idaho (Map1).

Conformance with Applicable Land Use Plan

The four alternatives are subject to and in conformance with the Lemhi Resource Management Plan dated April 1987, as amended (Attachment 1). The amendment directs the SFO to "Reassess OHV management throughout the Field Office area no later than 2007 to determine

if changes in management would be appropriate to achieve the broadest range of use opportunities. During the assessment, consider the following: Need for access; recreation opportunities; public safety; use conflicts; ability to properly maintain roads; and resource concerns such as highly erodible or fragile soils, protection of cultural resources, historic view sheds, sacred and traditional values, visual resources, special status species habitat, water quality, wildlife habitat, threat of weed invasion, retention of wilderness characteristics, and wetland and riparian habitat [2001 RMPA Decision Record, page 4].”

The four alternatives are subject to and in conformance with the Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, including the Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montanan Nevada and Northern California Oregon Utah dated September 2015.

The four alternatives are in conformance with the following Travel and Transportation management decisions in the Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment:

MD TTM 1: Limit off-highway vehicle travel within Idaho BLM Field Offices to existing roads, primitive roads, and trails in areas where travel management planning has not been completed or is in progress. This excludes areas previously designated as open through a land use plan decision or currently under review for designation as open, currently being analyzed in ongoing RMP revision efforts in the FourRivers, Jarbidge and Upper Snake Field Offices.

MD TTM 2: In PHMA, IHMA, and GHMA, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341(Conditions of Use) and other applicable law and policy.

MD TTM 3: Develop Travel Management Plans for each Field Office as described in the BLM Travel Management Handbook 8342.1 and according to the travel management planning guidelines (Appendix Lof FEIS).

MD TTM 4: During subsequent travel management planning design and designate a travel system to minimize adverse effects on GRSG. Locate areas and trails to minimize disturbance of GRSG and/or to have a neutral or positive effect on GRSG habitat and populations. Give special attention to protect endangered or threatened species and their habitats. Allow for route upgrade, closure of existing routes, timing restrictions, seasonal closures, and creation of new routes to help protect habitat and meet user group needs, thereby reducing the potential for pioneering unauthorized routes. The emphasis of the comprehensive travel and transportation planning within PHMA will be placed on having a neutral or positive effect on GRSG habitat. Individual route designations will occur during subsequent travel management planning efforts.

Relationship to Statutes, Regulations or Other Plans

- *43 CFR 8342 Designation of Areas and Trails*
- *Appendix C of BLM’s H-1601-1, Land Use Planning Handbook (3/31/2005)*

- *Clean Air Act, 1970*
- *Clean Water Act*
- *Endangered Species Act (ESA) of 1973, Section 7, as amended*
- *Interim Strategy for Managing Anadromous Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California: Commonly referred to as PACFISH (USDA Forest Service and USDI BLM, 1995)*
- *Bull Trout Habitat Conservation Strategy: Known as INFISH (USDA Forest Service, 1995) and implemented by BLM in 1995*
- *Idaho Sage-grouse Conservation Strategy 2007*
- *The Migratory Bird Treaty Act of 1918 (MBTA)*
- *The General Mining Laws (30 USC 21-54)*
- *Travel and Transportation Management Handbook H-8342-1 (2011)*
- *Programmatic Agreement (PA): Executed by the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers on March 26, 1997*
- *The Fort Bridger Treaty of 1868 (15 Stat. 673)*
- *Antiquities Act prohibits the unauthorized excavation, removal or defacement of objects of antiquity on public lands*
- *Archaeological Resource Protection Act prohibits the unauthorized excavation, removal, or damage of archaeological resources on federal and Indian lands*
- *American Indian Religious Freedom Act protects the rights of Indian people to practice traditional religions on federal lands*
- *The National Trails Act*

Scoping, Issues, and Decision to be Made

Scoping

The Salmon Field Office worked closely with interested members of the public, cooperating agencies, concerned organizations, and affected Tribal Governments in the development of the alternatives presented in this Travel Management Plan. In 2012 a series of initial public meetings were held to inform the public of the travel planning process and seek their input. These meetings were held on April 30th in Leadore, Idaho, May 1st in Salmon, Idaho, and on May 2nd in Tendoy, Idaho. Letters were sent to interested parties notifying them of these

meetings in March of 2012 along with newspaper articles to make the general public aware. Both specific and general public comments received at these meetings were incorporated into the planning process. Due to a delay in the planning process, a second round of public meetings were held in September of 2014, meetings were held in Salmon and Leadore, Idaho. Members of the public and organizations were made aware of these meetings through a mailing, flyers, and newspaper articles. In preparation for this second round of public meetings, maps of the alternatives were uploaded to the BLM's E-Planning site in early September 2014. In March of 2015 a letter was sent to interested parties informing them of changes in the BLM E-Planning site, this letter was intended to eliminate confusion and assist interested parties in navigating the site.

On XX XX XXX, the Salmon Field Manager issued the Travel Management Plan (#DOI-BLM-ID-I040-2013-0015-EA, Salmon Field Office South Half Travel Management Plan) to all interested publics, concerned organizations and other State and local governments of record for a 30-day comment and review period. The scoping document was presented to the Shoshone-Bannock Tribes on XX XX XX and Lemhi County Commissioners on XX XX XX.

Scoping Comments

The public meetings in 2012 resulted in 16 hand written comments received along with several comments emailed to the BLM Salmon Field Office. The majority of comments concerned the need for administrative access on specific routes by various grazing permittees for purposes such as maintenance of fences and water developments. Other commenters supported the closure of various routes, requested specific routes be left open, or expressed a general support for motorized access in the planning area.

The public meetings in 2014 resulted in 21 hand written comments received, with several comments being received by email after the meetings. The majority of these comments concerned support or opposition for a specific alternative, with the bulk of comments centering around the need for administrative access to specific routes in support of grazing operations. Other comments expressed either support or opposition for a certain alternative based on the commenters desire to see more or less opportunities for motorized recreation within the planning area.

Comments were also received from The Wilderness Society, the Idaho Conservation League, the Theodore Roosevelt Conservation Partnership, and the Backcountry Hunters and Anglers. These comments expressed a concern that completing this travel planning effort prior to a revision of the Salmon Field Office Resource Management Plan (RMP) could limit future decisions in the RMP process.

The Idaho Department of Fish and Game also provided comments concerning the impact of designating or not designating specific routes as related to wildlife concerns.

Issues

Through the scoping process and internal route evaluation process the ID team identified the following issues, many of which are similar to the guiding principles identified by the 2009 transportation planning group:

- Maintaining motorized recreation opportunities and administrative access, specifically for the maintenance of range improvements.
- Protecting the planning area's natural and cultural resources.
- Providing for a designated route system which is implementable, maintainable, and manageable.
- Providing for a designated route system which is adaptable to meet the area's current and future recreation and non-recreation motorized and non-motorized demands.
- Providing public access to public lands where restricted or blocked by private land.
- Providing non-motorized trails and opportunities for mountain bike riding.
- Travel planning could limit key decisions in future RMP revisions specifically as they relate to lands with wilderness characteristics inventories, and the designation of Special Recreation Management Areas (SRMA).

Decision to be Made

The Salmon Field Manager is the authorized officer responsible for the decisions regarding travel management on public lands within the Salmon Field Office. Based on the results of the NEPA analysis, the authorized officer will issue a determination of the significance of the environmental effects and whether an environmental impact statement (EIS) would be required. If the authorized officer determines that it is not necessary to prepare an EIS, the EA will provide information for the authorized officer to make an informed decision on how to best manage travel within the Salmon Field Office and what management actions, mitigation measures, and monitoring will be required.

CHAPTER 2 - ALTERNATIVES

ALTERNATIVE DEVELOPMENT

A multi-year intensive inventory of existing transportation linear features was completed between 2007 and 2011. This included digitizing linear features from aerial imagery used to create the existing route inventory for the 2001 RMPA, on the ground 'intersection' route inventory, and incorporating verified data collected from the public. This data was consolidated and is the Alternative A: No Action/Existing Motorized Network and was used as the existing transportation system in the route by route evaluation. The route-by-route evaluation process for the proposed action and alternatives took place over several weeks and was an interdisciplinary approach.

The designation criteria used for making the route designations used in the alternatives tie directly back to the designation criteria listed in 43 CFR §8342.1 which states: The authorized officer shall designate all public lands as either open, limited, or closed to off-road vehicles. All designations shall be based on the protection of the resources of the public lands, the promotion of the safety of all the users of the public lands, and the minimization of conflicts among various uses of the public lands; and in accordance with the following:

- (a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.
- (b) Areas and trails shall be located to minimize conflicts, harassment of wildlife, or significant disruption of wildlife habitats.
- (c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
- (d) Areas and trails shall not be located in officially designated Wilderness or wilderness areas or primitive areas. Areas and trails shall be located in Natural Areas only if the authorized officer determines that off-road vehicle use in such locations would not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

ALTERNATIVE A - NO ACTION/EXISTING NETWORK

Alternative A is a continuation of the current travel management situation for the SFO as identified in the 2001 RMPA (Map 2). The 2001 RMPA authorized motorized travel on existing roads, primitive roads, and trails visible on the 1993-1994 aerial photos and/or 1992 digital orthophotos. This existing route inventory was updated from 2007-2011 with an on the ground 'intersection' route inventory, and the incorporation of verified data collected from the public. The existing route inventory would be designated as the route network (Table 1). Classifications on roads, primitive roads, and trails would be made for the route inventory.

This alternative would designate 1,079 miles of motorized routes, of which 225 miles would be roads, 826 miles would be primitive roads, and 28 miles would be trails for OHVs and two-wheeled vehicles less than or equal to 50-inches wide (Table 1 and Table 2). There would be 49 low water fords on these designated roads, primitive roads, and trails (Table 3).

There would be no limitations on the vehicle type or season of use on 962 miles of the designated motorized routes (Table 1). Seasonal limitations would apply to 59 miles for wildlife protection and 30 miles for soils protection (Table 1).

Physical or passive route closures could occur on selected unplanned or user-created routes that were created since the time of the inventory or are made in subsequent years. In addition, the actions common to all alternatives would apply.

Table 1: All designated route action

DESIGNATED ROUTE ACTIONS	MILES BY ALTERNATIVE			
	Alternative A (Existing)	Alternative B (Minimum)	Alternative C (Balanced)	Alternative D (Maximum)
Total miles designated to travel	1,079	589	856	1,017
Open to motorized use with no limitations on the vehicle type or season of use	962	503	744	903
Limited motorized use seasonally for wildlife protection (12/16 – 4/30)	59	44	58	58
Limited motorized use seasonally for road surface protection in the Hayden, Basin, and Muddy Creek drainages (3/1 – 6/1)	30	25 ¹	30	30
Limited motorized use to OHVs and 2-wheeled vehicles ≤ 50-inches wide	28	17	24	26
Continental Divide Trail non-motorized construction	0	14	14	14

Five miles of seasonally closed roads in alternatives A, C, and D would be closed year round in Alternative B.

Table 2: All designated motorized route types

TYPE	MILES OF DESIGNATIONS BY ALTERNATIVE			
	Alternative A (Existing)	Alternative B (Minimum)	Alternative C (Balanced)	Alternative D (Maximum)
Roads	225	221	223	225
Primitive Roads	826	351	609	766
Trails	28	17	24	26

Table 3: Designated low water fords

ACTION	LOW WATER FORDS BY ALTERNATIVE			
	Alternative A (Existing)	Alternative B (Minimum)	Alternative C (Balanced)	Alternative D (Maximum)
Designated Armored Fords	30	21	28	29
Designated Unarmored Fords	19	3	5	11
Total Fords	49	24	33	40

ALTERNATIVE B – MINIMUM NETWORK

Alternative B would designate a minimal network of motorized vehicle access along the most commonly used roads, primitive roads, and trails within the planning area (Table 1). This alternative attempts to maximize protection and enhancement of natural and cultural resource values by focusing on loop riding for motorized use and limiting travel to highly traveled arterial routes (Map 3).

This alternative would designate 589 miles of motorized routes of which 221 miles would be roads, 351 miles would be primitive roads, 17 miles would be trails for OHVs and two-wheeled vehicles less than or equal to 50-inches wide, and 14 miles would be non-motorized trail (Table 1 and Table 2). There would be 24 low water fords on these designated roads, primitive roads, and motorized trails (Table 3).

There would be no limitations on the vehicle type or season of use on 503 miles of the designated motorized routes (Table 1). Seasonal limitations would apply to 44 miles for wildlife protection and 25 miles for road surface protection (Table 1). Fifteen miles of the previously limited routes that were closed for seasonal wildlife protection would be undesignated. Five miles of seasonally closed roads for road surface protection in the Hayden, Basin, and Muddy Creek drainages would be undesignated.

Approximately 490 miles of existing motorized routes and 25 low water fords in the current travel management (Alternative A) would not be designated. These routes: 1) duplicate an adjacent route, 2) existed during the time of inventory but are no longer visible on the landscape, 3) are short, user-created routes which do not provide public access to additional areas, and 4) are impacting or have the potential to impact natural or cultural resources. In addition, if there is no legal public access across the private land, the route would not be designated.

ALTERNATIVE C – BALANCED NETWORK

Alternative C would designate a maximum network of motorized access while minimizing resource damage along roads, primitive roads, and trails within the planning area (Table 1). This alternative strives to achieve the broadest range of recreation opportunity while balancing the need for access with the need to protect public land resources, reduce user conflicts, and provide for public safety (Map 4).

Based on these criteria, Alternative C would designate 856 miles of motorized routes of which 223 miles would be roads, 609 miles would be primitive roads, 24 miles would be trails for OHVs and two-wheeled vehicles less than or equal to 50-inches wide, and 14 miles would be non-motorized trail (Table 1 and Table 2). There would be 33 designated low water fords on these roads, primitive roads, and motorized trails (Table 3).

There would be no limitations on the vehicle type or season of use on 744 miles of the designated motorized routes (Table 1). Seasonal limitations would apply to 58 miles for wildlife protection and 30 miles for road surface protection (Table 1). One mile of the previously limited routes that were closed for seasonal wildlife protection would be undesignated.

Approximately 223 miles of existing motorized routes and 16 low water fords in the current travel management (Alternative A) would not be designated. These routes: 1) duplicate an adjacent route, 2) existed during the time of inventory but are no longer visible on the landscape, 3) are short, user-created routes which do not provide public access to additional areas, 4) are impacting or have the potential to impact natural or cultural resources, and 5) have no legal public access across the private land.

ALTERNATIVE D – MAXIMUM NETWORK

Alternative D would provide maximum motorized access to public lands, including redundant routes and user-created routes (Table 1). This alternative attempts to maximize the opportunity for motorized public access to public lands, recognizing the inherent conflicts that arise between motorized use and natural and cultural resources (Map 5).

This alternative would designate 1,017 miles of motorized routes of which 225 miles would be roads, 766 miles would be primitive roads, 26 miles would be trails for OHVs and two-wheeled vehicles less than or equal to 50-inches wide, and 14 miles would be non-motorized trail (Table 1 and Table 2). There would be 40 low water fords on these designated roads, primitive roads, and motorized trails (Table 3).

There would be no limitations on the vehicle type or season of use on 903 miles of the designated motorized routes (Table 1). Seasonal limitations would apply to 58 miles for wildlife protection and 30 miles for road surface protection (Table 1). One mile of the previously limited routes that were closed for seasonal wildlife protection would be undesignated.

Approximately 62 miles of existing motorized routes and 9 low water fords in the current travel management (Alternative A) that are causing specific resource damage would not be

designated. These include poorly located routes that are: 1) susceptible to high erosion, 2) a high safety risk, 3) causing damage to riparian areas, or 4) have no legal public access.

ACTIONS COMMON TO ALL ALTERNATIVES

1. Unless explicitly stated in the alternative description, all travel limitations, restrictions and/or exceptions identified under the 2001 amendment to the Lemhi RMP would remain in effect (Attachment 1) (USDI BLM, 2001).
2. Appropriate and applicable project related clearances and consultation processes such as NHPA Section 106 cultural resources survey, mitigation and consultation with Idaho State Historic Preservation Office and the Shoshone-Bannock Tribes and ESA Section 7 consultation would be completed prior to any undertaking, including any ground-disturbing activities, re-routes, new routes and physical route closures.
3. The continued exercise of tribal treaty rights and ceremonial activities, including access would be provided. Native American issues and concerns would be identified and considered in order to accommodate treaty and other legal rights of appropriate Native American groups in the multiple-use management of public lands. Consultation with the Shoshone-Bannock Tribes would occur on a case-by-case basis prior to project implementation in order to assess the potential effects to reserved treaty rights and cultural resources of concern to the Tribes.
4. All motorized travel within the planning area would be limited to designated roads, primitive roads, and trails, thereby eliminating the current category of “limited to existing” routes.
5. Unless a route is signed or mapped as open, it would not be designated for motorized use. Routes would be signed open through the placement of a steel U-Channel post that has an open sticker and route number mounted on the post (see photo below). Limited areas and routes would have an additional sign stating the limitation and the season of use.
6. Route signs would be non-reflective materials.
7. In accordance with 43 CFR §8341.2 with regard to off-highway-vehicle (OHV) use:
“Where off-road vehicles are causing or would cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence.”
8. The initial closures of undesignated routes would be passive (e.g. signs, visitor maps, natural revegetation). Physical route closures or obliteration could occur on select routes. The routes that would be physically closed or obliterated, and the site-specific closure or obliteration methods that would be used have not been identified. Instead, a variety of

methods would be available to close or obliterate routes on a case-by-case basis, depending on site-specific circumstances. The active closure methods may include: (1) obscuring the road entrance, (2) blocking the road entrance, (3) scarifying, seeding, and planting the roadbed and other disturbed areas, and (4) noxious weed treatment.

In general, the minimum closure techniques to meet resource objectives would be used. Any barrier construction would consist of natural materials that would be incorporated into the existing landscape where feasible. A BLM approved native grass and forb seed mix would be used when disturbances from route closures or obliteration are planted and seeded.

Obliteration of constructed road prisms may include: (1) outsloping and recontouring to restore hydrologic function and mimic the existing texture, form, line, color, and scale of the existing landscape, (2) removing all stream crossing culverts to prevent potential clogging and blowouts, removal of the fill within the channel, restoration and stabilization of streambanks, (3) scarifying, seeding, fertilizing, and mulching the roadbed and other disturbed areas, and (4) noxious weed treatment.

9. Physical route closures or obliteration would not occur without further NEPA analysis and Section 7 consultation:
 - within 0.6 miles of an active greater sage-grouse lek, between 3/1 and 6/30; and
 - within delineated WS-1 (big game and sage-grouse winter range) lands as described in the Lemhi RMP (USDI BLM, 1987) between 11/15 and 3/15.
10. Both motorized and non-motorized road and/or trail segments could receive periodic maintenance including smoothing of tread, removal of rocks or other obstacles, installation of rolling dips or water bars, cleanout of water bars, and repair of gullies and rills on the route surfaces. Maintenance of full-sized, motorized routes may require mechanized equipment. Maintenance of single-track trails would be carried out with the use of hand tools. These activities would not occur during the time-frames and in the areas described in #9 above.
11. The public access easements held by the BLM within the TMP area would continue to be valid under all alternatives until such time the United States decides it is no longer in the public interest to hold these easements. The public would need to continue to seek permission to cross private lands where no easements exist. The SFO would continue to pursue opportunities to acquire public access easements from willing landowners on a case by case basis. Acquisition of an easement would include site specific environmental analysis. Some routes within the planning are currently available to the public as a result of the landowner allowing access across the private land even though there is not a legal requirement to do so. In the event that the landowner restricts access to a particular route and the public does not have an alternate way to access the route, the route on BLM managed land beyond the private property would be undesignated.

12. Despite the efforts of personnel to “ground truth” existing routes within the planning area, some errors may still be identified on the maps and they would be corrected as they are found. Maps would be corrected as necessary to accurately reflect the route on the landscape.
13. Upon implementation of the South Half Travel Management Plan, a visitor map depicting designated routes throughout the entire field office would be created and distributed.
14. Access for permittees holding a valid grazing permit or others with an existing authorization would be provided. The Authorized Officer may issue a written travel variance or other written authorization for motorized travel off designated routes. Travel variances for use of existing roads can be issued for extended periods of time, or for specific types of uses (e.g. permittees may receive written authorization to drive on existing roads to access range improvements during their season of operation). Travel variances for cross-country travel would be considered on a case-by-case basis.
15. Monitoring of both the North and South Half TMA’s would be ongoing. This monitoring would include replacing damaged or missing signs, identifying undesignated routes that were receiving unauthorized motorized use and might require physical closure, and identifying new routes created after the route inventory.
16. The BLM Salmon Field Office would occasionally close the River Bluff road (road # 118) to minimize damage to soil and the road itself. The River Bluff road lies within the North Half Planning Unit, this temporary closure was intended to be addressed within that Travel Management Plan, however, it was omitted. The River Bluff road becomes impassable during the wet spring months and vehicle travel during this time leads to significant resource damage. The SFO would temporarily close this road during the times when it was most susceptible to damage. Closures would be accomplished through the placement of concrete barriers just north of the Discovery Hill trailhead. These closures would be accompanied by thorough public notification and would be removed as soon as the road conditions improved.

ACTIONS COMMON TO ALTERNATIVES B, C, and D

1. A 14-mile long section of non-motorized trail would be built on the ridge from Lemhi Pass south to Goat Mountain (Map 6). This non-motorized trail would be located adjacent to, but out of sight of, the existing two-track road. One of the primary design and location objectives would be to keep water off the trail by using a combination of drainage structures including: cross sloping (up to 2.5 percent), water bars, rolling dips, and slight, shallow cross trenching.
2. This non-motorized trail would be designed to maintain an 8-10 percent running slope when possible. Some stone or wood steps may be used in short sections where the slope exceeds 15 percent. Trail tread would be constructed using hand tools and would be limited to a 24-inch width. Wooden directional signs would be consistent with national CDT standards and would be placed at intersections along the new segments.

3. Road SPU2164 crosses upper Pattee Creek north of the Pattee Creek Habitat Improvement Project (HIP) enclosure (Map 7). The west side approach to the ford is steep causing bank erosion, sediment delivery, channel over-widening, and vehicles may bottom-out in the stream. The road approach on the west side of the stream would be excavated to a depth of 1-foot and replaced with compacted, well-graded 8-inch minus talus rock from a local source to a slope of 6 percent. The shallow channel at the base of the approach would be filled with the same talus rock to meet the level of the approach fill and tapered to the surface grades in the main channel upstream and downstream. The channel is over-widened because of the crossing; the fill would create a single thread channel on the east side of the mid-channel bar with widths similar to upstream and downstream reference widths. This ford connects a road that would be designated open to motorized vehicles in alternatives B, C, and D.
4. One unarmored ford used by motorized vehicles to cross Hawley Creek would be reconstructed and the adjacent banks would be revegetated to eliminate the streambank erosion, sediment delivery, channel over-widening, increased water temperature, and loss of riparian vegetation that are currently occurring. This ford connects the Hawley Creek Road with the Rocky Canyon Road (Map 8). The road approaches would be excavated to a depth of 1-foot and replaced with compacted, well-graded, 6-inch minus rock from a local pit to a slope of 6 percent. The 50-foot wide streambed would be excavated to a depth of 1-foot and armored to the existing streambed elevation with the same 6-inch minus rock. Waterbars, dips, other drainage structures, or soil mats would be added to the road approaches as needed to prevent rutting and sediment delivery. Two 1-foot high vegetated soil lifts would be used to rebuild a 32-foot long section of the bank and narrow the over-widened channel after the ford is hardened. The material excavated from the streambed and local coyote willow (*Salix exigua*) cuttings from the LHAc-02 ditch would be used to build the lifts. The design drawings for this ford and the vegetated soil lifts are in Appendix C. This ford connects roads that would be designated open to motorized vehicles in alternatives B, C, and D.
5. Three unarmored fords used by motorized vehicles to cross lower Hawley Creek would be armored to eliminate the streambank erosion and sediment delivery that are currently occurring (Map 8). These fords connect road segments that would be designated open to motorized vehicles. The road approaches would be excavated to a depth of 1-foot and replaced with compacted, well-graded, 6-inch minus rock from a local pit to a slope of 6 percent. The streambed would be excavated to a depth of 1-foot and armored to the existing streambed elevation with the same 6-inch minus rock. About 15 cubic yards would be excavated and 20 cubic yards would be filled per site. Construction would take place during the irrigation season when Hawley Creek is dewatered. The excess excavated material would be removed from the Riparian Habitat Conservation Area (RHCA) and would be deposited and stockpiled at a designated upland site away from any watercourses, rendering them unavailable to enter the stream channel as a result of storm runoff or a high water event. These fords connect roads that would be designated open to motorized vehicles in alternatives B, C, and D.

6. Two fords recently pioneered on Hawley Creek would be actively closed by obscuring and blocking the road entrance with local, natural materials. These fords connect to a road on the north side of Hawley Creek that would not be designated in alternatives B, C, and D.
7. A map that facilitates easy interpretation of the designated motorized routes would be made available to the public upon completion of route signing.

ACTIONS COMMON TO ALTERNATIVES C and D

1. An unarmored ford on road SPU687 that crosses a small, perennial tributary to upper Agency Creek (Map 9) would be armored to eliminate the streambank erosion and sediment delivery that are currently occurring. The road approaches and streambed would be excavated to a depth of 1-foot and replaced with compacted, well-graded, 6-inch minus talus rock from a local source to a slope of 6 percent. This ford connects a road that would be designated open to motorized vehicles in alternatives C and D.

CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section provides a description of the general environmental setting and resources within that setting that could be affected by the four management alternatives. In addition, the section presents an analysis of the direct, indirect, and cumulative environmental impacts likely to result from the implementation of the various alternatives.

General Setting

The planning area is located in east central Idaho and encompasses approximately 317,332 acres of public land. Lands managed by the SFO and neighboring BLM Field Offices typically adjoin National Forest system lands at the upper elevation boundary, and private land at the lower elevation boundary.

Elevations within the planning area vary from about 4,000 to 9,000 feet. General climatic characteristics are abundant sunshine, low humidity, and high evaporation. Annual precipitation in the TMA varies from about 7 inches in the city of Salmon to about 20 inches at the highest elevations in the field office. Precipitation in the area occurs primarily in the spring and fall as rain. April, May, and June are the wettest months. Summer thunderstorm activity is moderate, however some storms exhibit high intensity rainfall combined with moderate duration. Summer thunderstorms typically occur over small, subwatershed areas. Erosion associated with thunderstorms tends to be spatially limited, however debris flows and flooding may occur.

Although the SFO is in the Northern Rockies physiographic province, the landscape appears more typical of the Great Basin. The Lemhi River is the major river in the planning area. The Lemhi River and its major tributaries are perennial. Seasonally intermittent and ephemeral streams are more numerous. Loss of surface flows to groundwater is common, generally due to the permeability of coarse alluvial soils, or dewatering for irrigation. There are numerous

springs in the headwaters and wetlands. The riparian vegetation associated with the streams, wetlands, and springs varies in extent and vigor.

The existing transportation system (route system) within the planning area boundary includes several county roads, one federal highway, one state highway, and about 1,079 miles of BLM administered roads, primitive roads and trails. This document addresses only those BLM administered routes and represents the baseline management condition for analysis.

The BLM transportation system is divided into three main categories; roads, primitive roads, and trails as identified and defined in the North Half TMP.

The majority of roads and trails on public lands within the planning area are primitive and user-created. The amount of motorized vehicle use on this network of routes is low to very low with the exception of the fall hunting season from September to December. Vehicle use drops off during the winter and spring as a result of snow cover, inclement weather and poor road conditions (December through mid-April). Outside of hunting season, the majority of use occurs from public land permittee activities and recreational use.

The existing character of the landscape for the planning area is varied with ranch oriented land uses in the valley bottoms, rolling sagebrush/grass communities on the foothills, and a forest covered mountainous landscape in the higher elevations. Due to the inaccessibility of the terrain, the majority of the routes within the planning area are located on the lower benches with few routes traversing the steep mountainous areas. Visible human developments within the planning area include roads, transmission lines, fences, structures, agricultural lands, residential homes and outbuildings, and commercial business and associated structures.

The results of the site-specific assessments indicate that not all of the resources considered are present or would be directly or indirectly affected by any of the alternatives described in Chapter 2. Only those resources that are present and affected are discussed in the following narratives (Table 4). Rationale for Interdisciplinary Team recommendations is required for all “not present” and “present not impacted” situations. For resources that are “present and impacted” a detailed analysis is provided.

Table 4: Resources considered in the impact analysis

Resource	Resource Status	Rationale
Access	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Air Quality	Present, Not affected	The implementation of the alternatives would not result in the production of vehicle or equipment emission or particulate matter above incidental levels as required by the Clean Air Act.
Areas of Critical	Present, Not	There is one ACEC within the South Half TMA. The Trail Creek

Resource	Resource Status	Rationale
Environmental Concern (ACECs)	Affected	RNA ACEC was closed to motorized use by the Lemhi RMP and would remain so under all of the four alternatives.
Cultural Resource	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Economic and Social Values	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Environmental Justice	Present, Not Affected	There are some scattered minority and low-income populations in the South Half TMA however, the projects and actions described in the Alternatives would not affect these populations as described under Executive Order 12898 of 2/11/1994. There would be no disproportionately high and adverse human health or environmental effects to the minority and low-income populations in the area resulting from the proposed activities.
Existing and Potential Land Uses	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Fisheries	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Floodplains	Present, Not Affected	There are small sections of FEMA floodplains adjacent to the Lemhi River and upper Birch Creek in the planning area. None of the proposed actions would impact these FEMA floodplains.
Forest Resources	Present, Not Affected	Impacts were considered but eliminated from analysis. Forest resources occur within the South Half TMA. Access to these areas would continue to be available. None of the actions proposed under the alternatives would affect forest resources.
Invasive, Non-Native Species	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Mineral Resources	Present, Not Affected	Mineral resources may occur in the South Half TMA. None of the actions proposed under the alternatives would affect mineral resources. Any new proposals for mineral development would be subject to the mining laws which ensure access.
Migratory Birds	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Native American Religious Concerns	Present, Not Affected	Impacts were considered but eliminated from analysis. There may be Native American Religious values in the planning area. However, no specific concerns or affects have been voiced by the Tribes and would not be discussed further.
Paleontological	Present, Not	Impacts were considered but eliminated from analysis. None of the actions proposed under the alternatives would affect Paleontological

Resource	Resource Status	Rationale
Resources	Affected	resources which may be located in the planning area.
Prime and Unique Farmlands	Not Present	There are no prime or unique farmlands located within or near the proposed South Half TMA.
Soil Resources	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Threatened, Endangered, and Sensitive Plants	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Threatened, Endangered, and Sensitive Animals	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Threatened, Endangered, and Sensitive Fish	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Range Resources	Present, Not Affected	Impacts were considered but eliminated from analysis. Several grazing allotments are located within the South Half TMA. Livestock would continue to graze and be managed within the TMP area and would not be affected by any of the actions proposed under the alternatives. Vehicle access for use, operation and maintenance of the range and improvements would be accommodated.
Recreational Use	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Tribal Treaty Rights and Interests	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Vegetation	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Visual Resources	Present, Not Affected	Impacts were considered but eliminated from analysis. Design features of the proposed alternatives produce negligible adverse and beneficial impacts. Thus, visual resources would not be discussed further.
Wastes, Hazardous and Solid	Not Present	There are no solid or hazardous wastes in the South Half TMA and none would be created during the implementation of the any of the alternatives.
Water Quality (Surface and Ground)	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .

Resource	Resource Status	Rationale
Wetland and Riparian Zones	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Wild and Scenic Rivers	Not Present	There are not wild and scenic rivers near the South Half TMA.
Wild Horse and Burro HMAs	Not Present	There are no wild horse and burro HMAs in the Salmon Field Office.
Wilderness	Present, Not Affected	The 18 mile WSA lies adjacent to the planning area. No routes would be designated within the boundaries of the WSA. Travel management within the WSA would continue as outlined in the 2001 Lemhi RMP Amendment.
Wildlife Resources	Present, Affected	Impacts are disclosed under <u>Environmental Consequences</u> .
Lands with Wilderness Characteristics	Present, Not Affected	A LWC inventory is currently underway within the Salmon Field Office. While more lands with wilderness characteristics may be identified within the Salmon Field Office, no travel designations under any of the alternatives would impact any present or future identification of wilderness characteristics.

¹Rationale for Interdisciplinary Team recommendations is required for all “not present” and “present not impacted” situations. For resources that are “present and impacted” a detailed analysis is provided.

Trends and Assumptions for Analysis

Although the planning area receives less visitor use and associated impacts when compared to most other public lands and regions in the west, certain trends and assumptions can be made while assessing impacts of each of the alternatives. The following fundamental assumptions are common to all alternatives and are expected to influence travel management decisions in the foreseeable future:

- Use levels on roads and trails would increase.
- Some degree of road proliferation and associated impacts would continue.
- Residential development of private lands adjacent to BLM lands would increase.
- Costs and challenges related to law enforcement and travel management compliance would increase.
- Costs of maintaining and managing the selected travel network would increase.
- Conflicts between some recreation uses would increase.

Affected Resource, Direct, and Indirect Impacts of Each Alternative

Access

Affected Environment

Decisions made within the 2001 RMPA resulted in limiting motorized travel within most of the Field Office to “existing vehicle roads, ways and trails [2001 RMPA, pg. 11]”; with subsets of the Field Office “limited to designated roads and trails” (Attachment 1). The 2001 RMPA authorized motorized travel on existing roads, primitive roads, and trails visible on the 1993-1994 aerial photos and/or 1992 digital orthophotos. This existing route inventory was updated from 2007-2011 with an on the ground ‘intersection’ route inventory, and the incorporation of verified data collected from the public. These inventories were combined to create the existing route network described in Alternative A and represent the vast majority of linear transportation features available to the public for travel within the South Half TMP area.

Effects Common to All Alternatives

The public access easements held by the BLM within the TMP area would continue to be valid under all alternatives until such time the United States decides it is no longer in the public interest to hold these easements. The public would need to continue to seek permission to cross private lands where no easements exist. The SFO would continue to pursue opportunities to acquire public access easements from willing landowners. Acquisition of an easement would include site specific environmental analysis.

Alternative A- No Action/Existing Network

Direct/Indirect Impacts: Under the existing management situation, motorized access to public lands would not change. There would continue to be approximately 1,079 miles of routes designated for travel within the TMP area. The 14 miles of non-motorized single track trail would not be constructed along the Continental Divide Trail.

Alternative B- Minimum Network

Direct/Indirect Impacts: Under this alternative, motorized travel over approximately 589 miles of existing roads, primitive roads, and trails would be designated. This alternative would designate a minimal network of vehicle access along the most commonly used roads, primitive roads and trails within the planning area. This alternative would designate 490 fewer routes than the existing route network currently open to motorized travel within the TMP area and would result in the least amount of motorized access for the public. Over time, those roads which are no longer used would eventually be rehabilitated, either naturally or by man. In addition to the motorized routes designated under this alternative, 14 miles of non-motorized trail would be constructed along the Continental Divide Trail.

Alternative C- Balanced Network

Direct/Indirect Impacts: Under this alternative, approximately 856 miles of existing roads, primitive roads, and trails would be designated as open to some form of motorized travel. This

alternative would designate 223 fewer miles as open to motorized use than the existing route network found in Alternative A. In addition to the motorized routes designated under this alternative, 14 miles of non-motorized trail would be constructed along the Continental Divide Trail.

Alternative D –Maximum Network

Direct/Indirect Impacts: Under this alternative, there would be a 1,017 miles of existing roads, primitive roads, and trails designated as open for some form of motorized use. There would be 62 fewer miles designated under this alternative than the existing route network in Alternative A. In addition to the motorized routes designated under this alternative, 14 miles of non-motorized trail would be constructed along the Continental Divide Trail.

Cultural Resources

Affected Environment

The NHPA establishes the federal government’s policy and programs on historic preservation, including the creation of the National Register of Historic Places. Under the NHPA, cultural resources that meet specific eligibility criteria (found in 36 CFR Part 60) may be listed on or found eligible for listing on the National Register. Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places is called a historic property. Historic properties may reflect several kinds of significance; architectural, historic, archaeological (scientific), engineering, or cultural/traditional. Section 106 of the NHPA (regulations found in 36 CFR Part 800) requires federal agencies to take into account the effects of undertakings on all historic properties. The Idaho State Historic Preservation Office (Idaho SHPO) and the Advisory Council on Historic Preservation (ACHP) are the state and federal agencies responsible for reviewing and assisting in matters of federal cultural resource management and preservation under the NHPA.

Section 106 Class III cultural resource inventories in previous years over various sectors of the planning area incorporated (intentionally or incidentally) intensive scrutiny of approximately 165 miles of existing motorized road surfaces and adjacent terrain considered in this document. Further, targeted Class III inventory of an additional approximately 20 road miles of existing motorized routes was undertaken in FY 2014 by the Field Office archaeologist, with roads randomly selected across varying topography in the planning area to aid in assessments of potential impacts of alternatives. Over 180 miles of road surveys over the planning area have yielded an exceedingly very low incidence of impact to existing or newly discovered cultural properties. The resultant compliance documents have been reviewed and concurred in by the Idaho SHPO.

The Salmon Field Office area (SFO) encompasses approximately 495,000 surface acres, and of these an estimated 75,940 acres (15.4%) have been surveyed for cultural resources using intensive (Class III) or reconnaissance/sampling (Class II) field strategies. About 50,830 acres (10.3%) of the SFO have received intensive cultural resource surveys. These surveys, although representing a small percentage of the total land base managed by the Field Office, have resulted

in the identification and recording of 731 cultural resources. Approximately 40% of these have met the criteria for local, regional, or national significance as historic properties, and are eligible for listing on the National Register. Another 15% are contributing properties to potential Historic Districts or Multiple Property listings. Nationally significant segments of the Lewis and Clark National Historic Trail (sections of which are found within the planning area) and the Nez Perce National Historic Trail (outside the planning area) pass through various portions of the Field Office. A number of recorded cultural sites and historic roads or trail features associated with these National Historic Trail routes are determined eligible for National Register listing. The integrity of view-shed associated with the Lewis and Clark National Historic Trail in particular is an important BLM management consideration.

