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# Final

# Environmental Impact Statement

## Caribou Travel Plan Revision Final EIS

**Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee National Forest**

Bannock, Bear Lake, Bonneville, Caribou, Franklin, Oneida and Power Counties, Idaho; Box Elder and Cache Counties, Utah; Lincoln County, Wyoming

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# Environmental Impact Statement

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| | |
|---|---|
| **Lead Agency:** | **USDA Forest Service** |
| **Cooperating Agencies:** | **None** |
| **Responsible Official:** | **Larry Timchak, Forest Supervisor**<br>**Caribou-Targhee National Forest**<br>**Headquarters Office**<br>**1405 Hollipark Drive**<br>**Idaho Falls, ID 83401** |
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**Abstract:** The purpose of the travel plan revision analysis and decision is to determine the motorized and road and trail system, the non-motorized trail system, designated mechanized trails for the Caribou planning unit of the Caribou-Targhee National Forest. Motorized and non-motorized areas during winter season will also be analyzed. The decision will also determine the closure methods that would be applied to routes closed year-long. The analysis considers the effects of six travel plan alternatives. Design features and mitigation have been incorporated into the alternatives to reduce impacts to forest resources. The alternatives were analyzed for their effectiveness in resolving issues, reducing potential impacts to resources, and for compliance with federal statutes and regulations, and the 2003 Revised Forest Plan. Alternative 5 was identified as the preferred alternative in the Draft EIS. Alternative 5R was formulated from additional public comment and analysis. The Deciding Officer for this action is Larry Timchak, Forest Supervisor of the Caribou-Targhee National Forest. For more information, please contact Deb Tiller at the Forest's Headquarters Office at 208-524-7500.

# EXECUTIVE SUMMARY

## Proposed Action

The Caribou-Targhee National Forest proposes to revise the Caribou Travel Plan. The project area for the proposal includes portions of the Caribou and Cache National Forests administered by the Westside, Soda Springs, and Montpelier Ranger Districts. The project area will be referred to as the Caribou. This action will revise the 2002 Caribou Travel Plan to reflect the goals, objectives, and desired conditions of the 2003 Caribou Revised Forest Plan (RFP). The RFP provides programmatic direction for forest management and will guide forest activities for the next ten to fifteen years. The FEIS will consider both summer and winter travel or snow and snow-free season travel. The FEIS will consider motorized travel, mechanized travel and trails that will be maintained for foot and stock travel.

The increased popularity and widespread use of Off Highway Vehicles, or OHVs, on public lands in the early 1970's prompted the development of a unified federal policy for such use. Executive Order (EO) 11644 (1972) and EO 11989 (1977) provide direction for federal agencies to establish policies and procedures to control and direct the use of OHVs on public lands as to (1) protect the resources of those lands, (2) promote the safety of all users of those lands, and (3) minimize conflicts among various uses on those lands. In this document, OHVs are defined as any vehicle that is designed to travel off of paved roadways. They include full sized 4-wheel drive vehicles, motorcycles, and all-terrain vehicles (ATVs).

## Tribal Consultation

The Shoshone-Bannock Tribes and Northwest Band of the Shoshoni have ancestral treaty rights to uses of the Caribou-Targhee National Forest and the Curlew National Grassland. The relationship of the United States government with American Indian tribes is based on legal agreements between sovereign nations. The Fort Bridger Treaty of July 3, 1868, reserved the hunting, fishing, and gathering rights of tribal members on "all unoccupied lands of the United States so long as game is present thereon." This right applies to all public domain lands reserved for National Forest purposes that are administered by the Caribou-Targhee National Forest. Consultation with the Fort Hall Business Council of the Shoshone-Bannock Tribes is required on land management activities that could affect resources, access and use of the National Forest. Two staff biologists of the Shoshone-Bannock Tribes were members of the interdisciplinary team for the analysis. Two evening meetings were held in April of 2004 and April of 2005 in Fort Hall, Idaho, for tribal members and staff to review the proposed action, the Draft EIS, and alternative maps.

## Public Involvement

Public discussions for the forest plan analysis included the future travel plan revision and the route designation process. In January of 2004, the Theodore Roosevelt Conservation Partnership held a two-day workshop to discuss travel issues on the eastside of the Caribou. Local trail users were invited to explore the issues related to the upcoming Travel Plan revision for the Soda Springs and Montpelier Ranger Districts at the weekend workshop. Although the Forest Service did not sponsor the workshop, forest personnel were present to answer questions and to listen to the participants' views on road and trail management.

The Notice of Intent to prepare an Environmental Impact Statement for this project was published in the Federal Register on March 11, 2004. Public notification included mailings, press releases, and information posted on the Forest's internet website. Over 1,500 letters were sent to potentially interested parties. In an

effort to reach statewide trail users, the State of Idaho Parks and Recreation Department included a notice of Forest Service travel planning on their website which included a link to the Caribou-Targhee National Forest website. Forest personnel met with trail use groups, agencies and counties, as requested, to discuss the Proposed Action. Eight evening meetings were held for the general public during March and April 2004. The interdisciplinary team and ranger district staff discussed the Proposed Action maps and related issues with trail users, land owners, and others. Throughout the travel planning process, the interdisciplinary team gathered comments on the Proposed Action, and possible alternatives to the Proposed Action. Over 450 comments were received on the Proposed Action. The Draft EIS, (DEIS), was released to the public on April 1, 2005. Seven public meeting were held throughout southeast Idaho in April and May 2005 to discuss the DEIS and alternatives. The official comment period was to close May 17th, but was extended to May 26, 2005, to allow time for the public to review a corrected map of the map package and an errata sheet for the DEIS. Notice of the extension was sent out to all parties who received the Executive Summary of the DEIS. Corrected maps were sent to all parties who received the map package and the corrected map and errata sheet were posted on our forest website. The Forest received over 1,700 comments on the DEIS.

## Issues

Preliminary issues were identified through public comments and forest staff concerns. Significant issues were defined from the preliminary issues. Significant issues are directly or indirectly caused by implementing the Proposed Action and they define alternatives to the Proposed Action.

- **Issue #1** The Proposed Action does not designate as many snow-free motorized routes as allowed by the RFP and restricts snowmobile travel in some forest areas. Some people feel the Proposed Action is not responsive to the growing demand for motorized travel opportunities.

- **Issue #2** The Proposed Action does not designate enough trails and areas that provide a non-motorized experience. Some people feel this is not responsive to the growing demand for non-motorized settings. Some people want additional mountain bike opportunity on non-motorized trails.

- **Issue #3** The Proposed Action designates some motorcycle trails for ATV use. Some people want to retain or increase single-track motorcycle trails.

- **Issue #4** The Proposed Action manages the Huckleberry Basin prescription area, east of Soda Springs, as open to cross-country motorized use during the snow-free season. Some people feel motorized travel should be restricted to designated routes during the snow-free season on the entire planning unit to provide management consistency and to benefit resource conditions.

- **Issue #5** The RFP sets Open Motorized Route Density ceilings, OMRDs, to reduce disturbance to wildlife and to maintain the desired recreation setting. The Proposed Action exceeds prescription OMRDs in some prescription areas.

- **Issue #6** The Proposed Action designates some motorized travel routes within areas that Idaho Department of Fish and Game (IDF&G) would like to see managed as non-motorized. The IDF&G wants to reduce wildlife disturbance from motorized travel during the snow-free season and provide more non-motorized areas for hunters.

- **Issue #7** The Proposed Action designates motorized travel routes (snow-free) and proposes route closures that have the potential to affect soils, especially on soil types mapped as unstable or with a high risk for erosion.

- **Issue #8** The Proposed Action designates motorized travel routes (snow-free) within riparian areas. Riparian areas are managed under an Aquatic Influence Zone (AIZ) prescription. There is a concern for the impacts of designated motorized routes on watershed conditions.

- **Issue #9** The Proposed Action designates motorized travel routes (snow-free) within riparian areas. There is a concern for the impacts of designated motorized travel routes on fish and fish habitat.