The planning area and the SFO as a whole includes values representing both Native American and Euro-American land uses and settlement, attesting of a continuous human occupation from at least 11,000 years ago to the present. Native American archaeological sites and places of traditional importance within the planning area are varied, involving evidence of ancient travel ways, winter and summer campsites, and hunting, fishing, and gathering locales. Types of cultural resources documented include open surface phenomena and rock shelter habitations, toolstone procurement quarries, kill sites, food processing locales, rock art localities, and feature types such as large stone lodge rings, stone alignments and other arrangements, and feature related to past ceremonial or religious practice. Found within the planning area as well are portions of the historic Lemhi Indian Reservation (A.D. 1875 to 1907). Just outside of the planning area is the Chief Tendoy Cemetery, managed by the SFO in close coordination with the Shoshone-Bannock Tribes. Both of these historic properties are of great traditional and spiritual importance to descendants of the Lemhi Shoshone and to the larger Shoshone-Bannock Tribes now at Fort Hall.

Documented Euro-American cultural resources largely date after the 1870s, comprising mining related sites and features, homesteads and farmsteads, vestiges of an historic railroad, traces of historic wagon and stage roads and pack trails, historic refuse dumps, historic water conveyances, and a host of other Euroamerican phenomena.

Cultural - Effects Common to All Alternatives

None of the alternatives considered in this EA would be expected to elevate present overall levels of direct and indirect impacts to cultural resources through vandalism or inadvertent disturbance. Alternatives that reduce available motorized routes from that presently existing may also reduce the potential for incidences of impact to cultural resources, as well. Proposed ground-disturbing actions specified in any of the alternatives would receive Class III inventories over areas of potential effect prior to implementation, in compliance with Section 106 of the NHPA.

Alternative A– No Action/Existing Management

Direct/Indirect Impacts: Under Alternative A, OHV and non-motorized travel within the planning area would remain as it is currently managed under the 2001 amendment to the Lemhi RMP. Closed and seasonally closed routes would remain unchanged. Existing travel limitations under the 2001 RMP amendment were intended to reduce the potential for impact to known and

as yet undiscovered historic properties in the planning area. However, under the existing management, the designation “Limited to Existing” is confusing; it is unclear to the public what roads or trails on public lands may be regarded as “Existing.” This ambiguity has likely contributed in an increase in user-defined “Existing” roads and trails, which presents an increased probability of inadvertent impact to cultural resources in some areas.

Alternative B Minimum Network

Direct/Indirect Impacts: Alternative B would reduce motorized routes across the planning area by nearly half. This alternative would minimize appreciably the network of motorized accesses in the planning area, keeping only the most commonly used roads and trails as designated for use. Substantial reductions under Alternative B in overall miles of designated motorized routes would tend to expand distances between travel routes over given tracts of land relative to other alternatives, and would also be expected to increase insolation of known and unrecorded cultural resources on the landscape. About 490 miles of existing spur roads, redundant parallel accesses, and roads interfacing private and public land would not be designated for motorized use. Further, eliminating the “Limited to Existing” designation under Alternative B would be beneficial in protecting cultural resources by remedying user confusion and the subsequent proliferation of user-defined “Existing” roads and trails on public land.

Alternative C Balanced Network

Direct/Indirect Impacts: Designated routes in Alternative C would increase from that of Alternative B, but remain fewer than the Existing Management alternative. Potential impacts to cultural resources under Alternative C would logically be expected to be elevated slightly from that of Alternative B.

Alternative D Maximum Network

Direct/Indirect Impacts: Under Alternative D, which is similar to Alternative A (Existing Management) in terms of designated motorized road miles and other motorized uses, impacts to cultural resources would not be expected to differ substantially from the Existing management condition.

Economic and Social Values

Affected Environment

Economics

Salmon, Idaho is located in Lemhi County and the county is described as a rural area with an estimated population of 7,936. Most of the population is concentrated in and around the communities of Salmon, North Fork, Tendoy, and Leadore. Historically, the Lemhi County economy was based on mining activity which caused population and job numbers to fluctuate over time.

Early in the decade Lemhi County’s unemployment rate hit 7.4 percent and gradually declined to 4.3 percent by 2007. Since then rates doubled, averaging 9.8 percent in 2012. The average

annual unemployment rate for 2013 in Lemhi County was 9.0% compared to 5.6% for the State of Idaho and 7.4% for the U.S. (State of Idaho, 2014). By June 2014, the total seasonally adjusted employment of the civilian labor force in Lemhi County was 3,285 with the total unemployed of 259, a rate of 7.9%.

Lemhi County's basic economic sections are services and retail (tied to tourism and ranch/farm activities), government, agriculture (ranching), mining, and construction. In recent years, service contracts and material sales related to aquatic and riparian restoration projects has become an increasingly important sector of the local economy.

Government, including schools, is a basic sector of the economy in many small, rural economies like Salmon because it brings personal income and tax revenues from the state and federal levels into the community. Government employs about 37% of the county's workers, and trade, transportation, and utilities, along with leisure and hospitality, employ 27% of the labor force (State of Idaho, 2014) (State of Idaho, 2014).

The growth of urban population centers in Idaho, coupled with technological advances in transportation equipment, has fueled a surge in recreational road and trail riding. The South Half TMA has seen an increase in recreational OHV use for hunting and sight-seeing activities by both visitors and local residents. This type of use boosts the local economy by an increase in the purchase of amenities. Travel methods associated with uses traditionally permitted on public lands have also changed. One example of this is in livestock operations, where the traditional use of horses has, in some cases, given way to the use of ATVs and motorcycles. ATV use is a popular form of transportation and recreation in Lemhi County and the city of Salmon supports two local dealerships that provide sales and service.

Growing OHV use on public lands, particularly use occurring within the South Half TMA, has begun to impact the otherwise quiet atmosphere many residents enjoyed in the past. Motorized recreation has resulted in an increase in noise, vehicle-generated dust, spread of noxious weeds and invasive plants, and littering. Throughout the planning area, issues related to unauthorized use on private lands are on the increase as motorized use increases; and as lands adjacent to public lands are bought, sold, and come under residential development.

Social

Concern as to how federal lands are managed is a common theme across the west. Many groups and individuals indicate the condition of resources on public lands managed by the BLM is important to them because they value these resources for wildlife, recreation, education, scenic qualities, wilderness, open space, and a variety of other reasons. Many individuals and groups are also concerned about limitations being put on the availability of public lands managed by the BLM for recreational and commercial uses

Recreation is a component of most lifestyles in the analysis area. The substantial recreational opportunities for fishing, hunting, hiking, horseback riding, OHV use, and sightseeing are important elements of the overall quality of life for residents. Many people have either moved to or stayed in the county because of the recreation opportunities. Recreationists are very diverse

groups of people and changes in recreation management can affect the people who engage in the various activities very differently. They tend to organize into interest groups; most recreational activities have at least one group advocating for their activity.

Small rural communities can be tied to public lands managed by the BLM in a variety of ways. Local businesses and governments depend upon the employees to maintain a population base for businesses and public services. Use of public lands managed by the BLM for livestock grazing, recreation activities, mineral development and other activities can provide employment and help maintain related businesses. In addition, the local residents depend on the public lands managed by the BLM for recreation and open space.

Small towns such as Salmon, Challis, North Fork, and Leadore are unique places with shared values and a relationship with nearby public lands. Quality of life issues such as a slower pace of life, low crime rates, high levels of interpersonal trust, opportunities for community involvement, a sense of belonging and a high value placed on the health of the surrounding landscape motivates people to live in these communities. Public lands surrounding these communities are important to people because they provide a place for recreation including hiking, wildlife viewing, hunting, fishing, rafting, mountain biking, and motorized recreation. Additionally, many utilize public lands to make a living through ranching, outfitting and guiding, or mineral development. The community also cares about healthy landscapes. Clean water, air, and soil are important to the people that reside in Lemhi County.

Effects Common to All Alternatives

As the population of the city of Salmon and surrounding communities in Lemhi County is expected to increase over time, so is the desire for recreational opportunities. The population in the state of Idaho is also expected to increase over time as individuals are seeking rural relatively secluded communities such as Salmon, which offer vast recreational opportunities. This increase in population in the state may be a result of technological advances in the communications world where individuals are able to tele-commute to work and still live in a remote place such as Salmon. With the increase in population, recreational road and trail use would be expected to increase. With the change in travel methods such as in livestock operations, where the traditional use of horses has, in some cases, given way to the use of ATVs and motorcycles, this type of activity would continue to increase under all the alternatives.

Another effect that remains consistent across the alternatives is replacing the “limited to existing” with a “limited to designated” route category would result in a more coherent travel system by eliminating the confusion arising between the two designations. This would provide a more user friendly and easily navigated route network for members of the public traveling to the planning area to recreate.

Alternative A – No Action/Existing Management:

Direct/Indirect Impacts: Under Alternative A, the available network of existing roads, primitive roads, and trails would remain the same. As motorized use increases incrementally,

so would the related impacts such as noise, dust, and user conflicts between motorized and non-motorized uses. These kinds of impacts would result in an increase in costs to monitor, regulate, and control use; and, over time, have the potential to diminish the overall quality of other recreation experiences. Increasing recreational vehicle use in some locations may also result in shifts of some motorized and non-motorized uses and activities to other locations. The resulting increase of interactions with livestock could have negative economic impacts to livestock permittees, either through vehicle collisions with livestock or reduced rates of livestock weight gain. This alternative provides for the largest route network available to motorized use. This would result in some small positive impact to the area through ATV/motorcycle sales and repairs in local dealerships as well as the sale of amenities, as members of the public travel to the area specifically for its opportunities for motorized recreation.

Under this alternative, 14 miles of non-motorized single track would not be constructed on the Continental Divide Trail. This would allow the possibility for conflicts between motorized and non-motorized users in the area. This could cause some trail users to seek out other areas with dedicated sections of non-motorized trail along the CDT.

Alternative B – Minimum Network:

Direct/Indirect Impacts: This alternative would designate the most minimal route network available for motorized use, a use that has become increasingly popular to members of the public. This alternative would create a route network for motorized use that contains 490 fewer miles than the existing network currently enjoyed by motorized users. This minimal route network could cause members of the public who enjoy motorized recreation to seek out other areas with greater opportunities. This could result in a negative impact to the economy of the area as local businesses see less income associated with ATV/motorcycle repair and the sale of amenities. Conversely this alternative provides the greatest opportunities for non-motorized recreation and could result in increased visitation to the TMP area along with the associated economic benefits from people who value a non-motorized experience. In addition to a minimal route network, the construction of 14 miles of non-motorized single track trail on the Continental Divide Trail would further increase opportunities for non-motorized recreation in the planning area.

Livestock operators could perceive some inconvenience as a result of this alternative from the increased need to apply for travel management variances in order to continue their operations at present levels. Operators could benefit from the reduction in conflicts between motorized vehicles and livestock.

Alternative C—Balanced Network:

Direct/Indirect Impacts: Alternative C would designate a slightly smaller route network than what is currently available in the planning area. This would result in a slight reduction in the opportunities from motorized recreation and a slight increase in opportunities for non-motorized recreation. These minimal changes are not expected to have a noticeable impact on

economic or social values within the planning area beyond those described in the affected environment and the effects common to all alternatives.

In addition to the designated route network, the construction of 14 miles of non-motorized single track trail on the Continental Divide Trail would also increase opportunities for non-motorized recreation in the planning area. This could result in a slight increase in visitation to the area as hikers seek out the new section of trail.

Alternative D – Maximum Network:

Direct/Indirect Impacts: This alternative would designate a route network that is essentially the same as the one currently available in the planning area. Only 62 fewer miles would be designated under this alternative as compared to the existing network. This minimal difference is not expected to have a noticeable impact on economic or social values within the planning area beyond those described in the effects common to all alternatives and those described under Alternative A.

In addition to the designated route network, the construction of 14 miles of non-motorized single track trail on the Continental Divide Trail would slightly increase opportunities for non-motorized recreation in the planning area. This could result in a slight increase in visitation to the area as hikers seek out the new section of trail.

Existing and Potential Land Uses

Affected Environment

Existing land uses on public lands in the planning area include the following:

- State Highway 28 and U.S. Highway 93 are the two main highways in and out of the city of Salmon.
- Approximately 12 existing authorized ditches for conveyance of irrigation purposes are issued to private land owners.
- The Salmon Field Office holds 15 public access easements across private or State of Idaho land totaling approximately 11 miles.
- There are 8 Land Use Permits issued to adjacent private land owners for use of public land for agricultural or residential use totaling approximately 77 acres. These are Land Use Permits issued to adjacent private landowners who have public land that has historically been fenced in with their private land.
- Idaho Power supplies the main source of power into the Salmon River and Lemhi Valleys. All of the transmission and distribution lines crossing public land in the area are authorized by a right-of-way grant. There are 14 right-of-ways issued for power lines over 44 miles within the planning area.

- Century Telephone supplies landline telephone service to the area and all of their service lines crossing public lands are authorized. Within the planning area, 3 right-of-ways have been issued over 48 miles.
- There are approximately 36 road right-of-ways issued within the planning area, totaling approximately 179 miles.
- There are approximately 47 grazing allotments with authorized grazing permits located within the TMP area.

Effects Common to All Alternatives

Current existing authorized uses of the public land within the TMP area would continue to occur under all of the alternatives until such time the authorization expires and is not renewed, or the authorization is no longer needed. Under all the alternatives, the BLM would continue to process new use applications (right-of-ways, land use permits, etc.) on a case-by-case basis as they are received and each proposed use would require a site specific environmental analysis. Depending on the result of the environmental analysis, some may be authorized. On an annual basis, approximately three applications may be processed in the South Half TMA. These uses may be for a short telephone or power line to a private residence, or an access road to a private residence.

Fisheries, Threatened, Endangered, and Sensitive Fishes

Affected Environment

The headwaters of the Lemhi River and the Birch Creek originate in the planning area. Gilmore Summit divides the subbasins.

Lemhi River Subbasin

The Lemhi River is a tributary to the Salmon River that supports anadromous and resident fish populations, and has spring/summer Chinook salmon, steelhead, and bull trout designated critical habitat (DCH). Private and public land management practices have adversely affected aquatic habitat in the Lemhi River Subbasin. Road culverts, irrigation structures, and dewatering have created fish passage barriers and disconnected historic habitat. Multiple agencies, organizations, and individuals have been involved in efforts to improve fish habitat conditions in the Lemhi River and its tributaries since the 1990s. Numerous projects to reconnect habitat through changes in irrigation structures and water delivery systems, and road culvert replacements have been implemented. The SFO has replaced barrier culverts on Agency, Cow, Basin, Tenmile, Clear, Hawley, and Canyon creeks (Attachment 6). All the identified fish passage barriers on the BLM-managed road system in the planning area have been upgraded to “fish-friendly” structures. Other fish barrier culverts in the upper Lemhi River Subbasin have been replaced, or are in the process of being replaced agency and non-government organization partners (Attachment 6). As a result of these actions, the aquatic habitat connectivity in the Lemhi River Subbasin is improving.

The SFO has also implemented road surfacing, drainage improvements and general road maintenance on roads in the Agency Creek, Yearian Creek, Reese Creek, and Eighteenmile Creek watersheds since 2001. The SFO did additional work in 2008-2010 in the Eighteenmile Creek Watershed to upgrade roads and reduce sediment delivery to streams based on the Lemhi TMDL report recommendations (IDEQ 2010).

Birch Creek Subbasin

Birch Creek is a closed basin. The surface water sinks into the Snake River aquifer on irrigated private lands and the U.S. Energy Research and Administration's Idaho National Laboratories property (USDI BLM 1975). Bull trout and anadromous Chinook salmon and steelhead have never occupied Birch Creek, and there is no DCH in the Birch Creek Subbasin (USDI BLM 1975).

Birch Creek originates from widely-scattered springs in the upper two miles of the valley floor, and reaches maximum flow near the IDFG Kaufman Recreation Site at the southern boundary of the planning area (USDI BLM 1975). The surface water sinks into the Snake River aquifer on irrigated private lands and the U.S. Energy Research and Administration's Idaho National Laboratories property (USDI BLM 1975). Channel alteration, bank erosion, irrigation practices, a hydropower plant, and livestock grazing have degraded aquatic and riparian habitats in lower Birch Creek, outside of the planning area (USDI BLM 1975).

BLM and IDFG have completed aquatic and riparian habitat improvement projects on public lands in the upper subbasin, within the planning area. In the 1980s The Nature Conservancy purchased property in the headwaters of Birch Creek that contains an extensive network of emergent wetlands, alkali springs, aquatic, and riparian habitat. This 1,605 acre property was later exchanged to the BLM in cooperation with IDFG and is managed as a riparian enclosure to protect these sensitive and valuable habitats from livestock impacts. The riparian enclosure would be reconstructed in 2015 to improve its long-term effectiveness and make it more wildlife-friendly. About 13.5 acres in the Breazeale Springs complex were fenced to exclude livestock in 2013.

The ESA listed fish populations and their DCH in the upper Lemhi River Subbasin and its perennial tributaries, and the resident salmonid populations in both subbasins are described below.

Snake River Spring/Summer Chinook Salmon

Snake River spring/summer Chinook salmon was listed as Threatened April 22, 1992 (57 FR 14653), with some modifications on June 28, 2005 (70 FR 37160). NMFS DCH for the Snake River spring/summer Chinook salmon on December 28, 1993, effective January 27, 1994 (58 FR 68543). This was revised on October 25, 1999 (64 FR 57399). Designated critical habitat is all river reaches presently or historically accessible to spring/summer Chinook salmon. The designation also includes 300 feet from either side of the ordinary highwater (OHW) mark (USDC NMFS 1992).

The current Chinook salmon population in the Lemhi River Subbasin is a fraction of historic levels. Most spring/summer Chinook salmon enter the subbasin from mid-April through August 21 (USBWP Technical Team 2005). All spawning is natural and occurs in August-September. Hayden Creek and the Lemhi River above the confluence with Hayden Creek (IDFG 2006) are the only streams in the in the planning area that currently support Chinook salmon spawning. An occasional Chinook salmon redd occurs in Big Springs Creek which functions as part of the Lemhi River, however relatively warm water temperatures and low flow may limit salmonid spawning (P. Murphy, IDFG Fisheries Biologist, personal communication).

Juvenile Chinook salmon reside in rearing areas for approximately 1 year before migrating downstream the following spring. Historically, juvenile Chinook salmon utilized coldwater tributaries for rearing and thermal refuge during the summer months when the temperatures in the river increased. Many of these tributaries are effectively disconnected from the river during the irrigation season, and juvenile Chinook salmon rearing habitat is currently limited to the mainstem Lemhi River, Big Springs Creek, and Hayden Creek, and the lower reaches of the connected tributaries.

This EA also determines potential affects as directed by Protective Regulations for commercial fisheries Essential Fish Habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (MSA). The MSA defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” NMFS updated the designated EFH in the Federal Register on January 17, 2002 (USDI FWS 2002). The MSA established procedures designed to identify, conserve, and enhance EFH for species regulated under various federal fisheries management plans that require federal agencies to consult with NMFS on all actions they propose, authorize, fund, or plan to undertake, that may adversely affect EFH (U.S. 1996). EFH designation and considerations for this action only applies to Chinook salmon, as they are the only fish species defined as “commercial” in the planning area.

Snake River Basin Steelhead

NMFS issued a final rule on January 5, 2006 for the Final Listing Determinations for 10 Distinct Population Segments of west coast steelhead. This rule assessed the effectiveness of the six artificial propagation programs that are a part of the Snake River Basin steelhead distinct population segments and determined that those programs, collectively, do not substantially reduce the extinction risk of Snake River Basin steelhead. The Snake River Basin steelhead Evolutionarily Significant Unit (ESU) includes all naturally spawned anadromous populations below natural and man-made barriers in streams tributary to the Snake River in southeast Washington, northeast Oregon and Idaho, and also includes stocks from six artificial propagation programs located throughout the same region (USDC NMFS, 2013). Steelhead DCH in the South Half TMA includes the Lemhi River, Texas Creek, and Hayden Creek (USDC NMFS 2005).

O. mykiss (redband/rainbow/steelhead) may express either resident or anadromous life histories. Both resident and anadromous forms occur in the planning area. Anadromous steelhead migrate

inland, spend the winter in larger rivers, and spawn in early spring (USBWP Technical Team 2005). The current steelhead populations in the Lemhi River Subbasin are a fraction of historic levels, and are highly supplemented with fish raised at the IDFG Pahsimeroi and Sawtooth hatcheries. Hatchery steelhead spawn in all reaches of the river but most of the natural origin steelhead spawn in the Hayden, Basin, Bear Valley, Texas, and Agency tributaries. An occasional steelhead redd occurs in Big Springs Creek which functions as part of the Lemhi River, however relatively warm water temperatures and low flow may limit salmonid spawning (P. Murphy, IDFG Fisheries Biologist, personal communication).

Juvenile *O. mykiss* are present year-round¹. Like Chinook salmon, juvenile steelhead utilize cold water tributaries for rearing and thermal refuge during the summer months when the temperatures in the river increase. Juvenile *O. mykiss* currently utilize the Lemhi River, Big Springs, Pattee, Agency, Cow, Flume, Hayden, Basin, Wright, Bear Valley, Trail, Mill, Lee, Little Eightmile, Big Eightmile, Big Timber, Swan Basin, Canyon, Cruikshank, Hawley, Reservoir, Big Bear, Clear, Eighteenmile, and Texas creeks.

Columbia River Bull Trout

Bull trout critical habitat was designated in October 2010 (USDI FWS 2010). Bull trout DCH in the planning area includes the Lemhi River, most of the Hayden Creek and Big Timber Creek watersheds, Little Eightmile, Big Eightmile, Lee, and Mill creeks.

IDFG radio-tracking indicates bull trout move out of the Lemhi River and up into the perennial tributaries when spring peakflows subside to spend the summer and then spawn in the cooler water (Schoby 2006). The migratory bull trout portion of the population has been severely diminished because of this lack of connectivity between the Lemhi River and its tributaries. Currently, bull trout occupy the Lemhi River and Big Springs, Pattee, Agency, Little Eightmile, Rough Canyon, Cruikshank, Hawley, Big Bear, Eighteenmile, Deer, Big Timber, Big Eightmile, Lee, Stroud, Everson, Dairy, Mill, Hayden, Wright, and Bear Valley creeks.

The relatively warm water temperatures and low flow in Big Springs Creek may limit bull trout utilization (P. Murphy, IDFG Fisheries Biologist, personal communication). However, the USFWS considers both the Lemhi River and Big Springs Creek to be bull trout foraging, migration, and overwintering habitat (USDI FWS 2010). Some resident populations are isolated in the headwater reaches due to seasonal dewatering of the lower reaches during the irrigation season and man-made migration barriers.

Resident Salmonid Fishes

Redband trout (*O. m. gairdneri*), mountain whitefish, and westslope cutthroat trout are native salmonid fishes found in the Lemhi River and its perennial tributaries. The redband trout and westslope cutthroat trout are BLM, Forest Service Region 4, and Idaho State sensitive species.

¹ Juvenile native redband trout, non-native rainbow trout, and steelhead are indistinguishable.

The Lemhi River and Birch Creek subbasins have reproducing populations of non-native, hatchery strain rainbow trout (*O. m. iridieus*) and non-native, eastern brook trout. There is an important recreational fishery for these species in Birch Creek that is supplemented with catchable-size rainbow trout stocked by IDFG. The reaches on public lands are readily accessible to anglers from State Highway 28, and Birch Creek is considered one of the most heavily fished trout streams in eastern Idaho (USDI BLM 1975). The IDFG Kaufman Recreation Site adjacent to the highway at the southern boundary of the planning area is a popular destination for anglers.

Effects Common to All Alternatives

Designated and Undesignated Routes

Road networks modify natural drainage patterns and networks, accelerate erosion processes, and are an important factor in determining potential turbidity and sediment delivery to streams. Wemple (1996) found that the drainage ditches along logging roads and the gullies that form below culvert outlets served as primary conduits linking surface flows to streams. Wheel tracks channelize and direct run-off containing sediment and contaminants into streams, and compacted soils can enhance gully formation (Wemple, Jones, & Grant 1996; Forman et al, 2003).

Road densities are often used as a coarse level descriptor of watershed characteristics and conditions. Dunham and Rieman (1999) found bull trout were absent from areas with high road densities. Road density expressed as miles of road per square mile of area (mi/mi^2) provides an index of the potential for roads to affect watershed function. NMFS (1996) and USFWS (1998) established road density guidelines to be used as indices of watershed condition in ESA consultations. The NMFS guidelines for properly functioning condition in the 5th field HUC watersheds are road densities less than $2 \text{ mi}/\text{mi}^2$ and no valley bottom roads; not properly functioning condition are road densities greater than $3 \text{ mi}/\text{mi}^2$ and many valley bottom roads; and functioning at risk is in between. The USFWS guidelines are road densities less than $1 \text{ mi}/\text{mi}^2$ and no valley bottom roads; functioning at unacceptable risk are road densities greater than $2.4 \text{ mi}/\text{mi}^2$ and many valley bottom roads; and functioning at risk is in between.

Most of the undesignated routes would be in upland areas. The potential for upland routes to affect water quality is low because of distance to water; the terrestrial vegetation provides overland filtering; and the pioneered BLM routes have few culverts or constructed drainage ditches. Therefore, undesignating upland routes would reduce the watershed road densities but would have discountable effects on fish, DCH, and EFH.

RHCA routes have the highest potential for sediment delivery and other wetland, riparian, and aquatic habitat impacts because of proximity to streams and other waterbodies². The RHCA road densities in the South Half TMA watersheds range from 0.9 to $8.3 \text{ mi}/\text{mi}^2$ (Table 5). These

² The RHCA widths for perennial streams, intermittent streams, and wetlands are based on the PACFish guidelines (USDA Forest Service and USDI BLM 1995).

density figures include only the BLM managed routes. The highest baseline RHCA densities are in Hawley Creek and Timber Creek watersheds; the lowest baseline densities are in Hayden Creek and Eighteenmile Creek watersheds. The designated RHCA routes would continue to deliver some sediment during spring run-off, thunderstorms, and other wet weather conditions.

The RHCA routes provide access to, and concentrate human use and impacts within, riparian areas, wetlands, and streams. The designated routes would continue to provide access and concentrate human use in these areas.

RHCA routes also provide livestock access to riparian areas, wetlands, and streams. Livestock would continue to enter these areas from the route system.

Roads in close proximity to streams decrease woody debris recruitment potential because of clearing for the road prisms and stream crossings, bank riprapping, hazard tree removal, developed and dispersed recreation sites, and “stream cleaning” to prevent debris jams or stream migration. Meredith et al. (2014) found roads less than 100 feet from streams had 26 percent fewer pieces of total wood, 37 percent fewer pieces of pool-forming wood, and 42 percent less wood volume that sites greater than 100 feet from a road. Meredith et al. (2014) estimated that roads less than 100 feet from streams reduce wood volume to 72-87 m³/km. Juvenile bull trout are typically found in streams with high volumes of woody debris (90-280 m³/km) (Dambacher and Jones 1997). Instream woody debris forms complex, deep pool habitat which provides protection from predators and high flows and supports higher densities of fry and juvenile salmonids (Roni and Quinn 2001). The designated RHCA routes would continue to reduce woody debris recruitment.

Table 5: All designated motorized routes and densities in the RHCAs in the South Half TMA watersheds

USGS 5 th Field Hydrologic Unit	Alternative A		Alternative B		Alternative C		Alternative D	
	Miles	mi/mi ²						
Middle Lemhi River	15.6	2.2	13.6	2.0	15.4	2.2	15.5	2.2
Hayden Creek	2.0	0.9	2.0	0.9	2.0	0.9	2.0	0.9
Upper Lemhi River	26.4	4.4	13.0	2.2	20.0	3.3	22.8	3.8
Hawley Creek	5.2	8.3	1.4	2.2	3.2	5.1	4.4	7.0
Timber Creek	4.4	6.8	2.7	4.2	3.0	4.6	3.9	6.0
Texas Creek	0.4	3.1	0.4	3.1	0.4	3.1	0.4	3.1
Eighteenmile Creek	3.4	1.1	1.4	0.5	2.1	0.7	2.9	1.0
Upper Birch Creek	7.2	2.3	2.5	0.8	5.0	1.6	6.0	1.9
Totals	64.6	--	37	--	51.1	--	57.9	--

The RHCA motorized routes adjacent to occupied Chinook salmon, steelhead, bull trout habitat or DCH are shown in Table 6. Hayden Creek is the only stream in the planning area that is occupied by Chinook salmon, steelhead, and bull trout, and is DCH for all three species. Hayden Creek is also Chinook salmon EFH. As per the 2001 LRMPA, the seasonal wet weather closures in the Hayden Creek Watershed (Hayden, Basin, and Muddy creeks) for protection of the unsurfaced, primitive roads that were built on bentonite clay soil would be maintained. These wet weather closures would have no effect on listed fish, DCH, or EFH because there is no potential for these routes to deliver sediment and there are no proposed changes in current RHCA motorized route designations, so the baseline conditions in the Hayden Creek Watershed would be maintained.

Table 6: Designated motorized routes in the RHCAs adjacent to habitat occupied by listed fishes and DCH

USGS 5th Field HUC	Stream	Alternative A (miles)	Alternative B (miles)*	Alternative C (miles)*	Alternative D (miles)*	Chinook Salmon		Steelhead		Bull Trout	
						Occupied	DCH	Occupied	DCH	Occupied	DCH
1706020406	Hayden	0.4	0.4	0.4	0.4	X	X	X	X	X	X
1706020406	Basin	1.0	1.0	1.0	1.0		X				
1706020407	Pattee	2.1	2.1	2.1	2.1		X			X	
1706020405	Everson	0.3	0	0	0.3		X			X	
1706020405	Lee	0.5	0	0	0.5	X	X			X	X
1706020405	Mill	0.2	0.2	0.2	0.2		X			X	X
1706020405	Stroud	0.4	0.4	0.4	0.4		X			X	
1706020402	Hawley	5.2	1.4	3.2	4.4		X				
1706020403	Eighteen-mile	1.1	0.2	0.2	1.0		X				
1706020403	Bull	0.5	0.1	0.2	0.2		X			X	
1706020404	Little Timber	1.0	0.3	0.6	1.0		X			X	X
1706020404	Swan Basin**	<0.1	<0.1	<0.1	<0.1		X				
1706020404	Big Timber**	3.4	2.3	2.3	2.9		X			X	X
	Totals	16.2	8.5	10.7	14.5						

* Changes from the baseline condition are in **bold type**

**Motorized trail above the Carey Act Dam

The minimum closure techniques would be used to meet resource objectives. The initial “closures” of undesignated routes would be passive (e.g. signs, visitor maps, revegetation). Some immeasurable sediment delivery would continue to occur from the undesignated routes that are not reclaimed and revegetated during spring run-off, thunderstorms, and other wet weather conditions.

Some of the undesignated routes are already effectively closed and stable due to lack of access and revegetated roadbeds. For example, the road segment in upper Bull Creek that would be undesignated in alternatives B, C, and D has been closed by a Forest Service pasture boundary fence with a locked gate for at least 20 years. And a 0.5 mile of road in Lee Creek through would be undesignated in alternatives B, C, and D because there is no access through private land.

Physical closures or obliteration could occur on undesignated or user-created routes, as needed for resource protection. Physical closures and obliteration are more likely to promote revegetation and increased infiltration rates, which may reduce sediment delivery to occupied habitat, DCH, and EFH.

User-created routes tend to have greater impacts than constructed routes because they receive no maintenance and do not have drainage structures such as ditches, cross-drains, waterbars, and dips. User-created routes are also more likely to occur in areas with poor drainage, multiple stream crossings, and highly erodible or unstable soils.

Most of the undesignated roads that would be physically closed for resource protection do not have cutslopes, fillslopes, or culverts. These routes can be barriered and allowed to revegetate naturally without risk of sediment delivery due to slope or culvert failures. Barrier construction would consist of natural materials that would be incorporated into the existing landscape where feasible. Hydroseeding with a BLM approved native grass and forb seed mix and weed treatments would be used to reseed disturbed soil.

Obliteration of constructed road prisms would require methods such as outsloping, recontouring, removing all stream crossing culverts, removal of fill within the channel, restoration and stabilization of streambanks, scarifying/seeding/fertilizing/mulching the roadbed, and noxious weed treatment. These types of closure methods can result in an increase in short-term sediment delivery, depending on the location. The conservation measures for road decommissioning and obliteration projects in the NMFS BiOp for habitat restoration projects would be implemented to minimize the risk of short-term sediment delivery (USDC NMFS 2015).

Enforcing the motorized route designations would continue to be problematic due to increasing OHV/ATV recreation, decreasing BLM staffing levels, repeated vandalism of signs, and the difficulties associated with physically restricting use along pioneered and primitive roads on relatively flat or gentle terrain.

Designated and Undesignated Fords

All of the streams in the South Half TMA that would have designated fords are shown in Table

7. The designated fords are either armored (rocky) or unarmored (Table 7). The source for the fish species information in Table 7 is Idaho Fish and Wildlife Information System Species Composition Reports (accessed online 3/12/2015). Species information is not available for all streams. The species in the Birch Creek Subbasin tributaries are probably rainbow trout and non-native brook trout.

Road-stream crossings are likely to deliver sediment to streams because there is little or no buffer zone to filter sediment eroded from the roadbeds and fillslopes (King & Gonsior 1981; IDL 2000; Burroughs 1990). The monitoring required by the SFO North Half TMP BiOp and the Salmon-Challis National Forest TMP BiOp indicates turbidity and sediment generated by vehicles at armored fords is likely to be an insignificant effect on sediment delivery and turbidity. Vehicles crossing the unarmored fords may cause streambank erosion, turbidity plumes, sedimentation, and increase the channel width to depth ratios. Vehicles may also introduce chemical contaminants into waterways via leaking hydrocarbon fluids, particularly at higher stream flows that wash the undercarriage or mire vehicles.

All of the designated and undesignated fords in the Lemhi Subbasin are in Chinook salmon DCH and EFH; none of these fords are in currently occupied Chinook salmon or steelhead habitat, or steelhead DCH (Table 8). These fords are in tributaries or reaches that are inaccessible to Chinook salmon and steelhead due to irrigation practices, man-made barriers, or in small headwater tributaries where they would have no effect on Chinook salmon and steelhead, and the Chinook salmon DCH has no intrinsic value (Cooney and Holzer 2006).

Most of the designated and undesignated fords in the Lemhi Subbasin are in occupied bull trout habitat and/or bull trout DCH (Table 8). Bull trout spawn between mid-August and mid-October; fry incubate over winter and emerge from the substrate by the first of May (USBWP Technical Team 2005). Most vehicles use the fords during low flow, particularly during the fall hunting season when bull trout spawning and incubation are occurring. It is unlikely that bull trout would spawn in the armored fords because optimal bull trout spawning habitat is fine gravel to small cobble (0.25 to 3-inch diameter) (Watershed Consulting 1997). Preferred spawning habitat includes low gradient reaches of mountain valley streams with loose, clean gravel and cobble substrate (Fraley and Shepard 1989; Montana Bull Trout Scientific Group 1998; USDI FWS 2002). More than 20 percent fine sediment less than 0.25-inch diameter may detrimentally affect the survival of salmonid eggs and fry (Bjornn and Reiser 1991). The substrate in naturally armored fords is typically coarse, rock that is often embedded with fines and is not suitable spawning substrate. The angular, 6 to 8-inch minus rock that would be used to armor the fords on the upper Pattee Creek and Hawley Creek fords (described below) is not expected to be suitable spawning habitat either. The upper Agency Creek tributary is not fishbearing. For these reasons, any potential impacts to bull trout redds and fry from the designated, armored fords are expected to be insignificant.

Table 7: All designated fords in the South Half TMA

Stream	Alternative A		Alternative B		Alternative C		Alternative D		Species ²
	A ¹	U	A	U	A	U	A	U	
Pattee	1	1	2	0	2	0	2	0	BT
Agency	2	0	1	0	2	0	2	0	BT
Agency Tributary	0	1	0	0	1	0	1	0	none
Copper Queen	1	0	1	0	1	0	1	0	no data
Ghoul Basin	1	0	0	0	1	0	1	0	no data
Flume	1	0	1	0	1	0	1	0	BT
Yearian	0	1	0	1	0	1	0	1	RT, Cott
South Fork Yearian	0	1	0	0	0	1	0	1	RT, Cott
Right Fork Peterson	4	0	0	0	0	0	0	0	no data
Left Fork Peterson	1	1	1	0	1	0	1	1	no data
Chippie	0	1	0	1	0	1	0	1	unid. trout
Eighteenmile	1	0	0	0	1	0	1	0	BrT, Cott
Clear	1	0	1	0	1	0	1	0	BT, RT, Cott
Hawley	0	6	4	0	4	0	4	0	BT, RT, WCT, Cott
Bull	1	0	0	0	0	0	0	0	BT
Tenmile	0	4	0	0	0	0	0	4	none
Big Timber	1	0	1	0	1	0	1	0	CS, BT, WCT, MW, SH/RT, BrT, Cott
Swan Basin	1	0	1	0	1	0	1	0	RT
Little Timber	1	0	1	0	1	0	1	0	BT, WCT, Cott
Walter	2	0	1	0	2	0	2	0	no data
Cedar Gulch	0	3	0	1	0	2	0	3	none
Lake	1	0	1	0	1	0	1	0	no data
Shears*	1	0	1	0	1	0	1	0	BrT
Willow*	2	0	1	0	1	0	2	0	no data
North Jump*	2	0	0	0	2	0	2	0	no data
South Jump*	1	0	1	0	1	0	1	0	no data
Carlin*	3	0	1	0	1	0	1	0	no data
South Jump Tributary*	1	0	1	0	1	0	1	0	no data
Totals	30	19	21	3	28	5	29	11	

¹A = Armored, U = Unarmored

²Source: Idaho Fish and Wildlife Information System Species Composition Reports 3/12/2015

BT=bull trout, CS = Chinook salmon, RT = Rainbow Trout, SH = Steelhead, BrT = brook trout, WCT = cutthroat trout

MW = mountain whitefish, Cott = unidentified sculpin

*Streams in the Birch Creek Subbasin – species are probably rainbow trout and brook trout

Table 8: Designated armored and unarmored fords in habitat occupied by listed fishes and DCH

Stream	Alternative A		Alternative B		Alternative C		Alternative D		Chinook salmon		Steelhead		Bull trout	
	A	U	A	U	A	U	A	U	Occupied*	DCH	Occupied*	DCH	Occupied*	DCH
Pattee ¹	1	1	2	0	2	0	2	0		X			X	X
Agency ¹	2	0	1	0	2	0	2	2		X			X	X
Agency Tributary	0	1	0	0	1	0	1	0						
Big Timber ²	1	0	1	0	1	0	1	0		X				X
Eighteenmile	1	0	0	0	1	0	1	0		X				
Hawley ³	0	6	4	0	4	0	4	0		X				
Little Timber	1	0	1	0	1	0	1	0		X			X	X
Swan Basin ²	1	0	1	0	1	0	1	0		X				
Bull	1	0	0	0	0	0	0	0		X			X	
Flume	1	0	1	0	1	0	1	0		X			X	
Clear	1	0	1	0	1	0	1	0		X			X	
Totals	10	9	12	0	15	0	15	2						

A = Armored, U = Unarmored

¹The unarmored Agency tributary and Pattee fords would be armored in alternatives B, C, and D

²Motorized trail above the Carey Act Dam

³These Hawley Creek fords would be armored or reconstructed in alternatives B, C, and D

⁴Source: Idaho Fish and Wildlife Information System Species Composition Reports 3/12/2015

Effects Common to Alternatives B, C, and D

Ford Armoring and Reconstruction

Unarmored fords on upper Pattee Creek and lower Hawley Creek would be armored and reconstructed as described below (Table 9). These fords would be designated in alternatives B, C, and D.

Table 9: Ford armoring, reconstruction, and closure/rehabilitation actions

Ford Actions	Proposed Action
Upper Pattee Creek ford - armor	1
Lower Hawley Creek fords - armor	3
Hawley Creek-Rocky Canyon – armor and reconstruct	1
Hawley Creek fords - physically close & rehabilitate	2
Upper Agency Creek ford - armor	1

Upper Pattee Creek Ford

Road SPU2164 crosses upper Pattee Creek north of the Pattee Creek Habitat Improvement Project (HIP) enclosure (Map 7). This road would be designated open to motorized vehicles in all alternatives. The flow is perennial but the stream is disconnected from the Lemhi River during the irrigation season.

The west side approach to the ford is steep, causing bank erosion, sediment delivery, channel over-widening, and vehicles may bottom-out in the stream (Figure 1 and Figure 2). The channel substrate is rocky with a large, mid-channel bar. A backhoe would cross the ford to work from the west side of the stream. The road approach on the west side of the stream would be excavated to a depth of 1-foot and replaced with compacted, well-graded, 8-inch minus talus rock from a local source to a slope of 6 percent (~10 CY). The shallow channel at the base of the approach would be filled with the same talus rock to meet the level of the approach fill and tapered to the surface grades in the main channel upstream and downstream (~20 CY). The channel is over-widened because of the crossing; the fill would create a single thread channel on the east side of the mid-channel bar with widths similar to upstream and downstream reference widths. The excavated material would be removed from the RHCA and would be deposited and stockpiled at a designated upland site away from any watercourses, rendering them unavailable to enter the stream channel as a result of storm runoff or a high water event.

Pattee Creek is occupied bull trout habitat, and Chinook salmon and bull trout DCH. The construction would be done in the wetted channel during the July 7-August 15 work window (USBWP Technical Team 2005) and is expected to be completed in about one hour by a BLM equipment operator with fish biologist monitor. Bull trout are not expected to be in the work area because there is no instream or overhead cover, and the stream is heavily aggraded with coarse rock so most of the flow would be interstitial. Instead, bull trout are expected to be in the good quality habitat upstream or downstream of the ford. If some short-term behavior

modification does occur during construction (i.e. moving further up or downstream of the ford due to the activity) it would not exceed the level of insignificant effects.

There would be no effect on Chinook salmon or bull trout DCH during construction because there would be no in-water excavation or sediment generated.

The proposed ford reconstruction is expected to have a long-term beneficial effect on Chinook salmon and bull trout DCH because it will: (1) eliminate a chronic source of sediment, (2) reduce the risk of oil or other fluids from entering the stream from bank erosion or vehicles bottoming-out, and (3) the talus rock fill on the west side of the mid-channel bar would create a single thread channel on the east side of the mid-channel bar.



Figure 1: The upper Pattee Creek ford looking down from the west approach (photo date 3/26/2015)



Figure 2: The west bank of upper Pattee Creek ford (photo date 3/26/2015)

Hawley Creek Watershed Fords

There are six unarmored fords on lower Hawley Creek that are causing streambank erosion, sediment delivery, channel over-widening, increased water temperature, and loss of riparian vegetation (Map 8). Hawley Creek is Chinook salmon DCH and EFH. Hawley Creek is disconnected from the Lemhi River due to irrigation practices and man-made barriers, and is not occupied by Chinook salmon and steelhead. Bull trout are found in the headwaters on the Salmon-Challis National Forest.

The unarmored Hawley Creek-Rocky Canyon ford has perennial flow. This ford would be designated and armored under alternatives B, C, and D to eliminate the streambank erosion, sediment delivery, channel over-widening, increased water temperature, and loss of riparian vegetation that are currently occurring (Figure 3-Figure 6).

The road approaches would be excavated and replaced with compacted, well-graded, 6-inch minus rock from a local source to a slope of 6 percent. The 50-foot wide streambed would be excavated to a depth of 1-foot by 14-feet long (26 CY) and armored to the existing streambed elevation with the same 6-inch minus rock. Waterbars, dips, other drainage structures, or soil mats would be added to the road approaches as needed to prevent rutting and sediment delivery.

The excavation and armoring is expected to take one day and would be done in the wetted channel when instream flows are at a seasonal low. Turbidity and sediment plumes would exceed the State turbidity standard of 50 NTUs over background level during the streambed excavation. The LHaC-02 diversion, about 150 feet downstream of the ford would be closed during the streambed excavation and armoring to prevent sediment from clogging the ditch and pipeline. The turbid and sediment-laden water would be released to the historic Hawley Creek channel downstream of LHaC-02 diversion, as was done in the LHaC-03 diversion improvement project (Littlejohn & Guyer, 2014). Hawley Creek below LHaC-02 is dry during the irrigation season, and would be dry during the ford reconstruction.

Two 1-foot high vegetated soil lifts would be used to rebuild a 32-foot long section of the bank and narrow the over-widened channel after the ford is hardened. The material excavated from the streambed (18 CY), 10 CY of clean ¾” minus fill, and local coyote willow (*Salix exigua*) cuttings from the LHaC-02 ditch would be used to build the lifts. A silt fence would be used to soak the willow bundles and contain turbidity and sediment during the lift construction. Construction of the lifts is expected to two days. The design drawings for this ford and the vegetated soil lifts are in Appendix C.

The excess excavated material would be removed from the RHCA and would be deposited and stockpiled at a designated upland site away from any watercourses, rendering them unavailable to enter the stream channel as a result of storm runoff or a high water event.



Figure 3: Hawley Creek-Rocky Canyon ford (photo date 4/15/2013)



Figure 4: Hawley Creek-Rocky Canyon ford (photo date 4/15/2013)



Figure 5: Hawley Creek-Rocky Canyon ford (photo date 5/8/2014)



Figure 6: Hawley Creek-Rocky Canyon ford wave action (photo date 5/8/2015)

The five fords below the Hawley Creek Road-Rocky Canyon Road ford are currently dewatered during the irrigation season. Three of the unarmored fords would be armored under alternatives B, C, and D to eliminate the streambank erosion and sediment delivery that are currently occurring (Figure 7-Figure 9). These fords connect road segments that would be designated open to motorized vehicles in all alternatives. The road approaches would be excavated to a depth of 1-foot and replaced with compacted, well-graded, 6-inch minus rock to a slope of 6 percent. The streambed would be excavated to a depth of 1-foot and armored to the existing streambed elevation with the 6-inch minus rock. About 15 cubic yards would be excavated and 20 cubic yards would be filled per site. Construction would take place during the irrigation season when Hawley Creek is dewatered. The excess excavated material would be removed from the RHCAs and would be deposited and stockpiled at a designated upland site away from any watercourses, rendering them unavailable to enter the stream channel as a result of storm runoff or a high water event.



Figure 7: Hawley Creek ford that accesses the LHaC-02 ditch headgate at the split (photo date 5/8/2014)



Figure 8: Hawley Creek fords that parallel either side of a BLM fenceline (photo date 5/8/2015)



Figure 9: The parallel Hawley ford on the west side of the BLM fenceline (photo date 5/8/2015)

Two low water fords that have steep, unarmored banks and were recently pioneered by motorized vehicles crossing Hawley Creek would be actively closed by obscuring and blocking the road entrance with local, natural materials. These fords connect to a road on the north side of Hawley Creek that would not be designated in alternatives B, C and D (Map 8). Effective closures of these fords would promote revegetation and stabilization of the streambanks which would reduce sediment delivery to benefit Chinook salmon DCH and EFH. However, enforcing these closures would be problematic due increasing OHV/ATV recreation, decreasing BLM staffing levels, repeated vandalism of signs, and the difficulties associated with physically restricting use.

Multiple agencies, organizations, and individuals are involved in projects to reconnect Hawley Creek to the Lemhi River including diversion reconstruction, diversion screening, improved irrigation efficiencies, culvert replacements, and conservation easements. The proposed Hawley Creek ford actions would contribute to improvement of fish habitat conditions in the Hawley Creek Watershed.

A naturally armored ford on Bull Creek above the McFarland Livestock diversion would be undesignated in alternatives B, C, and D. There is an isolated population of bull trout in Bull Creek. Historically, Bull Creek was a tributary to Hawley Creek but has been disconnected from Hawley Creek for decades due to irrigation practices. The road segment and ford that will be

undesigned have been closed by a Forest Service pasture boundary fence with a locked gate for at least 20 years, so the effectively baseline condition would be maintained.

Effects Common to Alternatives C and D

Upper Agency Creek Tributary Ford

An unarmored ford on road SPU687 that crosses a small, perennial tributary to upper Agency Creek would be armored to eliminate the streambank erosion and sediment delivery that are currently occurring under alternatives C and D (Map 9; Figure 10 and Figure 11). Road SPU687 would be open to motorized vehicles in alternatives A, C, and D; it would be undesigned in Alternative B. Vehicles are eroding the sedge mat that forms the banks and over-widening the channel. The natural channel is less than 1-foot wide and the water was 1 to 2-inches deep on April 2, 2015. The streambed and the approaches would be excavated to a depth of 1-foot by 12-feet long by 10-feet wide and replaced with compacted, well-graded, 6-inch minus talus rock from a local source. The total fill volume below ordinary high water would be 4.4 cubic yards (CY).

Mainstem Agency Creek is occupied bull trout habitat and Chinook salmon and bull trout DCH. The ford is on a first order, non-fishbearing tributary about 250 feet upstream of the confluence with Agency Creek. Work would be done in the wetted channel during the low flow July 7 to August 15 work window (USBWP Technical Team 2005). Temporary spikes in turbidity that exceed the State turbidity standard of 50 NTUs over background level would occur in the tributary when the streambed is excavated. The short-term turbidity generated during the excavation (≤ 30 minutes) is expected to be at background levels before the confluence with Agency Creek, so the construction activities would have no effect on bull trout and Chinook salmon and bull trout DCH in Agency Creek.

The excavated material would be removed from the RHCA and would be deposited and stockpiled at a designated upland site away from any watercourses, rendering them unavailable to enter the stream channel as a result of storm runoff or a high water event.



Figure 10: Ford on an upper Agency Creek tributary; 2-meter stick in the foreground (photo date April 2, 2015)



Figure 11: Ford on an upper Agency Creek tributary (photo date 4/2/2015)

Alternative A – No Action/Existing Network

Direct/Indirect Impacts: Alternative A is a continuation of the current travel management in the 2001 LRMPA decision (USDI BLM 2001), and terms and conditions in the NMFS BiOp (USDC NMFS 2001). This alternative would designate the most extensive network of roads, primitive roads, and motorized trails and low water fords (Table 1-Table 3). This alternative would also have the most extensive network of motorized miles and densities (miles/mile²) in the RHCAs (Table 5); the most extensive network of motorized routes and fords on fish-bearing and potentially fish-bearing streams (Table 6); and the greatest potential for turbidity, sediment delivery, bank erosion, and loss of riparian vegetation and large woody debris. The Middle Lemhi River and Upper Lemhi River watersheds have the greatest number of RHCA road miles (Table 5). The highest BLM road densities are in Upper Lemhi River, Hawley Creek, Timber Creek, and Texas Creek watersheds (Table 5). These existing conditions would be maintained.

Terms and conditions of the NMFS BiOp for the 2001 LRMPA included identification and monitoring of areas where existing and designated OHV routes may adversely affect listed species and critical habitats, and areas in which OHV travel is likely to harass juvenile or adult anadromous salmonids, damage redds, or damage DCH. The NMFS terms and conditions specified that closure of these routes should occur until the adverse effects can be sufficiently

mitigated in a TMP. No routes have been closed in the South Half TMP South Half TMA since the 2001 BiOp. Physical or passive route closures, as described in *Effects Common to All Alternatives* could occur on selected user-created routes that were created since the time of the inventory or are made in subsequent years.

Alternative B – Minimum Network

Direct/Indirect Impacts: Alternative B would designate the least extensive network of roads, primitive roads, motorized trails, and low water fords (Table 1-Table 3). This alternative would also have the least extensive network of motorized miles and densities in the RHCAs (Table 5); the least extensive network of motorized routes and fords in habitat occupied by ESA listed fishes, DCH, and other resident fishes (Table 6-Table 7); and the lowest potential for turbidity, sediment delivery, bank erosion, and loss of riparian vegetation and future large woody debris recruitment.

Other physical or passive route closures, as described in *Effects Common to All Alternatives* could occur on selected user-created routes that were created since the time of the inventory or are made in subsequent years.

Alternative C – Balanced Network

Direct/Indirect Impacts: Alternative C would designate a more extensive network of roads, primitive roads, and motorized trails and low water fords than Alternative B, and less than alternatives A and D (Table 1-Table 3). This alternative would also designate more motorized miles and densities in the RHCAs (Table 5); more motorized routes and fords in habitat occupied by ESA listed and other resident fishes, and DCH (Table 6-Table 8); and more potential for turbidity, sediment delivery, bank erosion, and loss of riparian vegetation and future large woody debris recruitment potential than Alternative B, and less than alternatives A and D.

Other physical or passive route closures, as described in *Effects Common to All Alternatives* could occur on selected user-created routes that were created since the time of the inventory or are made in subsequent years.

Alternative D – Maximum Network

Direct/Indirect Impacts: Alternative D would designate a more extensive network of roads, primitive roads, motorized trails, and low water fords than alternatives C and B, and less than Alternative A (Table 1-Table 3). This alternative would also designate more motorized miles and densities in the RHCAs (Table 5); more motorized routes and fords in habitat occupied by ESA listed fishes, DCH, and other resident fishes (Table 6-Table 8); and more potential for turbidity, sediment delivery, bank erosion, and loss of riparian vegetation and future large woody debris recruitment potential than alternatives B and D, and less than Alternative A.

Other physical or passive route closures, as described in *Effects Common to All Alternatives* could occur on selected user-created routes that were created since the time of the inventory or are made in subsequent years.

Invasive, Non-native Species

Affected Environment

Noxious weed species are non-native, invasive plant species that can germinate under a wide variety of conditions, establish quickly, exhibit fast seedling growth, and out-compete native species for water and nutrients. They can ultimately take over native rangeland and forest habitat and reduce productivity and biological diversity. The State of Idaho currently recognizes 66 species of noxious weeds requiring control measures. Of the 66 species listed, 17 occur on lands managed by the Salmon Field Office (SFO) within the TMP area. Another three species are not listed but require treatment as well. The State listed species occurring within the planning area are black henbane, dalmatian toadflax, field bindweed, hoarycress, houndstongue, Japanese knotweed, leafy spurge, musk thistle, broadleaved (perennial) pepperweed, field (perennial) sowthistle, puncturevine, rush skeletonweed, Russian knapweed, spotted knapweed, saltcedar, Scotch thistle and butter and eggs/yellow toadflax. The other three species not listed include hoary alyssum, bull thistle and Canada thistle.

Many weed species are “colonizer” species, which means they can readily colonize areas that have been previously disturbed or lack plant cover. Noxious weeds often produce numerous seeds which can be transported long distances by wind, wildlife, humans, livestock and water. In general, travel routes are the primary conduit for the spread of non-native invasive plants into natural areas. This is especially apparent on the primitive roads and trails used by a wide variety of recreationists. Isolated weed infestations are often discovered adjacent to primitive roads and trails where weeds seeds carried in mud or trapped in the under carriages of vehicles dislodge from the vehicle and fall to the ground, germinate and become new weed infestations.

The SFO is an active member of the Lemhi Coordinated Weed Management Area (LCWMA), which includes private, county, state, and federal partners. This group has devised a county-wide plan for combating noxious weeds. The highest priorities in Lemhi County are to keep weed-free areas weed-free, prevent the establishment of new species of weeds, and contain the existing populations of leafy spurge and spotted knapweed. The northern portion of the SFO area in the Carmen Creek drainage has been designated a special weed management zone, due to leafy spurge populations, however the treat of these infestations has been greatly reduced by years of integrated control methods including targeted grazing, herbicide use and insect releases. With increased primitive road and trail density, the threat of new weed infestations increases. The most extensive infestations of weeds in the SFO are spotted knapweed and leafy spurge. Both are aggressive invaders capable of dominating the landscape in a variety of habitats. Canada thistle is a prevalent invader in riparian areas of the SFO. Cheatgrass is also present mostly in the northern half of the SFO but is slowly increasing throughout the SFO area. The SFO, in coordination with the LCWMA, continues to employ an integrated approach to weed management on public lands that includes herbicide treatment, biological control, manual control and restoration measures.

Effects Common to All Alternatives

Weed establishment and spread would occur under all alternatives though the degrees of impact would differ somewhat with the amount of road mileage open under the different alternatives. Season of use and type of vehicles used may also have an impact on the amount of weed spread and new establishment.

Alternative A –No Action/Existing Network

Direct/Indirect Impacts: Under the existing management alternative, with the existing network of roads and a potential increase of unauthorized roads it is expected new noxious weed infestations would continue to become established and expand into non-infested areas.

Although most open roads are treated annually or on a rotation basis, the greatest threat comes from machinery coming from outside areas transporting either weed species that are already present or establishment of new weed species infestations that immediately become a high priority for control if or when detected. Based on past recordings of new weed infestations along road corridors, it is safe to say that approximately 1 to 2 acres of new infestations would be detected and treated in the analysis area each year.

Alternative B—Minimum Network

Direct/Indirect Impacts: Under Alternative B, the impacts of new invader weed establishment and spread would be reduced due to the designation of 490 fewer miles of routes that weed carrying vehicles would have access to in the planning area. The construction of 14 miles of non-motorized single track on the CDT would create the potential for new weed infestations in the disturbed area.

Alternative C—Balanced Network

Direct/Indirect Impacts: Under Alternative C, approximately 223 miles of routes would not be designated as open for vehicle use. With 223 fewer miles of routes available under Alternative C, new infestations would likely be less than the 1-2 acres estimated under Alternative A. The construction of 14 miles of non-motorized single track on the CDT would create the potential for new weed infestations in the disturbed area.

Alternative D – Maximum Network

Direct/Indirect Impacts: Under Alternative D the impacts of new invader weed establishment and spread would very similar to the impacts of Alternative A with the reduction of only 62 fewer miles of routes that weed carrying vehicles would have access to in the planning area. The construction of 14 miles of non-motorized single track on the CDT would create the potential for new weed infestations in the disturbed area.

Recreation Use

Affected Environment

Recreation opportunities in the SFO area are diverse, ranging from dispersed use to developed campgrounds with paved surfaces, vault restrooms, water, and other amenities. Recreational activities include hiking, fishing, boating, camping, backpacking, wildlife viewing, mountain biking, OHV riding, scenic driving, hunting, and photography. Most recreation activity occurs during the summer and is concentrated at developed recreation sites occurring along the Salmon River corridor. Dispersed recreation use is most popular in the backcountry during the fall hunting season. Currently, ten outfitters have special recreation use permits to guide hunting, fishing, horse packing, and/or river floating trips.

Although growing, off-highway vehicle use in the SFO area is relatively low compared to more populated regions within the state of Idaho. The current transportation network within the planning area is, for the most part, an inherited system of unplanned roads and trails totaling about 1,079 miles. Many of these routes were created by the passage of vehicles in support of activities such as grazing, mineral exploration and timber production. Routes were often pioneered or constructed in the most direct manner possible to a specific location and for a specific need. Over time, the use of many of these routes has become recreational in nature as ATVs have become an increasingly popular form of recreation and transportation, especially for hunters. In 1988, 8% of respondents to an Idaho Fish and Game (IDFG) survey of elk hunters stated that they always use an ATV as a mode of travel for hunting, while 83% stated that they had never used an ATV for this purpose. In a repeat survey in 2000, 7% of hunters stated that they always used an ATV, while 35% said they never travel by ATV (Sanyal 2002). Inappropriate use of ATVs by some hunters has become a point of contention in recent years, prompting the IDFG to issue special regulations related to the use of ATVs while hunting.

The open topography and low-lying vegetation of the region allows for easy cross-country pedestrian and equestrian access. Game trails and primitive roads are also commonly used as non-motorized trails. The current management situation allows for non-motorized recreation to occur anywhere on public lands.

The planning area includes a portion of the Lewis and Clark National Historic Trail Special Recreation Management Area (LCNHT/SRMA) (Map 10). According to the 2001 amendment to the Lemhi RMP, management of the LCNHT/SRMA shall provide for the education and enjoyment of visitors while simultaneously retaining natural aspects of the historic trail route and protecting the integrity of intact segments of trail tread and associated cultural sites. Approximately 25,600 acres of the LCNHT/SRMA occur within the planning area located primarily in the Kenny Creek, Pattee Creek and Agency Creek Drainages on the northern end of the planning area. The 2001 RMPA limited travel in the LCNHT/SRMA to designated routes. In addition, the 2001 RMPA prohibited OHV use in the Agency, Pattee and Kenny Creek drainages from December 16 through April 30 to address wildlife concerns with the exception of the Agency Creek, Alkali Flat, four miles of the Pattee Creek Roads, and the Warm Springs Wood Road which remain open to motorized use year-round.

The planning area also includes a portion of the Continental Divide National Scenic Trail (CDNST). Approximately 17.5 miles of the CDNST occur within the planning area along with the majority of the 4,600 acre Continental Divide National Scenic Trail Special Recreation Management Area (CDNST/SRMA). The 1987 Lemhi RMP established a trail corridor ¼ mile on either side of proposed CDNST treadway. The 2001 RMPA changed the Visual Resource Management of the CDNST/SRMA to VRM Class I guidelines.

Effects Common to All Alternatives

Recreation opportunities at developed recreation sites would remain unchanged regardless of the alternative implemented. The action of implementing a travel plan would not alter the experience or opportunity for camping, hiking, fishing, or many other activities that are popular at developed recreation sites. Another effect that remains consistent across the alternatives is replacing the “limited to existing” with a “limited to designated” route category would result in a more coherent travel system by eliminating the confusion arising between the two designations. This would also improve the BLM’s ability to properly sign and map a route network, and educate and inform the public accordingly.

For the foreseeable future, the LCNHT/SRMA would likely experience a modest but steady increase in motorized and non-motorized recreational activity. Along with increasing use come the costs associated with maintenance, rehabilitation, signing, and compliance. Under all alternatives, management of the LCNHT/SRMA would provide for the education and enjoyment of visitors while simultaneously retaining natural aspects of the historic trail route and protecting the integrity of intact segments of trail tread and associated cultural sites

Alternative A – No Action/Existing Network

Direct/Indirect Impacts: Alternative A provides the maximum opportunity for motorized access and recreation, allowing continued use 1,079 miles of existing road, primitive road, and trail network. While this alternative provides the maximum opportunity for motorized recreation and access, a sustainable vehicle route network would not be defined, leaving the area susceptible to increasing route proliferation due to unauthorized cross country travel. Additionally, this alternative does not address many of the concerns and recommendations provided during public scoping, work group meetings, and during agency interdisciplinary review. These recommendations could serve to enhance recreation opportunities, reduce user conflicts, and reduce impacts to cultural and natural resources. For example, duplicate or redundant routes would not be eliminated.

Under Alternative A, 14 miles of single track non-motorized trail would not be constructed on the CDNST. Leaving hikers to continue to share this portion of the trail with motorized vehicles and continuing the potential for conflicts.

Alternative B Minimum Network

Direct/Indirect Impacts: Alternative B would result in a reduction of 490 miles of existing roads, primitive roads, and trails open to motorized use within the planning area as compared to the existing network. This alternative would result in a substantial reduction of opportunities

for motorized recreation within the planning area. A significant portion of the routes, however, are user-created routes that would physically not withstand sustained use. Additionally, the reduction in recreation opportunity would not be in direct proportion to the total miles of closure as substantial portion of the reduction would result from closing duplicate or redundant routes or routes with no legal access across private land.

This alternative would also provide for an overall increase in the opportunity and quality of non-motorized recreation pursuits such as hunting on foot, hiking, and wildlife viewing in areas where both motorized and non-motorized recreation opportunities exist.

Alternative B would provide for the construction of 14 miles of non-motorized single track trail along the route of the CDNST within the planning area. This would increase the quality of non-motorized recreation along the trail and respond to a request from a wide variety of trail users to move the trail off of the existing two-track road and on to a dedicated single track trail tread. The improved recreation experience along the single track portion of the trail would likely lead to an increase in use along this section.

Alternative C Balanced Network

Direct/Indirect Impacts: Alternative C would result in a route network of 856 miles of roads, primitive roads and trails open to motorized use. This would be 223 miles fewer than are open in the current route network. This alternative strives to achieve the broadest range of recreation opportunity while reducing user conflicts and providing for public safety.

This alternative provides ample opportunities for motorized recreation in the planning area. The resulting route network would be a sustainable, easily identified system of roads and trails designed to be accessible to a wide variety of the recreating public.

Alternative C would also provide for the construction of 14 miles of non-motorized single track trail along the route of the CDNST within the planning area. This would increase the quality of non-motorized recreation along the trail and respond to a request from a wide variety of trail users to move the trail off of the existing two-track road and on to a dedicated single track trail tread. The improved recreation experience along the single track portion of the trail would likely lead to an increase in use along this section.

Alternative D – Maximum Network

Direct/Indirect Impacts: Under Alternative D there would be an unnoticeable reduction of routes over Alternative A. The route network designated under Alternative D would have only 62 fewer miles than the existing network in Alternative A. Impacts to recreation as a result of this alternative would be very similar to those discussed in Alternative A, with the exception of the construction of 14 miles of non-motorized single track trail along the route of the CDNST. This would increase the quality of non-motorized recreation along the trail and respond to a request from a wide variety of trail users to move the trail off of the existing two-track road and on to a dedicated single track trail tread. The improved recreation experience along the single track portion of the trail would likely lead to an increase in use along this section.

Soil

Affected Environment

The soils within the boundaries of the South Half TMA are diverse and reflect a wide range of ecological communities. Soils within this area occur at various elevations, however most are mollisols or aridisols that have a frigid temperature regime and a xeric moisture regime. These soils are derived from mixed alluvium, alluvium, mixed lacustrine deposits, till, mixed outwash, mixed slope alluvium, colluvium, slope alluvium, mixed colluvium, lacustrine deposits, loess, outwash, and mixed till. The characteristics of these soils vary greatly depending on surface texture, depth, precipitation, rock fragments (both surface and sub-surface), and organic matter content.

The Natural Resource and Conservation Service (NRCS) Custer-Lemhi County Soil Survey has mapped the soils within the South Half TMA. There are 118 soil map units within the South Half TMA that occur where routes have been identified. Of the designated routes 24% of the miles are poorly suited for natural surface roads due to slope, wetness, low strength, stickiness, flooding, sandiness, or ponding. Additionally, 10% miles of the designated routes are severely or very severely vulnerable to erosion from roads due to slope and erodibility. Thirty-one percent of the designated route miles are severely vulnerable to soil rutting.

A majority of the soil map units that are poorly suited for natural surface roads are located in the northern portion of the South Half TMA, as are many of the soil map units that are vulnerable to erosion. Soils near Gilmore summit area are also severely vulnerable to soil erosion when used as natural surfaced roads. Soils that are vulnerable to soil rutting are scattered throughout the South Half TMA.

There are currently 1,079 miles of roads within the South Half TMA. Of these roads, 1% of the miles of roads are graveled, 3% are paved, and 96% are identified as having a natural road surface. In general paved and graveled roads are more stable than are natural surfaced roads. The graveled and paved roads within the South Half TMA are generally in good repair and the soils bordering these roads are also generally stable. The soils of the natural surfaced roads are compacted. Some of the natural surfaced roads within the South Half TMA are stable whereas others exhibit signs of rutting, gulying, or The soils adjacent to the roads are generally in good condition, exhibiting limited erosion and supporting vigorous vegetation, however there are a few areas where erosion is occurring within the footprint of the road and along the shoulders of the road.

Effects Common to All Alternatives

Repeated use by motorized vehicles compact the soil surface when soils are dry or rut the soil when soils are moist, reduce water infiltration, can remove surface vegetation, reduce or impair the function of soil stabilizers (i.e. soil crusts) and increase soil erosion. Areas that are used frequently would generally exhibit more pronounced compaction; in fact it has been observed that soil bulk density increases logarithmically with increasing vehicle passes (Iverson et al. 1981). In areas where vehicles repeatedly travel over the soil, the soil becomes compacted

which limits infiltration, increases runoff, reduces soil moisture content, and limit root activity within the soil profile. Additionally, repeated vehicle use removes surface vegetation and can break up surface aggregates, both of which increase the potential for erosion to occur. Erosion removes surface soils which are generally rich in nutrients essential for plant growth. Removal of essential nutrients limits productivity of native species and ultimately reduces the stability of the soil.

Soils within the footprint of graveled and paved roads and trails and permanently removed from productivity for the life of the road. Soils within the footprint of natural surface roads and trails also have reduced productivity; however the extent is often dependent on use. Roads that experience high use would have little or no productivity, whereas primitive roads that receive low use have higher productivity due to the continued presence of vegetation within a majority of the footprint of the road.

Alternative A – No Action/Existing Network

Under the No Action/Existing Network Alternative 1,079 miles of roads and trails would continue to remain open to motorized vehicle use. Of the 1,031 miles of natural surface roads and trails approximately 261 miles are identified as receiving high use; these roads are generally primitive. Approximately 29 miles of roads designated as open Under the No Action/Existing Network Alternative are rated as severe or very severe for erosion hazard from a road or trail by the NRCS and would continue to be at increased risk to erosion occurring due to vehicle use. Approximately 331 miles of roads designated as open would continue to be vulnerable to soil rutting occurring when soils are moist. These roads should be monitored for indications that maintenance is required to ensure long-term stability of the roads.

Alternative B – Minimum Network

Under the Minimum Network Alternative 589 miles of roads and trails would remain open to motorized vehicle use, a 45% reduction from baseline conditions. Of the miles of roads and trails designated as open, 547 miles occur on natural surface roads; a 44% reduction from baseline conditions. Approximately 236 miles of roads designated as open have been identified to receive high use, a 9% decrease compared to baseline conditions. Approximately 19 miles of roads designated as open Under the Minimum Network Alternative are rated as severe or very severe for erosion hazard from a road or trail by the NRCS and would continue to be at increased risk to erosion occurring due to vehicle use. This is a 34% decrease compared to baseline conditions. Approximately 172 miles of roads designated as open would continue to be vulnerable to soil rutting occurring when soils are moist. This is a 48% decrease from baseline conditions. These roads should be monitored for indications that maintenance is required to ensure long-term stability of the roads.

Of the roads that are closed under this Alternative, 24 miles of roads that are natural surfaced and receive high use would be included. Closing these high use roads would cease continued disturbance from motorized vehicle use. Once vegetation is established on any closed roads, root activity and reintroduction of organic matter would begin to reverse any compaction that has occurred and vegetation cover would help to reduce any erosion that is occurring. Recovery of

these soils however, would take an extended period of time unless mechanical methods are used to close the roads.

Alternative C – Balanced Network

Under the Balanced Network Alternative 856 miles of roads and trails would remain open to motorized vehicle use, a 38% reduction from baseline conditions. Of the miles of roads and trails designated as open, 814 miles occur on natural surface roads; a 21% reduction from baseline conditions. Approximately 247 miles of roads designated as open have been identified to receive high use, a 5% decrease compared to baseline conditions. Approximately 25 miles of roads designated as open Under the Balanced Network Alternative are rated as severe or very severe for erosion hazard from a road or trail by the NRCS and would continue to be at increased risk to erosion occurring due to vehicle use. This is a 14% decrease compared to baseline conditions. Approximately 264 miles of roads designated as open would continue to be vulnerable to soil rutting occurring when soils are moist. This is a 20% decrease from baseline conditions. These roads should be monitored for indications that maintenance is required to ensure long-term stability of the roads.

Of the roads that are closed under this Alternative, 13 miles of roads that are natural surfaced and receive high use would be included. Closing these high use roads would cease continued disturbance from motorized vehicle use. Once vegetation is established on any closed roads, root activity and reintroduction of organic matter would begin to reverse any compaction that has occurred and vegetation cover would help to reduce any erosion that is occurring. Recovery of these soils however, would take an extended period of time unless mechanical methods are used to close the roads.

Alternative D – Maximum Network

Under the Maximum Network Alternative 1,017 miles of roads and trails would remain open to motorized vehicle use, a 7% reduction from baseline conditions. Of the miles of roads and trails designated as open, 974 miles occur on natural surface roads; a 6% reduction from baseline conditions. Approximately 260 miles of roads designated as open have been identified to receive high use, the same as baseline conditions. Approximately 27 miles of roads designated as open Under the Maximum Network Alternative are rated as severe or very severe for erosion hazard from a road or trail by the NRCS and would continue to be at increased risk to erosion occurring due to vehicle use. This is a 7% decrease compared to baseline conditions. Approximately 314 miles of roads designated as open would continue to be vulnerable to soil rutting occurring when soils are moist. This is a 5% decrease from baseline conditions. These roads should be monitored for indications that maintenance is required to ensure long-term stability of the roads.

Of the roads that are closed under this Alternative, 1 mile of road that is natural surfaced and receives high use would be included. Closing these high use areas would cease continued disturbance from motorized vehicle use. Once vegetation is established on any closed roads, root activity and reintroduction of organic matter would begin to reverse any compaction that has occurred and vegetation cover would help to reduce any erosion that is occurring. Recovery of

these soils however, would take an extended period of time unless mechanical methods are used to close the roads.

Tribal Treaty Rights and Interests

Affected Environment

The entire Salmon Field Office area falls within the traditional subsistence realm and occupation sphere of the Shoshone-Bannock Tribes as established by the Indian Claims Commission (ICC) in the 1950s and 1960s. Article IV of the Fort Bridger Treaty of July 3, 1868 (15 Stat. 673) specifically reserves the right of the Shoshone-Bannock Tribes to hunt, fish, and gather natural resources on the “unoccupied land,” now understood to be federal lands. Today, members of the Shoshone-Bannock Tribes continue to exercise reserved treaty rights within the Salmon Field Office area.

The BLM has a Federal Trust responsibility to honor treaty rights and to make land management decisions that do not directly or indirectly infringe or abrogate treaty rights. Part of the BLM’s trust responsibility entails coordinating openly and candidly with tribal governmental entities in government-to-government consultation when proposed actions have the potential to impact access to or exercise of treaty reserved interests (clarified in Executive Order 13175, November 6, 2000). The BLM is mandated to provide for this while still meeting its multiple use land and resource management responsibilities to all of the nation’s people.

Effects Common to All Alternatives

The BLM’s trust responsibilities to consider resources critical in the practice of Shoshone-Bannock Tribal treaty rights has contributed heavily in the resulting need for designated travel management as a means of curtailing resource impacts caused by un-managed motorized travel over public land. Closed or seasonally closed routes in each of the alternatives present various limitations to motorized treaty rights access. Still, access by way of non-mechanized means would remain over the entire planning area under all alternatives.

Under all alternatives, the BLM would continue to provide for Tribal access to exercise treaty rights and ceremonial activities.

Alternative A – Existing Management

Direct/Indirect Impacts:

No changes to current Salmon Field Office management of roads and trails would take place under Alternative A. The change in limitations from “Existing” to “Designated” routes would essentially result in the same impacts as specified in the 2001 amendment to the Lemhi RMP.

Alternative B Minimum Network

Direct/Indirect Impacts: Access issues are of prime importance in relation to the Shoshone-Bannock Tribes’ reserved off-reservation treaty rights. Alternative B would result in a substantial reduction in miles of designated motorized roads across the planning area for non-

treaty rights activities. Alternative B would further close a limited number of stream fords, redundant paralleling roads, routes blocked by private lands, and specific spur roads that exist within the planning area. There would be a net decrease in the number of alternative routes available from which to access the same areas. There would also be a net decrease in proposed designated OHV access routes. Substantial reduction in the number of road miles available for use by motorized means would be expected to benefit wildlife habitat and hunting success. Fewer motorized vehicles over the landscape would also yield a heightened sense of “remoteness” and seclusion, conducive to aspects of treaty rights and other traditional or ceremonial practices by tribal members. Access to all of the public land within the planning area is of course open by non-mechanized means, as well.

Alternative C Balanced Network

Direct/Indirect Impacts: Total miles designated for motorized travel under Alternative C would be increased from those outlined in Alternative B. OHV access would remain similar to Alternative A, also increased from that of Alternative B. As with other alternatives, non-mechanized treaty rights access would be afforded over all of the public lands within the planning area.

Alternative D Maximum Network

Direct/Indirect Impacts: Alternative D would closely match impacts described for Alternative A, Existing Management.

Vegetation

Affected Environment

The travel management planning area includes eight classes of land cover as defined in BLM ID-IM 2009-053. Using the Northwest ReGap (USDI-BLM, 2009), these classes are Forest and Woodland (11.5%), Mesic Shrubland and Grassland (0.8%), Semi-desert Shrubland and Grassland (85.4%), High Montane Vegetation (1.0%), and Sparse Vegetation and Natural Barren Areas (0.1%). Agriculture, Urban and Other Developed Lands, and Open Water are additional categories that are not discussed because they are not considered to be vegetative communities for these purposes (about 1.2% of the area). A plant “common to scientific” name crosswalk is provided in Attachment 3.

Elevation, slope, aspect, precipitation and soil type are the primary determinants of vegetative cover type. In general, the foothills and the lower half of the mountains are rangelands. With increases in elevation, rangelands give way to woodlands and forest. The ecotone between range and forest moves up or down slope depending on aspect. Drier south and west aspects support rangeland communities to higher elevations, while north and east slopes support forested communities at lower elevations into the valley.