The nine significant issues led the agency to develop alternatives to the Proposed Action. Six alternatives were considered in detail.

# Changes Between Draft and Final EISs

Changes between the Draft and Final Environmental Impact Statements are summarized in Appendix B. The majority of these changes were made as a result of public comments received on the Draft EIS. An additional alternative, Alternative 5R was created based on specific comments from trail users and others. Cumulative effects discussions were expanded for the Recreation, Wildlife and other resource sections. Chapters Three and Four for Wildlife expands the discussion of road and trail effects on various species.

## *Alternative 1, No Action*

Considering a "No Action" alternative within the analysis is required by the Council on Environmental Quality regulations. The "No Action" Alternative would be the management and restrictions for travel routes and areas as depicted on the 2002 Caribou Travel Map, with the addition of the 2003 Special Order[1]. In 2003, a Special Order was added to the 2002 Caribou Travel Plan Map that prohibited cross-country, motorized travel during the snow-free season on most areas of the forest. In areas that were formerly open to cross-country motorized travel, any road or trail depicted on the 2002 Travel Map became a designated motorized route during the snow-free season.

This alternative has 1,010 miles of designated road, 670 miles of designated ATV trail, 170 miles of designated motorcycle trail, and 590 miles of designated non-motorized trail, with eight miles of non-motorized trail that allow mountain bike travel.

### *Summer or Snow-free Season Travel*

Mountain bike restrictions and the historic Winschell Dugway trail remain the same as depicted on the 2002 Travel Map. The Huckleberry Basin area is open to cross-country motorized travel during the snow-free season, as mapped in the RFP. This alternative retains the closure dates of all routes and areas as depicted on the 2002 Travel Map. Site-specific seasonal closures may be determined by the Ranger.

### *Winter or Snow Season Travel*

Designated snowmobile routes in winter range are the same as depicted on the 2002 Travel Map. Areas managed as non-motorized during the snow season are the same as depicted on the 2002 Travel Map with these exceptions:

- Mt. Naomi Recommended Wilderness is open to cross-county snowmobile use during the snow season as mapped in RFP prescriptions. This management was determined by the RFP.

[1] Travel Plans are legally enforced through the issue of a Special Order signed by the Forest Supervisor.

- Additional closures to motorized travel (snowmobiles) during snow season are the eastern slope of Bonneville Peak (east of Inkom) and the Bear Creek area (north of McCoy Creek Road) and Meade Peak (east of Georgetown); as mapped in the RFP prescriptions. This management was determined by the RFP.

## Features Common to Alternatives 2, 3, 4, 5, and 5R

### Trail Construction

New trail construction of under 1/2 mile segments is considered in the analysis and varies by action alternative. Proposed new construction consists of "connector" segments which would tie existing travel routes together. Some alternatives include direction to consider and analyze additional motorized routes in the future. Miles for these routes are included in the alternative's total miles but the decision to build and the actual location would be made pending further analysis and public involvement. These proposed routes vary by alternative.

### Non-system Travel Routes

Designating non-system travel routes for motorized travel is considered in the analysis and varies by action alternative. Some non-system travel routes are remnants of agency built or approved routes, other non-system routes are user-created. Designated motorized travel routes will become part of the transportation system.

### Travel Route Closures

Travel routes not needed for public access or other approved access will be closed. Travel route closures and methods are included in this analysis. Travel routes to be closed vary by alternative and are listed by route number in Appendix B. Five miles of travel route are proposed for decommissioning under all action alternatives. Decommissioning is proposed for parallel routes where one route is designated and the other closed. Closure and decommissioning methods are described in Appendix B.

### Open Motorized Route Densities

The RFP uses Open Motorized Route Density ceilings (OMRDs) to reduce motorized vehicle disturbance to wildlife and to maintain recreation settings. The prescribed OMRD ceilings were determined from the density of the existing road and trail system, motorized access needs, and the management emphasis of the prescription area. In 2004, the transportation inventory was updated to reflect route locations indicated by satellite image and GPS technology. With this update, it was discovered that many routes were actually longer than initially mapped and some route alignments were not accurate. All alternatives exceed the OMRD ceilings in some prescription areas. All alternatives would require a plan amendment to change the OMRD ceiling for some prescription areas.

## Alternative 2, Proposed Action

The Proposed Action for the Caribou Travel Plan Revision was created by ranger district staffs using an updated roads and trails inventory and the Revised Forest Plan (RFP) desired conditions, goals and objectives.

This alternative has 970 miles of designated road, 690 miles of designated ATV trail, 140 miles of designated motorcycle trail, and 700 miles of designated non-motorized trail. This alternative has 8 miles of non-motorized trail that allows mountain bike travel. These routes are West Fork and Gibson Jack trails south of Pocatello. This alternative closes 60 miles of motorized routes.

### *Summer or Snow-free Season Travel*

Mountain bike restrictions remain the same as depicted on the 2002 Travel Map. The alternative retains the closure dates of all routes and areas as depicted on the 2002 Caribou Travel Plan map. Site-specific seasonal closures may be determined by the Ranger. Other features of this alternative include:

- The Huckleberry Basin prescription area, east of Soda Springs, remains open to cross-country motorized travel.
- A core area within the Stump Creek drainage, northeast of Soda Springs, is managed as a non-motorized setting during the snow-free season.
- The Winschell Dugway is managed as a designated motorized trail open to vehicles less than 50 inches in width or ATVs. Additional analysis and design is needed to determine if an ATV trail is feasible to build and maintain and that the trail would meet RFP standards and guidelines for soils, fish and water quality.
- Trail 331, on the eastern slope of Elkhorn Mountain, is managed as a designated motorcycle trail.
- This alternative manages Crestline Cycle Trail, south of Pocatello, as a designated ATV trail.
- This alternative proposes to decommission five miles of motorized trail in areas that have parallel routes.

### *Winter or Snow Travel*

Designated snowmobile routes in winter range are the same as depicted on the 2002 Travel Map. This alternative proposes designated snowmobile routes through the "new" areas identified as big game winter range. Before the RFP, these areas were not managed under a big game winter range prescription and snowmobile travel was not restricted.

Areas managed as non-motorized during the snow season are the same as Alternative 1.

## *Alternative 3*

Alternative 3 was developed from wildlife and hunting issues provided by IDF&G. IDF&G would like the Travel Plan to manage large areas as non-motorized during the snow-free season to reduce wildlife disturbance from motorized travel and to offer additional non-motorized hunting areas. The alternative manages some designated roads and trails as closed to motorized travel during the snow-free season to create additional large non-motorized areas in the Mink Creek area (south of Pocatello), the Portneuf Range (east of Pocatello), Elkhorn Mountain (north of Malad), Oxford Peak (south of Downy), and areas in the Bear River Range (south of Soda Springs). This alternative has 940 miles of designated road, 490 miles of designated ATV trail, 100 miles of designated motorcycle trail, and 930 miles of designated non-motorized trail. Eight miles of non-motorized trail are managed for mountain bike travel. This alternative closes 325 miles of motorized routes.

### *Snow-free Travel*

Mountain bike restrictions and seasonal closures remain the same as the No Action and the Proposed Action. Other features of this alternative include:

- Huckleberry Basin area is open to cross-country motorized travel.
- The Winschell Dugway is managed as a designated non-motorized trail.
- Trail 331, on the eastern slopes of Elkhorn Mountain, is managed as a non-motorized trail.

- This alternative maintains Crestline Cycle Trail, south of Pocatello, as a motorcycle trail. (Note: this route is not correctly mapped on the Alternative 3 map, it should be depicted as a dashed blue line, motorcycle trail)

### *Snow Travel*

Snow-season travel remains the same as in Alternative 1 and 2, the Proposed Action.