Forest & Woodland

The Forest and Woodland land cover type occupies about 11.5% of BLM-administered land within the assessment area. Forest and woodland acres are found primarily at higher elevations and on more mesic sites on north and east facing slopes. A wide elevation range promotes a diverse mixed conifer forest. The higher elevations of the mountains are forested with Douglas-fir, lodgepole pine, limber pine, Engelmann spruce, subalpine fir, and whitebark pine. Numerous aspen stands and two species of cottonwood, black cottonwood and narrowleaf cottonwood, contribute to structural diversity and canopy cover.

Understory species found in these communities may include bog blueberry, dwarf bilberry, snowberry, kinnikinnik, heartleaf arnica, raceme pussytoes, lupine, Indian paintbrush, fleabane, groundsel, pinegrass, Idaho fescue, and bluebunch wheatgrass in the more open areas. These species are limited mostly by sunlight availability (a function of forest canopy cover) and soil characteristics, such as depth and nutrient availability.

Scattered, isolated patches of curl-leaf mountain mahogany are found on rocky slopes and ridges in the planning area. It provides year-round cover and forage for deer and is a crucial source of winter forage for many wildlife species.

Upland plant composition along the forest/mountain big sagebrush ecotone, and within mid-elevation aspen stands within the planning area, is changing toward a more conifer-dominated community. Aerial photographs show the spread of coniferous forest species downslope onto benches previously dominated by mountain big sagebrush and cool season grasses. The spread of primarily Douglas-fir can be attributed, in part, to the reduced frequency of wildfire.

Mesic Shrubland & Grassland

The Mesic Shrubland and Grassland cover type, comprising about 0.8% of the of BLM-administered land in the assessment area, includes natural vegetation dominated or characterized by shrub and/or herb species requiring environmental conditions of moderate moisture and temperature or which are only partially protected against desiccation (USDI-BLM, 2009). For the assessment area most of the vegetation that falls in this type is considered riparian and is discussed in the riparian section of this document.

Semi-desert Shrubland & Grassland

The Semi-desert Shrubland and Grassland cover type includes natural vegetation dominated or characterized by shrub and/or herb species having structural or functional adaptations to prevent water loss by evaporation (USDI-BLM, 2009). The majority of the assessment area (85.4%) is mapped as this cover type. This land cover type is comprised of a number of ecological site types.

Much of the semi-desert type is dominated by Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) with a bluebunch wheatgrass or Sandberg bluegrass (*Poa secunda*) dominated understory. As elevation and amount of precipitation increases, there is a shift to

mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) with an Idaho fescue (*Festuca idahoensis*) dominated understory. Within these two cover types exists a mix of other vegetation types, such as threetip sagebrush (*Artemisia tripartita*) with an understory of Idaho fescue and low sage-brush (*Artemisia arbuscula*) with bluebunch wheatgrass (*Pseudoroegneria spicata*). These two types tend to occur in transition areas between the Wyoming big sagebrush sites and the higher elevation, moister sites that support mountain big sagebrush. Other grasses typically found within this cover type include squirreltail (*Elymus elymoides*), prairie Junegrass (*Koeleria macrantha*), needle and thread (*Hesperostipa comata*), and Indian ricegrass (*Achnatherum hymenoides*). Forbs commonly found within this cover type include long leaf (*Phlox longifolia*), hood (*Phlox hoodii*), and flowery phlox (*Phlox multiflora*), low pussytoes (*Antennaria dimorpha*), rosy pussytoes (*Antennaria rosea*), Lewis flax (*Linum lewisii*), milkvetches (*Astragalus* sp.), locoweeds (*Oxytropis* sp.), pale agoseris/mountain dandelion (*Agoseris glauca*), tailcup (*Lupinus caudatus*) and velvet lupine (*Lupinus leucophyllus*), granite prickly phlox (*Linanthus pungens*), sego lily (*Calochortus nuttallii*), cushion buckwheat (*Eriogonum ovalifolium*), sulphur-flower buckwheat (*Eriogonum umbellatum*), and parsnipflower buckwheat (*Eriogonum heracleoides*), Franklin's sandwort (*Arenaria franklinii*), King's sandwort (*Arenaria kingii*), low larkspur (*Delphinium bicolor*), nailwort (*Paronchia* sp.), maiden blue eyed mary (*Collinsia parviflora*), fernleaf biscuitroot (*Lomatium dissectum*), nineleaf biscuitroot (*Lomatium triternatum*), and many others.

Ecological condition and rangeland health is generally correlated with slope; the gentler hills and flats near the valley bottom tend to be in fair condition, and the steeper hills and higher elevations tend to be in good to excellent condition. These shifts in community composition are departures from what is believed to have historically existed on these types of rangelands.

These communities also have a biotic crust that is comprised of mosses, lichens, and algae that form a protective covering for the soil between the larger plants. It functions as living mulch for desert soils, helping to catch and retain moisture and prevent overland runoff. In addition, some species act as nitrogen fixers, adding significant amounts of that critical nutrient to the soils. Soil biological crusts develop on most soil types and become more abundant, and important, as precipitation decreases. From general observations, the condition of the biotic crust in the planning area correlates with general range condition; impacts to biological crusts vary with time of year and intensity and duration of livestock grazing.

High Montane Vegetation

The High Montane Vegetation cover type comprises approximately 1.0% of the BLM administered land in the planning area. It includes natural vegetation dominated or characterized by shrub and/or herb species having structural or functional adaptations to survive cold temperatures and resist frost damage (USDI-BLM, 2009). Most of this cover type in the assessment area is found on lands managed by the USFS. No roads are currently mapped in this cover type on BLM managed lands.

Sparse Vegetation & Natural Barren Areas

The Sparse Vegetation and Natural Barren Areas land cover type, comprising approximately 0.1% of the BLM administered land in the planning area, includes natural vegetation dominated or characterized by shrub, herb, or nonvascular plant species having structural or functional adaptations for living on rock surfaces or on rocky substrates. Vegetation is scattered or nearly absent; total vegetative cover, excluding crustose lichens, is generally 1-10% at the peak of the growing season. Vegetation may include low-growing plants such as Hood's phlox, nailwort, and low pussytoes. Natural areas (undisturbed by man) where vegetation is generally less than 1% of the surface area are included in this category (USDI-BLM, 2009). These sites are rare in the assessment area; the rock faces above timberline represent most of the area considered in the land cover type. No roads are currently mapped in this cover type on BLM managed lands.

Effects Common to All Alternatives

Travel routes and motorized vehicle use have variable impacts on vegetative cover. A one-time occurrence of vehicle traffic would have negligible (lowest level of detection and causes very little or no disturbance) effects to most vegetation (either on the route or alongside the route). Occasional disturbance could have minor (slight but detectable, with some perceptible effects of disturbance) effects, displacing species sensitive to soil compaction and defoliation. Frequent, repeated use may have moderate (readily apparent and measureable) effects, displacing most native perennial vegetation with annual grasses and weedy forbs. Intense, constant use results in an eroded state supportive of only the most disturbance-tolerant vegetation (Goran et al. 1983).

Impact timing, duration (short or long-term) and intensity drives the level effect to vegetation. Impact intensity (degree or level of effect) to vegetation can be life-form specific (for example, shrub vs. grass) and dependent on factors such as traffic volume, season and timing of use, and the amount of vegetative cover along travel routes. Individual plants, or groups of plants, are directly affected by vehicle disturbance in several ways. Plants found in wetland soils, or those with woody stems (*e.g.*, sagebrush), would be more susceptible to long-term adverse effects than would herbaceous, non-woody vegetation (*e.g.*, Sandberg bluegrass) found on drier, more stable soils. Soil compaction from vehicle use affects plant growth by reducing moisture availability and precluding adequate taproot penetration to deeper soil horizons. Above-ground portions of plants can be reduced through breakage or crushing, potentially leading to reductions in photosynthetic capacity, poor reproduction, and diminished litter cover. Likewise, blankets of fugitive dust raised by traffic can disrupt photosynthetic processes, thereby suppressing plant growth and vigor, especially along more heavily travelled routes. In turn, reduced vegetation cover may permit invasive and/or non-native plants, particularly shallow-rooted annual grasses and early successional species capable of rapid establishment and growth, to spread and dominate the plant community, thus diminishing overall endemic biodiversity (Ouren et al. 2007).

Also common to the local and regional landscape are impacts from subdivision and development, agricultural conversion, mining, invasive plants, grazing, fire, and so forth. Some of these activities, such as subdivision and development, agricultural conversion, and mining, result in a decrease in cover of native vegetation, although over time, some of these lands are reclaimed either naturally or through active reclamation planning. Some activities, such as grazing and fire, do not negatively affect native vegetative communities provided correct grazing management is in place and weeds do not invade and come to dominate the landscape. Both locally and regionally, native plant communities are most threatened by competition from invasives such as cheatgrass (*Bromus tectorum*), medusahead wildrye (*Taeniatherum caput-medusae*), spotted knapweed (*Centaurea stoebe*), rush skeletonweed (*Chondrilla juncea*), leafy spurge (*Euphorbia esula*). Pro-active, well-organized, and well-funded integrated weed management programs can help reduce negative impacts from invasive plants both locally and regionally. Invasive species and their impacts are further discussed in the Invasive, Non-native Species section of this document.

Within the South Half TMP area, no roads are mapped within the High Montane Vegetation and Sparse Vegetation and Natural Barren Areas land cover types; impacts would not occur in these cover types.

Alternative A – No Action/Existing Network

Under Alternative A, impacts to the planning area vegetation would be similar as those under the existing road network (see *Effects Common to All Alternatives* section, above). Approximately 1,079 miles of existing routes would be designated. Users would continue to utilize existing roads, primitive roads and trails, although use would increase over time as population increases. Average road density across the area would be 2.2 miles per square mile (mi/mi²). About 85% (917.1 of 1,079 miles) of all routes (roads, primitive roads and trails) would occur in the Semi-desert Shrubland and Grassland cover type; of these, about 79.6% (729.7 of 917.1 miles) of roads in this cover type would be primitive roads. Effectively, 67.6% (729.7 of 1,079 total miles) of all routes under this alternative would be primitive roads in the Semi-desert Shrubland and Grassland cover type (Table 2); most roads would be two-track type roads in sagebrush habitat.

Native vegetation would continue to exist along roadsides, in the middle of many primitive roadways, and along trails. Plants persisting in tire tracks would continue to be driven over and would be damaged by tires and pressure exerted by vehicle weight and traction. Some low-growing herbaceous plant species may persist over time, while more delicate woody species would remain suppressed or excluded from roadbeds due to repeated vehicle related damage. Plants existing outside of roads, improved roads and trails would be driven over as necessary to turn vehicles around, or by hunters retrieving game, but long-term effects would be minimal. Redundant routes, roads crossing sensitive or erosive areas, and roads identified as safety hazards or with conflict/legal access issues would not be closed and reclaimed; they would remain mostly unvegetated due to continued vehicle traffic. Mileage by travel route type (road, primitive road, and trail) within each of the vegetative cover types would not change, as shown in Table 10, below.

Table 10: Alternative A existing travel routes by vegetative land cover type

Alternative A: No Action / Existing Network	Road (mi)	Primitive Rd (mi)	Trail (mi)	Total (mi)	Land Cover Class Area (mi ²)	Density (mi/mi ²)
Forest and Woodland	4.4	48.1	10.8	63.3	57	1.1
High Montane Vegetation	0.0	0.0	0.0	0.0	4.8	0.0
Mesic Shrubland and Grassland	0.6	4.5	1.8	6.9	3.9	1.8
Semi-desert Shrubland and Grassland	172.4	729.7	15.0	917.1	423.0	2.2
Sparse Vegetation and Natural Barren Areas	0.0	0.0	0.0	0.0	0.7	0.0
Other*	47.7	43.7	0.1	91.5	5.9	15.5
Total	225.1	826.0	27.7	1078.8	495.3	2.2

* These miles consist of state and federal highways, and some primitive roads, identified as “other developed lands” by Northwest ReGap within BLM managed lands.

Alternative B – Minimum Network

Direct/Indirect Impacts: Under Alternative B, 490.2 fewer total travel route miles would be designated (a 45.4% reduction), compared to Alternative A, No Action/Existing Network (1078.8 total miles). Average overall road density would be reduced 55% compared to existing management; overall miles of road per square mile would be reduced to 1.2 from 2.2.

Non-designated routes would be left to natural revegetation or could be rehabilitated with the appropriate BLM-approved seed mixture. Using an average approximate 10 foot disturbance footprint width, approximately 594 total acres (490.2 miles x 5,280 feet x 10 feet average width = 43,560 feet² per acre) of existing roadbed would reclaim naturally or through BLM initiated rehabilitation. Both native and non-native species would eventually colonize road surfaces, resulting in a minor beneficial effect to vegetative cover across the planning area. Because fewer roads would be designated, there would be less opportunity for the public to utilize the 300 foot buffer tied to existing motorized travel routes, resulting in an overall minor beneficial effect to native vegetation existing within the 300 foot route buffer. Plants existing outside of roads, improved roads or trails would be still be driven over as necessary to turn vehicles around, or by hunters retrieving game, but adverse effects would be negligible and short-term.

The largest change from existing management would occur in the Semi-desert Shrubland and Grassland vegetative cover type; there would be approximately about 437.9 fewer miles of road, a 47.7% reduction from existing management in this cover type, resulting in a minor long-term beneficial effect in this cover type, resulting in the restoration, over time, of 510 acres of this cover type. Most, about 98% (428.2 of 437.9 miles), of the reduction in this cover type would occur on routes identified as “primitive roads.”

Of all designated routes in Alternative B, 81.4% (479.2 mi) would occur in the Semi-desert Shrubland and Grassland cover type; of these, 62.9% (301.5 mi) would primitive roads, 35.1% (168.4mi) would be roads, and 1.9% (9.3 mi) would classify as trails. Of all routes (588.6 mi total), 51.2% would be primitive roads and 28.6% would be roads in the Semi-desert Shrubland and Grassland cover type.

Changes to Forest and Woodland (24.4 fewer miles, a 38.5% reduction in this type), Mesic Shrubland and Grassland (2.4 fewer miles, a 34.8% reduction in this type), and the “Other” category (25.5 fewer miles, a 27.9% reduction in this type) would be a negligible long-term beneficial effect to the remaining cover types because of the relatively small reduction (in terms of number of miles) in route designation in those cover types. Alternative B travel route designations and mileage by vegetative cover type are shown in Table 11, below.

Table 11: Alternative B travel rout designations be vegetative land cover type

Alternative B: Minimum Network	Road (mi)	Primitive Rd (mi)	Trail (mi)	Total (mi)	Land Cover Class Area (mi²)	Density (mi/mi²)
Forest and Woodland	4.4	27.9	6.6	38.9	57.0	.7
High Montane Vegetation	0.0	0.0	0.0	0.0	4.8	0.0

Alternative B: Minimum Network	Road (mi)	Primitive Rd (mi)	Trail (mi)	Total (mi)	Land Cover Class Area (mi²)	Density (mi/mi²)
Mesic Shrubland and Grassland	0.6	2.5	1.4	4.5	3.9	1.2
Semi-desert Shrubland and Grassland	168.4	301.5	9.3	479.2	423.0	1.1
Sparse Vegetation and Natural Barren Areas	0.0	0.0	0.0	0.0	0.7	0.0
Other*	47.6	18.4	0.0	66.0	5.9	11.2
Total	221.0	350.3	17.3	588.6	495.3	1.2

* These miles consist of state and federal highways, and some primitive roads, identified as “other developed lands” by Northwest ReGap within BLM managed lands.

Alternative C – Balanced Network

Direct/Indirect Impacts: Under Alternative C, 222.1 fewer total travel route miles would be designated (a 20.5% reduction), compared to Alternative A, No Action/Existing Network (1078.8 total miles). Averaged road density would be reduced by about 23% compared to existing management; overall miles of road per square mile would be reduced to 1.7 from 2.2 under existing management.

Non-designated routes would be left to natural revegetation or would be rehabilitated with the appropriate BLM-approved seed mixture. Using an average approximate 10 foot disturbance footprint width, approximately 269 total acres (222.1 miles x 5,280 feet x 10 feet average width = 43,560 feet² per acre) of existing roadbed would reclaim naturally or through BLM initiated rehabilitation. Both native and non-native species would eventually colonize road surfaces, resulting in a minor beneficial effect to vegetative cover across the planning area. Because fewer roads would be designated, there would be less opportunity for the public to utilize the 300 foot buffer tied to existing motorized travel routes, resulting in an overall minor beneficial effect to native vegetation existing within the 300 foot route buffer. Plants existing outside of roads, improved roads or trails would be still be driven over as necessary to turn vehicles around, or by hunters retrieving game, but adverse effects would be negligible and short-term.

The largest change from existing management would occur in the Semi-desert Shrubland and Grassland vegetative cover type. There would be 200 fewer miles of road, a 21.8% reduction in

this cover type. This would result in a minor long-term beneficial effect and, over time, restoration would occur on 242 acres. Most (98% or 196.1 of 200 miles) of the reduction in this cover type would occur on roads identified as “primitive.”

Of all designated routes, 83.7% (717.1 of 856.7) would occur in the Semi-desert Shrubland and Grassland cover type. About 74.4% (533.6 of 717.1 miles) of routes would primitive roads, 23.8% (170.8 of 717.1 miles) would be roads, and 1.7% (12.7 of 717.1 miles) would be trails in the Semi-desert Shrubland and Grassland cover type. Under this alternative, 62.3% (533.6 of 856.7 miles) of all routes would be primitive roads in the Semi-desert Shrubland and Grassland cover type; about 19.9% of all routes would be designated roads in this cover type.

Changes to Forest and Woodland (7.4 fewer miles, a 11.7% reduction in this type), Mesic Shrubland and Grassland (1.4 fewer miles, a 20.3% reduction in this type), and the “Other” category (13.3 fewer miles, a 14.5% reduction in this type) would be a negligible long-term beneficial effect to the remaining cover types because of the relatively small reduction (in terms of miles) in route designation in those cover types. Alternative C travel route designations and mileage by vegetative cover type are shown in Table 12, below.

Table 12: Alternative C travel route designations by vegetative land cover type

Alternative C: Balanced Network	Road (mi)	Primitive Rd (mi)	Trail (mi)	Total (mi)	Land Cover Class Area (mi ²)	Density (mi/mi ²)
Forest and Woodland	4.4	42.0	9.5	55.9	57.0	1.0
High Montane Vegetation	0.0	0.0	0.0	0.0	4.8	0.0
Mesic Shrubland and Grassland	0.6	3.5	1.4	5.5	3.9	1.4
Semi-desert Shrubland and Grassland	170.8	533.6	12.7	717.1	423.0	1.7
Sparse Vegetation and Natural Barren Areas	0.0	0.0	0.0	0.0	0.7	0.0
Other*	47.7	30.5	0.0	78.2	5.9	13.3
Total	223.5	609.6	23.6	856.7	495.3	1.7

* These miles consist of state and federal highways, and some primitive roads, identified as “other developed lands” by Northwest ReGap within BLM managed lands.

Alternative D – Maximum Network

Direct/Indirect Impacts: Under Alternative D, approximately 61.4 fewer total travel route miles would be designated (a 5.7% reduction), compared to Alternative A, No Action/Existing Network (1078.8 total miles). Averaged road density (mi/mi²) would be 2.1, which is similar to existing management (2.2 (mi/mi²)).

Non-designated routes would be left to natural revegetation or would be rehabilitated with the appropriate BLM-approved seed mixture. Using an average approximate 10 foot disturbance footprint width, 74.4 total acres (61.4 miles x 5,280 feet x 10 feet average width = 43,560 feet² per acre) of existing roadbed would reclaim naturally or through BLM initiated rehabilitation. Both native and non-native species would eventually colonize road surfaces, resulting in a minor beneficial effect to vegetative cover across the planning area. Because only slightly fewer roads would be designated, there would be only slightly less opportunity for the public to utilize the 300 foot buffer tied to existing motorized travel routes, resulting in a negligible beneficial effect to native vegetation existing within the 300 foot route buffer. Plants existing outside of roads, improved roads or trails would be still be driven over as necessary to turn vehicles around, or by hunters retrieving game, but adverse effects would be negligible and short-term.

The largest change from existing management would occur in the Semi-desert Shrubland and Grassland vegetative cover type. There would be approximately 55 fewer miles of road, a 6% reduction in this cover type compared to the existing condition. This would result in a minor long-term beneficial effect and, over time, restoration would occur on 67 acres. Most (96.9% or 53.3 of 55 miles) of the reduction in this cover type would occur on roads identified as “primitive.”

Of all designated routes, 84.7% would occur in the Semi-desert Shrubland and Grassland cover type. About 78.5% (676.4 of 862.1 miles) of routes would primitive roads, 20% (172.4 of 862.1 miles) would be roads, and 1.5% (13.3 of 862.1 miles) would be trails. Under this alternative, 66.5% (676.4 of 1017.4 miles) of all designated routes would be primitive roads in the Semi-desert Shrubland and Grassland cover type; about 16.9% of all routes would be designated roads in this cover type.

Changes to Forest and Woodland (3.6 fewer miles, a 5.7% reduction in this type), Mesic Shrubland and Grassland (0.5 fewer miles, a 7.2% reduction in this type), and the “Other” category (2.3 fewer miles, a 2.5% reduction in this type) would be a negligible long-term beneficial effect to the remaining cover types because of the relatively small reduction (in terms of miles) in route designation in those cover types. Alternative D travel route designations and mileage by vegetative cover type are shown in Table 13, below.

Table 13: Alternative D travel route designations by vegetative land cover type

Alternative D: Maximum Network	Road (mi)	Primitive Rd (mi)	Trail (mi)	Total (mi)	Land Cover Class Area (mi ²)	Density (mi/mi ²)
Forest and Woodland	4.4	44.7	10.6	59.7	57.0	1.0

Alternative D: Maximum Network	Road (mi)	Primitive Rd (mi)	Trail (mi)	Total (mi)	Land Cover Class Area (mi ²)	Density (mi/mi ²)
High Montane Vegetation	0.0	0.0	0.0	0.0	4.8	0.0
Mesic Shrubland and Grassland	0.6	4.1	1.7	6.4	3.9	1.6
Semi-desert Shrubland and Grassland	172.4	676.4	13.3	862.1	423.0	2.0
Sparse Vegetation and Natural Barren Areas	0.0	0.0	0.0	0.0	0.7	0.0
Other*	47.7	41.4	0.1	89.2	5.9	15.1
Total	225.1	766.6	25.7	1017.4	495.3	2.1

* These miles consist of state and federal highways, and some primitive roads, identified as “other developed lands” by Northwest ReGap within BLM managed lands.

Continental Divide Trail Construction

The fourteen miles of non-motorized trail construction between Lemhi Pass and Goat Mountain would result in disturbance and removal of vegetation on 3.4 acres (14 miles of two-foot trail width), primarily in the Forest and Woodland cover type, although where the canopy opens up, mountain big sagebrush or subalpine plant communities would be impacted. Most impacts, however, would occur within the Forest and Woodland cover type. Impacts would include the removal of vegetation to create a trailbed-type surface; in some cases existing cattle or wildlife trails could be incorporated, reducing the creation of newly disturbed areas.

Threatened/Endangered Plants, Sensitive Plants

Affected Environment

In accordance with national policy (USDI-BLM Manual 6840), the Idaho BLM State Director has a Sensitive Species List. Information on sensitive plants is presented by species and then by Idaho BLM vegetation class. A plant “common to scientific” name crosswalk is provided in Attachment 3. Although no ESA listed plant species occur on SFO-managed lands, nine sensitive plant species, some with more than one known population, have been documented within 300 feet of an existing management route within the TMP planning area. These are the

Alkali Primrose (*Primula alcalina*), Hoary Willow (*Salix candida*), Lemhi Milkvetch (*Astragalus aquilonius*), Lemhi Penstemon (*Penstemon lemhiensis*), Park Milkvetch (*Astragalus leptaleus*), Salmon Twin Bladderpod (*Physaria didymocarpa* var. *lyrata*), Two-grooved Milkvetch (*Astragalus bisulcatus* var. *bisulcatus*), and Yellow Sedge (*Carex flava*).

Alkali Primrose is known from alkaline spring-fed stream systems in east-central Idaho in Custer and Lemhi counties; within the TMP area, it exists in the Birch Creek, Texas Creek, Eighteenmile Creek and Brazeau Springs areas. Wetlands associated with alkali primrose are unique due to the relatively stable spring-fed hydrology and the strongly alkaline chemistry. Elzinga (2003) describes a number of efforts to locate additional populations and states that it appears restricted to constantly sub-irrigated areas; primrose tend to remain moist to saturated throughout the year. Most understory and meadow areas are dominated by various graminoids, primarily *Carex* spp. A number of different geomorphic surfaces (wet, dry and fen hummocks, low islands, etc.) may support alkali primrose, all of which are associated with wetlands. Identified threats include potential competition from invasive species, such as Canada thistle (*Cirsium arvense*), quackgrass (*Elymus repens*), creeping meadow foxtail (*Alopecurus arundinaceus*), and black henbane (*Hyoscyamus niger*), herbivory during flowering, and direct injury to plants or habitat from trampling. Other identified threats include dewatering of habitat and trampling damage due to campsite activity in Birch and Summit Creek campgrounds. Roads have been constructed through alkali primrose populations at Birch Creek, Summit Creek, and Texas Creek, which may have eliminated individuals and altered hydrology. Three populations are known to exist within 300 feet of a currently existing route within the TMP planning area.

Hoary Willow is a low to medium sized shrub found in peatland wet meadows and swamps; in east-central Idaho, it occurs in sub-irrigated alkaline meadows in moist to wet microsites, often where substrates were unstable due to upwelling groundwater. It is rarely found immediately on the banks of spring-fed streams. Identified threats include competition from weed species occurring in alkaline fen sites (Canada thistle, quackgrass, creeping meadow foxtail, and black henbane), possibly herbivory, and trampling by recreationists. Three populations are known to exist within 300 feet of currently existing routes within the TMP planning area.

Lemhi milkvetch is a perennial forb found in semi-desert shrublands and grasslands with encapsulated barren areas. It can be found on dry slopes of less than 30 degrees, comprised of talus, in washes and on flats among alluvial debris. Southern aspects are common, although plants have been found on nearly every aspect as well as on flats; the soils are usually gravelly and sandy, but clay-based soils also provide suitable habitat. Associated plant species include Wyoming big sagebrush, shadscale (*Atriplex confertifolia*), basin wildrye (*Leymus cinereus*), and Sandberg bluegrass. Threats include competition from cheatgrass, possibly trampling by livestock, although pods have been known to accumulate in footprints of cattle on steep slopes, OHV use, particularly in washes, and mining or exploration activities. Six populations are known to exist within 300 feet of currently existing routes within the TMP planning area.

Lemhi penstemon is a short lived perennial found on early seral habitats in open forest/woodlands, mesic shrublands and grasslands, or semi-desert shrublands and grasslands.

Lemhi penstemon may also be found in graminoid patches under sparse forests of ponderosa pine or Douglas-fir. It occurs in a wide elevational range (3,200 to 8,100 ft.); the most common habitat is mountain big sagebrush/bluebunch wheatgrass openings in sparse Douglas-fir stands, but is also found in other sagebrush/grassland types. Soils are usually shallow and can be clay to sandy loams with coarse rocky components. Threats include roadside weed infestations (primarily spotted knapweed), roadside application of herbicide, herbivory when plants are flowering (particularly deer), livestock impacts are less understood and cattle appear not to prefer the plant over other species present. Timber harvest activities may impact Lemhi Penstemon through mortality caused by substrate alteration during road and skid trail construction. The plant's shallow root system make is susceptible to even minimal traffic. Roadside populations are vulnerable to road maintenance (grading, re-contouring, and widening); plants on state and county roads receive no protection. At least four populations are known to exist (unmapped populations likely exist) within 300 feet of currently existing routes within the TMP planning area.

Park Milkvetch is a delicate perennial forb that occupies mesic sites of riparian areas, often on the ecotone between upland sagebrush /grass communities and saturated sedge-dominated communities. Soils are often alkaline loams and are often dry at the surface by mid-summer, but remain moist throughout the growing season. Plants commonly found in association and Kentucky bluegrass (*Poa pratensis*), Baltic rush (*Juncus baltica*), and sometimes geyer willow (*Salix geyeriana*) and booth willow (*Salix boothii*). Threats include competition from Canada thistle; grazing impacts are unknown. Because hydrological requirements are fairly narrow (neither very wet nor dry), the plant would be susceptible to changes in hydrology that would drastically increase or decrease soil moisture. Two populations are known to exist within 300 feet of a currently existing route within the TMP planning area.

Salmon Twin Bladderpod is a perennial found in sparsely vegetated habitats and natural barren areas. These areas mainly consist of south-facing slopes on barren knolls, rock outcrops, and scree and talus at mid elevations interspersed within semi-desert shrublands. Soils are generally gravelly to stoney and soil surface rock cover may be up to approximately 80%. Parent material is Challis volcanics and can be andesite, latite and rhyolite flow material. Commonly associated plant species include bluebunch wheatgrass, cheatgrass, Douglas' dustymaiden (*Chaenactis douglasii*), cordilleran/ silverleaf phacelia (*Phacelia hastata*), and tufted evening primrose (*Oenothera caespitosa*). Roadside habitat, where deeper soils and water collect below talus slopes, creates Salmon twin bladderpod and Basin big sagebrush associations (Craig 1992; Craig and Craig 1996). Threats include competition from cheatgrass and spotted knapweed, incidental trampling by livestock, and road building and/or maintenance and mining exploration. Four populations are known to exist within 300 feet of currently existing routes within the TMP planning area.

Two-grooved Milkvetch is a course, stout, erect, clump-forming perennial forb that occupies prairies, plains, foothills and bottomland sites. It is often on barren sites with selenium-rich soils and where alkaline; Idaho populations are more common in moist swales, bottomlands and springs. Common associated species include western wheatgrass (*Pascopyrum smithii*), Baltic rush, basin wildrye, greasewood and shrubby cinquefoil (*Dasiphora fruticosa*).

Threats include cheatgrass and water developments. Grazing has little direct impact due to unpalatability, although heavy grazing may encourage establishment of weeds that could compete with the plant. One population is known to exist within 300 feet of currently existing routes within the TMP area; these routes would be designated under each alternative.

Yellow Sedge is a grass-like plant that can be found in boggy or swampy places and along the shores of lakes, wet meadows and fens. It can be found throughout the boreal regions of North America and in the US, extending south into north east Washington, northwestern Montana and central Idaho. One population is known to exist within 300 feet of a currently existing route within the TMP planning area.

Effects Common to All Alternatives:

Effects to sensitive plant species that are common to all alternatives are similar to those described in the vegetation “effects common to all alternatives” section above (page 68). Designated route use could directly damage sensitive plants that have established along the road prism or within the designated 300 foot buffer. Authorized route use could promote the spread of invasive species by spreading weed seed and disturbing soil in sensitive plant habitats.

Alternative A – No Action/Existing Network

Direct/Indirect Impacts: Under Alternative A, 1,079 miles of routes (roads, primitive roads, and trails) would continue to exist within the planning area. Impacts to the planning area sensitive plant species would not change from the existing network under current management. Users would continue to utilize existing roads, primitive roads and trails, although use would increase over time as population increases. Sensitive plants would continue to exist along roadsides, in the middle of many primitive roadways, and along trails. Plants persisting in tire tracks would continue to be driven over and would be damaged by tires and pressure exerted by vehicle weight and traction. Some low-growing herbaceous sensitive plant species may persist over time, while more delicate woody species would remain suppressed or excluded from roadbeds due to repeated vehicle related damage. Plants existing outside of roads, improved roads and trails would be driven over as necessary to turn vehicles around, or by hunters retrieving game, but long-term effects would be minimal. Redundant routes, roads crossing sensitive or erosive areas, and roads identified as safety hazards or with conflict/legal access issues would not be closed and reclaimed; they would remain mostly un-vegetated due to continued vehicle traffic. Mileage by travel route type (road, primitive road, and trail) within each of the vegetative cover types would not change.

Under Alternative A, there would be three Alkali Primrose sites, three Hoary Willow sites, six Lemhi Milkvetch sites, four Lemhi Penstemon sites, two Park Milkvetch site, four Salmon Twin Bladderpod sites, one Two-grooved Milkvetch site, and one Yellow sedge site falling within the 300 foot buffer distance from designated routes as listed under the 2001 amendment to the Lemhi RMP (Table 14: Known sensitive plant species populations within 300 feet of a designated route by alternative). Potential for adverse effect to these sensitive plant populations would be negligible.

Table 14: Known sensitive plant species populations within 300 feet of a designated route by alternative

Species	Alternative A	Alternative B	Alternative C	Alternative D
Alkali Primrose	3	2	2	3
Hoary Willow	3	2	2	3
Lemhi Milkvetch	6	6	6	6
Lemhi Penstemon	4	4	4	4
Park Milkvetch	2	1	1	2
Salmon Twin Bladderpod	4	4	4	4
Two-grooved Milkvetch	1	1	1	1
Yellow Sedge	1	1	1	1

Alternative B – Minimum Network

Direct/Indirect Impacts: Under Alternative B, there would be an estimated 589 miles of roads, primitive roads, and trails designated in the planning area. Impacts to sensitive plant species would generally be similar to Alternative A, No Action/Existing Network for all species, although Alkalai primrose, Hoary willow and Park Milkvetch would be slightly less likely to be affected because of the reduction in roads designated under this alternative.

Under Alternative B, the available network of designated roads and trails would be reduced by 490.2 miles (45.4%), compared to existing management. This would decrease the possibility that undocumented sensitive plant populations would be impacted. The change in designation of some routes would allow some vegetation to return to the road prism and potentially create suitable habitat for sensitive plants locally destroyed or damaged by the existing roads under Alternative A. Under this Alternative, two Alkali Primrose site, two Hoary Willow sites, six Lemhi Milkvetch sites, four Lemhi Penstemon sites, one Park Milkvetch, four Salmon Twin Bladderpod sites, one Two-grooved Milkvetch sites, and one Yellow sedge site falling within the 300 foot buffer distance from designated routes as listed under the 2001 amendment to the Lemhi RMP (Table 14). Potential for adverse effect to these sensitive plant populations would be negligible.

Alternative C – Balanced Network

Direct/Indirect Impacts:

Under Alternative C, about 856 miles of roads, primitive roads, and trails would be designated. Under Alternative C, the available network of designated roads and trails would be reduced by 222.1 miles (20.6%) compared to Alternative A, No Action/Existing Network. Impacts to sensitive plant species would generally be similar to Alternative A for all species, although

Alkalai primrose, Hoary willow and Park Milkvetch would be slightly less likely to be affected because of the reduction in roads designated under this alternative

The change in designation of some routes would allow some vegetation to return to the road prism and potentially create suitable habitat for sensitive plants locally killed or damaged by the existing roads under the existing condition. This decrease in authorized roads would decrease the impact to native vegetation and sensitive plant habitats. Under this Alternative, two Alkali Primrose site, two Hoary Willow sites, six Lemhi Milkvetch sites, four Lemhi Penstemon sites, one Park Milkvetch, four Salmon Twin Bladderpod sites, one Two-grooved Milkvetch sites, and 1 Yellow sedge site falling within the 300 foot buffer distance from designated routes as listed under the 2001 amendment to the Lemhi RMP (Table 14). Potential for adverse effect to these sensitive plant populations would be negligible.

Alternative D – Maximum Network

Direct/Indirect Impacts: Under Alternative D, about 1,017 miles of roads, primitive roads, and trails would be designated. Under Alternative D, the available network of designated roads and trails would be reduced by 31.4 miles (5.7%) miles compared to Alternative A, No Action/Existing Network.

Impacts to the planning area sensitive plant species would not change from current management (Alternative A). Users would continue to utilize existing roads, primitive roads and trails, although use would increase over time as population increases. Sensitive plants would continue to exist along roadsides, in the middle of many primitive roadways, and along trails. Plants persisting in tire tracks would continue to be driven over and would be damaged by tires and pressure exerted by vehicle weight and traction. Some low-growing herbaceous sensitive plant species may persist over time, while more delicate woody species would remain suppressed or excluded from roadbeds due to repeated vehiclereLATED damage. Plants existing outside of roads, improved roads and trails would be driven over as necessary to turn vehicles around, or by hunters retrieving game, but long-term effects would be minimal. Redundant routes, roads crossing sensitive or erosive areas, and roads identified as safety hazards or with conflict/legal access issues would not be closed and reclaimed; they would remain mostly un-vegetated due to continued vehicle traffic. Mileage by travel route type (road, primitive road, and trail) within each of the vegetative cover types would not change.

Under Alternative D, there would be three Alkali Primrose sites, three Hoary Willow sites, six Lemhi Milkvetch sites, four Lemhi Penstemon sites, two Park Milkvetch site, four Salmon Twin Bladderpod sites, one Two-grooved Milkvetch site, and one Yellow sedge site falling within the 300 foot buffer distance from designated routes as listed under the 2001 amendment to the Lemhi RMP (Table 14). Potential for adverse effect to these sensitive plant populations would be negligible.

Water Quality

Affected Environment

Lemhi River Subbasin Non-Point Source Pollution

Designated beneficial uses in the Lemhi River Subbasin (USGS 4th field HUC 17060204) include cold water biota, salmonid spawning, primary contact recreation, secondary contact recreation, and domestic water supply (IDEQ 2012). The only known contaminants in the Lemhi River Subbasin are total coliform and *Escherichia coli* (IDEQ 2012). Agricultural runoff presents a low level of potential impact to water quality in the Lemhi River Subbasin (Bureau of Reclamation 2004). Other concerns in portions of the Lemhi River and its perennial tributaries are altered flow regimes, water temperature, sedimentation/siltation, Idaho Department of Environmental Quality (IDEQ) combined biota/habitat bioassessments, and possible eutrophication. All the pollutants are from non-point sources, that is, no one single location or activity can be identified as the source. Generally, sedimentation from non-point sources such as irrigated crop production, rangeland, pastureland, streambank modification/erosion, and roads is the primary pollutant of concern, although nutrients used on pasture and crop lands entering waterways can be a concern (IDEQ 2012). Other contributing factors may include surface mining, mine tailings, timber harvesting, flow regulation/modification, highway/road/bridge construction, or cattle entering the streams from the roads, fords, livestock crossings, and water gaps.