## Alternative 4

Alternative 4 was developed from comments received by a coalition of interested parties, the Southeast Idaho Recreation Alliance, or SIRA. SIRA is a group of local residents, conservation groups, and recreation organizations. SIRA wants the Travel Plan to manage additional areas for a "non-motorized" setting during the snow and snow-free seasons. This alternative manages some designated roads and trails as closed to motorized travel during the snow-free season creating more non-motorized areas forest-wide. These areas are similar to the non-motorized areas of Alternative 3. This alternative manages additional areas as non-motorized during the snow season. This alternative was based on comments received from SIRA; however, not all features of the alternative reflect their views. This alternative does not reflect the views of SIRA concerning the expansion of mountain bike opportunities and snowmobile use in recommended wilderness areas.

The alternative has 900 miles of designated road, 430 miles of designated ATV trail, 100 miles of designated motorcycle trail, and 1,030 miles of designated non-motorized trail. Eight miles of non-motorized trail allow mountain bike travel. The alternative closes 430 miles of motorized routes.

### Summer or Snow-free Travel

Mountain bike restrictions and seasonal closures remain the same as Alternatives 1, 2 and 3. Other features of this alternative include:

- The Huckleberry Basin prescription area allows motorized travel on designated routes during the snow-free season. This change would require a forest plan amendment to change the prescription from 5.2c to 5.2b.
- The Winschell Dugway is managed as a designated non-motorized trail.
- Trail 331, on the eastern slope of Elkhorn Mountain, is managed as a non-motorized trail.
- This alternative maintains Crestline Cycle Trail, south of Pocatello, as a motorcycle trail.

### Winter or Snow Travel

Designated snowmobile routes in winter range are the same as depicted on the 2002 Travel Map. "New" big game winter range prescription areas *do not* have designated snowmobile routes within them. Areas managed as non-motorized during the snow season are the same as depicted on the 2002 Travel Map with these exceptions:

- Mt. Naomi Recommended Wilderness is open to snowmobile travel during the snow season, as mapped in RFP prescriptions.
- Areas managed as non-motorized during the snow season include the eastern slope of Bonneville Peak, the Bear Creek area, and portions of Meade Peak as mapped in the RFP prescriptions. The alternative includes additional non-motorized acres in Mink Creek, Gibson Jack and Trail Creek on the Westside District as mapped in the Alternative 4 Snow Season Travel Map.
- The boundary for the Bonneville Peak snowmobile closure has been changed from RFP prescription. The boundary moves north to take in "Strawberry Fields" as depicted on the Alternative 4 Snow Season Travel Map. This alternative would require a forest plan amendment to change the prescription area boundary.

## Alternative 5

This alterative was developed from the Proposed Action with specific changes in response to resource concerns, public comment and the findings of the Travel Plan Roads Analysis. This alternative emphasizes improving motorized opportunities through loop routes, expanding mountain bike opportunity on non-motorized trails, and maintaining existing non-motorized areas. Closure boundaries have been altered for some non-motorized snow season areas to improve compliance or to improve the non-motorized experience.

This alternative has 970 miles of designated road, 660 miles of designated ATV trail, 140 miles of designated motorcycle trail, and 700 miles of designated non-motorized trail. This alternative allows mountain bike travel on 510 miles of non-motorized trail. This alternative closes 90 miles of motorized routes.

### *Snow-free Travel*

Snow-free travel for this alternative is the same as the Proposed Action with these exceptions:

- Mountain bikes are restricted to designated motorized routes on the Westside District with some exceptions. On the Soda Springs and Montpelier Districts, mountain bikes are restricted to *designated* motorized and non-motorized routes. Non-motorized trails adjacent to Pocatello that allow mountain bike travel including the West Fork and Gibson Jack trails.
- Motorized travel is restricted to designated routes during the snow-free season in the Huckleberry Basin prescription area. This would require a forest plan amendment to change the prescription from 5.2c to 5.2b.
- This alternative does not manage the Winschell Dugway as a designated trail, motorized or non-motorized, due to maintenance concerns. Portions of the trail can be traveled by hikers and stock users but the route will not be maintained to standard.
- This alternative manages Slate Mountain Trail, just west of Pocatello, as a single-track motorcycle trail. This trail was mapped incorrectly under this alternative in the Draft EIS map package.
- This alternative manages Crestline Cycle Trail, south of Pocatello, as a designated ATV trail.
- This alternative would provide direction to explore a preliminary design and analysis for new trail construction for a designated motorized trail paralleling Cub River Road, from Albert Moser Campground to Willow Flat Campground. This trail would allow trail users of all kinds to travel to other recreation destinations without the risk of mixing with full-sized vehicle traffic on Cub River Road.

Alternative 5 proposes three new motorized loop opportunities on the Montpelier District:

#### *Motorized Loop #1:*

A designated motorized trail exists between Squirrel Hollow and Main Canyon. ATVs use the trail from both sides of the watershed divide, but a short length of rocky ridge separates the existing routes. There is an opportunity to relocate the trail to the north of the ridge. The proposed route goes through forested vegetation near the top of the slope. The re-route would improve an existing tight switchback. See the Alternative 5 map of the map packet.

#### *Motorized Loop #2:*

A designated road accesses the Hawks Roost area. There is a network of non-system logging roads and user-created trails south of Summit View Campground. Firewood gatherers and ATV riders have created a route within ¼ mile of the Hawks Roost Road. A properly located connector for these two routes would create a loop for motorized travel in close proximity to popular camping areas. See the Alternative 5 maps of the map packet.

#### *Motorized Loop #3:*

The Green Mountain Road runs along the top of the east face of Green Mountain. A different road of unknown origin, possibly mineral exploration, leaves the Diamond Creek Road and proceeds southwest; eventually becoming a two-track route at the south end of a large open basin. A minor reroute of the user-created connector would put the trail in a more appropriate location along a ridgeline leading to the Green Mountain Road. See the Alternative 5 maps of the map packet.

### *Snow Travel*

Snow Season travel is the same as Alternative 2, the Proposed Action, with these exceptions:

- The boundary for the Bonneville Peak snowmobile closure has been adjusted from the RFP boundary. The boundary moves north to take in "Strawberry Fields" and moves west, up the slope. This alternative would require a forest plan amendment to change the prescription area boundary.
- The boundaries of the Gibson Jack snowmobile closure, west of Pocatello, are changed to improve compliance.
- Three areas in the vicinity of Emigration Summit on the Montpelier District are managed as non-motorized during the snow season.

## *Alternative 5R*

This alterative is based on Alternative 5 with specific changes in response to public comment on the DEIS. Changes include managing additional non-motorized routes adjacent to Pocatello as open to mountain bikes and maintaining some designated motorized routes as single-track motorcycle trails. Closure boundaries have been altered for some existing non-motorized snow season areas adjacent to Pocatello. It is anticipated that these changes would improve compliance with the Travel Plan.

This alternative has 970 miles of designated road, 650 miles of designated ATV trail, 150 miles of designated motorcycle trail, and 640 miles of designated non-motorized trail, with 490 miles open to mountain bike travel. This alternative closes 90 miles of motorized routes.

### *Snow-free Travel*

Snow-free travel for this alternative is the same as Alternative 5 with these exceptions:

- Mountain bikes are restricted to *designated* system routes, motorized and non-motorized, on the Soda Springs and Montpelier Districts. An additional 10 miles of non-motorized trails allow mountain bike travel on the Westside District. Non-motorized trails adjacent to Pocatello that allow mountain bike travel including West Fork, Gibson Jack, and associated trails in Gibson Jack and Mink Creek drainages.
- This alternative manages Crestline Cycle Trail, south of Pocatello, as a single-track motorcycle trail.
- Due to construction and maintenance concerns, the Winschell Dugway, on Caribou Mountain, is not managed as a system trail. To bring this trail to standard for non-motorized or motorized use will require additional public involvement and analysis. This analysis will be initiated within one year. Under this alternative, the southern portion of the trail can be traveled by hikers and stock users but the route will not be maintained to standard.
- This alternative would provide direction to explore a preliminary design and analysis for new trail construction for a designated motorized trail paralleling Cub River Road, from Albert Moser Campground to Willow Flat Campground and a new motorized trail paralleling the South Fork of Mink Creek Road, south of Pocatello. These trails would allow trail users of all kinds to travel to other recreation destinations without the risk of traveling with full-sized vehicles on these roads.