The IDEQ assessment units in Category 4a³ “water bodies with EPA-approved TMDLs” for sediment/siltation pollution are Eighteenmile Creek-Hawley Creek to Mouth; Eighteenmile Creek-Clear Creek to Hawley Creek; and Eighteenmile Creek-Divide Creek to Hawley Creek. The IDEQ Texas Creek assessment unit is Category 5⁴, “Impaired Waters” for sediment/siltation pollution (IDEQ 2012).

SFO field reviews and water quality data show most of the water quality limited stream segments in the upper Lemhi River Subbasin are on private lands, downstream of the public lands. Details about stream segments and IDEQ water quality rating and pollutants can be found in the *2010 Integrated Report* (IDEQ 2010) and the *Lemhi River Subbasin Total Maximum Daily Loads and Five Year Review: Addendum to the Lemhi River Assessment and TMDL* (IDEQ 2012).

The SFO has done general maintenance on roads in the Agency Creek, Yearian Creek, Reese Creek, and Eighteenmile Creek watersheds since the late 1990s. Drainage culverts, gravel surfacing, and drainage dips were installed on these routes to limit erosion and sediment delivery to streams. In 2008-2010 the SFO upgraded roads in the Eighteenmile Creek

³ Waters of the state impaired or threatened for one or more standards but not needing a TMDL.

⁴ Waters of the state for which a TMDL is needed.

Watershed to reduce sediment delivery based on the Lemhi Total Maximum Daily Load (TMDL) report recommendations (IDEQ 2010). Over 42 miles were surfaced with pit run and/or crushed gravel aggregate. The roads were compacted and graded to harden the surface material. Waterbars, drainage culverts, or drainage dips were added to improve surface drainage and minimize the sediment delivery. Descriptions and photographs of these project actions can be found in the *Lemhi River Subbasin Total Maximum Daily Loads and Five-Year Review*, Appendix I (IDEQ 2012) available online at:

<http://www.deq.idaho.gov/media/919701-lemhi-river-subbasin-tmdls-five-year-review-addendum-1012.pdf>.

Lemhi River Subbasin Water Temperatures

Water temperature influences many aspects of salmonid life history including reproduction, growth, and migration. Shallow slow water warms faster than deep, fast moving water, and holds less dissolved oxygen. Warm water with less dissolved oxygen, especially temperatures above 20°C (68°F) and dissolved oxygen below 5 milligrams per liter can stress salmonids (Bjornn and Reiser 1991).

The water temperatures in the Lemhi River and many of the lower tributary reaches are elevated during periods of low flow, and some water temperatures are functioning at unacceptable risk. The following Lemhi River Subbasin assessment units do not meet water quality standards for cold water biota (IDEQ 2012):

- Lemhi River-Confluence of Eighteenmile Creek and Texas Creek,
- Eighteenmile Creek-Hawley Creek to Mouth,
- Eighteenmile Creek-Clear Creek to Hawley Creek,
- Eighteenmile Creek-Divide Creek to Hawley Creek,
- Eighteenmile Creek-Source to Divide Creek,
- Little Eightmile Creek-Diversion to Mouth, and
- Little Eightmile Creek-Source to Diversion.

The water temperature increases in the Lemhi River Subbasin are primarily correlated with the loss of streamshade in the lower elevation cottonwood riparian zone (IDEQ 2012) and irrigation practices, not BLM land management. SFO thermograph data indicates water temperatures in most of the BLM South Half TMA streams meet the PACFISH criteria for Chinook salmon and steelhead migration and rearing July 1 to October 1. The PACFISH water temperature Riparian Management Objective (RMO) is no measureable increase in maximum temperature expressed as the 7-day moving average of daily maximum temperature (i.e. the average of the maximum daily temperature of the warmest consecutive 7-day period) (USDA Forest Service and USDI BLM, 1995). The PACFISH water temperature RMO for Chinook salmon and steelhead rearing and migration is less than 17.8°C (64°F), and for spawning less than 15.6°C (60°F).

The upper Lemhi River and Hayden Creek are the only streams currently supporting Chinook salmon spawning in the Lemhi River Subbasin. Water temperatures in the Hayden Creek Watershed (Hayden, Basin, Grouse, and Trails creeks) generally meet PACFISH Chinook salmon spawning criteria mid-August through early September (Table 15).

Most of the natural origin steelhead in the South Half TMA spawn in Hayden, Basin, Texas, and Agency creeks. Steelhead spawn in the spring when water temperatures typically meet PACFISH steelhead spawning criteria (Table 15).

The INFISH (USDA Forest Service 1995) bull trout maximum water temperature criteria for adult holding habitat is less than 15.0°C (59°F), and in spawning and rearing habitats less than 8.9°C (48°F). The migratory bull trout population in the Lemhi River Watershed is severely diminished or lost due to dewatering and disconnection to cooler tributary streams (USDI BLM and USDA Forest Service 1999). Currently, most of the bull trout in the Lemhi River Subbasin are isolated, self-sustaining populations in the cooler, headwater reaches. An ongoing study in the Lemhi River Subbasin indicates bull trout move into tributary streams on the descending end of the peak hydrograph to spend the summer rearing in cooler, spawning tributaries (Schoby 2006). Pattee, Flume, Grouse, Trail, Clear, upper Eighteenmile, and Pass creeks meet the INFISH criterion for adult bull trout holding July 1 to October 1. After October 1 and the end of the irrigation season, temperatures in these streams typically meet bull trout spawning criteria (Table 15).

Table 15: Water temperatures of perennial fish-bearing streams in the Upper Lemhi River Subbasin (Source: SFO thermograph data)

Stream	7-Day Average Maximum (°C / °F)	Dates
Lower Pattee	15.0 / 58.9	7/1-9/24/2012
Lower Agency	17.4 / 63.3	7/1-9/24/2012
Cow	15.7 / 60.2	7/1-9/29/2012
Flume	15.5 / 59.9	7/1-9/24/2012
Hayden	17.0 / 62.6	7/1-9/29/2012
Basin	17.0 / 62.6	7/1-9/27/2011
Grouse	15.2 / 59.4	7/23-10/1/2010
Trail	9.3 / 48.7	7/23-10/1/2010
Yearian upstream of reservoir	18.8 / 65.8	7/1-9/29/2012
Big Timber @ Swan Basin	18.8 / 62.2	7/1-9/29/2012
Big Timber @ Mouth	24.8 / 76.6	7/1-9/29/2012
Little Timber	18.0 / 64.4	7/1-9/29/2012

Stream	7-Day Average Maximum (°C / °F)	Dates
Canyon	16.3 / 61.4	7/1-9/29/2012
Clear	11.1 / 52.0	7/1-9/29/2012
Upper Eighteenmile	16.9 / 62.4	7/20-9/21/2012
Lower Eighteenmile	19.7 / 67.5	7/1-9/29/2012
Pass	15.2 / 59.4	7/1-9/29/2012
Texas	18.7 / 65.7	7/1-9/29/2012

Birch Creek Subbasin Flow Alteration

Clean Water Act designated beneficial uses in the Birch Creek Subbasin (USGS 4th field HUC 17040216) include salmonid spawning, cold water aquatic life, domestic water supply, and primary contact recreation. Birch Creek is in a predominantly rangeland-agricultural region. The perennial waters in the Birch Creek Subbasin arise primarily from spring sources and infiltrate prior to connecting with any other surface waters.

Birch Creek was added to the IDEQ 1998 §303(d) list for flow alteration, habitat alteration, sediment and nutrients. A follow-up inspection indicted the primary water quality problem is the absence of flow⁵ (IDEQ, 2005). Birch Creek is completely diverted in the lower subbasin to supply a hydroelectric project and for irrigation. The §303(d)-listed reach of Birch Creek occurs from the Reno Ditch to the playas, downstream of the planning area. Because lower Birch Creek is permanently dewatered and there is no mechanism by which restoration of the stream channel is possible or practical, IDEQ determined any listing other than for flow alteration would be meaningless (IDEQ 2005). IDEQ did not establish TMDLs for nutrients, sediment, or habitat alteration because TMDLs are not required for water bodies that are impaired by flow alteration rather than specific pollutants. IDEQ water quality data from the Beneficial Use Reconnaissance Project (BURP) shows that other perennial tributaries and Birch Creek above the hydropower diversion are in full support of beneficial uses. The subbasin assessment recommended that the lower reach remain on the §303(d) list for flow alteration only and the listings for nutrients, sediment, and habitat alteration be removed (IDEQ 2005).

Other perennial waters evaluated in the planning area include Willow Creek and Cottonwood Creek, in the northern subbasin near the Lemhi River Subbasin, and Pass Creek in the western subbasin (IDEQ 2005). These streams have flows less than 1 cubic foot per second throughout most of the year (IDEQ 2005). Spring-fed streams like these are much more vulnerable to impairment by sediment than snowmelt driven hydrology because they tend to widen without entrenching and lack the hydrologic energy sufficient to transport sediment over lower gradients

⁵ The U.S. Environmental Protection Agency considers flow alteration to be pollution.

(IDEQ 2005). The higher gradient, transport reaches in upper Birch, Willow, and Pass creeks reduce the risk of excess sediment and nutrients, and streambank stability was generally above 80 percent (IDEQ 2005). BURP data showed near-reference conditions for samples collected above the ephemeral reaches in Pass, Willow, and Birch creeks.

IDEQ could not gain access to Cottonwood Creek because it exists almost entirely on private property, with the exception of the source springs that arise in the Eighteenmile Wilderness Study Area. However, there was no evidence of water quality issues on Cottonwood Creek (IDEQ 2005).

Effects Common to All Alternatives

Road networks are an important factor in determining potential turbidity and sediment delivery to streams. The potential for the upland motorized routes to deliver sediment to streams is low because of distance to water; the terrestrial vegetation provides overland filtering; and the pioneered BLM routes have few culverts or constructed drainage ditches. The seasonal wet weather closures in the Hayden Creek Watershed are for protection of the unsurfaced, primitive roads that were built on bentonite clay soil (Table 1). These closures would have no effect on water quality because there is no potential for these routes to deliver sediment to waterways. Cattle would continue to enter the streams from the roads and fords.

The roads in close proximity to streams with only narrow riparian buffers such as the Cow Creek and Yearian Creek roads would continue to deliver sediment during spring run-off, storms, and other wet weather conditions.

Vehicles crossing fords may cause streambank erosion, turbidity plumes, sediment delivery, and increase the channel width to depth ratios. Most of the designated fords are naturally armored (Table 7). The monitoring required by the SFO North Half TMP BiOp and the Salmon-Challis National Forest TMP BiOp indicates turbidity and sediment generated by vehicles at armored fords is likely to be an insignificant effect on bank erosion, sediment delivery, and turbidity. Vehicles crossing designated unarmored fords would continue to cause streambank erosion, turbidity plumes, sedimentation, and increase the channel width to depth ratios, as they do now.

Vehicles, especially 2-stroke OHV engines can impact water quality through spills and emissions. Contaminants may enter aquatic systems via direct flushing, or they may be adsorbed to sediments and/or absorbed by plant materials, which are easily transported to streams by precipitation run-off or wind (Ouren et al. 2007). These water quality impacts are more likely to occur at the low water fords.

Loss of riparian vegetation along roads and high width to depth ratios at road-stream crossings (culverts, bridges, and fords) may affect water temperature by increasing solar radiation, particularly where topography does not provide shade. Diurnal water temperature fluctuations may also be greater than the range of natural conditions due to these factors. Elevated water temperatures in the Lemhi River Subbasin primarily correlated with the loss of streamshade in the lower elevation cottonwood riparian zone (IDEQ 2012) and irrigation practices, not BLM land management. This is supported by the BLM thermograph data that indicates water temperatures in most of the planning area meet the PACFISH criteria for Chinook salmon and

steelhead spawning, migration, and rearing (Table 15). Currently, most of the bull trout in the Lemhi River Subbasin are isolated, self-sustaining populations in the cooler, headwater reaches. Water temperatures typically meet INFISH bull trout spawning criteria after October 1 and the end of the irrigation season (Table 15). IDEQ water quality data shows the perennial tributaries and Birch Creek above the hydropower diversion are in full support of beneficial uses.

Road drainage networks are typically associated with increased peakflows that may increase erosion and sediment delivery, destabilize channels and side-slopes, and deliver road-associated contaminants to wetlands and waterways (Furniss, Flanagan, and McFadin 2000). Early season irrigation withdrawals are the primary influence on the magnitude and duration of peakflows in the South Half TMA. Peakflow changes due to increases or decreases in the road drainage network are unlikely to occur because of early season irrigation withdrawals that significantly decrease the magnitude and duration of peakflows. Therefore, the proposed decreases in designated routes would have no effect on peakflows.

Physical route closures and obliteration could occur on selected user-created routes that were created since the time of the inventory, as needed for resource protection. These closure methods have the potential to generate short-term turbidity and sediment delivery. Most of the closed routes that may be physically closed for resource protection are primitive, user-created roads that do not have cutslopes and fillslopes or culverts, and can be barriered and allowed to revegetate naturally without risk of sediment delivery due to slope or culvert failures. Obliteration of constructed road prisms would require methods such as outslipping, recontouring, removing all stream crossing culverts, removal of fill within the channel, restoration and stabilization of streambanks, scarifying/seedling/fertilizing/mulching the roadbed, and noxious weed treatment. These types of closure methods can result in an increase in short-term sediment delivery, depending on the location. The conservation measures for road decommissioning and obliteration projects in the NMFS BiOp for habitat restoration projects would be implemented to minimize the risk of short-term sediment delivery (USDC NMFS 2015).

OHVs and ATVs are an increasingly popular form of recreation and transportation, especially for hunters. Enforcing the motorized vehicle restrictions would continue to be problematic due to BLM staffing levels, repeated vandalism of signs, and the difficulties associated with physically restricting use along pioneered and primitive roads on relatively flat or gentle terrain.

Alternative A - No Action/Existing Network

Direct/Indirect Impacts: Alternative A is a continuation of the current travel management in the 2001 LRMPA decision (USDI BLM, 2001), and terms and conditions in the NMFS BiOp (USDC NMFS, 2001). This alternative would designate the most extensive network of roads, primitive roads, motorized trails, and low water fords (Table 1-Table 3). This alternative would also have the most extensive network of motorized miles and densities in the RHCAs (Table 5); the most network of motorized routes and fords in habitat occupied by ESA listed fishes, DCH, and other resident fishes (Table 6 and Table 8); and the greatest potential for turbidity, sediment delivery, bank erosion, and loss of large woody debris. Currently, the

Middle Lemhi River and Upper Lemhi River watersheds have highest number of motorized miles in the RHCAs (Table 5). The highest BLM route densities are in Upper Lemhi River, Hawley Creek, Timber Creek, and Texas Creek watersheds (Table 5). These existing conditions would be maintained.

Alternative B – Minimum Network

Direct/Indirect Impacts: Alternative B would designate the least extensive network of roads, primitive roads, motorized trails, and low water fords (Table 1-Table 3). This alternative would also have the least extensive network of motorized miles and densities in the RHCAs (Table 5); the least extensive network of motorized routes and fords in habitat occupied by ESA listed fishes, DCH, and other resident fishes (Table 6 and Table 8); and the lowest potential for turbidity, sediment delivery, bank erosion, and loss of large woody debris.

Alternative C – Balanced Network

Direct/Indirect Impacts: Alternative C would designate a less extensive network of roads, primitive roads, motorized trails, and low water fords than alternatives A and D, and more than Alternative B (Table 1-Table 3). This alternative would also designate more motorized miles and densities in the RHCAs (Table 5); a more extensive network of motorized miles and densities in the RHCAs (Table 5); a more extensive network of motorized routes and fords in habitat occupied by ESA listed fishes, DCH, and other resident fishes (Table 6 and Table 8); and more potential for turbidity, sediment delivery, bank erosion, and loss of large woody debris than Alternative B, and less than alternatives A and D.

Alternative D – Maximum Network

Direct/Indirect Impacts: Alternative D would designate a more extensive network of roads, primitive roads, motorized trails, and low water fords than alternatives B and C, and less than Alternative A (Tables 1-3). This alternative would also designate more motorized miles and densities in the RHCAs (Table 5); a more extensive network of motorized routes and fords in habitat occupied by ESA listed fishes, DCH, and other resident fishes (Table 6 and Table 8); and more potential for turbidity, sediment delivery, bank erosion, and loss of large woody debris than alternatives B and C, and less than Alternative A.

Wetlands and Riparian Zones

Affected Environment

Wetland/riparian vegetation is composed of plants strongly influenced by the presence of water along streams, rivers, lakes, ponds, seeps, springs, wet meadows, and bogs. Historically beaver activity contributed to healthy wetlands, riparian, and aquatic habitats. Beaver have been eradicated from much of its historically occupied habitat within the Lemhi River and Birch Creek subbasins.

Healthy riparian vegetation is critical to watershed health and provides high quality habitat for fish, wildlife, and macroinvertebrates. Riparian vegetation stabilizes streambanks, prevents

erosion, slows floodwaters, traps sediment, and stores runoff for later release. Woody riparian vegetation provides canopy cover to maintain cold water habitat and instream habitat complexity.

There are two general types of riparian vegetation: (1) woody shrubs and trees and (2) non-woody grasses, sedges, rushes, and forbs. The dominant trees in the planning area are quaking aspen and black cottonwood. The dominant riparian shrubs are water birch, mountain alder, red-osier dogwood, woods rose, chokecherry, gooseberry, currant species, and Geyer, Drummond, whiplash, booth, and coyote willows. The dominant non-woody species are Nebraska sedge, beaked sedge, and Baltic rush. The degraded riparian areas are dominated by Kentucky bluegrass, clover, and dandelion.

The BLM, USFWS, and the Natural Resource Conservation Service (1998) developed a method to assess the properly functioning condition (PFC) status of streams and wetland/riparian habitats. A stream in PFC has adequate vegetation, landform, or woody debris to dissipate stream energy associated with high flows, thereby, reducing erosion and improving water quality, filter sediment, capture bedload, and aid floodplain development, and improve floodwater retention and groundwater recharge.

In 2009-2010 the Salmon Field Office used the PFC process to rate the stream and wetland/riparian habitats in the Lemhi River and Birch Creek subbasins. The 2009-2010 PFC ratings for the 5th field HUC watersheds are in Table 16 and Table 17.

Table 16: Lemhi River Subbasin Proper Functioning Condition ratings (Source: BLM 2009-2010)

Stream	PFC (miles)	FAR (miles)	NF (miles)	Totals (miles)
Pattee	2.1	1.7	0	3.8
Agency	2.6	0.7	0	3.3
Yearian	2.1	2.9	0	5.0
Reese	0	5.3	0	5.3
Peterson	0.3	0	0.9*	1.2
Canyon	2.8	0	0	2.8
Clear	3.2	0.7	0	3.8
Hawley	1.2	0	4.6*	5.9
Eighteenmile	7.7	0.7	0	8.4
Texas	0.7	0.4	0	1.1
Big Timber	3.2	0	0	3.2
Hayden	1.3	0	0	1.3

Stream	PFC (miles)	FAR (miles)	NF (miles)	Totals (miles)
Trail	2.6	1.3	0	3.9
Lake	0.4	0.9	0	1.3
Basin	2.0	0	0	2.0
Cow	2.9	3.4	0	6.3
Mill	0.1	2.7	0	2.8
Big Eightmile	0	0	~0.5**	0.5
TOTALS	35.2	20.7	6.0	61.9

PFC = Proper Functioning Condition

FAR = Functioning at Risk Condition

NF*= Non-Functioning Condition associated with private land irrigation diversions

NF**= Non-Functioning Condition associated with a private landowner's escaped control burn in 2012; this reach is recovering naturally.

Table 17: Birch Creek Subbasin Proper Functioning Condition ratings (Source: BLM 2009-2010)

Stream	PFC (miles)	FAR (miles)	NF (miles)	Totals (miles)
McGinty	0.0	1.8	0.7	2.4
Divide	1.3	2.0	0.0	3.3
Mud	0.0	1.3	0.0	1.3
Shears	0.0	2.9	0.0	2.9
Carlin	0.0	2.0	0.0	2.0
Middle	0.0	1.2	0.0	1.2
Cottonwood	0.0	2.9	0.0	2.9
N. Jump	0.0	2.2	0.0	2.2
S. Jump	0.0	2.2	0.0	2.2
Willow	0.0	1.7	2.3	3.9
Smelter Gulch	0.0	0.3	0.0	0.3
Birch Creek in the enclosure	12.4	0.0	0.0	12.4
TOTALS	13.7	20.2	2.9	36.9

PFC = Proper Functioning Condition; FAR = Functioning at Risk Condition; NF = Non-Functioning Condition

Effects Common to All Alternatives

The potential wetlands and riparian vegetation impacts would differ between the alternatives based on the number of road-stream crossings and the miles and densities of motorized routes in the RHCAs. These routes provide access to, and concentrate human and livestock use within riparian areas, wetlands, streams, and have the highest potential to adversely impact these habitats (USDC NMFS 1996; USFWS 1998). There is no potential for the proposed upland motorized routes to impact wetland and riparian vegetation except at road-stream crossings. Therefore, the RHCA road densities are a better indicator of potential impacts to wetland and riparian habitats than the total watershed road densities, and are used for the comparison of alternatives (Table 5).

Some of the first pioneered and most heavily traveled roads in the planning area follow drainages due to steep terrain. The roads in close proximity to streams and the road-stream crossings would maintain the current narrow riparian buffers. These narrow buffers do not provide adequate filtering to prevent sediment delivery from the road surfaces, cutslopes, and fillslopes.

Loss of riparian vegetation along roads and at road-stream crossings (culverts, bridges, and fords) may also affect water temperature by increasing solar radiation, particularly where topography does not provide shade. Diurnal water temperature fluctuations may also be greater than the range of natural conditions due to these factors. The water temperature increases in the Lemhi River Subbasin are primarily correlated with the loss of streamshade in the lower elevation cottonwood riparian zone (IDEQ 2012) and irrigation practices, not BLM land management. IDEQ water quality data shows the perennial tributaries and Birch Creek above the hydropower diversion are in full support of beneficial uses (IDEQ 2005).

Roads in close proximity to streams are also likely to decrease woody debris recruitment potential because of clearing for the road prisms and stream crossings, bank riprapping, hazard tree removal, developed and dispersed recreation sites, and “stream cleaning” to prevent debris jams or stream migration. Meredith et al. (2014) found roads less than 100 feet from streams had 26 percent fewer pieces of total wood, 37 percent fewer pieces of pool-forming wood, and 42 percent less wood volume than sites greater than 100 feet from a road. Meredith et al. (2014) estimated that roads less than 100 feet from streams reduce wood volume to 72-87 m³/km. Juvenile bull trout are typically found in streams with high volumes of woody debris (90-280 m³/km) (Dambacher and Jones 1997). Instream woody debris forms complex, deep pool habitat which provides protection from predators and high flows, and supports higher densities of fry and juvenile salmonids (Roni and Quinn 2001). The designated valley bottom routes would continue to reduce woody debris recruitment for the foreseeable future.

As currently authorized, vehicles would be able to travel up to 300 feet from the designated routes for direct access to campsites, retrieve downed big game, or harvest forest products. Exceptions may also be authorized for any military, fire, emergency, or law enforcement vehicles in use for emergency purposes; any vehicle in official use; and any vehicle whose use is expressly authorized in writing by the authorized officer. BLM policy, as specified in personal

fuelwood permits, does not allow fuelwood harvesting within 300 feet of streams, lakes, ponds, or wet/boggy areas so these exceptions should not impact large wood recruitment potential. However, vehicles would be able to leave designated routes and enter the RHCAs for the other exempt uses which may adversely impact wetland and riparian vegetation and habitats by crushing, rutting, and other mechanical damage, as they do now. All of the alternatives would maintain these exemptions and the potential RHCA impacts associated with these exemptions.

Enforcing the motorized route and ford “closures” with or without physical closures and obliteration would continue to be problematic due to increasing OHV/ATV recreation, decreasing BLM staffing levels, repeated vandalism of signs, and the difficulties associated with physically restricting use along pioneered and primitive roads.

Alternative A – No Action/Existing Network

Direct/Indirect Impacts: Alternative A is a continuation of the current travel management in the 2001 LRMPA decision (USDI BLM 2001), and terms and conditions in the NMFS BiOp (USDC NMFS 2001). This alternative would designate the most extensive network of roads, primitive roads, motorized trails, and low water fords (Table 1-Table 3). This alternative would also have the most extensive network of motorized miles and densities in the RHCAs (Table 5), and the greatest potential to impact wetland and riparian vegetation, and future large woody debris recruitment. Currently, the Middle Lemhi River and Upper Lemhi River watersheds have highest number of motorized miles in the RHCAs. The highest BLM route densities in the RHCAs are in Upper Lemhi River, Hawley Creek, Timber Creek, and Texas Creek watersheds (Table 5). These existing conditions would be maintained.

Alternative B – Minimum Network

Direct/Indirect Impacts: Alternative B would designate the least extensive network of roads, primitive roads, motorized trails, and low water fords (Table 1-Table 3). This alternative would also have the least extensive network of motorized routes and densities in the RHCAs (Table 5), and have the lowest potential to impact wetlands, riparian vegetation, and future large woody debris recruitment. The closed RHCA routes and fords may develop increased riparian vegetation and canopy cover over time.

Alternative C – Balanced Network

Direct/Indirect Impacts: Alternative C would designate a less extensive network of roads, primitive roads, motorized trails, and low water fords than alternatives A and D, and more than Alternative B (Table 1-Table 3). This alternative would also designate more motorized miles and higher densities in the RHCAs (Table 5), and have more potential to impact wetlands, riparian vegetation, and future large woody debris recruitment than Alternative B, and less than alternative A and D. The closed RHCA routes and fords may develop increased riparian vegetation and canopy cover over time.

Alternative D – Maximum Network

Direct/Indirect Impacts: Alternative D would designate a less extensive network of roads, primitive roads, motorized trails, and low water fords than Alternative A, and more than alternatives B and D (Table 1-Table 3). This alternative would also designate more motorized miles and higher densities in the RHCAs (Table 5), and have more potential to impact wetlands, riparian vegetation, and future large woody debris recruitment than alternatives B and C, and less than Alternative A. The closed RHCA routes and fords may develop increased riparian vegetation and canopy cover over time.

Wildlife, Threatened/Endangered, Candidate, Sensitive and Migratory Birds

Affected Environment

The south-half travel management planning area includes sagebrush steppe, conifer forest, riparian, basin wash, and rocky canyons. This diversity of habitat supports a variety of wildlife species (Table 18). Some of these species are listed under the ESA, listed on the BLM Idaho State Director's list of sensitive species (USDI BLM, 2014), protected by the Migratory Bird Treaty Act, and/or protected by other executive orders, policy, or legislation. The ESA listed and candidate wildlife species are described below under common name.

The majority of the travel management planning area is in sagebrush steppe habitat. Over time most of the current travel routes have been generated in this habitat type due to the ease of passage through rolling topography and low-lying vegetation. Portions of constructed roads pass through conifer forest, and rocky canyons. Due to the disproportionate distribution of travel routes in sagebrush steppe, wildlife species that primarily use this habitat would be most affected by travel activities.

Canada lynx

The Final Rule issued March 24, 2000; U.S. Fish and Wildlife Service (USFWS, 2000) determined threatened status for the contiguous U.S. Distinct Population Segment of Canada lynx. A revised Final Rule issued on July 3, 2003 validated the Canada lynx as not endangered throughout a significant portion of its range thereby maintaining its listing as threatened (USFWS, 2003).

A 2014 revision to the Final Rule adjusts DCH for the Canada lynx and extends the ESA's protections to the species wherever self-sustaining populations occur in the contiguous United States (USFWS, 2014). There are five core areas identified with the new Final Rule, Maine, Minnesota, Northern Rockies, Greater Yellowstone, and North Cascades. The 2014 revised rule defines DCH to include only those areas occupied by lynx at the time of ESA listing, 2000, as well as containing the physical and biological features essential to the conservation of the species. Lemhi County, Idaho and the SFO managed lands are not considered DCH by the newest definition.

The 2014 revised rule condensed the original three categories of lynx habitat and occurrence to two categories: (1) core areas, and (2) secondary/peripheral areas. Core areas have both persistent verified records of lynx occurrence over time and recent evidence of reproduction. Secondary/peripheral areas are those with historical records of lynx presence and no record of reproduction. Secondary/peripheral areas may also be those areas with historical records and no recent surveys to document the presence of lynx and/or reproduction (USFWS, 2013). The 2014 revised rule places the SFO area into the secondary/peripheral area category.

In Idaho, the Canada lynx subsists in montane and subalpine coniferous forests typically above 4,000 feet. Generally, habitat used during foraging is early successional forest. Dens are usually in mature forests. Individuals are wide-ranging and require large tracts of forest. The Canada lynx preys on the snowshoe hare, particularly during the winter, as well as a variety of birds and other small mammals (IDFG, 2005).

Based the definition of primary habitat described in the Canada Lynx Conservation Assessment and Strategy (LCAS) 2014 and (Ruediger, et al., 2000), BLM-administered lands within the planning area are considered poor lynx habitat. The forest vegetation is dry and contains inadequate components for species reproduction and foraging. The travel management planning area contains some lynx travel corridors. This linkage habitat exists along the Continental Divide and across the upper valley between the Continental Divide and the Lemhi Mountains. The SFO has nine reports of lynx crossing BLM managed lands in the travel management planning area: in the Agency (1978), Canyon (1978), Eighteenmile (1978), Hayden (1970 and 1979), Muddy (1998), Timber (1978 and 1991) and Yearian (1955) creek drainages.

Table 18: Significant wildlife species status and occurrence potential in the TMA

Wildlife Common/ Specific		Status	Category in travel management planning area	Habitat	Occurrence potential ¹
Mammals	Canada Lynx/ <i>Lynx canadensis</i>	Threatened	Transitory	Boreal forest	Improbable
	Gray wolf/ <i>Canis lupus</i>	BLM Special Status	Resident	Variety associated with forest cover and prey base	Present
	White-tailed deer/ <i>Odocoileus virginianus</i>	None	Resident	Forest and riparian	Present
	Mule deer/ <i>Odocoileus</i>	None	Resident	Sagebrush steppe	Present

Wildlife Common/ Specific	Status	Category in travel management planning area	Habitat	Occurrence potential ¹
<i>hemionus</i>				
Rocky Mountain elk/ <i>Cervus canadensis</i>	None	Resident	Forest	Present
Pronghorn antelope/ <i>Antilocapra americana</i>	None	Resident	Sagebrush steppe	Present
Rocky Mountain bighorn sheep/ <i>Ovis canadensis</i>	BLM Special Status	Resident	Mountain side-slopes	Present
Mountain goat/ <i>Oreamnos americanus</i>	None	Resident	Rocky Mountain side- slopes often above timberline	Present
Moose/ <i>Alces alces</i>	None	Resident	Forest and riparian	Present
Fisher/ <i>Martes pennant</i>	BLM Special Status	Transitory	High elevation forest	Possible
Wolverine/ <i>Gulo gulo</i>	BLM Special Status	Transitory	High elevation forest	Possible
Pygmy rabbit/ <i>Brachylagus idahoensis</i>	BLM Special Status	Resident	Sagebrush steppe with specific aspect, riparian, and soil type	Present
Piute ground squirrel/ <i>Uroditellus mollis</i>	BLM Special Status	Not Present	Sagebrush steppe, well- drained soils, embankments	Not Present
Big brown bat/ <i>Eptesicus</i>	BLM Special	Resident	Variety associated with caves/ abandoned tunnels	Probable

Wildlife Common/ Specific	Status	Category in travel management planning area	Habitat	Occurrence potential ¹
<i>fuscus</i>	Status			
Hoary bat/ <i>Lasiurus cinereus</i>	BLM Special Status	Breeding- short migratory	Variety associated with tree cavities, caves/ abandoned tunnels	Probable
Little brown bat/ <i>Myotis lucifugus</i>	BLM Special Status	Resident- short migratory	Variety associated with caves/ abandoned tunnels	Probable
Pallid bat/ <i>Antrozous pallidus</i>	BLM Special Status	Transitory	Variety associated with caves/ abandoned tunnels	Improbable
Silver-haired bat/ <i>Lasionycteris noctivagans</i>	BLM Special Status	Resident	Variety associated with caves/ abandoned tunnels	Possible
Spotted bat/ <i>Euderma maculatum</i>	BLM Special Status	Resident – short migratory	Variety associated with caves/ abandoned tunnels	Improbable
Long-eared myotis/ <i>Myotis evotis</i>	BLM Special Status	Resident- short migratory	Variety associated with tree cavities, caves/ abandoned tunnels	Probable
Long-legged myotis/ <i>Myotis volans</i>	BLM Special Status	Resident	Variety associated with tree cavities, caves/ abandoned tunnels	Probable
Western small- footed myotis / <i>Myotis ciliolabrum</i>	BLM Special Status	Resident	Variety associated with caves/ abandoned tunnels	Probable
California myotis/ <i>Myotis californicus</i>	BLM Special Status	Resident	Variety associated with caves/ abandoned tunnels	Possible
Yuma myotis/ <i>Myotis</i>	BLM Special	Resident	Variety associated with caves/ abandoned tunnels	Probable

Wildlife Common/ Specific		Status	Category in travel management planning area	Habitat	Occurrence potential ¹
	<i>yumanensis</i>	Status			
	Townsend's big-eared bat/ <i>Plecotus townsendii</i>	BLM Special Status	Resident	Variety associated with caves/ abandoned tunnels	Probable
Amphibians	Western/Boreal toad/ <i>Anaxyrus boreas</i>	BLM Special Status	Resident	Variable mesic habitat with cover elements close to aquatic breeding habitat	Probable
Birds	Sage-grouse/ <i>Centrocercus urophasianus</i>	Candidate	Resident	Sagebrush steppe	Present
	Yellow-billed cuckoo/ <i>Coccyzus americanus</i>	Threatened	Not present	Cottonwood galleries ideally over 200acres	Not Present
	Bald eagle/ <i>Haliaeetus leucocephalus</i>	BLM Special Status	Resident	Forest/ riparian	Present
	Golden eagle/ <i>Aquila chrysaetos</i>	BLM Special Status	Resident	Variety open habitats	Present
	Northern goshawk/ <i>Accipiter gentilis</i>	BLM Special Status	Breeding- migratory	Forest	Possible
	Ferruginous hawk/ <i>Buteo regalis</i>	BLM Special Status	Breeding- migratory	Open sagebrush steppe	Possible
	Short-eared owl/ <i>Asio flammeus</i>	BLM Special Status	Resident	Sagebrush steppe	Possible

Wildlife Common/ Specific	Status	Category in travel management planning area	Habitat	Occurrence potential ¹
Burrowing owl/ <i>Athene cunicularia</i>	BLM Special Status	Breeding- migratory	Short-grass areas/ steppe	Not Present
Flammulated owl/ <i>Otus flammealus</i>	BLM Special Status	Breeding- migratory	Forest	Possible
Harlequin duck/ <i>Histrionicus histrionicus</i>	BLM Special Status	Breeding- migratory	River	Possible
Long-billed curlew/ <i>Numenius americanus</i>	BLM Special Status	Breeding- migratory	Short-grass areas/ wetlands	Possible
Lewis woodpecker/ <i>Melanerpes lewis</i>	BLM Special Status	Breeding- migratory	Forest	Present
Loggerhead shrike/ <i>Lanius ludovicianus</i>	BLM Special Status	Breeding- migratory	Sagebrush steppe	Present
Sage thrasher/ <i>Oreoscoptes montanus</i>	BLM Special Status	Breeding- migratory	Sagebrush steppe	Present
Brewer's sparrow/ <i>Spizella breweri</i>	BLM Special Status	Breeding- migratory	Sagebrush steppe	Present
Sage sparrow/ <i>Amphispiza belli</i>	BLM Special Status	Breeding- migratory	Sagebrush steppe	Present
Cassin's finch/ <i>Carpodacus cassinii</i>	BLM Special Status	Breeding- migratory	Forest	Possible

Wildlife Common/ Specific	Status	Category in travel management planning area	Habitat	Occurrence potential ¹
Green-tailed towhee/ <i>Pipilo chlorurus</i>	BLM Special Status	Breeding- migratory	Riparian	Possible
Olive-sided flycatcher/ <i>Contopus cooperi</i>	BLM Special Status	Breeding- migratory	Riparian	Possible
Willow flycatcher/ <i>Empidonax traillii</i>	BLM Special Status	Breeding- migratory	Riparian	Possible

¹ Categories include species presence documented (Present), species likely to occur based on preferred habitat and local species abundance and nearby occurrences within 5 miles (Probable), species may occur based on preferred habitat and/or occurrences within 25 miles (Possible), species not likely to occur based on limited or lack of preferred habitat and/or occurrence over 50 miles (Improbable), and species not present due to lack of habitat (Not Present). Presence of habitat within South Half TMA was determined from Idaho Vertebrate Modeling Database (University of Idaho n.d.); *NatureServe Explorer* <http://explorer.natureserve.org>, Idaho BLM unpublished data, and specialist expertise.

Yellow-billed cuckoo

On January 15, 2015 the USFWS identified the western distinct population segment (DPS) of yellow-billed cuckoo as a threatened species for the BLM SFO (Lemhi County) area (USFWS, 2014), (USFWS, 2014a), <http://ecos.fws.gov/ipac/resubmit.jsp>. The SFO is not within the area proposed for DCH (USFWS, 2014a).

Suitable habitat for the yellow-billed cuckoo is a minimum of 5 acres and ideally >200 acres of cottonwood canopy and a thick willow understory (Laymon, 1998), (USFWS, 2001). This type of habitat is rare within the SFO area, and does not occur within the travel management planning area. There are no records of yellow-billed cuckoos in the travel management planning area.

Greater sage-grouse

The greater sage-grouse is a sagebrush-obligate species that requires large extents of relatively undisturbed sagebrush steppe habitat. Sage-grouse were once abundant across the sagebrush steppe ecosystems of western North America. Present distribution area is half the original (Schroeder, Young, & Braun, 1999), (Schroeder, et al., 2004). Despite long-term population declines, sage-grouse persist across more than 250,000 square miles of the sagebrush ecosystem (Schroeder, et al., 2004).

On March 5, 2010 the USFWS submitted a new finding to the Federal Register which found that listing the greater sage-grouse was warranted but precluded by the need to take action on other species facing more immediate and severe extinction threats (USFWS, 2010). With a listing decision date of September 2015 maintenance of viable sage-grouse populations is of special concern to state and federal resource managers across the species' present range.

Typically, sage-grouse congregate on communal strutting grounds called leks from late March to early May. The nesting season occurs soon after, extending from May to early June. Broods remain with females for several more months. Early brood-rearing areas contain high forb and insect compositions. Late brood-rearing and summer habitats used from late June to early August are generally wet meadows and riparian areas. Sage-grouse breeding, nesting, early and late brood-rearing and winter habitats occur within the travel management planning area. Local lek surveys, telemetry studies, and incidental observations confirm the location of sage-grouse seasonal habitats in the travel management planning area.

Federal agencies are required by Executive Order 13186 (Federal Register, 2001), to consider the effect of projects on migratory birds with emphasis on species of concern. Species of concern are mapped and described in the Birds of Conservation Concern 2008 (USFWS, 2008), <http://www.fws.gov/migratorybirds/NewReportsPublications/SpecialTopics/BCC2008/BCC2008.pdf>. The goal of this list is to prevent or remove the need for additional ESA bird listings by implementing proactive management and conservation actions.

Bald eagle activities are concentrated along the Salmon River and to a lesser extent, the Lemhi River between late fall and early spring, but principally during the winter. These bald eagles generally utilize cottonwoods and cliffs immediately along the rivers although conifers may provide perch or roosting sites with additional thermal protection. The birds principally forage on fish and waterfowl but also feed on animals that are winter-killed or vehicle mortalities. Each year, a mid-winter bald eagle census is conducted within the Salmon area along the main rivers. There were 241 bald eagle counted in the 2014 survey, highest number in 37 years of survey. In addition to wintering bald eagles the number of nesting bald eagles has increased. In the last 20 years the number of nests in the upper Salmon River Subbasin has increased from zero to 18 (IDFG, 2010).

Affects Common to All Alternatives

The existence of travel routes, and their use, impact wildlife and their habitat throughout the world, these impacts are common to all Alternatives, though they differ in the degree of impact.

Travel routes and motorized vehicles have variable impacts on wildlife species. They are often species-specific and co-dependent on factors such as traffic volume, season and timing of use, the amount of vegetative cover along travel routes, and the frequency of human-wildlife interactions. Typically, impacts associated with low traffic volume are not as significant to most wildlife species as those associated with high- volume, high-speed traffic. Motorized off-road recreation, such as OHV use, can have numerous impacts on wildlife species because

there are direct effects on vegetation and other habitat components and disturbances to individual animals.

Wildlife disturbance by motor vehicles generally results in displacement and avoidance of otherwise suitable habitats. Human disturbances can affect nesting, breeding, or wintering sites. Responses vary by species and the intensity of disturbance (Gaines et.al., 2002). Direct and indirect effects of human disturbances include nest abandonment, decline in parental care, increased stress, shortened feeding times, lower reproductive success, and collisions with wildlife.

Routes lead to habitat fragmentation. Many wildlife species thrive better in large blocks of undisturbed habitat rather than smaller units. Generally the local biodiversity attributes are reduced as habitat fragmentation increases. Maintenance of wildlife movement corridors between existing habitats is an important consideration when planning designated travel routes.

Existing travel limitations and exceptions identified under the 2001 amendment to the Lemhi RMP would remain in effect under all alternatives. This includes seasonal closures, the ability of the public to travel up to 300 feet from designated routes for direct access to campsites, retrieve downed big game, or harvest forest products.

Table 19 lists miles of road by alternative within certain wildlife habitats.

Alternative A – No Action/ Existing Network

Direct/Indirect Impacts: Alternative A would offer the same impacts to wildlife as those presently occurring. If use increases overtime, as expected, more frequent use could disturb wildlife species that are less adaptable to this regular disturbance.

Alternative B – Minimum Network

Direct/Indirect Impacts: Alternative B designates the fewest number of routes and therefore, fewest number of road miles through the landscape, Table 16. This action would generally lead to fewer and less frequent interactions between human users of BLM administered lands in the planning area and wildlife species. Fewer routes would also decrease habitat fragmentation.

Alternative C – Balanced Network

Direct/Indirect Impacts: With implementation of Alternative C the total number and mileage of designated routes in the planning area is reduced by 223 miles from present, but remains 267 miles above Alternative B. This change in designated route mileage would lead to a slight change in wildlife habitat maintenance/ fragmentation from the present condition.

Alternative D – Maximum Network

Direct/Indirect Impacts: Alternative D would decrease the number of routes and total mileage in the planning area by 10 miles from the current situation. This minimal change combined

with the expected increase in use over time would lead to continued habitat fragmentation and possible impacts to wildlife species.

Table 19: Miles of designated routes by alternative within certain wildlife habitats

Wildlife Habitat by Species			Alternative A – No Action/ Existing Network (mi)	Alternative B – Minimum Network (mi)	Alternative C – Balanced Network (mi)	Alternative D – Maximum Network (mi)
Miles Within Mapped Species Specific Habitat	Canada Lynx	LAUs	21	15	19	20
		lynx habitat within LAUs	9	6	8	8
	Mule Deer	winter range	207	130	177	192
		winter range without seasonal restrictions	157	89	126	142
		crucial winter range	57	34	48	53
		crucial winter range without seasonal restrictions	40	21	31	36
	Elk	winter range	76	45	69	74
		winter range without seasonal restrictions	44	21	37	43
		crucial winter range	22	10	19	21
		crucial winter range without seasonal restrictions	12	3	10	11

Wildlife Habitat by Species		Alternative A – No Action/ Existing Network (mi)	Alternative B – Minimum Network (mi)	Alternative C – Balanced Network (mi)	Alternative D – Maximum Network (mi)
Sage- grouse	key habitat	955	517	750	902
	summer habitat	519	280	403	491
	winter habitat	231	117	177	220
	spring habitat	292	148	224	280
	CSGLWG priority areas	401	194	299	378

CHAPTER 4 – CUMULATIVE EFFECTS OF ALTERNATIVES

Cumulative effects are defined by the Council on Environmental Quality as “...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7).

This section of the document discloses the incremental impact that the alternatives are likely to have when considered in the context of impacts associated with past, present, and reasonably foreseeable future actions that have occurred, or are likely to occur in the Cumulative Impacts Assessment Area (CIAA).

The CIAA for this analysis includes the BLM SFO South Half Travel Planning Area and the adjacent lands managed by other entities occurring within the same watersheds (Map 12). The surface management status for lands in the CIAA is in Table 20.

Past, present, and reasonably foreseeable actions that have impacted the CIAA include road maintenance, infrastructure development (roads, powerlines, pipelines, etc.), OHV use, recreation, weed invasion and/or control, grazing, fire, land conversion for agricultural or residential development, mining, and reclamation. Although these actions probably do not account for all of the actions that have or are likely to occur in the CIAA, GIS analysis, agency records, and professional judgment suggest that they have contributed to the vast majority of cumulative impacts that have occurred in the CIAA.

For all of the resources affected by the alternatives described in this document, this CIAA is the landscape unit that defines the bounds of the cumulative effects analysis. As identified in the Actions Common to All Alternatives, the BLM would continue to validate travel management designations if new information comes available on route location.

Table 20: Surface management status within the CIAA

Ownership	Acres
Bureau of Land Management	384,827
Private Property	121,935
U.S. Forest Service Salmon-Challis National Forest	422,349
Idaho Department of Lands	22,374
Idaho Department of Fish and Game Lands	201

Past and Present Actions

The BLM follows a multiple use mandate that allows for many resources and uses besides transportation, including, but not limited to:

- livestock grazing including but not limited to grazing permits, troughs, fences, pipelines;
- recreation including but not limited to developed recreation sites, dispersed recreation, outfitter and guide permits;
- fuels management including but not limited to hazardous fuels reductions and invasive weed treatments;
- forest resources including but not limited to harvest and forest health actions;
- oil, gas, and geothermal exploration and permits;
- wildlife including but not limited to research, construction and maintenance of guzzlers, habitat improvements;
- fisheries including but not limited to research, irrigation diversions, culvert replacements, habitat improvements;
- minerals including but not limited to free use permits and mineral material sales; and
- realty including but not limited to ROWs, easements, and land transfers.

In the past, motorized use has been largely unregulated, due in part to limited use. Travel routes were often created for resource access needs such as mining, grazing, water management, and timber harvest and were typically minimally impacting as those routes received use once, or perhaps a few times over the course of a year. Mining and timber roads would typically see the most active use during extraction activities, but road use would decline

precipitously after those activities ceased. Additionally, in the past, private lands in the West were often large ranches with few fences or other impediments to public usage.

Over the recent years, as population growth has exploded in the West, and motorized technology has out-paced planning efforts, resource impacts from unmanaged motorized transportation have become a serious issue for the BLM, USFS, and other land management agencies. At the same time, private lands have become increasingly subdivided, resulting in reductions in areas that were generally open to public access, and increasing pressure on adjacent public lands to address access needs. In the 2001 LRMPA, the SFO adjusted travel management from generally “open”, to “limited” for most of the field office. This action also restricted cross-country travel. Routes were designated in a few areas with significant resource issues and known conflicts. In some areas, seasonal restrictions were implemented to protect wildlife or reduce the potential for soil impacts. These changes were brought about by the need to address the proliferation of routes across the landscape and subsequent impacts to all resources.

Past and present actions such as road maintenance, infrastructure development (roads, powerlines, pipelines, etc.), OHV use, recreation, weed invasion and/or control, grazing, fire, land conversion for agricultural or residential development, mining, and reclamation have affected the resources analyzed to varying degrees. Specifically, the following actions are known to have affected the analyzed resources individually, or in conjunction with one another.

Livestock Grazing

Livestock grazing has been occurring in the planning area since the 1800s and remains an important part of the local economy and way of life. There are 46 grazing allotments administered by the BLM in the CIAA. The USFS has approximately 57 allotments in the CIAA.

The SCNF has approximately 48 active stockwater rights, the SFO has 159, and Idaho Department of Lands has 6 in the CIAA. Together, these public land stockwater rights withdraw 4.3 cubic feet per second from streams in the CIAA in addition to the private land stockwater rights.

The SFO has 48 mapped riparian exclosures that protect 1,909 acres of wetlands, springs, riparian habitat, and sensitive stream reaches from livestock impacts in the Lemhi River Subbasin within the CIAA. There are additional, smaller SFO exclosures that have not been mapped.

The SFO has are 6 exclosures that protect 1,718 acres of wetlands, springs, riparian habitat, and sensitive stream reaches from livestock impacts in the upper Birch Creek Subbasin within the CIAA.

Recreational Uses

Dispersed recreational activities in the CIAA have include hiking, fishing, boating, camping, backpacking, wildlife viewing, mountain biking, OHV riding, scenic driving, hunting, and photography. These activities occur on State, USFS, and BLM lands. Most recreation activity occurs during the summer and fall and is concentrated at the 7 developed BLM recreation sites. Dispersed recreation use is most popular in the backcountry during the fall hunting season.

Currently, there are two BLM Special Recreation Permits (SRP) in the CIAA. One permit is for an annual endurance run that occurs along the Continental Divide National Scenic Trail. Another permit authorizes dude ranching activities in the Eighteenmile WSA area. Several other outfitters have SRPs to guide hunting, fishing, and/or horse packing on USFS lands in the CIAA.

Snowmobiling and cross-country skiing occur on accessible USFS and BLM trails in the CIAA. The current transportation network is a system of planned and unplanned roads and trails totaling about 1,079 miles. Many motorized routes were created in support of activities such as grazing, mineral exploration, and timber production. Routes were often pioneered or constructed in the most direct manner possible to a specific location and for a specific need. The route network receives extensive use by recreationists both traveling the routes as a means of recreation and those using the routes to access remote areas.

Timber Harvest and Hazardous Fuels Reduction

Since 1980, there have been 17 timber sales on BLM lands in the CIAA, totaling 2,858 acres harvested. There are three harvest projects currently taking place. Removal of the trees has required the construction of 14.1 miles of access roads.

There has not been any road construction, temporary or otherwise, associated with hazardous fuels reduction contracts in the CIAA.

Timber harvest and fuels reduction projects have also occurred on adjacent USFS and private lands, and additional projects are currently underway.

Agricultural Development

Agricultural development is found throughout the CIAA and dates back to early settlement in the 1800s. Most the agricultural development is found along the valley floor in the lower elevations along U.S. Highway 93 and State Highway 28. Approximately 100,000 acres or 7 percent of the lands in the CIAA is currently used for agricultural purposes.

For more than 100 years, surface water has been diverted from streams in the CIAA for irrigation. Screened and unscreened diversion structures and water conveyance ditches occur throughout the CIAA. More recently, private land groundwater wells and closed pipeline systems have been developed for irrigation.

Fisheries, and Threatened, Endangered, and Sensitive Fishes

Lemhi River Subbasin

For over 100 years, private and public land management practices have adversely affected fish and riparian and aquatic habitat in the Lemhi River Subbasin. Road culverts, irrigation structures, and dewatering created fish passage barriers and disconnected historic habitat. The effects from these activities include excessive sedimentation, high stream temperatures, and changes to hydrologic processes.

As Columbia River Basin anadromous fish runs began to decline and stocks were listed, ranchers in the Lemhi River Subbasin took action to prevent the extirpation of Lemhi River Chinook salmon and steelhead runs. They sought the assistance of state and federal officials to help develop a conservation plan addressing the habitat needs of ESA listed fishes in the subbasin, including the CIAA. The Northwest Power Planning Council's 1992 *Strategy for Salmon* issued a plan calling for the recovery of salmon runs in the Columbia River Basin, watershed-level planning efforts to effect that recovery, and cooperation between private landowners, government agencies, and other stakeholders in developing such efforts. These collaborative efforts led to establishment of the Model Watershed Project in Salmon, Idaho in 1993 (now OSC-USBWP); completion of a plan by local irrigators to improve fish passage in the Lemhi River in 1992; and the 1995 Model Watershed Plan which identified a range of fish conservation actions for the Lemhi River Subbasin.

In 1992, Idaho Department of Water Resources (IDWR) placed a moratorium on all new appropriations of surface water in the upper Salmon River Subbasin, including the CIAA. This moratorium was implemented in response to the ESA listings of Chinook salmon, sockeye salmon, steelhead, and bull trout. In 2005, IDWR removed the moratorium in favor of a case-by-case consideration. A local public interest review is required for all new water right applications to ensure water right permits do not conflict with fish recovery efforts.

In 2005 the Lemhi Framework was established to set the goals, objectives, and conservation strategies for implementation of the habitat actions in the Lemhi River Subbasin pursuant to the Memorandum of Agreement (MOA) titled "Memorandum of Agreement Between the State of Idaho, the Nez Perce Tribe, USFWS, and NMFS Establishing a Collaboration Process for Making Recommendations to the State of Idaho Concerning Use of the State Section 6 Account of the Snake River Basin Adjudication Agreement of 2004 Habitat Trust Fund (Nez Perce MOA)". The purpose of the Lemhi Framework is conservation of ESA listed and non-listed salmonid species and their habitat in the Lemhi River Subbasin. The framework builds upon existing conservation strategies that have been voluntarily implemented by water users and landowners in cooperation with state and federal agencies and tribes. Numerous and significant conservation projects have been voluntarily implemented in the Lemhi River Subbasin focusing on fish passage issues, fish screen improvements, protection of riparian habitat, and consolidation or modification of irrigation diversions. The framework builds upon the previous habitat actions implemented by local water users, landowners, tribes, state and federal agencies, and other stakeholders and identifies remaining concerns and potential strategies that address those concerns. Both in-basin and out-of-basin habitat actions are needed to protect and restore ESA listed fish within the Lemhi River Subbasin (2005 MOA). Therefore, the framework not only builds upon past conservation efforts, but is also consistent with out-of-basin habitat actions being taken to protect and restore ESA listed fishes.

The primary goals of the Lemhi Framework are to: (1) implement biologically sound strategies that contribute to the persistence of healthy populations of Chinook salmon, bull trout, steelhead, westslope cutthroat trout, and redband trout in the Lemhi River Subbasin; (2) implement restoration alternatives that have a high likelihood of success and that provide substantial value for target resources; (3) coordinate with, and support other, compatible fish protection and restoration activities in the Lemhi River Subbasin to maximize total benefits to fisheries resources.

The conservation strategy for Lemhi River tributaries is to provide hydraulic and ecological reconnection of at least 10 tributaries with the Lemhi River in the first 20 years of the MOA “to benefit anadromous and resident salmonids by providing access to historical spawning and rearing habitat”. IDFG has 17 pit tag arrays to monitor Chinook salmon and steelhead population trends in the Lemhi River Subbasin.

To date, cooperative projects have restored perennial flow/full connection to four tributaries including Hayden, Big Springs, and Little Springs creeks in the CIAA. Four tributaries have partial connection including Big Timber, Canyon, and Hawley creeks in the CIAA. Another three tributaries are seasonally connected including Agency and Lee creeks in the CIAA.

Upper Birch Creek Subbasin

BLM SFO, IDFG, and The Nature Conservancy (TNC) have completed aquatic and riparian habitat improvement projects on public lands in the upper Birch Creek Subbasin, within the CIAA. In the 1980s TNC purchased property in the headwaters of Birch Creek that contains an extensive network of emergent wetlands, alkali springs, aquatic, and riparian habitat. This 1,605 acre property was later exchanged to the BLM in cooperation with IDFG and is managed by the SFO as a riparian enclosure to protect these sensitive and valuable habitats from livestock impacts.

Residential Development and Infrastructure

Most of the residential development in the CIAA is along State Highway 28. Some larger ranches have been sold and subdivided which has increased housing along these routes. There are also many residences found along some of the larger, wider drainages. Along with residential development, access roads, distribution powerlines, and telephone lines are needed and have been constructed to meet the public demand need for infrastructure.

Mineral Activities

Past mineral activities in the CIAA began in the late 1800s with limited placer and lode gold mining in localized areas throughout the region. Lead, zinc and silver were discovered about this same time which brought thousands of prospectors and miners to the Nicholia and Gilmore areas. In the early twentieth century, copper, uranium, and thorium exploration dominated the region, especially in the 1950s. All of these unregulated activities resulted in numerous changes to the landscape, including the construction of settlements and towns, road networks, mining and exploration structures, and excavations.

The current mineral activities in the CIAA include limited “Notice” level prospecting and some production of mineral materials including building stone, soil (clay), and gravel. Much of the mineral material production has come from private lands. The Notice level metal exploration activities have been well-regulated, bonded, and have concentrated mostly on gold exploration. Recently thorium and rare-earth elements have caught the interest of prospectors and mineral investors but activities for these elements are still on a very limited basis.

Road Construction and Maintenance

The SFO has also implemented road surfacing, drainage improvements and general road maintenance on roads in the Agency Creek, Yearian Creek, Reese Creek, and Eighteenmile Creek watersheds since 2001. In 2007, the SFO received multi-year funding to maintain and upgrade several roads, including some in the CIAA. Approximately 15 miles of road were improved, with associated surfacing, and drainage improvements (culverts and rolling dips) in an effort to reduce impacts to water quality. The SFO did additional work in 2008-2010 in the Eighteenmile Creek Watershed to upgrade roads and reduce sediment delivery to streams based on the Lemhi TMDL report recommendations (IDEQ, 2010).

The SFO has replaced barrier culverts on Agency, Cow, Basin, Tenmile, Clear, Hawley, and Canyon creeks (Attachment 6). All the identified fish passage barriers on the BLM-managed road system in the CIAA have been upgraded to “fish-friendly” structures. Other fish barrier culverts have been replaced by IDFG, Idaho Transportation Department, Bureau of Reclamation, SCNF, The Nature Conservancy, Trout Unlimited, Natural Resource Conservation Service, and the OSC-USBWP (Attachment 4).

Each year, annual maintenance is performed on some BLM, USFS, and Lemhi County roads. On an average, 30 miles of road are maintained on BLM-administered lands in the CIAA.

Salmon-Challis National Forest Travel Plan 2010

The SCNF Travel Plan was completed in 2009. The USFS Record of Decision implemented their Preferred Alternative (Alternative 5), which designated 2,670 miles of roads and 864 miles of motorized trails for public motor vehicle use, Forest-wide. This is a reduction of 250 miles of roads and 255 miles of motorized trails when compared to the No Action Alternative. The designation of routes includes the limited use of motor vehicles within 300 feet of most roads and trails solely for the purpose of dispersed camping. Motor vehicle use off the designated system, including the use of motor vehicles for game retrieval, is no longer allowed. Although much of the USFS planning area is outside the CIAA, the end result is a designated route system and restrictions on cross-country travel similar to those implemented as a result of the BLM SFO North Half Travel Plan and proposed for this travel plan.

In 2014 the Salmon-Challis National Forest prepared a Final Supplemental Environmental Impact Statement to provide supplemental analysis to clarify and revise sections of the original analysis and to correct deficiencies in the 2009 Final Environmental Impact Statement identified by the District Court of Idaho.

Reasonably Foreseeable Actions

All of the past and present actions described above are expected to continue into the reasonably foreseeable future. The intensity of the actions may vary through time depending on economic factors, changes in management direction, and population changes. No actions beyond those discussed can be predicted to occur with certainty in the foreseeable future.

Livestock Grazing

The intensity and the character of livestock grazing are anticipated to remain constant in the foreseeable future. Maintenance of existing range improvement projects and construction of additional range improvement projects such as exclosures to protect water sources, wetlands, springs, riparian areas, and sensitive stream reaches from livestock impacts, water pipelines, water troughs, fences, and adjustments to grazing management such as alterations of stocking levels or season of use to facilitate grazing management are expected to continue for the foreseeable future.

The SFO would build a livestock exclosure, water pipeline, and trough at Poison Spring about 10 miles south of Leadore in the CIAA (Trapani & Guyer, 2011). A 4.5 acre exclosure would be built around the spring complex.

The Birch Creek riparian exclosure that protects 1,605 acres of sensitive wetlands, springs, riparian habitat, and sensitive stream reaches would be reconstructed in 2015-2016 to improve its long-term effectiveness and make it more wildlife-friendly. Funding for the reconstruction was provided by a National Fish and Wildlife Foundation grant and the IDFG Upper Snake Region.

Recreational Uses

Based on the BLM and USFS visitor use data management system, trends lean towards an increase in visitor use in both developed and dispersed recreation settings located in the CIAA. Activities that have been popular in the past would likely continue into the future. The transportation network would continue to be utilized for both travel and recreation at increasing levels.

The BLM anticipates routine maintenance and improvements to continue in many of the developed recreation sites located in the CIAA. Larger improvement projects at existing developed recreation areas are likely, as well. It is expected that a number of mountain biking, hiking, and equestrian trails would be signed and mapped in the CIAA.

Timber Harvest and Hazardous Fuels Reduction

There are currently 672 acres of timber harvest scheduled for implementation in the SFO five-year timber sale action plan. There is no road construction planned as part of this harvest; however it is anticipated there would be approximately one mile of temporary road to facilitate hauling of forest products from the sale areas. Temporary roads would be made impassable following contract termination and seeded to native grass and forb species. There is not any

road construction, temporary or otherwise associated with hazardous fuels reduction contracts planned for the foreseeable future in the CIAA.

Agricultural Development

Future agricultural development would be tied to the availability of new tracts of land for cultivation, availability of water, and the economy. At the present time there are no plans to dispose of any public lands for agricultural purposes. It is anticipated that agricultural development would remain at the current level or decline in the foreseeable future as the demand for residential and commercial purposes increases.

Fisheries, and Threatened, Endangered, and Sensitive Fishes

Collaborative efforts to improve riparian and aquatic habitats, and reconnect historically accessible spawning and rearing habitat to benefit ESA listed fishes, DCH, and sensitive salmonids are expected to continue in the foreseeable future.

In 2015-2017 OSC-USBWP, IDFG, BLM SFO, NRCS, LSWCD, BOR, and four landowners are expected to implement diversion improvement projects in Eighteenmile, Hawley, and Canyon creeks that would increase irrigation efficiency, restore connectivity with the Lemhi River, remove fish barrier diversion structures, and prevent fish entrainment.

A limited number of new surface water rights are expected to be issued by IDWR.

Development of groundwater wells for irrigation is expected to increase.

Residential Development and Infrastructure

Future residential development would be tied to the availability of new tracts of land for subdivision and the economy. At the present time there are no known proposed subdivisions in the CIAA. It is anticipated that residential development would remain at the current level or increase in the foreseeable future. Along with any new residential development, additional access roads, distribution powerlines, and telephone lines would be needed.

Mineral Activities

Future mineral activities would likely increase, with emphasis placed on metal exploration mostly for gold, silver, cobalt, thorium and various rare earth elements. There would also be an increasing need for mineral materials, especially gravel and gravel related products as populations increase.

In the distant future there is the possibility that exploitation of known geothermal resources may occur. Currently the region's remoteness hinders this activity.

Road Construction and Maintenance

It is expected that road construction and maintenance would occur at, or near, the same levels as it has in past years. The primary influence on this factor would be agency budgets as the

miles of roads maintained on an annual basis is primarily driven by road conditions and funding levels.

In 2015-2016 OSC-USBWP and IDFG would install a bridge to replace culverts on Eighteenmile Creek at Highway 29. Beaver plug the culverts annually, creating fish passage barriers. This would be a causeway style bridge to prevent beaver from plugging the culverts and maintain beneficial beaver activity.

In 2015 OSC-USBWP would install a bridge to replace a fish barrier culvert on Eighteenmile Creek at the Old Railroad Grade.

It is expected OSC IDFG, Idaho Transportation Department, BOR, SCNF, The Nature Conservancy, Trout Unlimited, NRCS, LSWCD, and the OSC-USBWP would continue to replace other fish barrier culverts on state, federal, county, and private roads in the CIAA in the foreseeable future.

Cumulative Impacts Associated with Past, Present and Reasonably Foreseeable Future Actions

Each of the past, present, and reasonably foreseeable future actions described above contribute a specific incremental environmental effect that can be described or accounted for with the same indicators as used in the alternative analysis presented earlier in the document. The accumulated effect of past, present, and reasonably foreseeable future actions on a given resource provides a baseline from which to evaluate the contribution of the alternatives to the collective impact on that resource.

Access: At this point in time, there are no landowners willing to allow public legal public access in an easement to the BLM. Should the BLM acquire additional legal public access easements across existing roads on private land, there would be no change to the existing, on the ground road network because no new roads would be constructed. Over time, private land development has resulted in limitations on access to public lands and increased use in areas that have continued to allow access. Future subdivisions and or residential development on private land may further decrease access and result in the need for the creation of access roads across public lands to reach areas otherwise inaccessible.

Cultural Resources: Numerous activities have impacted cultural resources in the CIAA, individually and collectively. Livestock congregating on floodplains, spring sources, trailing routes, salting locations, water developments, and other grazingrelated actions have disturbed, destroyed, and otherwise altered cultural resources.

Unrestrained recreational travel by motor vehicles, agricultural and residential development, mining activities, and road construction has had similar impacts. Anticipated increases in recreational use are likely to result in increased visitation to cultural resources and the possibility of vandalism or unintentional disturbance.

Economics and Social Values: Since the advent of the 4-wheeled ATV circa 1981 and the corresponding increase in motorized recreation use on public lands, conflicts between public

land users, private landowners, and agency permittees have been steadily rising as a result of unwelcome noise and the minority of users who cut fences, leave gates open, and trespass, etc. In several locations within the planning area, private lands owners have responded to these issues by blocking access over their lands, thereby restricting access to public lands. For the foreseeable future, it is reasonable to assume that the planning area would experience a modest but steady increase in motorized and non-motorized recreational vehicle use, and with this increase, private land owners will further restrict public access.

Past and present, the overall social and economic impacts of motorized and non-motorized travel within the planning area have been relatively low when compared to other regions and public lands across the west. This reflects relatively low numbers of visitors who use and travel the planning area outside of hunting season. However, as agricultural lands that border public lands continue to transition to residential properties, user conflicts between home owners and those traveling across public lands would likely increase. At some threshold, impacts resulting from increasing motorized travel will incrementally begin to diminish the quality of other kinds of non-motorized recreation experiences. Under any planning alternative, government costs associated with maintaining routes and monitoring and regulating use would increase accordingly. Increasing recreational vehicle use may also result in shifts of some motorized and non-motorized uses and activities to other locations.

Although difficult to measure, anticipated increases in both motorized and non-motorized uses will continue to bring in additional revenues to local commercial interests as a result of increasing sales and repair of ATVs and mountain bikes, and the need for amenities such as food, beverage, and motels to accommodate increasing visitor use.

Existing and Potential Land Uses: Permitted land uses such as pipelines, roads, telephone lines, powerlines, and livestock grazing have resulted in alterations to the landscape in the form of visual and habitat alteration, fragmentation, and disturbance. Right-of-ways are typically authorized for up to 30 years with the potential for renewal upon expiration and land use permits are authorized for three years with the potential for renewal. These current and future types of uses are compatible with the existing uses in the area and provide a public need. The demand for such uses is likely to increase with increases in population, development of private lands, and better identification and recognition of land ownerships. Any reduction in access is likely to result in the increased need for authorization of access requests to conduct such land uses.

Fisheries, Threatened, Endangered, and Sensitive Fishes: Collaborative projects to reconnect historically accessible spawning and rearing habitat in the Lemhi River Subbasin through changes in irrigation practices, removal of barrier diversion structures, and road culvert replacements have been implemented since the 1990s and are expected to continue in the reasonably foreseeable future. The Lemhi Framework conservation strategy for Lemhi River tributaries is to provide hydraulic and ecological reconnection of at least 10 tributaries with the subbasin in the first 20 years of the 2005 MOA to benefit anadromous and resident salmonids by providing access to historical spawning and rearing habitat. As a result of these actions, the quantity and quality of aquatic habitat has improved and would continue to improve for the benefit of ESA listed fishes, DCH, EFH, and sensitive salmonids.

Invasive Non-native Species: Past, present and reasonably foreseeable activities within the CIAA have and would contribute to the spread of invasive non-native species. Noxious weeds are extremely mobile and by definition, are aggressive and have a high risk of expansion. Although travel corridors both motorized and non-motorized are prime vectors of noxious weed expansion, other activities also contribute to their expansion. Any ground disturbing activity increases the risk of noxious weed establishment due to vegetation disturbance and surface soil alteration. During project development on public lands, all authorized ground disturbing project activities (e.g. livestock grazing, water developments, new road construction, fuels reduction projects, utility corridor maintenance and upgrades, special recreation events, and mining exploration and development) are designed with best management practices geared towards mitigating noxious weed establishment. Big game animals and domestic grazing also contribute to noxious weed establishment as a means of seed dispersal and the potential for ground disturbing activities. The risk of noxious weed expansion by these activities is relatively constant.

Recreation Use: Current indicators suggest the planning area would experience a modest but steady increase in motorized and non-motorized recreational use for the foreseeable future, along with a corresponding increase in user conflicts. The impacts to recreation uses in the CIAA come primarily from livestock grazing, mineral activities, residential development and infrastructure, and recreation related actions. The transportation system, while not a function of any one resource, also affects recreation uses.

Livestock management related fencing is often an impediment to recreational users and can add to confusion when trying to differentiate between private and public lands.

Future mineral activities would likely increase, with emphasis placed on metal exploration mostly for gold, silver, cobalt, thorium and various rare earth elements. There would also be an increasing need for mineral materials, especially gravel and gravel related products as populations increase. Mineral activities tend to displace recreational use, but are currently not prevalent in the planning area.

Residential development and infrastructure can both impair and improve recreational access. ROWs and easements are often attained to ensure public access to an area otherwise controlled by private land ownership. However, land sales and exchanges may result in acreage lost to general public recreational pursuits.

Recreation actions generally benefit one type of recreational user group, often at the expense of another. For example, a campground designed for modern motor-homes may discourage users who prefer a primitive tent camping experience and a boat launch designed for canoes would displace motorboat access. Similar to recreation actions, transportation system actions generally benefit one recreational user group at the expense of another.

Soils: Past, present, and reasonable foreseeable activities within the CIAA have and would continue to impact soils, primarily livestock grazing, recreational uses, agricultural development, residential development and infrastructure, mineral activities, and road construction and maintenance. These activities increase the erosion and compaction of soils. Throughout the CIAA there is evidence of erosion and compaction occurring. These impacts occur mostly along

roads and trails, in and around livestock concentration areas, and around areas developed for residential or agricultural purposes. These impacts are not widespread and are expected to continue at current or slightly increased levels within the CIAA.

Tribal Treaty Rights and Interests: Impacts to cultural resources also impact Tribal Treaty Rights, as the two are intermeshed. Private and public road construction and maintenance, water utilization and ditches, livestock grazing, and the spread of invasive plants and noxious weeds have impacted culturally important species (i.e. salmon, steelhead, sage-grouse, deer and elk) through habitat fragmentation, habitat alteration, and disturbance. These actions may also directly affect important riparian and upland tribal food resources. Actions that have the potential to effect traditional procurement methods such as spear fishing, which requires clear water for success, are also of concern to the Shoshone-Bannock Tribes.

Transfer and sale of federal lands, issuance of land use permits, authorization of large scale disturbances such as mining actions, and private trespass on federal lands have the cumulative effect of reducing the federally managed land base available for the exercise of treaty-reserved rights. Additionally, limitations on access to public land across private lands are increasing, further reducing the opportunity to exercise treaty-reserved rights.

Local viewshed qualities, important in tribal cultural and traditional pursuits have been affected by agricultural and residential development, timber harvest and mineral extraction. The expected increase in population and use of public lands would result in continued conflict between public uses and unhindered practice of Tribal Treaty Rights.

Individually and in coordination such past activities have adversely impacted some Cultural Resources/Tribal Treaty Rights and Interests located in the CIAA. The BLM would continue to meet its federal trust responsibilities by consulting with the Shoshone-Bannock Tribes on a case-by-case basis during project planning and prior to project implementation in order to assess the potential cumulative effects to reserved treaty rights and cultural resources of concern to the Tribes.

Vegetation: Impacts to native vegetation occur from activities throughout the CIAA such as road maintenance, OHV use, weed invasion and/or control, grazing (both domestic and wildlife), fire, development, agricultural conversion, and mining. Impacts to relevant vegetative cover types occur at the local and regional level and could be beneficial (e.g., integrated weed management program implementation) or adverse (e.g., off-trail OHV use) to the native vegetative resource.

Threatened and Endangered Plants and Sensitive Plants: Habitat fragmentation by roads, development, dewatering, and grazing by livestock and wildlife have had negligible to minor impacts to sensitive plants in the CIAA. The more palatable sensitive plants are grazed by both livestock and wildlife in some years. Sensitive plant populations have been fragmented to some degree by OHV vehicle use, route development, road maintenance, mining, forestry, canal construction and agricultural development (Elzinga 2002).

Sensitive plants found directly in or along the road prisms would continue to be impacted. Continued application of herbicides to invasive plants along designated routes may damage

sensitive populations (Elzinga 2002). Conversely, not spraying weeds could cause more damage through invasive plant competition to sensitive plants.

Long-term road maintenance activities have the potential to damage sensitive plants in and adjacent to the road prism through direct physical damage or by directing water in a way that erodes soil from around individual plants. Natural impacts from wildlife, water, and wind erosion would continue to occur under any alternative.

Water Quality: The past SFO road surfacing and drainage improvements reduced sediment delivery to streams as per the Lemhi TMDL report recommendations (IDEQ, 2010). These improvements need continued maintenance to provide future benefits. On an average, 30 miles of road are maintained on BLM-administered lands in the CIAA annually. Annual maintenance is also performed on some SCNF and Lemhi County roads.

Wetlands and Riparian Zones: The BLM SFO and SCNF livestock exclosures and the upland and off-channel livestock water developments protect wetlands, springs, riparian habitat, and sensitive stream reaches from livestock impacts. SFO monitoring also shows that riparian vegetation has been improving under the current grazing strategies.

To date, collaborative projects have restored perennial flow/full connection to four tributaries including Hayden, Big Springs, and Little Springs creeks in the CIAA. Four tributaries have partial connection including Big Timber, Canyon, and Hawley creeks in the CIAA. Another three tributaries are seasonally connected including Agency and Lee creeks in the CIAA. These past, present, and foreseeably future actions would provide the perennial flow needed to establish and maintain healthy wetlands and riparian zones.

Cumulatively, these management changes and projects have improved riparian vegetation and streambank stability in the CIAA and the trend is expected to continue upward.

Wildlife, Threatened/Endangered, Candidate, Sensitive, and Migratory Birds: Cumulative effects to wildlife in the CIAA are caused by both natural and human influenced actions. Within the CIAA, habitat has been fragmented or altered by urbanization and agricultural development on private lands. Natural processes, like wildfire, have fragmented some habitat types, while also creating habitat for other species. Uses such as livestock grazing or timber harvest and associated road building have both enhanced habitat and created fragmentation. The presence of humans or livestock can temporarily displace wildlife from habitats.

The level of effects to wildlife and their habitats in the long-term would change little from present conditions across the CIAA.

Contribution of the Alternatives to the Cumulative Impacts

Access:

Alternative A No Action/Existing Network

There would be no change to access from current conditions. Additional cumulative impacts beyond those associated with past, present, and reasonable foreseeable future actions likely

include increased unauthorized motorized use and associated resource impacts and user conflicts resulting from inconsistent BLM and USFS travel plans. Conflicts associated with limitations on public access across private lands to adjacent public lands may increase where designated routes lead to private lands without easements. A clearly signed and mapped travel network would help to reduce confusion and may reduce user conflict arising from access issues.

Alternative B Minimum Network

The available route network under Alternative B would consist of 589 miles of designated routes open to some form of motorized use. This alternative would result in 490 fewer miles available for motorized access. Some users may view this as an unnecessary and unwelcome change; others may view it positively due to increased levels of conflict between motorized and non-motorized users. This alternative could potentially result in unauthorized off road use on the BLM lands from recreation use and other public land users. Cumulatively, this alternative would result in the greatest impacts to access to public lands in the CIAA.

This alternative would greatly increase the need for monitoring to ensure restrictions are being followed, as well as likely increase the number of authorizations required by BLM in order to provide access for development of land uses such as powerlines. A clearly signed and mapped travel network would help to reduce confusion and may reduce user conflict arising from access issues.

Alternative C Balanced Network

The available route network under Alternative C would consist of 856 miles of designated routes open to some form of motorized use. This would reduce motorized access in the planning area by 223 miles. There are no additional cumulative impacts to access under this alternative beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions. A clearly signed and mapped travel network would help to reduce confusion and may reduce user conflict arising from access issues.

Alternative D Maximum Network

Cumulative impacts to access within the planning area would be similar to those described under Alternative A and Cumulative Impacts Associated with Past, Present, and Reasonable Foreseeable Future Actions.