### *Snow Travel*

Snow Season travel is the same as Alternative 5; however, the boundaries of the Gibson Jack and Mink Creek non-motorized areas, west of Pocatello, are changed to improve compliance.

# Mitigation and Monitoring Common to All Alternatives

The following mitigation measures will be used as part of all of the action alternatives.

RFP Standards and Guidelines will be applied. Best Management Practices (BMPs) addressing soil, water, and noxious weeds will be applied to all construction or maintenance of roads and trails and route closures.

All areas proposed for ground disturbing activities will be surveyed for heritage resources, with State Historical Preservation Office review.

Forest Plan monitoring involves both legally required monitoring activities and monitoring that is conducted based on the availability of funding and personnel. Forest Plan monitoring that could indicate adverse impacts to forest resources from road and trail use include:

- Annual reviews of Best Management Practices and updating projects in the Forest's Watershed Improvement Needs Inventory are designed to protect water quality (RFP 5-3).
- Riparian properly functioning condition will be reevaluated at the stream level by 2008 to determine rate of movement towards desired future conditions (RFP 5-7).
- Fish habitat is monitored annually, where needed, to determine if conditions are outside of desired AIZ attributes (RFP 5-13).
- Wildlife occurrences and territories are monitored to determine if management activities are providing adequate habitat to maintain populations of Management Indicator Species and to assist in recovery of listed species (RFP 5-15).
- Condition surveys are conducted on system trails per national direction; these include stream crossings and trails in riparian areas.
- Road and trail closure effectiveness will be monitored, as described in Chapter Two of the FEIS.

***Table A -- Road and Trail Opportunities by Miles and Travel Mode by Alternative.***

| Westside Ranger District – Pocatello Section | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs and motorcycles may legally travel some of these routes) | 111 | 110 | 107 | 89 | 108 | 107 |
| ATVs, motorcycles, m.bikes, foot and stock | 87 | 112 | 75 | 36 | 109 | 102 |
| Motorcycles, m.bikes, foot and stock | 46 | 23 | 15 | 42 | 23 | 30 |
| m.bikes, foot and stock | 8 | 8 | 8 | 8 | 11 | 20 |
| foot and stock | 135 | 119 | 141 | 168 | 110 | 82 |

***Table A -- Road and Trail Opportunities by Miles and Travel Mode by Alternative.***

| Westside Ranger District – Malad Section | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs and motorcycles may legally travel some of these routes) | 76 | 75 | 72 | 69 | 74 | 74 |
| ATVs, motorcycles, m.bikes, foot and stock | 127 | 130 | 73 | 66 | 127 | 127 |
| Motorcycles, m.bikes, foot and stock | 39 | 38 | 28 | 18 | 42 | 42 |
| m.bikes, foot and stock | 0 | 0 | 0 | 0 | 0 | 2 |
| foot and stock | 99 | 96 | 159 | 180 | 78 | 68 |

***Table A -- Road and Trail Opportunities by Miles and Travel Mode by Alternative.***

| Montpelier Ranger District – Bear River Range | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs and motorcycles may legally travel some of these routes) | 307 | 286 | 279 | 281 | 289 | 293 |
| ATVs, motorcycles, m.bikes, foot and stock | 185 | 195 | 124 | 145 | 196 | 199 |
| Motorcycles, m.bikes, foot and stock | 40 | 42 | 25 | 29 | 43 | 45 |
| m.bikes, foot and stock | 0 | 0 | 0 | 0 | 109 | 105 |
| foot and stock | 81 | 106 | 202 | 165 | 0 | 0 |

***Table A -- Road and Trail Opportunities by Miles and Travel Mode by Alternative.***

| Montpelier Ranger District – Pruess Section | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs and motorcycles may legally travel some of these routes) | 182 | 159 | 147 | 147 | 166 | 165 |
| ATVs, motorcycles, m.bikes, foot and stock | 49 | 53 | 44 | 44 | 50 | 50 |
| Motorcycles, m.bikes, foot and stock | 48 | 37 | 29 | 9 | 28 | 28 |
| m.bikes, foot and stock | 0 | 0 | 0 | 0 | 143 | 133 |
| foot and stock | 113 | 131 | 158 | 179 | 0 | 0 |

***Table A -- Road and Trail Opportunities by Miles and Travel Mode by Alternative.***

| Soda Springs Ranger District | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs and motorcycles may legally travel some of these routes) | 335 | 337 | 337 | 315 | 332 | 332 |
| ATVs, motorcycles, m.bikes, foot and stock | 225 | 201 | 176 | 135 | 178 | 172 |
| Motorcycles, m.bikes, foot and stock | 0 | 0 | 0 | 0 | 1 | 3 |
| m.bikes, foot and stock | 0 | 0 | 0 | 0 | 248 | 230 |
| foot and stock | 151 | 243 | 266 | 328 | 0 | 0 |

***Table A -- Road and Trail Opportunities by Miles and Travel Mode by Alternative.***

| Forest-Wide | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs and motorcycles may legally travel some of these routes) | 1012 | 968 | 942 | 902 | 969 | 972 |
| ATVs, motorcycles, m.bikes, foot and stock | 673 | 692 | 493 | 427 | 660 | 649 |
| Motorcycles, m.bikes, foot and stock | 172 | 139 | 97 | 98 | 137 | 147 |
| m.bikes, foot and stock | 8 | 8 | 8 | 8 | 511 | 489 |
| foot and stock | 578 | 694 | 925 | 1019 | 188 | 146 |

# Major Conclusions

## *Recreation*

### *Recreation during the Snow-free Season*

All alternatives provide a variety of recreation opportunities, motorized and non-motorized. All alternatives provide a variety of areas for a non-motorized experience during the snow-free season. Alternatives 2, 5 and 5R would meet plan intent for ROS settings with some adjustments. Alternatives 3 and 4 would manage some areas currently managed for a semi-primitive motorized experience as semi-primitive non-motorized.

Alternative 1 offers the most motorized route miles; but some trails dead-end and some routes are redundant. This alternative offers the least amount of acres that provide a non-motorized setting. Alternatives 2, 3, 4, 5 and 5R decrease the miles of existing designated motorized routes. Alternative 2 maintains motorized access into many areas of the forest with some redundant routes not designated. Alternatives 2, 5, and 5R offer an additional non-motorized setting in the core of Stump Creek drainage. Alternative 5 and 5R reduce motorized routes but provide new motorized loop opportunities. Alternative 5

and 5R offer additional non-motorized routes open to mountain bike travel. Alternatives 4, 5, and 5R would require a forest plan amendment to change the prescription for the Huckleberry Basin prescription area from 5.2c to 5.2b. This change would allow motorized travel on designated routes only during the snow-free season in this area.

### *Recreation during the Snow Season*

All alternatives offer a different mix of non-motorized settings and motorized opportunity for winter travel. Alternatives 2 and 3 implement the new non-motorized areas identified in the RFP and offer designated snowmobile routes through new areas of winter range. Alternatives 4, 5 and 5R implement the new closure areas identified in the RFP and offer some additional non-motorized areas and change some closure boundaries to improve compliance. Alternative 4 manages the greatest number of acres for a non-motorized setting during the snow season. Alternatives 4, 5, and 5R would require a forest plan amendment to change the prescription boundary for the Bonneville Peak non-motorized prescription area.

### *OMRD ceilings*

All alternatives would require a forest plan amendment to change the OMRD ceilings for specific prescription areas. With the exception of Alternative 1, most OMRD overages represent a small increase in motorized route miles, and most represent existing designated routes. In Alternatives 3, 4, 5 and 5R, adjusting OMRD ceilings would not change the desired recreation settings for prescription areas, as described in the RFP.