Cultural Resources:

Alternative A No Action/Existing Network

With the available route network remaining the same as current conditions within the CIAA, impacts to Cultural Resources would remain similar to those described in Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions. The designation of routes and associated restrictions on use, at any level, would result in the reduced potential for disturbance beyond the existing condition. The current limitation on “existing routes” provides unclear and unenforceable guidance to the public, resulting in continued proliferation of routes and associated impacts to cultural resources.

Alternative B Minimum Network

Clearly defined travel designations and the reductions in open roads would reduce accidental impacts to known and unknown cultural resources. Implementation of this alternative would result in substantial tracts of public land not be open to motorized travel, with large reductions in miles of designated roads and trails open to the general public. Cumulatively, this condition would provide the greatest reduction in the potential for cumulative impacts to cultural resources.

Alternative C Balanced Network

Clearly defined travel designations and the reductions in open roads would reduce accidental impacts to known and unknown cultural resources. Cumulative impacts in the CIAA would otherwise be similar to those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative D Maximum Network

Cumulative impacts to cultural resources within the planning area would be similar to those described under Alternative A and Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Economic and Social Values:

Alternative A No Action/ Existing Network

There are no additional cumulative impacts to Economic and Social Values expected under Alternative A beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative B Minimum Network

In addition to the impacts described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions, implementation of this alternative would result in expected impacts to the local economy through potential reductions in ATV sales and service and reductions in the number of motorized users traveling to the area. Although there would be opposition from many portions of the community, it is expected that users would gradually become accustomed to the greatly reduced network of routes open to motorized travel. Some users may elect to abandon motorized recreation activities due to the cumulative effect of the reduced opportunities proposed under this alternative in combination with the increased restrictions on adjacent USFS lands. Cumulatively, this alternative has the potential to have the greatest negative impacts to the economy and social values in the CIAA. Some negative impacts to the economy from motorized users choosing to travel elsewhere to recreate would be offset by an increase in visitation from members of the public interested in non-motorized recreation.

Alternative C Balanced Network

There are no additional cumulative impacts to Economic and Social Values expected under Alternative C beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative D Maximum Network

Cumulative impacts to Economic and Social Values under Alternative D within the planning area would be similar to those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Existing and Potential Land Uses

Alternative A No Action/ Existing Network

There are no additional cumulative impacts expected under Alternative A beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative B Minimum Network

This alternative with the least number miles of routes designated would likely result in an increased need to authorize access requests for permitted land uses.

Alternative C Balanced Network

This alternative with fewer miles of routes designated than Alternative A would likely result in a slightly increased need to authorize access requests for permitted land uses.

Alternative D Maximum Network

There are no additional cumulative impacts expected under Alternative D beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Fisheries, Threatened, Endangered, and Sensitive Fishes:

Alternative A No Action/ Existing Network

This alternative has the highest potential to increase cumulative impacts on Fisheries, TES fishes, riparian and aquatic habitats of all the alternatives. OHVs and ATVs are an increasingly popular form of recreation and transportation, especially for hunters. The current limitation on “existing routes” provides unclear and unenforceable guidance to the public, resulting in continued proliferation of routes and associated impacts to fish, riparian, and aquatic habitats.

The Pattee Creek ford action would not occur. This ford would continue to have potential cumulative impacts on the resident bull trout downstream in the Pattee Creek HIP.

The six Hawley Creek ford actions would not occur. Hawley Creek has been disconnected from the Lemhi River for over 100 years and is not currently accessible to Chinook salmon and

steelhead. When Hawley Creek is reconnected to the river in the reasonably foreseeable future, these fords would be additional cumulative impacts on these species.

Alternative B Minimum Network

This alternative would have the greatest potential for reduction of cumulative impacts on Fisheries, Threatened, Endangered, and Sensitive Fishes, riparian and aquatic habitats of all the alternatives. The proposed actions in this alternative are primarily administrative, although physical closures and obliteration could occur on undesignated routes and fords, and on user-created routes as needed to reduce cumulative fisheries, TES fishes, riparian, and aquatic impacts, the same as alternatives C and D.

Alternative C Balanced Network

This alternative would have less potential for reduction of cumulative Fisheries, Threatened, Endangered, and Sensitive Fishes, riparian and aquatic habitats impacts than Alternative B, and more than alternatives A and D. . The proposed actions in this alternative are primarily administrative, although physical closures and obliteration could occur on undesignated routes and fords, and on user-created routes as needed to reduce cumulative fisheries, TES fishes, riparian, and aquatic impacts, the same as alternatives C and D.

Public cooperation, current maps, signing, physical closures, obliteration, and enforcement would be needed to effectively reduce the cumulative road and ford related impacts that are currently occurring under Alternative A. Enforcing the motorized vehicle restrictions would continue to be problematic due to BLM staffing levels, repeated vandalism of signs, and the difficulties associated with physically restricting use along pioneered and primitive roads on relatively flat or gentle terrain, as in all the alternatives.

The Pattee Creek ford action would reduce the potential for cumulative impacts on the resident bull trout and the aquatic habitat downstream in the Pattee Creek HIP, the same as alternatives B and D.

Alternative D Maximum Network

This alternative would have less potential for reduction of cumulative Fisheries, Threatened, Endangered, and Sensitive Fishes, riparian and aquatic habitats impacts than alternatives B and C, and more than Alternative A. The proposed actions in this alternative are primarily administrative, although physical closures and obliteration could occur on undesignated routes and fords, and on user-created routes as needed to reduce cumulative fisheries, TES fishes, riparian, and aquatic impacts, the same as alternatives C and D.

Invasive, Non-Native Species:

Alternative A No Action/ Existing Network

The designation and signage of routes would help the public understand which areas are open for travel beyond the current limitation of “existing” routes, reducing the potential for spread of noxious weeds into new areas. However, the designation of routes, in and of itself, does little

to stop the spread of weeds along those routes and thus implementation of Alternative A would have little cumulative effect on the existing condition.

Alternative B Minimum Network

With the reduction in road mileage available for use by motorized vehicles and the subsequent reduction in vectors for transport of seeds, there is expected to be a corresponding reduction in the spread of Invasive Species. There are no additional cumulative impacts to Invasive, Non-invasive Species expected under Alternative B beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative C Balanced Network

There are no additional cumulative impacts to Invasive, Non-invasive Species expected under Alternative C beyond those described under Alternative B.

Alternative D Maximum Network

There are no additional cumulative impacts to Invasive, Non-invasive Species expected under Alternative D beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Recreation Use:

Alternative A No Action/ Existing Network

Additional cumulative impacts to Recreation Use beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions, likely include user conflicts as a result of increased unauthorized motorized use resulting from inconsistent BLM and USFS travel plans. Conflicts associated with limitations on public access across private lands to adjacent public lands may increase where designated routes lead to private lands without easements. Opportunities for non-motorized recreation would not increase under this alternative as a result of not constructing the 14 miles of non-motorized single track along the CDNST proposed for the other alternatives.

Alternative B Minimum Network

This alternative would provide the smallest network of routes available to motorized travel. Some recreationists would see this as a negative impact to recreation in the planning area. Other members of the public would see this as a positive impact to recreation use due to increased opportunities for non-motorized recreation. By implementing Alternative B, combined with an expected increase in recreation use and other uses (forestry, ranching, agricultural practices), the BLM would not be providing a balanced, sustainable, route network that would meet the demands of the public. Opportunities for non-motorized recreation would further increase under this alternative with the construction of 14 miles of non-motorized single track trail along the CDNST.

Alternative C Balanced Network

Cumulative impacts to recreation use under Alternative C would result in a slight decrease in opportunities for motorized recreation in the planning area and a slight increase in opportunities for non-motorized recreation as compared to the existing route network. Opportunities for non-motorized recreation would further increase under this alternative with the construction of 14 miles of non-motorized single track trail along the CDNST.

Alternative D

The construction of 14 miles of non-motorized single track along the CDNST would increase recreation opportunities in the planning area. There are no additional cumulative impacts to Recreation Use expected under Alternative D beyond those described in Alternative A and Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Soils:

Alternative A No Action/ Existing Network

There are no additional cumulative impacts to Soils expected under Alternative A beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative B Minimum Network

Cumulative impacts to soils would be reduced commensurate with the reduction of vehicular use. Soil impacts in areas where past practices involved vehicular use would be reduced substantially by any road closures or reclamation work. Based on the reduction in road mileage designated for motorized vehicle use, implementation of this alternative would result in the most positive cumulative impacts to soil resources, reducing those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative C Balanced Network

Cumulative impacts under Alternative C would collectively be similar to those described in Alternative B, with an increase in negative affects to soils based on the increase in road mileage designated for motorized vehicle use.

Alternative D Maximum Network

Under this alternative, there would be no measureable cumulative impacts to Soils expected beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Tribal Treaty Rights and Interests:

Alternative A No Action/ Existing Network

Under Alternative A, the designation of routes would result in motorized travel only on specific routes reducing impacts to known and unknown cultural resources, while the ability to continue unhindered motorized access to public lands would provide for the opportunity to exercise Tribal Treaty Rights. No other impacts to Tribal Treaty Rights and Interests are expected beyond those described in Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative B Minimum Network

There are no additional cumulative impacts to Tribal Treaty Rights and Interests expected under Alternative B beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative C Balanced Network

There are no additional cumulative impacts to Tribal Treaty Rights and Interests expected under Alternative C beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative D Maximum Network

There are no additional cumulative impacts to Tribal Treaty Rights and Interests expected under Alternative D beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Vegetation:

Alternative A No Action/ Existing Network

There are no additional cumulative impacts to Vegetation expected under Alternative A beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative B Minimum Network

Implementing Alternative B would slightly reduce cumulative impacts to Vegetation in the CIAA. The removal of impacts along routes not designated for use would allow approximately 594 acres of roadbed to be reclaimed, either naturally or through BLM efforts. Under this alternative, 490 fewer total travel route miles would be designated (a 45.4% reduction). The majority of the reduction, 437.9 miles, would occur in the Semi-desert Shrubland and Grassland cover type. Additionally, there would be an overall minor beneficial effect to native vegetation existing within the 300 foot route buffer currently open for limited motorized use along existing routes. This alternative would decrease the negative cumulative impacts on vegetation since the number of designated routes that would fragment vegetative communities would decrease from the existing network. There would be no additional cumulative impacts to Vegetation expected under Alternative B beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative C Balanced Network

Implementing Alternative C would slightly reduce cumulative impacts to Vegetation in the CIAA. The removal of impacts along routes not designated for use would allow approximately 269 acres of roadbed to be reclaimed, either naturally or through BLM efforts. Under this alternative, 223 fewer total travel route miles would be designated (a 20.6% reduction). The majority of the reduction, 200 miles, would occur in the Semi-desert Shrubland and Grassland cover type. Additionally, there would be an overall minor beneficial effect to native vegetation existing within the 300 foot route buffer currently open for limited motorized use along existing routes. This alternative would decrease the negative cumulative impacts on vegetation since the number of designated routes that would fragment vegetative communities would decrease from the existing network. There are no additional cumulative impacts to Vegetation expected under Alternative C beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative D Maximum Network

There would be a slight, but immeasurable beneficial effect to native vegetation existing within the 300 foot route buffer currently open for limited motorized use along existing routes. The removal of impacts along routes not designated for use would allow approximately 74.4 acres of roadbed to be reclaimed, either naturally or through BLM efforts. Under this alternative, 62 fewer total travel route miles would be designated (a 5.7% reduction); the majority of the reduction, 55 miles, would occur in the Semi-desert Shrubland and Grassland cover type. This alternative would only slightly decrease negative cumulative impacts on vegetation because there would only be a 5.7% reduction in mileage compared to the existing network. There would be no additional cumulative impacts to Vegetation expected under Alternative D beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Water Quality:

Alternative A No action/ Existing Network

This alternative has the highest potential to increase cumulative Water Quality impacts of all the alternatives. OHVs and ATVs are an increasingly popular form of recreation and transportation, especially for hunters. The current limitation on “existing routes” provides unclear and unenforceable guidance to the public, resulting in continued proliferation of routes and associated impacts to water quality.

User-created routes tend to have greater impacts than constructed routes because they receive no maintenance and do not have drainage structures such as ditches, cross-drains, waterbars, and dips. User-created routes are also more likely to occur in areas with poor drainage, multiple stream crossings, and highly erodible or unstable soils. Physical route closures and obliteration could occur on user-created routes that were created since the time of the inventory, as needed to reduce cumulative Water Quality impacts. Implementation of physical

closures, obliteration, and enforcement would continue to be limited by SFO staffing and funding for the reasonably foreseeable future.

Some sediment delivery would continue to occur from the designated roads. Funding for SFO road maintenance is expected to continue at the current level (~30 miles of the 225 designated road miles annually). This percentage of the designated road system (13%) is the same as the other alternatives.

The Pattee Creek and Hawley Creek ford actions would not occur. Hawley Creek has been disconnected from the Lemhi River for over 100 years and is not currently accessible to Chinook salmon and steelhead. However, when perennial flow is restored to Hawley Creek in the reasonably foreseeable future, these fords would add to Water Quality and Chinook salmon DCH and EFH cumulative impacts.

Alternative B Minimum Network

This alternative would have the greatest potential for reduction of cumulative Water Quality impacts of all the alternatives. The proposed actions in this alternative are primarily administrative, although physical closures and obliteration could occur on undesignated routes and fords, and on user-created routes as needed to reduce Water Quality impacts, the same as alternatives C and D.

Some sediment delivery would continue to occur from the designated roads. Funding for SFO road maintenance is expected to continue at the current level (~30 miles of the 221 designated road miles annually). This percentage of the designated road system (13%) is the same as the other alternatives.

Enforcing the motorized restrictions would continue to be problematic due to repeated vandalism of signs and the difficulties associated with physically restricting use along pioneered and primitive roads on relatively flat or gentle terrain. Implementation of physical closures, obliteration, and enforcement would continue to be limited by SFO staffing and funding for the reasonably foreseeable future. Public cooperation, current maps, signing, physical closures, obliteration, and enforcement would be needed to effectively reduce the cumulative road and ford related impacts that are currently occurring, as in all the alternatives.

The Pattee Creek ford action would reduce the potential for cumulative water quality downstream in the Pattee HIP, the same as alternatives C and D.

Alternative C Balanced Network

This alternative would have less potential for reduction of cumulative Water Quality impacts than Alternative B, and more than alternatives A and D. The proposed actions in this alternative are primarily administrative, although physical closures and obliteration could occur on undesignated routes and fords and on user-created routes as needed to reduce Water Quality impacts, the same as alternatives B and D.

Some sediment delivery would continue to occur from the designated roads. Funding for SFO road maintenance is expected to continue at the current level (~30 miles of the 223 designated

road miles annually). This percentage of the designated road system (13%) is the same as the other alternatives.

Enforcing the motorized restrictions would continue to be problematic due to repeated vandalism of signs and the difficulties associated with physically restricting use along pioneered and primitive roads on relatively flat or gentle terrain. Implementation of physical closures, obliteration, and enforcement would continue to be limited by SFO staffing and funding for the reasonably foreseeable future. Public cooperation, current maps, signing, physical closures, obliteration, and enforcement would be needed to effectively reduce the cumulative road and ford related impacts that are occurring, as in all the alternatives.

Some sediment delivery would continue to occur from the designated roads. Funding for SFO road maintenance is expected to continue at the current level (~30 miles of the 223 designated road miles annually). This percentage of the designated road system (13%) is the same as the other alternatives.

The Pattee Creek ford action would reduce the potential for cumulative water quality impacts downstream in the Pattee HIP, the same as alternatives B and D.

The six Hawley Creek fords actions would reduce turbidity, sediment delivery, and water temperature increases to reduce cumulative Water Quality impacts, the same as alternatives B and D.

Alternative D Maximum Network

This alternative would have less potential for reduction of cumulative Water Quality impacts than alternatives B and C, and more than Alternative A. The proposed actions in this alternative are primarily administrative, although physical closures and obliteration could occur on undesignated routes and fords and on user-created routes as needed to reduce Water Quality impacts, the same as alternatives B and C.

Some sediment delivery would continue to occur from the designated roads. Funding for SFO road maintenance is expected to continue at the current level (~30 miles of the 225 designated road miles annually). This percentage of the designated road system (13%) is the same as the other alternatives.

Enforcing the motorized restrictions would continue to be problematic due to repeated vandalism of signs and the difficulties associated with physically restricting use along pioneered and primitive roads on relatively flat or gentle terrain. Implementation of physical closures, obliteration, and enforcement would continue to be limited by SFO staffing and funding for the reasonably foreseeable future. Public cooperation, current maps, signing, physical closures, obliteration, and enforcement would be needed to effectively reduce the cumulative road and ford related impacts that are currently occurring, as in all the alternatives.

The Pattee Creek ford action would reduce the potential for adverse water quality impacts downstream in the Pattee HIP, the same as alternatives B and C.

The six Hawley Creek fords actions would reduce turbidity, sediment delivery, and water temperature increases to reduce cumulative Water Quality impacts, the same as alternatives B and C.

Wetlands and Riparian Zones:

Alternative A No Action/ Existing Network

This alternative has the highest potential to increase cumulative Wetland and Riparian Zone impacts of all the alternatives. OHVs and ATVs are an increasingly popular form of recreation and transportation, especially for hunters. The current limitation on “existing routes” provides unclear and unenforceable guidance to the public, resulting in continued proliferation of routes and associated impacts to wetlands, springs, and riparian zones.

Physical route closures and obliteration could occur on selected user-created routes that were created since the time of the inventory, as needed to reduce cumulative Wetland and Riparian Zone impacts. Implementation of physical closures and obliteration would continue to be limited by SFO staffing and funding for the reasonably foreseeable future, as in all the alternatives.

Alternative B Minimum Network

Motorized routes provide access to, and concentrate human and livestock use within riparian areas, wetlands, streams, and have the highest potential to adversely impact these habitats. This alternative would have the greatest potential for reduction of cumulative Wetland and Riparian Zone impacts. Public cooperation, current maps, signing, physical closures, obliteration, and enforcement would be needed to effectively reduce the cumulative road and ford related impacts that are occurring under Alternative A. Enforcing the motorized vehicle restrictions would continue to be problematic due to BLM staffing levels, repeated vandalism of signs, and the difficulties associated with physically restricting use along pioneered and primitive roads on relatively flat or gentle terrain.

When perennial flow is restored to Hawley Creek in the reasonably foreseeable future (~2016), the riparian zone is expected to become re-established along the historic channel. The Hawley Creek-Rocky Canyon ford reconstruction proposed in this alternative would reduce the cumulative riparian impacts by restoring the riparian zone and streambanks at this ford.

Alternative C Balanced Network

Motorized routes would continue to provide access to, and concentrate human and livestock use within riparian areas, wetlands, and streams. This alternative would have less potential for reduction of cumulative Wetland and Riparian Zone impacts than Alternative B, and more than alternatives A and D. Public cooperation, current maps, signing, physical closures, obliteration, and enforcement would be needed to effectively reduce the cumulative road and ford related impacts that are currently occurring. Enforcing the motorized vehicle restrictions would continue to be problematic due to BLM staffing levels, repeated vandalism of signs, and

the difficulties associated with physically restricting use along pioneered and primitive roads on relatively flat or gentle terrain, as in all the alternatives.

When perennial flow is restored to Hawley Creek in the reasonably foreseeable future (~2016), the riparian zone is expected to become re-established along the historic channel. The Hawley Creek-Rocky Canyon ford reconstruction proposed would reduce the cumulative riparian impacts by restoring the riparian zone and streambanks at this ford, the same as alternatives A and D.

Alternative D Maximum Network

Motorized routes provide access to, and concentrate human and livestock use within riparian areas, wetlands, and streams. This alternative would have less potential for reduction of cumulative Wetland and Riparian Zone impacts than alternatives B and C, and more than Alternative A. Public cooperation, current maps, signing, physical closures, obliteration, and enforcement would be needed to effectively reduce the cumulative road and ford related impacts that are currently occurring. Enforcing the motorized vehicle restrictions would continue to be problematic due to BLM staffing levels, repeated vandalism of signs, and the difficulties associated with physically restricting use along pioneered and primitive roads on relatively flat or gentle terrain, as in all the alternatives.

When perennial flow is restored to Hawley Creek in the reasonably foreseeable future (~2016), the riparian zone is expected to become re-established along the historic channel. The proposed Hawley Creek-Rocky Canyon ford reconstruction would reduce the cumulative riparian impacts by restoring the riparian zone and streambanks at this ford, the same as alternatives B and C.

Wildlife, Threatened/Endangered, Candidate, Sensitive, and Migratory Birds:

Alternative A No Action/ Existing Network

There are no additional cumulative impacts to Wildlife, Threatened/Endangered, Candidate, Sensitive, and Migratory Birds expected under Alternative A beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative B Minimum Network

Implementing Alternative B would decrease the cumulative impacts on wildlife species since the number of designated routes that would fragment habitat and displace wildlife would decrease from the current situation. There are no additional cumulative impacts to Wildlife, Threatened/Endangered Animals, Sensitive Animals, and Migratory Birds expected under Alternative B beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative C Balanced Network

Implementing Alternative C would result in a slight decrease in cumulative impacts on wildlife species since the number of designated routes that would fragment habitat and displace wildlife would decrease slightly from the current situation. There are no additional cumulative impacts to Wildlife, Threatened/Endangered Animals, Sensitive Animals, and Migratory Birds expected under Alternative C beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

Alternative D Maximum Network

There are no additional cumulative impacts to Wildlife, Threatened/Endangered, Candidate, Sensitive, and Migratory Birds expected under Alternative D beyond those described under Cumulative Impacts Associated with Past, Present, and Reasonably Foreseeable Future Actions.

CHAPTER 5 - CONSULTATION AND COORDINATION

The Salmon Field Office worked closely with interested members of the public, cooperating agencies, concerned organizations, and affected Tribal Governments in the development of the alternatives presented in this Travel Management Plan. In 2012 a series of initial public meetings were held to inform the public of the travel planning process and seek their input. These meetings were held on April 30th in Leadore, Idaho, May 1st in Salmon, Idaho, and on May 2nd in Tendoy, Idaho. Letters were sent to interested parties notifying them of these meetings in March of 2012 along with newspaper articles to make the general public aware. Both specific and general public comments received at these meetings were incorporated into the planning process. Due to a delay in the planning process, a second round of public meetings were held in September of 2014, meetings were held in Salmon and Leadore, Idaho. Members of the public and organizations were made aware of these meetings through a mailing, flyers, and newspaper articles. In preparation for this second round of public meetings, maps of the alternatives were uploaded to the BLM's E-Planning site in early September 2014. In March of 2015 a letter was sent to interested parties informing them of changes in the BLM E-Planning site, this letter was intended to eliminate confusion assist interested parties in navigating the site.

Interested parties involved in the creation of this Travel Management Plan include: The Salmon-Challis National Forest, Lemhi County, the Shoshone-Bannock Tribes, the Idaho Department of Fish and Game, the Idaho Department of Parks and Recreation, the Idaho Department of Lands, The Wilderness Society, the Idaho Conservation League, Western Watersheds Project, Wildlands Defense, Salmon Valley Stewardship, Theodore Roosevelt Conservation Partnership, Ravalli County Off-Road User Association, affected grazing permittees, and interested members of the public in Lemhi County and surrounding counties.

In January 2013 the BLM Salmon Field Office began ESA Section 7 consultation with the National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service (USFWS). Verbal concurrence with the determinations was received at the March 25, 2015 Level I team meeting. Consultation was completed and letters of concurrence were received from NMFS and USFWS.

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CHAPTER 6 - LITERATURE CITED

- Behnke, R. J. (1992). *Native trout of western North America*. Bethesda, Maryland: American Fisheries Society Monograph 6.
- Behnke, R. J. (1992). *Native trout of western North America*. Bethesda, Maryland: American Fisheries Society Monograph 6.
- Bjornn, T. C., & Reiser, D. W. (1991). Habitat requirements of salmonids in streams In: W. R. Meehan (ed.), *Influences of forest and rangeland management on salmonid fishes and their habitats*. Bethesda: American Fisheries Society Special Publication 19.
- Bureau of Reclamation. (2004). *Flow characterization study: Instream flow assessment of Big Timber Creek, Idaho*. Denver, Colorado: Reclamation Technical Service Center.
- Burroughs, E. R. (1990). *Predicting onsite sediment yield from forest roads*. Ogden, Utah: USDA Forest Service, Intermountain Research Station.
- Cooney, T., & Holzer, D. (2006). *Appendix C: Interior Columbia Basin stream type Chinook salmon and steelhead populations: Intrinsic habitat potential analysis*. USDC NMFS
- Dambacher, J. M., & Jones, K. K. (1997). Stream habitat of juvenile bull trout populations in Oregon and benchmarks for habitat quality. *Friends of the bull trout conference proceedings* (pp. 353-360). Calgary, Alberta: Trout Unlimited, Bull Trout Task Force.
- Dambacher, J. M., & Jones, K. K. (1997). Stream habitat of juvenile bull trout populations in Oregon and benchmarks for habitat quality. *Friends of the bull trout conference proceedings* (pp. 353-360). Calgary, Alberta: Trout Unlimited, Bull Trout Task Force.
- Dunham, J. B., & Rieman, B. E. (1999). Metapopulation structure of bull trout: influences of physical, biotic, and geometrical landscape characteristics. *Ecological Applications*, 9:642-655.
- Challis Sage-grouse Local Working Group. 2007. Challis Sage-Grouse Conservation Plan.
- Cook, Jeff. 2007. Idaho Motorbike/ATV Registration Statistics 2002-2006. IDPR Recreation Registration Information System.
- Craig, E.H. 1992. A study of population parameters and habitat characteristics of salmon twin bladderpod, *Physaria didymocarpa* var. *lyrata*. A Challenge Cost-Share Project between BLM Salmon District Office and Western Ecological Studies Team. 23 pp.
- Craig, E., and T. Craig. 1996. Population trends of Salmon River bladderpod, *Physaria didymocarpa* var. *lyrata*. 1991-1995. A Challenge Cost-Share Project between the Bureau of Land Management and Western Ecological Studies Team. BLM Salmon District Office, Salmon, ID. 24 pp.
- Elzinga, C.L. 2002. Rare Plants of the Salmon BLM, East-central Idaho. Prepared for the BLM by Alderspring Ecological Consulting, Tendoy, ID. 165 pp.

- Elzinga, C.L. 1997. Habitat conservation assessment and conservation strategy for the Lemhi Penstemon (*Penstemon lemhiensis*). Prepared for the USDA Forest Service and Bureau of Land Management by Alderspring Ecological Consulting; Tendoy, ID. 49 pp.
- Elzinga, C.L., D.W. Salzer, and J.W. Willoughby. 1998. Measuring and monitoring plant populations. BLM Tech. Ref. 1730-1. Denver, CO. 477 pp.
- Endangered Species Act of 1973, as amended (ESA). ([16 U.S.C. 1531-1544](#), 87 Stat. 884), as amended -- Public Law 93-205, approved December 28, 1973, repealed the Endangered Species Conservation Act of December 5, 1969 (P.L. 91-135, 83 Stat. 275). The 1969 Act had amended the Endangered Species Preservation Act of October 15, 1966 (P.L. 89-669, 80 Stat. 926)
- Federal Register (FR). 2001a. Endangered and Threatened Wildlife and Plants: 12-Month Finding for a Petition To List the Yellow-billed Cuckoo (*Coccyzus americanus*) in: The Western Continental United States. FR 66:143 (July 2001). p. 38611
- FR. 2001b. Responsibilities of Federal Agencies To Protect Migratory Birds. FR 66:11 (17 January 2001). p. 3853
- Forman, R. T., Sperling, D., Bissonette, J. A., Clevenger, A. P., Cutshall, C. D., Dale, V. H., et al. (2003). *Road Ecology: Science and Solutions*. Washington: Island Press.
- Fraley, J. J., & Shepard, B. B. (1989). *Life history, ecology, and population status of migratory bull trout (Salvelinus confluentus) in the Flathead lake and river system, Montana*.
- Furniss, M. J., Flanagan, S. A., & McFadin, B. (2000). *Hydrologically-connected roads: an indicator of the influence of roads on chronic sedimentation, surface water hydrology, and exposure to toxic chemicals*. Rocky Mountain Research Station, Stream Systems Technology Center. Fort Collins: USFS.
- Gaines, W.L., P.H. Singleton, R.C. Ross. 2002. Assessing the cumulative effects of linear recreation routes on wildlife habitats on the Okanagan and Wenatchee Forests. Gen. Tech. Rep. PNW-GTR- 586 . Portland, OR, USDA Forest Service, Pacific Northwest Research Station. 79 pp.
- Goran, W.D., L.L. Radke, and W.D. Severinghaus. 1983. An overview of the ecological effects of tracked vehicles on major U.S. Army installations. USACERL Technical Report N-142. U.S. Army Corps of Engineers, Champaign, IL. 75 pp.
- Hale, M.E. 1989. New species in the lichen genus *Xanthoparmelia* (*Ascomycotina: Parmeliaceae*). - Mycotaxon 34(2): 541-564.
- Hitchcock, C.L. and A. Cronquist. 1973. Flora of the Pacific Northwest, an illustrated manual. University of Washington Press, Seattle, WA. 730 pp.
- IDEQ. 2002. 2002/2003 Integrated 303(d) /305 (b) Report. IDEQ, Boise, ID.
- IDEQ. (2005). *Birch Creek Subbasin Assessment*. IDEQ.

- IDEQ. (2010). *2010 Integrated 303(d)/305(b) Report*. Boise: IDEQ.
- IDEQ. (2012). *Lemhi River Subbasin total maximum daily load and five-year review*. Boise: IDEQ Technical Service, State Office.
- IDEQ. (2012). *Lemhi River Subbasin total maximum daily loads and five-year review*. Boise, ID: Idaho Department of Environmental Quality.
- IDFG. (2005). *Idaho Comprehensive Wildlife Conservation Strategy*. Boise, ID: IDFG.
- IDFG. (2006). *Lee Creek fisheries report*. Anadromous Screen Shop Program, Salmon, Idaho for the Bonneville Power Administration Fish and Wildlife Program.
- Idaho Department of Fish and Game (IDFG). [No date]. Birds of the Upper Salmon Basin checklist.
- IDFG. 2010. Salmon Region Bald Eagle Nesting Report 2009.
- IDL. (2000). *Forestry for Idaho Best Management Practices*. Boise: Idaho Department of Lands.
- Idaho Department of Parks and Recreation (IDPR). 2006. Recreation Next, Idaho's 2006-2010 Statewide Comprehensive Outdoor Recreation Plan. 342 pp.
- Idaho Sage-grouse Advisory Committee. 2006. Conservation Plan for the Greater Sage-grouse in Idaho.
- Idaho Transportation Department (ITD). 2005. Best Management Practices: Erosion and Sediment Control. Available online at: http://www.itd.idaho.gov/manuals/Online_Manuals/BMP/BMP.htm
- Iverson, R.M., Hinckley, B.S., and Webb, R.M. 1981. Physical effects of vehicular disturbances on arid landscapes. *Science*, v. 212, no. 4497, pp. 915-917.
- King, J., & Gonsior, M. (1981). *Effects of forest roads on stream sediment*. Ogden, UT: USDA USFS Intermountain Research Station.
- Kondolf, G. M., & Wolman, M. G. (1993). The sizes of salmonid spawning gravels. *Water Resources Research*, 29:2275-2285.
- Littlejohn, L. H., & Guyer, V. L. (2014). *Biological Assessment for the Lemhi-Hawley Creek-03 Diversion Improvement Project*. BLM SFO.
- Mancuso, M. 1991. Field investigation of *Epipactis gigantea* (giant helleborine), a Region 4 sensitive species on the Payette National Forest. IDFG Conservation Data Center, Boise, ID. 13 pp.
- Meredith, C., Roper, B., & Archer, E. (2014). Reductions in instream wood in streams near roads in the Interior Columbia Basin. *North American Journal of Fisheries Management*, 34:3, 493-506.

- Migratory Bird Treaty Act of 1918, as amended. (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755) as amended by: Chapter 634; June 20, 1936; 49 Stat. 1556; P.L. 86-732; September 8, 1960; 74 Stat. 866; P.L. 90-578; October 17, 1968; 82 Stat. 1118; P.L. 91-135; December 5, 1969; 83 Stat. 282; P.L. 93-300; June 1, 1974; 88 Stat. 190; P.L. 95-616; November 8, 1978; 92 Stat. 3111; P.L. 99-645; November 10, 1986; 100 Stat. 3590 and P.L. 105-312; October 30, 1998; 112 Stat. 2956.
- Moseley, R.K. 1992. Ecological and floristic inventory of birch creek fen, Lemhi and Clark Counties, Idaho. Unpublished report prepared for the Targhee National Forest and the Salmon District BLM on file at IDFG Conservation Data Center, Boise, ID. 29 pp.
- Moseley, R.K. 1989. Field investigation of four astragali: all Region 4 sensitive species on the Salmon National Forest, with notes on two others. Challenge Cost-Share Project between the Salmon National Forest and IDFG. IDFG Conservation Data Center, Boise, ID. 23 pp.
- Montana Bull Trout Scientific Group. (1998). *The relationship between land management activities and habitat requirements of bull trout*. Helena, MT: Prepared for: Montana bull trout restoration team, Montana Fish Wildlife and Parks.
- Nicholson, R A., and C.D. Bonham. 1977. *Grama (Bouteloua Lag.)* communities in a southeastern Arizona grassland. *Journal of Range Management* 30(6): pp. 427-433.
- OSC-USBWP Technical Team. (2005). *Upper Salmon River recommended instream work windows and fish periodicity for river reaches and tributaries above the Middle Fork Salmon River including the Middle Fork River drainage*.
- Ouren, D.S., C. Haas, C.P. Melcher, S.C. Stewart, P.D. Ponds, N.R. Sexton, L. Burris, T. Fancher, and Z.H. Bowen. 2007. Environmental effects of off-highway vehicles on Bureau of Land Management lands: A literature synthesis, annotated bibliographies, extensive bibliographies, and internet resources: U.S. Geological Survey, Open-File Report 2007-1353. 225 pp.
- Prather, T., S. Robins, and D. Morishita. 2008. Idaho's noxious weeds. University of Idaho Extension, Moscow, ID. 123 pp.
- Roni, P., & Quinn, T. P. (2001). Density and size of juvenile salmonids in response to placement of large woody debris in western Oregon and Washington streams. *Canadian Journal of Fisheries and Aquatic Sciences*, 58:282-292.
- Ruediger, B., J. Claar, S. Gniadek, B. Holt, L. Lewis, S. Mighton, B. Naney, G. Patton, T. Rinaldi, J. Trick, A. Vandehey, F. Wahl, N. Warren, R. Wenger, and A. Williamson. 2000. Canada lynx conservation assessment and strategy. USDA Forest Service, USFWS, USDI BLM, and USDI NPS. Missoula, MT. 142 pp.
- Rittenhouse, B.H., and R. Rosentreter. 1994. The autecology of Challis milkvetch, an endemic of east-central Idaho. *Natural Areas Journal* 14:22-30.

- Salt, D., P. Graves, J. Bell, S. Anderson, D. Todd, C. Hamilton, T. MacDonald, N. Matthews, J. Perry, G. Pavick, S. Florence, P. Damon, and P. Fredericks. 2006. BLM Roads and Trails Terminology Report. BLM, Washington, D.C. 69 pp.
- Sanyal, N., Ph.D. August 2002. Understanding ATV/OHM and Hunting Interactions in Idaho. A survey of ATV/OHM registrants and licensed hunters. 100 pp.
- Sapsis, D.B. 1990. Ecological effects of spring and fall prescribed burning on basin big sagebrush/Idaho fescue-bluebunch wheatgrass communities. Corvallis, OR. Oregon State University Masters Thesis. 105 pp.
- Schoby, G. P. (2006). *Home range analysis of bull trout (Salvelinus confluentus) and westslope cutthroat trout (Oncorhynchus clarki lewisi) in the Upper Salmon River Basin, Idaho*. Idaho State University, M.S. thesis.
- Schroeder, M. A., Aldridge, S. L., Apa, A. D., Bohne, J. R., Braun, C. E., Bunnell, S. D., et al. (2004). Distribution of sage-grouse in North America. *Condor*, 106, 363-376.
- Schroeder, M. A., Young, J. R., & Braun, C. E. (1999). Sage-grouse (*Centrocercus urophasianus*). In A. Poole, & F. Gill, *The Birds of North America*, No. 425 (p. 28). Philadelphia, Pennsylvania: The Birds of North America, Inc.
- Sibley, David Allen. 2000. The Sibley Guide to Birds. Alfred A. Knopf, New York, NY.
- State of Idaho. (2014). *Idaho Department of Labor*. Retrieved September 2014, from Labor Market Information:
<http://lmi.idaho.gov/EmploymentUnemployment/CivilianLaborForceLAUS.aspx>
- State of Idaho. (2014, October). *Lemhi County Workforce Trends*. Retrieved October 2014, from Department of Labor:
<http://labor.idaho.gov/publications/lmi/pubs/lemhiProfile.pdf>
- Trapani, J., & Guyer, V. (2011, September). Biological Assessment for BLM Actions in the Canyon to Big Timber Watershed Assessment Area. BLM Salmon Field Office.
- U.S. (1996). Magnuson-Stevens Fishery Conservation and Management Act. *Public Law 94-265*.
- USDA Forest Service. 2009. Travel Planning and OHV Route Designation: Final Environmental Impact Statement. Salmon-Challis National Forest: Lemhi, Custer, and Butte Counties, ID.
- USDA Forest Service. 1995. Inland Native Fish Strategy, Environmental Assessment, Decision Notice and Finding of No Significant Impact: Interim strategies for managing fish-producing watersheds in eastern Oregon and Washington, Idaho, western Montana and portions of Nevada. Intermountain, Northern, and Pacific Northwest regions.
- USDA Forest Service and USDI BLM. 1995. Decision Notice/Decision Record, Finding of No Significant Impact, Environmental Assessment for the implementation of interim

strategies for managing anadromous fish-producing watersheds in eastern Oregon and Washington, Idaho, and Portions of California. Washington, D.C. 280 pp.

USDA Forest Service and USDI BLM. 2003. Supplement to Programmatic BA for Road Maintenance on Public Lands Administered by the Salmon-Challis Forest, and BLM Salmon, Challis, and Idaho Falls Field Offices in the Upper Salmon River Basin and Lost River Subbasin. BLM Idaho State Office, Boise, ID.