## *Wildlife*

All action alternatives meet the prescribed Open Motorized Route Density (OMRD) ceiling for the majority of prescription areas, which would reduce the risk of wildlife disturbance from motorized travel. All alternatives offer large areas with non-motorized settings for wildlife. Alternative 1 offers the least amount of non-motorized areas over 1,000 acres. Alternatives 3 and 4 offer the greatest number of acres within non-motorized areas over 1,000 acres. Alternatives 2, 5, and 5R manage more acres of non-motorized areas over 1,000 acres than the existing condition. Alternatives 2 through 5R will meet Forest Plan goals and objectives for wildlife and wildlife habitat.

## *Soils*

Alternative 1 has the most miles of designated motorized routes within areas mapped as having high or moderate sensitive soil risk. Alternatives 3 and 4 have the least miles of designated motorized routes within areas mapped for high or moderate sensitive soil risk. Alternatives 2, 5, and 5R have fewer miles of designated motorized routes within areas mapped for high sensitive soil risk than the existing condition; but more miles than Alternatives 3 or 4. All alternatives are expected to meet Forest Plan standards and guidelines for soil resources.

## *Riparian Areas and Aquatic Resources*

Alternatives 2, 5, and 5R reduce the risk to water and riparian resources from designated motorized routes by managing less motorized travel routes, less motorized travel routes in AIZs (Aquatic Influence Zones), and less stream crossings than the existing condition. Alternatives 3 and 4 reduce the risk to water and riparian resources from designated motorized travel routes by managing less motorized travel routes, less motorized travel routes in AIZs, and less motorized route stream crossings than Alternatives 2, 5, and 5R. With mitigation, all alternatives are expected to meet Forest Plan standards and guidelines for water and riparian resources.

### *Fish and Fish Habitat*

It is expected that Alternatives 1 and 2 would have the most impact upon aquatic biota and their habitat and Alternatives 3 and 4 would have the least. Alternatives 5 and 5R, when considered in the range of alternatives, have a median amount of impact upon aquatic biota and their habitat. All alternatives are expected to meet Forest Plan standards and guidelines for fish and fish habitat.

### *Overview*

Alternative 1, the no action alternative, has the greatest departure from RFP desired conditions, goals and objectives for access, recreation and resources. Alternatives 2, 5, and 5R maintain much of the existing motorized access for the public, forest management, and other motorized access needs. Alternatives 2, 3, 4, 5 and 5R manage a portion of Stump Peak as non-motorized during the snow-free season. Alternatives 3 and 4 offer the greatest amount of acres managed for a non-motorized setting during the snow-free season. Alternatives 4 and 5R offer the greatest amount of acres managed as non-motorized during the snow season. Alternatives 3 and 4 represent the greatest reduction of risk to soil, water, and riparian resources from designated motorized routes, but do not retain some popular motorized routes. Alternatives 5 and 5R meet the RFP desired conditions, goals, and objectives for recreation opportunities, and would meet the desired conditions for forest resources.

## Decision to be Made

Based upon the effects of the alternatives, the responsible official will decide:

- Which travel routes are appropriate for motorized, mechanized, and non-motorized travel?
- Which travel routes would have seasonal restrictions to protect resource needs or provide a non-motorized setting?
- What types of closure and/or rehabilitation methods should be used to close travel routes?

The responsible official will also decide whether to amend the Forest Plan to adjust the prescribed OMRD ceilings for some prescription areas, whether to amend the RFP for the motorized travel change in the Huckleberry prescription area, and whether to amend the Forest Plan to adjust the prescription boundary for the non-motorized area on Bonneville Peak.

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# CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

## Document Structure

The Forest Service has prepared this Final Environmental Impact Statement in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Final Environmental Impact Statement (FEIS) documents the public involvement and the environmental analysis and impacts for the revised Caribou National Forest (NF) Travel Plan. The Travel Plan defines the public access on the Forest, determining the mode of travel and the season of travel on roads, trails and areas. The FEIS will consider both summer and winter travel, or snow and snow-free season travel. The FEIS will analyze all modes of travel, including motorized and mechanized.

The FEIS discloses the direct, indirect, and cumulative environmental impacts that would result from the Proposed Action and alternatives. The document is organized into five chapters:

- **Chapter 1.** Purpose and Need for Action: this chapter includes the purpose and need of the project and the Proposed Action. This section also details how the Forest Service informed the public of the Proposed Action and how the public responded. This chapter describes the issues and concerns addressed in the analysis.

- **Chapter 2.** Alternatives, including the Proposed Action: this chapter provides a more detailed description of the agency's Proposed Action as well as alternative methods for achieving the purpose and need. These alternatives were developed based on significant issues raised by the public and others. This section also includes a summary table of the environmental consequences associated with each alternative.

- **Chapter 3.** Affected Environment: this chapter describes the environments affected by the Proposed Action.

- **Chapter 4.** Environmental Consequences: this chapter describes the environmental effects of implementing the Proposed Action and other alternatives.

- **Chapter 5.** Consultation and Coordination: this chapter provides a list of preparers and agencies consulted during the development of the FEIS.

- **Appendices:** The appendices provide supplemental information to support the analyses presented in the FEIS.

Additional documentation, including detailed analyses of project-area resources, may be found in the project planning record located at Forest Headquarters Office in Idaho Falls, Idaho.

The data displayed on the maps are representational in nature, not exact geographical locations. Geographic Information Systems (GIS) data and accuracy may vary for several reasons. Mileage totals and map locations are for information and comparison purposes only.

Forest travel plans define which roads and trails are open for what types of travel and at what time of year. The revised Travel Plan will implement direction for travel and access as defined by the 2003 Revised

Forest Plan (RFP) for the Caribou planning unit. The RFP provides programmatic direction for forest management and will guide forest activities for the next ten to fifteen years.

This analysis and decision will reference the forest-wide findings and analysis in the 2003 Final Environmental Impact Statement (FEIS) for the RFP.

The Caribou-Targhee NF issued a Proposed Action (Alternative 2) to address the need for a Revised Travel Plan. The public and forest staff identified nine significant issues driving the formulation of alternatives to the Proposed Action. This FEIS presents the analysis of six alternatives upon which the Forest Supervisor will base his decision for the revised Travel Plan. (Note to Reader: Acronyms and terms specific to the Forest Service are defined in the Glossary of this document.)

## Changes Between Draft and Final EISs

Changes between the Draft and Final Environmental Impact Statements are summarized in Appendix B. The majority of these changes were made as a result of public comments received on the Draft EIS. An additional alternative, Alternative 5R was created based on specific comments from trail users and others. Cumulative effects discussions were expanded for the Recreation, Wildlife and other resource sections. Chapters Three and Four for Wildlife expands the discussion of road and trail effects on various species.

## Background

In the 1970's, the increased use of Off Highway Vehicles (OHVs) on public lands prompted the development of a unified federal policy for such use. In this document, OHVs are defined as any vehicle that is designed to travel off of paved roadways. They include full-sized 4-wheel drive vehicles, motorcycles, snowmobiles, and all-terrain vehicles or ATVs[2]. Executive Order (EO) 11644 (1972) and EO 11989 (1977) provide direction for federal agencies to establish policies and procedures to control and direct the use of OHVs on public lands as to: (1) protect the resources of those lands, (2) promote the safety of all users of those lands, and (3) minimize conflicts among various uses on those lands. The Forest Service developed regulations in response to the EOs (36 Code of Federal Regulations (CFR) 216, 219 and 295). Under those regulations, OHV use can be restricted or prohibited to minimize: (1) damage to soil, watershed, vegetation, or other resources of the public lands; (2) harm to wildlife or wildlife habitats; and (3) conflict between the use of OHVs and other types of recreation. The EOs and federal regulations for OHV management on public lands can be found in Appendix A.

Travel planning is an allocation process based on social and resource concerns. The Forest Service has restricted motorized travel to designated routes in some areas of the Caribou since the late-1970s. In 1980, snowmobile travel was restricted to designated routes in areas identified as big game winter range. In 1987, mountain bikes were restricted to designated routes forest-wide (1987 Caribou Travel Plan map). A person can walk or ride an animal on most forest travel routes and areas. During the winter, a person can ski or snowshoe in most areas of the forest. Some special use areas, such as ski resorts and mining areas, restrict most public travel. In addition, the Caribou-Targhee NF issues a Travel Plan map that defines travel opportunities and restrictions on forest roads and trails. The Caribou Travel Plan map has evolved over the years with the most recent changes made in 2003.