USDA Forest Service. 2005. Biological Assessment for Stream Crossing Structure Replacement and Removal Activities Affecting ESA listed Species in Idaho National Forests (Payette, Boise, Sawtooth, Salmon-Challis, Nez Perce, and Clearwater national Forests) and Idaho/Nevada Bureau of Land Management Public lands in Challis, Cottonwood, Coeur d' Alene, Four Rivers, Jarbidge, Salmon and Upper Snake Field Offices. Region 4, Ogden, UT.

USDA National Resource Conservation Service (USDA NRCS). 2010. The PLANTS Database. Available online at: <http://plants.usda.gov>. NRCS National Plant Data Center, Baton Rouge, LA.

U.S. Department of Commerce National Marine Fisheries Service (USDC NMFS). 1993. Designated Critical Habitat; Snake River Sockeye Salmon, Snake River Spring/Summer Chinook Salmon, and Snake River Fall Chinook Salmon, Final Rule. Federal Register 58 (28 December 1993):68543-68554. 11pp.

USDC NMFS. (1996). *Making Endangered Species Act determinations of effect for individual or grouped actions at the watershed scale*. NMFS Environmental and Technical Services Division, Habitat Conservation Branch.

USDC NMFS. (2001). *Biological Opinion and Magnuson-Stevens Act Essential Fish Consultation for SFO Resource Management Plan Amendment 2001*.

USDC NMFS. 2005. Endangered and Threatened Species: Designation of Critical Habitat for 12 Evolutionary Significant Units of West Coast Salmon and Steelhead in Washington, Oregon, and Idaho, Final Rule. FR 70 (2 September 2005):52630-52858. 228 pp.

USDC NMFS. (2011). *Biological Opinion for the BLM Salmon Field Office Travel Management (North Half) Plan*.

USDC-NOAA. (2013). Snake River Basin steelhead. http://www.nwr.noaa.gov/protected_species/salmon_steelhead/salmon_and_steelhead_listings/steelhead/snake_river_basin/snake_river_basin_steelhead.html. Accessed on 19 February 2013.

USDC NMFS. (2015, February 9). Endangered Species Act Section 7(a)(2) Programmatic Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Habitat Projects in: *the Salmon River Basin, Clearwater River Basin, Hells Canyon Subbasin, Lower Snake-Asotin Subbasin, Idaho*. West Coast Region: NMFS Consultation # WCR-2014-832.

- U.S. Department of Interior Bureau of Land Management (USDI BLM). 2009. Idaho Vegetation, Landcover, Ecologic System, Northwest ReGAP, Division, Formation, Class. Source data: National Gap Analysis Program, Moscow, ID. GAP Ecological Systems, USGS Mapping Zone 10, Existing Land Cover/Vegetation Map. Available online at: <http://www.gap.uidaho.edu/Northwest/data.htm>
- USDI BLM. (1975). *Birch Creek Aquatic Habitat Management Plan*. BLM Idaho Falls District, Idaho Falls, ID.
- USDI BLM. April 1987. Lemhi Resource Management Plan. USDI BLM, Salmon, ID.
- USDI BLM. August 2001. Lemhi Resource Management Plan Amendment and Decision Record. USDI BLM, Salmon Field Office, Salmon, ID.
- USDI BLM. 2003. Idaho Bureau of Land Management Sensitive Species List (IM-ID-2003-057). BLM Idaho State Office, Boise, ID.
- USDI BLM. 2005. Land Use Planning Handbook (3/31/2005). H-1601-1 Appendix C.
- USDI BLM 2011. Travel and Transportation Management Handbook. H-8342-1.
- USDI BLM 2015. Idaho and Southwestern Montana Greater Sage-Grouse Approved Resource Management Plan Amendment. BLM Idaho State Office, Boise, ID.
- USDI BLM. 1993. Riparian Area Management Process for Assessing Proper Functioning Condition. D.J. Prichard, H. Barret, J. Cagney, R. Clark, J. Fogg, K. Gebhardt, P. Hansen, B. Mitchell, and D. Tippy. BLM TR 1737-9, 60 pp. Revised in 1995 and 1998.
- USDI-BLM, U.-U. a. (1994). *Environmental Assessment for the Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California*.
- USDI-BLM, USDA-USFS, and USDA NRCS. (1998). *TR-1737-15 A user guide to assessing proper functioning condition and the supporting science for lotic areas*. Denver, CO: USDI.
- USDI BLM and USDA Forest Service. (1999). *Lemhi River Subbasin review*. Upper Columbia-Salmon Clearwater District, Lemhi Resource Area and Salmon-Challis National Forest, Leadore Ranger District.
- USDI BLM. 2006. Monitoring Streambanks and Riparian Vegetation – Multiple Indicators. E.R. Cowley, T.A. Burton, and S.J. Smith. BLM TB 2005-02, Boise, ID. 34 pp. Revised May, 2006.
- U.S. Department of Interior Fish and Wildlife Service (USDI-FWS). 2011. Biological Opinion for effects to bull trout and designated critical habitat from the proposed travel plan, and concurrence for effect to Canada lynx (File #1005.3000, 1442-2011-F-0082).

- USDI USFWS. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA. Available online at: <http://www.fws.gov/migratorybirds/>
- USDI-BLM. (2010). *BLM Travel Plan for the Salmon Field Office (North Half)*.
- USDI BLM. (2014). *Idaho Bureau of Land Management Sensitive Species List (IM-ID-2014-057)*. BLM Idaho State Office, Boise, ID.
- USFWS. (1998). *A framework to assist in making Endangered Species Act determinations of effect for individual or grouped actions at the bull trout subpopulation scale*. USFWS adapted from NMFS.
- USDI-FWS. (2000, March 24). Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Contiguous U.S. Distinct Population Segment of the Canada Lynx and Related Rule; Final Rule. *Federal Register*. Federal Register.
- USDI-FWS. 2001. Endangered and Threatened Wildlife and Plants: 12-Month Finding for a Petition to List the Yellow-billed Cuckoo (*Coccyzus americanus*) in the Western Continental United States. *Federal Register* 66:143 (25 July 2001) p. 38611.
- USDI-FWS. (2002). Bull Trout (*Salvelinus confluentus*) Draft Recovery Plan. In *Chapter 17 - Salmon River Recovery Unit*. Portland, OR: USFWS.
- USDI-FWS. (2009, February 25). Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx. *Federal Register*, 74, 8616-8702.
- USDI-FWS. (2010). *Bull trout final critical habitat justification: Rationale for why habitat is essential, and documentation of occupancy*. Boise, ID: Idaho Fish and Wildlife Service Office.
- USDI-FWS. (2010, October 18). Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for Bull Trout in the Coterminous United States; Final Rule. *Federal Register*, 63898-64070.
- USDI-FWS. (2013). *Canada lynx conservation assessment and strategy. 3rd edition*. USDA Forest Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management, and USDI National Park Service. Forest Service Publication R1-13-19, Missoula, MT. 128 pp.
- USDI-FWS. (2014). *Endangered and Threatened Wildlife and Plants: Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx and Revised Distinct Population Segment Boundary*. US Fish and Wildlife Service.
- USDI-FWS. (2014, October 3). Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*). *50 CFR Part 17, 79, 192, 59992-60038*.

Warren, C., & Bliss, H. (2006). *Hawley Creek fisheries report*. Salmon: Idaho Department of Fish and Game: BPA Project #1994-015000, Contract 00023364.

Watershed Consulting. (1997). *1996 Field data summary report for Rock Creek near Noxon, Montana*. Troy, MT: Prepared for: ASARCO, Inc.

Wemple, B. C., Jones, J. A., & Grant, G. E. (1996). Channel Network Extension by Logging Roads in Two Basins, Western Cascades, Oregon. *Journal of the American Water Resources Association*, 32(6), 1195-1207.

GLOSSARY OF TERMS AND ACRONYMS

AHP: Advisory Council on Historic Preservation

ACEC: Area of Critical Environmental Concern

ATV: All Terrain Vehicles. Per House (Idaho) Bill 204, an ATV is defined as any recreational vehicle with three (3) or more tires, under eight hundred fifty (850) pounds and forty-eight (48) inches or less in width, having a wheelbase of sixty-one (61) inches, traveling on low pressure tires of ten (10) psi or less.

BiOp: Biological Opinion

BLM: Bureau of Land Management, an agency of the U.S. Department of the Interior.

BMP: Best Management Practices

CTMP/TMP: Comprehensive Travel Management Plan, Travel Management Plan

LCWMA: Lemhi Cooperative Weed Management Area

DHRA: Discovery Hills Recreation Area

ESA: Endangered Species Act of 1974, as Amended

IDFG: Idaho Department of Fish & Game

IDEQ: Idaho Department of Environmental Quality

IDPR: Idaho Department of Parks and Recreation

INFISH: USDA Forest Service inland native fish interim strategies for managing fish-producing watersheds in eastern Oregon and Washington, Idaho, western Montana, and portions of Nevada

Motorcycle/Motorbike: per House (Idaho) Bill 204, a Motorbike is defined as any self-propelled two (2) wheeled motorcycle or motor-driven cycle, excluding tractor, designed for or capable of traveling off developed roadways and highways and also referred to as trailbikes, enduro bikes, trials bikes, motocross bikes or dual purpose motorcycles.

NHPA: National Historic Preservation Act

NMFS: National Marine Fisheries Service

NOAA: National Oceanic and Atmospheric Administration

NRHP: National Register of Historic Places

OHV: Off Highway Vehicle (previously called ORV, Off Road Vehicle). Defined by the state of Idaho as: Any motorized vehicle capable of, or designated for travel on or immediately over land, water, or other natural terrain, excluding: 1) any non-amphibious registered motorboat; 2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; 3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; 4) vehicles in official use; 5) any combat or combat support vehicle when used for national defense.

Open Area: An area where all types of vehicle use is permitted at all times, anywhere in the area subject to the operating regulations and vehicle standards set forth in 43 CFR 8341 and 8342

PACFISH: USDA Forest Service and USDI BLM interim strategy for managing anadromous fish-producing watersheds in eastern Oregon and Washington, Idaho, and portions of California

PFC: Properly Functioning Condition

RHCA: Riparian Habitat Conservation Area

RMP: Resource Management Plan

RMPA: Resource Management Plan Amendment

Route: Generic term referring to any combination of motorized roads, primitive roads, and trails

RPP: Recreation and Public Purposes Act

ROD: Record of Decision

ROW: Right-of-Way

SFO: Salmon Field Office, a unit of the BLM Idaho Falls District

SHPO: State Historic Preservation Office

SMP: Sacajawea Motorsports Park (Lemhi County RPP Lease)

SRMA: Special Recreation Management Area

SSS: Special Status Species

TES: Threatened, Endangered, or Sensitive species

TMDL: Total Maximum Daily Load

USFS: United States Forest Service, an agency of the U.S. Department of Agriculture

USFWS: United States Fish and Wildlife Service

VRM: Visual Resource Management

ATTACHMENTS

Attachment 1: 2001 LRMPA, Pages 4-6

Sections 1 through 6 below replace existing off-highway vehicle use management described on pp. 14, 45, and 47 of the 1987 Lemhi RMP, and pp. 14 and 15 of the RNA/ACEC plan amendment (December 1987). Off-highway vehicle use designations are defined as follows:

Closed - Motorized vehicle travel is prohibited in the area. Access by means other than motorized vehicle is permitted.

Limited - Motorized vehicle travel within specified areas and/or on designated routes, roads, vehicle ways, or trails is subject to restrictions. Those restrictions are listed in decisions 2, 3, and 5 below.

Open – Motorized vehicle travel is permitted year-long anywhere within an area designated as “open” to OHV use if the vehicle is operated responsibly.

1. Off-highway vehicle use designations are as follows (see Map 4) (acres and percentages are approximate):

“Closed”: 17,140 acres (3.5%)

“Limited”: 476,248 acres (96.5%)

“Open”: 0 acres (0 %)

Reassess OHV management throughout the Field Office area no later than 2007 to determine if changes in management would be appropriate to achieve the broadest range of use opportunities. During the assessment, consider the following: Need for access; recreation opportunities; public safety; use conflicts; ability to properly maintain roads; and resource concerns such as highly erodible or fragile soils, protection of cultural resources, historic sites/areas, sacred and traditional areas, visual resources, special status species habitat, water quality, wildlife habitat, threat of weed invasion, retention of wilderness characteristics, and wetland and riparian habitat. Any changes to an area’s designation as “open,” “limited,” or “closed” would be implemented through a land use plan amendment.

2. Designate and manage OHV use within the Eighteenmile WSA as follows (see Maps 4 and 5): (a) Designate the suitable portion of the Eighteenmile WSA (about 14,796 acres) as “closed” to OHV use. (b) Designate the non-suitable portion of the Eighteenmile WSA (about 10,126 acres) as “limited,” with OHV use limited to designated routes. (c) Temporary exceptions for OHV use in the suitable portion of the WSA and off of designated routes in the non-suitable portion of the WSA would be allowed in emergencies and search and rescue operations, for official purposes by the BLM and other Federal, State, and local agencies, and to build or maintain structures and installations, as specifically provided for in the Interim Management Policy for Lands Under Wilderness Review (see Appendix B (page 9) of this amendment). (d) OHV use on any portions of the Eighteenmile WSA released by Congress from wilderness review in the future would be designated as “limited,” with OHV use limited to designated routes.

3. Except for within the Eighteenmile WSA, temporary exceptions to the OHV use limitations and closures listed in #4 and 5 below may be authorized for any military, fire, emergency, or law enforcement vehicle while it is being used for emergency purposes; any vehicle in official use; and any vehicle whose use is expressly authorized in writing by the authorized officer.

In areas designated “limited” to designated routes and OHV use areas or to existing roads, vehicle ways, and trails (see #5 below), some or all of the following off-road travel would be permitted, as displayed on Maps 4 through 10: (a) within 300 feet of designated routes or existing roads, vehicle ways, and trails for direct access to campsites, to retrieve downed big game, or to harvest forest products; (b) immediately adjacent to existing roads, vehicle ways, and trails for purposes such as parking, turning around, or passing another vehicle; (c) if the vehicle weighs 1,500 pounds or less gross vehicle weight and is traveling on at least six inches of continuous snow cover; (d) snowmobile use on groomed trails only.

4. The Trail Creek ACEC (236 acres) and the suitable portion of the Eighteenmile WSA (14,796 acres) would continue to be designated “closed” to OHV use. In addition, designate the following areas (about 2,108 acres) as “closed” to OHV use: the hillside behind the Chief Tendoy Cemetery and the Birch Creek Springs area (but continue to allow vehicle travel on State Highway 28 through the Birch Creek Springs area) (see Map 4).
5. OHV use on approximately 476,248 acres is designated “limited,” with the limitations as described in (5a) through (5e) below. Changes to OHV limitations within areas designated as “limited” (but that would not change the OHV designation from “limited” to either “open” or “closed”) may be initiated at any time through activity planning, with public, tribal, and agency involvement and appropriate environmental analysis.
 - (5a) OHV use in the following areas (about 73,863 acres) is limited to designated routes and OHV use areas (see Maps 4 through 10): the Lewis and Clark Trail SRMA, Chief Tendoy Cemetery, the non-suitable portion of the Eighteenmile WSA, the Continental Divide National Scenic Trail SRMA, Sevenmile ACEC, designated recreation sites, and the Hayden Creek/Basin Creek/Muddy Creek area. OHV use within the R&PP lease area would be limited to the designated routes and use areas shown on **Error! Reference source not found.** Cross-country motorized travel would be permitted within the designated use area yearlong, unless access to the R&PP lease area is temporarily restricted due to soil moisture conditions (see OHV #5d below).
 - (5b) OHV use on approximately 402,385 acres is limited to the existing roads, vehicle ways, and trails visible on 1993-1994 aerial photos and/or 1992 digital orthophotos, as verified through on-the-ground field review (see Map 4). Vehicle travel on single-track vehicle ways is limited to two-wheeled vehicles and would not promote expansion of those ways into two-track routes.

- (5c) OHV use in the Agency/Pattee/Kenney Creek, Badger Springs Gulch, and Tower Creek areas (about 38,902 acres) is prohibited from December 16 through April 30 to address wildlife habitat concerns (see Maps 4, 6, and 7), with some exceptions for motorized vehicle use on the routes indicated below.

Agency/Pattee/Kenney Creek: The Agency Creek Road, Alkali Flat Road, about 4 miles of the Pattee Creek Road, and the Warm Springs Wood Road shall remain open to motorized use year-long, and the following route shall be designated as a snowmobile route: The Divide Road from Lemhi Pass south to the Copper Queen Road to the Agency Creek Road.

From May 1 through December 15, OHV use in the Agency/Pattee/Kenney Creek, Badger Springs Gulch, and Tower Creek areas is limited to designated routes or existing roads, ways, and trails, as shown on Maps 4, 6, and 7.

- (5d) Within areas limited to designated routes and OHV use areas or to existing roads, ways, and trails, additional OHV use limitations are, or may be, implemented in the following areas to address erosion concerns:
- (1) Motorized access to and within the Lewis and Clark Trail SRMA may be limited seasonally, if soil moisture conditions indicate resource damage is likely.
 - (2) OHV use on existing roads, ways, and trails in the Henry Creek area (about 4,046 acres) is limited to vehicles 48 inches or narrower from April 11 through September 19. No motorized vehicle use is allowed from September 20 through April 10 (see Map 4).
 - (3) Motorized vehicle travel on some designated routes in the Hayden, Basin, and Muddy Creek drainages is prohibited from March 1 through June 15 (see Map 9).
- (5e) No vehicle travel is allowed on the following roads constructed for previous timber sales, unless specifically authorized by the BLM (see Map 4):

Sawmill Canyon Timber Sale Road

Birch Creek Timber Sale Road

5. Vehicle use authorization for newly constructed roads would be identified when the road construction proposal is developed and analyzed. Any vehicle use authorization would be consistent with the OHV designation for the South Half TMA.

Attachment 2: Maps

See Included Map Attachment.

Attachment 3: Plant, Wildlife, and Fish Species Lists

Sources: Hitchcock and Cronquist 1973; USDA NRCS 2010; USFWS 2013; NMFS 2013; IDFG 2013

Grass and Grass-Like		
Common Name	Scientific Name	Status
Basin wildrye	<i>Leymus cinereus</i>	native
Blue grama	<i>Bouteloua gracilis</i>	BLM Type 3
Bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	native
Bottle-brush squirreltail	<i>Sitanion hystrix</i>	native
Cheatgrass	<i>Bromus tectorum</i>	introduced, invasive
Idaho fescue	<i>Festuca idahoensis</i>	native
Indian ricegrass	<i>Achnatherum hymenoides</i>	native
Needle and thread	<i>Hesperostipa comata</i>	native
Pinegrass	<i>Calamagrostis rubescens</i>	native
Prairie Junegrass	<i>Koeleria macrantha</i>	native
Rush	<i>Juncus</i> spp.	native
Saline wildrye	<i>Leymus salinus</i>	native
Sandberg bluegrass	<i>Poa secunda</i>	native
Sedge	<i>Carex</i> spp.	native
Squirreltail	<i>Elymus elymoides</i>	native
Western wheatgrass	<i>Pascopyrum smithii</i>	native
Forbs		
Common Name	Scientific Name	Status
Biscuitroot	<i>Lomatium</i> spp.	native
Black henbane	<i>Hyoscyamus niger</i>	introduced, state noxious
Broadleaved (perennial) pepperweed	<i>Lepidium latifolium</i>	introduced, state noxious
Bull thistle	<i>Cirsium vulgare</i>	introduced, invasive
Butter and eggs; Yellow toadflax	<i>Linaria vulgaris</i>	introduced, invasive
Canada thistle	<i>Cirsium arvense</i>	introduced, state noxious
Challis crazyweed; Salmon River locoweed	<i>Oxytropis besseyi</i> var. <i>salmonensis</i>	BLM Type 3

Grass and Grass-Like		
Common Name	Scientific Name	Status
Challis milkvetch	<i>Astragalus amblytropis</i>	BLM Type 3
Common yarrow	<i>Achillea millefolium</i>	native
Cordilleran phacelia; Silverleaf phacelia	<i>Phacelia hastata</i>	native
Cushion buckwheat	<i>Eriogonum ovalifolium</i>	native
Dalmatian toadflax	<i>Linaria dalmatica</i>	introduced, state noxious
Death camas	<i>Zigadenus</i> spp.	native
Douglas' dustymaiden	<i>Chaenactis douglasii</i>	native
Fernleaf biscuitroot	<i>Lomatium dissectum</i>	native
Field (perennial) sowthistle	<i>Sonchus arvensis</i>	introduced, state noxious
Field bindweed	<i>Convolvulus arvensis</i>	introduced, state noxious
Fleabane	<i>Erigeron</i> spp.	native
Flowery phlox	<i>Phlox multiflora</i>	native
Foothills death camas	<i>Zigadenus paniculatus</i>	native
Franklin's sandwort	<i>Arenaria franklinii</i>	native
Gardencress pepperweed	<i>Lepidium sativum</i>	native
Granite prickly phlox	<i>Linanthus pungens</i>	native
Groundsel	<i>Senecio</i> spp.	native
Hearatleaf arnica	<i>Arnica cordifolia</i>	native
Herb sophia	<i>Descurainia sophia</i>	introduced, invasive
Hoary Alyssum	<i>Berteroa incana</i>	introduced, invasive
Hood's phlox; spiny phlox	<i>Phlox hoodii</i>	native
Houndstongue; Gypsyflower	<i>Cynoglossum officinale</i>	introduced, invasive
Idaho range lichen	<i>Xanthoparmelia idahoensis</i>	BLM Type 2
Indian paintbrush	<i>Castilleja</i> spp.	native
Japanese knotweed	<i>Polygonum cuspidatum</i>	introduced, invasive
King's sandwort	<i>Arenaria kingii</i>	native
Leafy spurge	<i>Euphorbia esula</i>	introduced, state noxious
Lehmi milkvetch	<i>Astragalus aquilonius</i>	BLM Type 2

Grass and Grass-Like		
Common Name	Scientific Name	Status
Lemhi penstemon	<i>Penstemon lemhiensis</i>	BLM Type 3
Lesser rushy milkvetch	<i>Astragalus convallarius</i>	native
Lewis flax	<i>Linum lewisii</i>	native
Little larkspur	<i>Delphinium bicolor</i>	native
Longleaf phlox	<i>Phlox longifolia</i>	native
Low pussytoes	<i>Antennaria dimorpha</i>	native
Lupine	<i>Lupinus</i> spp.	native
MacBride cleomella	<i>Cleomella macbrideana</i>	native
Maiden blue eyed mary	<i>Collinsia parviflora</i>	native
Mariposa lily	<i>Calochortus</i> spp.	native
Milkvetch; Locoweed	<i>Astragalus</i> spp.	native
Mill Creek/Pink agoseris	<i>Agoseris lackschewitzii</i>	BLM type 4
Musk thistle; Nodding plumeless thistle	<i>Carduus nutans</i>	introduced, state noxious
Nailwort	<i>Paronychia</i> spp.	native
Nakedstem sunray	<i>Enceliopsis nudicaulis</i>	native
Nineleaf biscuitroot	<i>Lomatium triternatum</i>	native
Pale agoseris; Mountain dandelion	<i>Agoseris glauca</i>	native
Parsnipflower buckwheat	<i>Eriogonum heracleoides</i>	native
Penstemon	<i>Penstemon</i> spp.	native
Phlox	<i>Phlox</i> spp.	native
Plains springparsley	<i>Cymopterus acaulis</i>	native
Puncturevine	<i>Tribulus terrestris</i>	introduced, state noxious
Purple loosestrife	<i>Lythrum salicaria</i>	introduced, state noxious
Raceme pussytoes	<i>Antennaria racemosa</i>	native
Ross' avens	<i>Geum rossii</i>	native
Rosy pussytoes	<i>Antennaria rosea</i>	native
Royal penstemon	<i>Penstemon speciosus</i>	native
Rush skeletonweed; Hogbite	<i>Chondrilla juncea</i>	introduced, state noxious

Grass and Grass-Like		
Common Name	Scientific Name	Status
Russian knapweed; Hardheads	<i>Acroptilon repens</i>	introduced, state noxious
Salmon twin bladderpod: Idaho twinpod	<i>Physaria didymocarpa</i> var. <i>lyrata</i>	BLM Type 2
Sandwort	<i>Arenaria</i> spp.	native
Scarlet globemallow	<i>Sphaeralcea coccinea</i>	native
Scotch cottonthistle	<i>Onopordum acanthium</i>	introduced, state noxious
Sego lily	<i>Calochortus nuttallii</i>	native
Shaggy fleabane	<i>Erigeron pumilus</i>	native
Sharpleaf penstemon	<i>Penstemon acuminatus</i> var. <i>latebracteatus</i>	native
Spotted knapweed	<i>Centaurea stoebe</i>	introduced, state noxious
Stemless mock goldenweed	<i>Stenotus acaulis</i>	native
Stream orchid; Giant helleborine	<i>Epipactis gigantea</i>	BLM Type 3
Sulphur-flower buckwheat	<i>Eriogonum umbellatum</i>	native
Tailcup lupine	<i>Lupinus caudatus</i>	native
Tapertip hawksbeard	<i>Crepis acuminata</i>	native
Tufted evening primrose	<i>Oenothera caespitosa</i>	native
Velvet lupine	<i>Lupinus leucophyllus</i>	native
Wallflower	<i>Erysimum</i> spp.	native
Western tansymustard	<i>Descurainia pinnata</i>	native
White eatonella	<i>Eatonella nivea</i>	BLM Type 4
Whitetop	<i>Cardaria draba</i>	introduced, state noxious
Wild onion; Tapertip onion	<i>Allium acuminatum</i>	native
Wooly princesplume	<i>Stanleya tomentosa</i>	native
Wyoming range lichen	<i>Xanthoparmelia wyomingensis</i>	native
Xanthoparmelia range lichen	<i>Xanthoparmelia norchlorochroa</i>	native
Yellow fritillary	<i>Fritillaria pudica</i>	native
Shrubs and Sub-shrubs		
Common Name	Scientific Name	Status
Antelope bitterbrush	<i>Purshia tridentata</i>	native

Grass and Grass-Like		
Common Name	Scientific Name	Status
Basin big sagebrush	<i>Artemisia tridentata</i> spp. <i>tridentata</i>	native
Black sagebrush	<i>Artemisia nova</i>	native
Bog blueberry	<i>Vaccinium uliginosum</i>	native
Bud sagebrush	<i>Picrothamnus desertorum</i>	native
Common snowberry	<i>Symphoricarpos albus</i>	native
Curl-leaf mountain mahogany	<i>Cercocarpus ledifolius</i>	native
Dwarf bilberry	<i>Vaccinium cespitosum</i>	native
Dwarf goldenbush	<i>Ericameria nana</i>	native
Fringed sagewort; Prarie sagewort	<i>Artemisia frigida</i>	native
Granite prickly phlox	<i>Linanthus pungens</i>	native
Greasewood	<i>Sarcobatus vermiculatus</i>	native
Green rabbitbrush	<i>Ericameria teretifolia</i>	native
Grey horsebrush; Spineless horsebrush	<i>Tetradymia canescens</i>	native
Horsebrush	<i>Tetradymia</i> spp.	native
Kinnikinnik	<i>Arctostaphylos uva-ursi</i>	native
Low sagebrush; Little sagebrush	<i>Artemisia arbuscula</i>	native
Mountain big sagebrush	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	native
Mountain snowberry	<i>Symphoricarpos oreophilus</i>	native
Rabbitbrush	<i>Ericameria</i> spp.	native
Redosier dogwood	<i>Cornus sericea</i>	native
Rubber rabbitbrush	<i>Ericameria nauseosa</i>	native
Saltbush	<i>Atriplex</i> spp.	native
Saltcedar	<i>Tamarix ramosissima</i>	introduced, invasive
Shadscale	<i>Atriplex confertifolia</i>	native
Spiny horsebrush; shortspine horsebrush	<i>Tetradymia spinescens</i>	native
Threetip sagebrush	<i>Artemisia tripartita</i>	native
Winterfat	<i>Krascheninnikovia lanata</i>	native
Wyoming big sagebrush	<i>Artemisia tridentata</i> spp. <i>wyomingensis</i>	native

Grass and Grass-Like		
Common Name	Scientific Name	Status
Trees		
Common Name	Scientific Name	Status
Aspen	<i>Populus tremuloides</i>	native
Black cottonwood	<i>Populus balsamifera ssp. trichocarpa</i>	native
Douglas-fir	<i>Pseudotsuga menziesii</i>	native
Engelmann spruce	<i>Picea engelmannii</i>	native
Limber pine	<i>Pinus flexilis</i>	native
Lodgepole pine	<i>Pinus contorta</i>	native
Narrowleaf cottonwood	<i>Populus angustifolia</i>	native
Ponderosa pine	<i>Pinus ponderosa</i>	native
Subalpine fir	<i>Abies lasiocarpa</i>	native
Whitebark pine	<i>Pinus albicaulis</i>	native

Birds		
Common Name	Scientific Name	Status
Bald eagle	<i>Haliaeetus leucocephalus</i>	ID BLM Sensitive
Black rosy-finch	<i>Leucosticte atrata</i>	No Special Status
Brewer's sparrow	<i>Spizella breweri</i>	ID BLM Sensitive
Calliope hummingbird	<i>Stellula calliope</i>	ID BLM Sensitive
Cassin's finch	<i>Carpodacus cassinii</i>	No Special Status
Cooper's hawks	<i>Accipiter cooperii</i>	No Special Status
Eared grebe	<i>Podiceps nigricollis</i>	No Special Status
Ferruginous hawk	<i>Buteo regalis</i>	ID BLM Sensitive
Flammulated owl	<i>Otus flammeolus</i>	ID BLM Sensitive
Golden eagle	<i>Aquila chrysaetos</i>	No Special Status
Greater sage-grouse	<i>Centrocercus urophasianus</i>	ESA Candidate Species
Green-tailed towhee	<i>Pipilo chlorurus</i>	No Special Status
Hammond's flycatcher	<i>Empidonax hammondii</i>	ID BLM Sensitive

Birds		
Common Name	Scientific Name	Status
Lewis's woodpecker	<i>Melanerpes lewis</i>	ID BLM Sensitive
Loggerhead shrike	<i>Lanius excubitor</i>	ID BLM Sensitive
Long-billed curlew	<i>Numenius americanus</i>	No Special Status
Northern goshawk	<i>Accipiter gentilis</i>	ID BLM Sensitive
Northern harrier	<i>Circus cyaneus</i>	No Special Status
Olive-sided flycatcher	<i>Contopus cooperi</i>	ID BLM Sensitive
Peregrine falcon	<i>Falco peregrinus</i>	ID BLM Sensitive
Prairie falcon	<i>Falco mexicanus</i>	ID BLM Sensitive
Red-tailed hawk	<i>Buteo jamaicensis</i>	No Special Status
Sage sparrow	<i>Amphispiza belli</i>	ID BLM Sensitive
Sage thrasher	<i>Oreoscoptes montanus</i>	No Special Status
Sharp-shinned hawk	<i>Accipiter striatus</i>	No Special Status
Swainson's hawk	<i>Buteo swainsoni</i>	No Special Status
Williamson's sapsucker	<i>Sphyrapicus thyroideus</i>	ID BLM Sensitive
Willow flycatcher	<i>Empidonax traillii</i>	ID BLM Sensitive
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	ESA Threatened Species
Mammals		
Common Name	Scientific Name	Status
Badger (American)	<i>Taxidea taxus</i>	No Special Status
Bobcat	<i>Lynx rufus</i>	No Special Status
Canada lynx	<i>Lynx canadensis</i>	ESA Threatened Species
Cottontail (mountain)	<i>Sylvilagus nuttallii</i>	No Special Status
Coyote	<i>Canus latrans</i>	No Special Status
Elk	<i>Cervus elaphus</i>	No Special Status
Fisher	<i>Martes pennanti</i>	ID BLM Sensitive
Fox (red)	<i>Vulpes vulpes</i>	No Special Status
Gray wolf	<i>Canus lupus</i>	ID BLM Sensitive
Hare (snowshoe)	<i>Lepus americanus</i>	No Special Status

Birds		
Common Name	Scientific Name	Status
Moose	<i>Alces alces</i>	No Special Status
Mountain goat	<i>Oreamnos americanus</i>	No Special Status
Mule deer	<i>Odocoileus hemionus</i>	No Special Status
Pronghorn	<i>Antilocapra americana</i>	No Special Status
Pygmy rabbit	<i>Brachylagus idahoensis</i>	ID BLM Sensitive
Rabbits	<i>Lepus spp.</i>	No Special Status
Rocky Mountain bighorn sheep	<i>Ovis canadensis canadaensis</i>	No Special Status
Shrews	<i>Sorex spp.</i>	No Special Status
Townsend's big eared bat	<i>Corynorhinus townsendii</i>	ID BLM Sensitive
White-tailed deer	<i>Odocoileus virginianus</i>	No Special Status
Wolverine	<i>Gulo gulo</i>	ID BLM Sensitive
Amphibians and Reptiles		
Common Name	Scientific Name	Status
Common garter snake	<i>Thamnophis sirtalis</i>	ID BLM Sensitive
Gopher snake	<i>Pituophis melanoleucus</i>	No Special Status
Short-horned lizard	<i>Phrynosoma Douglasii</i>	No Special Status
Western rattlesnake	<i>Crotalus viridis</i>	No Special Status
Western toad	<i>Bufo boreas</i>	ID BLM Sensitive

Fishes		
Common Name	Scientific Name	Status
Columbia River bull trout	<i>Salvelinus confluentus</i>	ESA Threatened
Eastern brook trout	<i>Salvelinus fontinalis</i>	Non-native, introduced
Snake River spring/summer Chinook salmon	<i>Oncorhynchus tshawytscha</i>	ESA Threatened
Snake River Sockeye Salmon	<i>Oncorhynchus nerka</i>	ESA Endangered
Westslope cutthroat trout	<i>Oncorhynchus clarki lewisi</i>	BLM, USFS, and State Sensitive
Snake River Basin steelhead trout	<i>Oncorhynchus mykiss</i>	ESA Threatened

Fishes		
Common Name	Scientific Name	Status
Redband trout	<i>Oncorhynchus mykiss gairdneri</i>	BLM, USFS, and State Sensitive
Rainbow trout	<i>Oncorhynchus mykiss iridius</i>	Non-native, introduced
Mountain whitefish	<i>Prosopium williamsoni</i>	Native
Sculpin species	<i>Cottus</i> spp.	Native
Speckled dace	<i>Rhinichthys osculus</i>	Native
Redside shiner	<i>Richardsonius balteatus</i>	Native
Pacific lamprey	<i>Lampetra tridentata</i>	BLM and USFS Sensitive; State Endangered

Attachment 4: Fish Barrier Culvert Replacements

Watershed	Stream	Road	Structure/Fish Barrier	Action	Action Agency	Comments
Agency	Agency	County	culvert/yes	bridge	USBWP	
	Agency	Private	culvert/yes	replaced	BLM	BLM road easement
	Agency	SH 28	culvert/unknown	none	---	
	Cow	BLM	culvert/yes	replaced	BLM	
	Cow	BLM	culvert/yes	replaced	BLM	
	Cow	BLM	culvert/yes	replaced	BLM	
	White	BLM	culvert/yes	none	---	headwaters, non-fish-bearing
Yearian	Yearian	BLM	culvert/yes	none	---	private land reservoir downstream; no upstream fish passage
Reese	Reese	SH 28	culvert/yes	none	---	
Little Eightmile	Little Eightmile	SH 28	culvert/yes	replaced	County	
Canyon	Canyon	BLM	culvert/yes	replaced	BLM	Leadville Road
	Canyon	BLM	culvert/yes	replaced	BLM	BLM Smokey Cub Campground
	Canyon	County	culvert/yes	bridge	BOR	
Eighteenmile	Eighteenmile	SH 29	2 culverts/yes	bridge 2015	IDFG/USBWP	causeway style bridge to prevent beaver from plugging the culverts
	Eighteenmile	Private	checked culvert & diversion/yes	none	---	Subdivision at confluence of Eighteenmile and Hawley creeks
	Eighteenmile	County	iron pipe/yes	none	---	Oxbow Ranch on Clear

Watershed	Stream	Road	Structure/Fish Barrier	Action	Action Agency	Comments
						Creek Road
	Eighteenmile	BLM	culvert/yes	bridge	BLM	junction of Eighteenmile Blvd.
	Eighteenmile	BLM	culvert/yes	bridge	BLM	junction of McFarland Blvd.
	Hawley	Private	culvert/yes	bridge	USBWP	Old Railroad Grade
	Hawley	County	culvert/yes	bridge	USBWP	Hawley Creek Road
	Hawley	County	culvert/yes	bridge	USBWP	Private land on Hawley Creek Road
	Hawley	County	culvert/yes	bridge	USBWP	BLM land on Hawley Creek Road
	Hawley	BLM	4 fords/no	armor/reconstruct	BLM	Proposed in this BA
	Hawley	BLM	2 fords/no	physically close	BLM	Proposed in this BA
	Hawley	USFS	double culverts/no	none	---	provides fish passage
	Tenmile	BLM	culvert/yes	replaced	BLM	undersized, replaced to prevent future blowouts
	Clear	BLM	culvert/yes	replaced	BLM	undersized, replaced to prevent future blowouts
	Poison	BLM	culvert/yes	none	---	non-motorized trail in Eighteenmile WSA
	McGinty	BLM	culvert/yes	none	---	dewatered during irrigation season
	Divide	BLM	culvert/yes	none	---	dewatered during irrigation season
Big Timber	Big Timber	SH 28	culvert/yes	replaced	IDFG	
	Big Timber	County	culvert/yes	none	IDFG or TU	Lee Creek Road

Watershed	Stream	Road	Structure/Fish Barrier	Action	Action Agency	Comments
	Swan Basin	BLM	culvert/yes	none	---	OHV only
Lee	Lee	SH 28	culvert/yes	relocated/replaced with box culvert	TNC/ ITD	done as part of the Lee Creek channel realignment/reconstruction
	Lee	County	2 culverts/yes	abandoned	TNC	2 Lee Creek Road culverts were abandoned when Lee Creek was realigned/reconstructed
Hayden	Basin	BLM	culvert/yes	replaced/road rerouted	BLM	
	Basin	County	culvert/no	none	---	Basin Creek Road, creek dewatered during irrigation season
	Wright	USFS	culvert/yes	bridge	USFS	Bear Valley tributary
	Kadletz	USFS	culvert/yes	bridge	USFS	Bear Valley tributary

Attachment 5: Hawley Creek-Rocky Canyon Ford Reconstruction Drawings