In January 2001, the Forest Service adopted a new road management policy which directs the agency to maintain a safe, environmentally-sound road network that is responsive to public needs and affordable to manage. The policy includes roads analysis process designed to help managers make better decisions regarding roads. A Caribou Forest Roads Analysis was completed in 2003. In 2004, Dale Bosworth, Chief

[2] Idaho Traffic Law does not consider full-sized vehicles or snow machines as OHVs.

of the Forest Service, identified "unmanaged recreation" as one of four threats to National Forest system lands. To address this issue, a National OHV Policy is being developed that would require OHVs to stay on designated routes and specifically defined off-highway use areas on all National Forests and Grasslands.

## *Terminology*

The Forest Service uses the term "system" to refer to any road or trail that is listed on the Forest Transportation System. Some system travel routes are "closed" to motorized travel. The Forest Service has determined not to manage these routes for public motorized access, but they are needed for occasional administrative use, to maintain special use facilities or for future management activities. Some system travel routes are **designated** on the Travel Plan map for motorized, mechanized, and non-motorized travel by the public. All designated routes would become part of the Forest Transportation System.

## *Closing Routes*

This analysis refers to closing and decommissioning some travel routes. "Closing" a travel route could range from installing a sign and managing a route as non-motorized to installing earthen berms, rock barriers, and/or debris to physically impede vehicular travel. The method of closures for individual routes is mapped and available in the project record. "Decommission" means to obliterate most or of the road template and return the road prism to production by ripping and seeding or through natural reclamation. Appendix B and the project file contain further discussion of route closures and decommissioning methods.

## *Management Direction for Tribal Treaty Rights*

The Shoshone-Bannock Tribes and Northwest Band of the Shoshoni have ancestral treaty rights to uses of the Caribou-Targhee National Forest and the Curlew National Grassland. The relationship of the United States government with American Indian tribes is based on legal agreements between sovereign nations. The Fort Bridger Treaty of July 3, 1868, reserved hunting, fishing, and gathering rights for tribal members on "all unoccupied lands of the United States so long as game is present thereon." These rights apply to all public domain lands reserved for National Forest purposes that are presently administered by the Caribou-Targhee National Forest. Consultation with the Fort Hall Business Council of the Shoshone-Bannock Tribes is required on land management activities and land allocations that could affect the uses and resources of the forest.

As part of government-to-government relations, the Shoshone-Bannock Tribes and Caribou-Targhee National Forest are developing a protocol which guides coordination, cooperation, and consultation between the two entities. According to the Fort Bridger Treaty and subsequent court cases clarifying treaty rights, the Shoshone-Bannock Tribes have the right to hunt, fish, gather, and practice traditional uses on all unoccupied lands in the United States. On ceded lands[3], the Tribes have also reserved the right to graze domestic livestock. In addition, the Northwest Band of the Shoshoni has treaty rights on the Caribou-Targhee NF. Forest Service managers have a responsibility to protect forest resources associated with treaty rights. Concerns that the Shoshone-Bannock Tribes may have with this project are discussed in Chapter Three.

## *Revised Forest Plan Direction*

The desired condition for the transportation system identified in the RFP (pg. 3-36) is described below. The Forest Transportation system:

- Provides access to the forest to meet planning and management goals.

[3] These lands were formerly part of the Fort Hall Reservation but later ceded to the federal government to allow for settlement. The ceded lands on the Caribou-Targhee NF are primarily on the Westside Ranger District.

- Is safe, environmentally sound, and is responsive to public needs.
- Is affordable to manage and maintain.
- Provides a variety of road and trail opportunities, including motorized and non-motorized experiences.

The 2003 Forest Roads Analysis discussed the primary roads of the  of the Forest. This analysis was used in the RFP decision.  This environmental analysis will use the Travel Plan Revision Roads Analysis which discusses the remaining secondary roads on the Forest.

The RFP discusses management direction for the transportation system and recreation on pages 3-36 and 40.  It states that system roads and trails will provide access for the management of recreation, special uses, timber, range, minerals, and fire protection.  It also describes a road and trail system that provides a variety of opportunities, both motorized and non-motorized.

The RFP goals that pertain to travel planning include:

- Forest roads and trails provide for user safety and are maintained to minimize impacts to forest resources.
- The transportation system is developed and maintained at the minimum level necessary to manage resources, provide access, and protect facilities.
- Forest and local governments work cooperatively towards resolution of RS 2477 assertions.

An objective identified in the RFP is to revise the Caribou Travel Plan to incorporate RFP direction for access management.  RFP standards and guidelines that are applicable to travel planning include:

- Open Motorized Route Densities (OMRDs) shall not exceed the limits identified in the Plan OMRD Map.  OMRD is defined as the miles of designated motorized roads and trails per square mile within a specific prescription area.
- The OMRD standard and restrictions depicted on the Travel Plan map do not restrict responses to emergency events to protect human life, property values, structures, and forest resources.
- The travel planning process shall consider additional areas for non-motorized winter recreation.
- Any motorized vehicle access on a restricted road or trail or in a restricted area shall be for official administrative business only and shall be officially approved.
- Unless otherwise posted, motorized access is allowed for parking, wood gathering, and dispersed camping within 300 feet of an open designated road.
- The construction of new or maintenance of existing, motorized and non-motorized access routes should be consistent with the Recreation Opportunity Spectrum (ROS) class in which they are located.

ROS is a planning tool used to divide outdoor settings and activities into categories: Primitive, Semi-primitive Non-motorized, Semi-primitive Motorized, Roaded Modified, Roaded Natural, Rural, and Urban. The Forest Service uses ROS to inventory and manage recreation areas and activities.

The RFP does not specifically identify additional motorized access for people with disabilities. The Travel Plan does provide equal opportunities for all individuals to participate in a variety of recreation activities and travel modes.  The RFP does not specifically identify motorized access off of designated routes for hunters to retrieve game.

### *Summer or Snow-free travel*

The RFP restricts motorized vehicles to designated routes on 97 percent of forest acres. A portion of the Soda Springs District, the Huckleberry Basin prescription area, allows cross-country motorized travel during the snow-free season.

Travel plans are legally enforced through the issue of a Special Order signed by the Forest Supervisor. In 2003, a Special Order was added to the 2002 Caribou Travel Plan map prohibiting cross-country motorized access during the snow-free season on most areas of forest. In areas that were *formerly open to cross-country motorized use*, all roads and trails depicted on the 2002 map became the designated routes, *until the travel plan analysis and decision are complete*.

### *Snow or Winter Travel*

Direction in the RFP allows cross-country snowmobile travel in most areas of the forest during the snow season. Developed ski areas and areas within the Mink Creek drainage (south of Pocatello) have been managed as non-motorized for many years. The eastern slope of Bonneville Peak (east of Inkom), portions of the Toponce area (east of Pocatello), Bear Creek (north of the McCoy Creek Road) and Meade Peak (east of Montpelier) are also managed as non-motorized in winter. The RFP restricts snowmobile travel to designated routes within big game winter range prescriptions (Prescription 2.7.1 and 2.7.2). These prescription areas are found in the lower elevations of the Forest. Mount Naomi and Caribou Mountain Recommended Wilderness Areas are managed to allow cross-country snowmobile travel during the snow season.

### *Roadless Areas*

In preparation for revising the Forest Plan, the Caribou National Forest completed an IRA re-inventory describing changes in the boundaries and character of the 34 IRAs in the Forest from 1985 to 1996. In 2001, the Forest Service published an Advanced Notice of Proposed Rulemaking (ANPR) describing how to evaluate IRAs for management decisions. During the revision process, the Forest then conducted an Inventoried Roadless Area Re-evaluation using the five principles for evaluating IRAs that were published in the ANPR. The results from this re-evaluation were incorporated into Selected Alternative of the Forest Plan FEIS which subsequently became the 2003 RFP for the Caribou. The Proposed Action and alternatives includes designating motorized travel routes within the Forest's Inventoried Roadless Areas (IRAs). In May of 2005 the U. S. Department of Agriculture announced the Final Roadless Rule, which allows State governors to petition the Department in regards to Roadless Area management within their state. This process has been initiated with the State of Idaho.

## Purpose and Need for Action

The 2002 Caribou Travel Plan with the temporary 2003 Special Order does not comply with programmatic direction for access identified in the 2003 Caribou Revised Forest Plan. The RFP prescribes a ceiling on Open Motorized Route Density (OMRD) during the snow-free season for many areas of the forest. The current Travel Plan exceeds these limits in many prescription areas of the forest. The 2002 Travel Plan does not address snow season motorized access through the new big game winter range prescriptions and the opening of the Mount Naomi Recommended Wilderness area to snowmobile use. The Proposed Action is needed to bring the Caribou Travel Plan into compliance with the RFP's desired future condition for access, recreation settings and resource conditions.

# Proposed Action

The Proposed Action for the Caribou Travel Plan Revision was created by district staffs using past public comments, the route inventory, and direction identified in the RFP.

The Proposed Action is described in more detail in Chapter Two. See the Alternative 2 maps (Map Packet, Maps # 4, 5 and 6) for specific travel route designations.

Travel management for the Proposed Action includes these features:

- Public or special use access would be provided to private lands within the National Forest boundaries, as required by law.
- The Travel Plan does not restrict emergency responses to loss of life or property. This includes county search and rescue efforts and fire suppression.
- All travel routes and areas are open to hikers, horses and stock, snowshoe, snowboard and ski travel unless specifically closed to these uses.

### *Snow-free Travel*

The Proposed Action:

- Retains the closure dates of all routes and areas, as depicted on the 2002 Caribou Travel Plan map. Some site specific closures are determined by the Ranger based on road conditions.
- Retains the restrictions for mountain bike travel as depicted on the 2002 Caribou travel plan map.
- Designates some non-system routes for motorized travel.
- Closes some existing designated motorized routes.
- Proposes to manage the Winschell Dugway as a designated motorized route for ATV travel.
- Manages a "core" area within the Stump Peak for a non-motorized experience.
- Includes maintaining and reconstructing designated travel routes to meet agency standards for user safety and resource concerns with some designated travel routes being relocated to reduce resource impacts.

### *Snow Travel*

The Proposed Action retains the snowmobile restrictions depicted on the 2002 Travel Map with these exceptions:

- The eastern slope of Bonneville Peak, Toponce, Bear Creek, and Mead Peak prescription areas are managed as non-motorized during the snow season, as mapped in the RFP.
- Mount Naomi Recommended Wilderness is open to cross-country snowmobile use during the snow season. This was part of the RFP decision.
- The "new" big game winter range prescription areas identified in the RFP contain designated snowmobile routes. See Alternative 2 and 3 Winter Travel Map.

## *Decision Framework*

Given the purpose and need for this action, the Forest Supervisor will review the Proposed Action, other alternatives, anticipated effects, and public comment in order to make the following decisions:

- Which travel routes are appropriate for motorized, mechanized, and non-motorized travel?

- What types of closure and/or rehabilitation methods should be used on year-long or seasonally restricted routes?

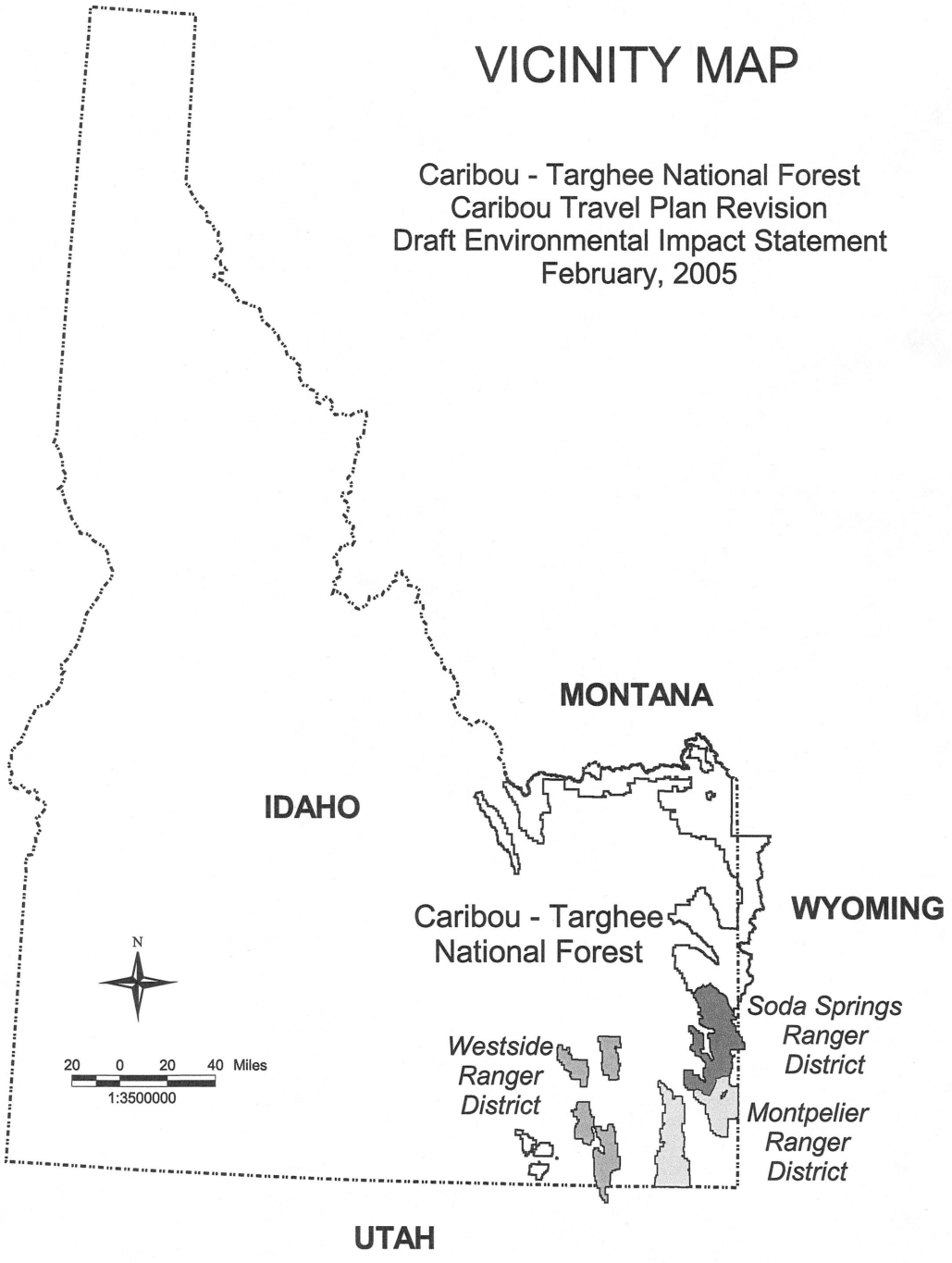
The responsible official will decide whether to amend the Forest Plan to adjust OMRD ceilings in some polygons and whether to amend the Forest Plan to adjust the prescription boundary on the Bonneville Peak

non-motorized area and whether to change the prescription in the Huckleberry Basin area from 5.2c to 5.2b. This change would manage motorized travel on designated routes during the snow-free season.

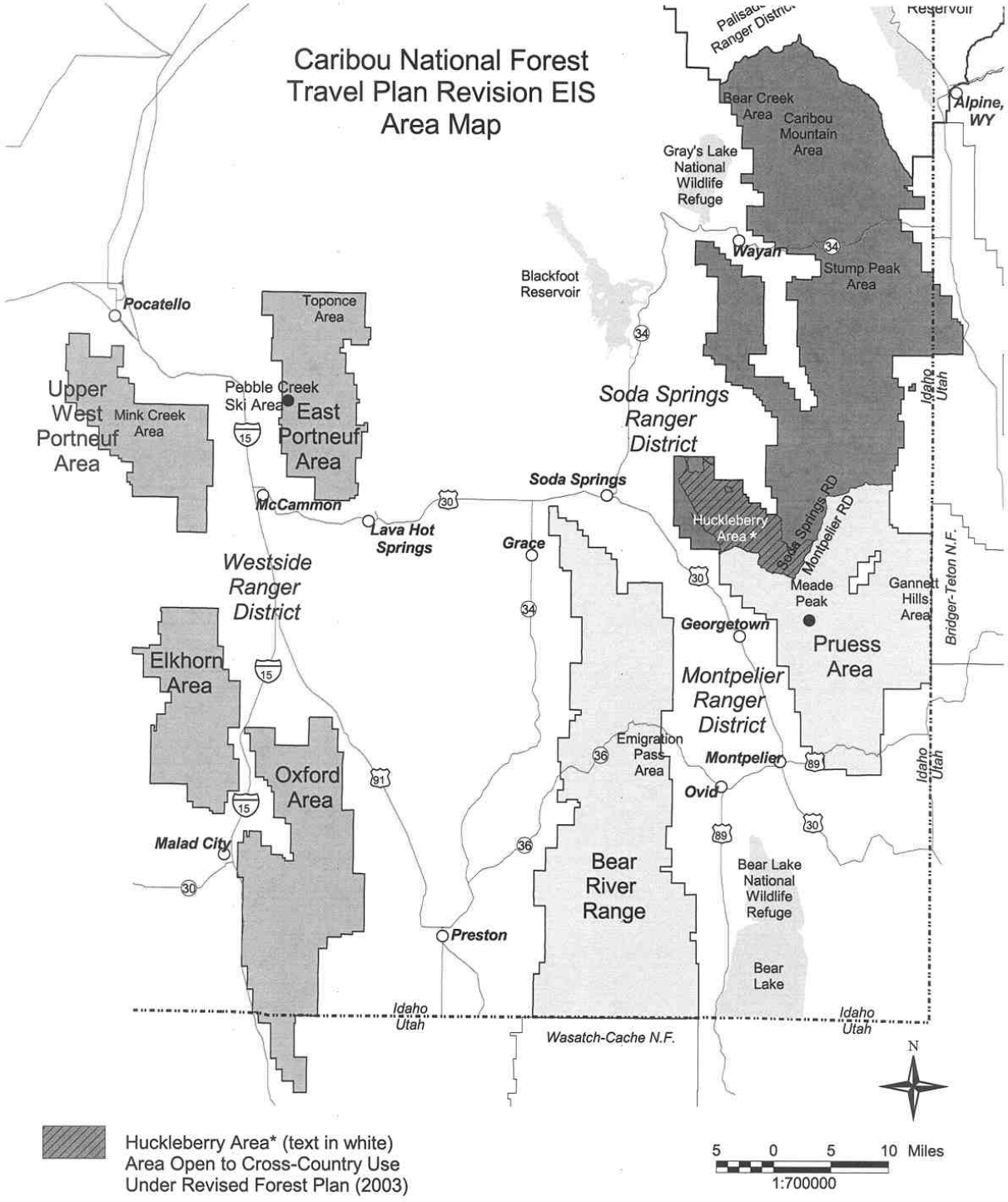
The assessment will consider the effects of forest travel management on adjacent lands. The decision does not include travel management for state lands, Bureau of Land Management (BLM) lands, or adjacent private lands or private "in-holdings."

This analysis and decision cannot validate nor deny RS 2477 assertions made by the counties. As stated in the RFP, "The Forest and local governments work cooperatively towards resolution of RS 2477 assertions." The status of RS 2477 roads will be determined by state and/or federal courts. (See Glossary for definition of RS 2477 road and assertion.)

***Map 1.1 - Caribou National Forest Travel Plan Revision EIS Vicinity***



***Map 1.2 - Caribou National Forest Travel Plan Revision EIS Area.***



## Public Involvement

Public outreach and open houses held for the forest plan analysis included discussions of the need to revise the Caribou Travel Plan and the route designation process.

In January of 2004, the Theodore Roosevelt Conservation Partnership was host to a two-day workshop to discuss travel issues on the eastside of the Caribou. The weekend workshop was held in Soda Springs, Idaho. Local trail users and others were invited to explore the issues related to the upcoming travel plan revision for the Soda Springs and Montpelier Ranger Districts. Although the Forest Service did not sponsor the workshop, Forest staff was present to answer questions and to listen to the participants' views on road and trail management. Workshop proceedings are available in the project record.

The NOI to prepare an Environmental Impact Statement for this project was published in the Federal Register on March 11, 2004. The NOI presented a summary of the Proposed Action, the purpose and need for the action, environmental issues, and other supplementary information. In April of 2004, an evening meeting was held at Fort Hall, Idaho, to discuss the Proposed Action with members and staff of the Shoshone-Bannock Tribes.

Public notification included mailings, press releases, and information posted on the Forest's internet website. In an effort to reach statewide trail users, the State of Idaho Parks and Recreation Department included a notice of Forest Service travel planning on their website which included a link to the forest website.

User groups, agencies, area counties, and others requested Forest staff meet with them to discuss the Proposed Action. Evening meetings were held for the general public during March and April 2004 in Malad, Preston, Pocatello, Soda Springs, Montpelier, Fort Hall, and Idaho Falls, Idaho, and in Afton, Wyoming. Forest staff and District Rangers discussed the Proposed Action maps and related issues with trail users, land owners, and others.

Throughout the travel planning process, the interdisciplinary team (IDT) gathered comments on the Proposed Action and possible alternatives to the Proposed Action.

The Draft EIS was released on April 1, 2005. Seven open houses were held in local communities to discuss the DEIS and alternatives. Over 1,700 comments were received on the DEIS. Many of the comments were electronic form letters. The IDT developed Alternative 5R based on additional public comment.

## Issues

Section 102(2)(e) of the National Environmental Policy Act (NEPA) states that all Federal agencies shall "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts, concerning alternative use of available resources." These unresolved conflicts, identified by the Forest Service and the public, are the environmental issues related to the Proposed Action. Preliminary issues were identified through public comments and IDT concerns. Issues were then grouped into categories. The IDT further refined and clarified the issues and presented a briefing to the Forest Supervisor on July 26, 2004. The IDT separated the issues into two groups: significant issues and resources of concern. Significant issues were defined as those directly or indirectly caused by implementing the Proposed Action. Significant issues define the alternatives to the Proposed Action. Resources of concern may not determine alternatives, but the effects to these concerns are considered in the decision. The effects of the Proposed Action and alternatives on significant issues and resources of concern are disclosed in Chapter Four.

## *Significant Issues*

The Forest Service identified the following significant issues. These issues were used to formulate alternatives to the Proposed Action. Each of the issue statements is written in an attempt to be unbiased and to be as specific as possible. The FEIS analyzes direct, indirect, cumulative, irretrievable, and irreversible effects for each alternative in relationship to these significant issues. Indicators have been assigned to each issue to define the key differences between alternatives.

- **Issue #1** The Proposed Action does not designate as many snow-free motorized routes as allowed by the prescribed OMRD ceilings and restricts snowmobile travel in some areas. Some people feel the proposed action is not responsive to the increasing demand for motorized travel opportunities during the snow and snow-free seasons.
  *Indicator* - miles of snow-free motorized routes, and motorized route miles compared to the maximum miles allowed under the OMRD ceiling.
  (Note- some polygons may have **all** established routes designated motorized, but are still under the prescription ceiling.)
  *Indicator* - acres open to cross-country snowmobile travel during the snow season

- **Issue #2** The Proposed Action does not designate enough trails and areas that provide a non-motorized experience during the snow and snow-free seasons. Some people feel this is not responsive to the increasing demand for non-motorized settings. The Proposed Action manages the historic wagon route, the Winschell Dugway, on the southern slope of Caribou Mountain as a motorized route. Some people want this route to remain a non-motorized trail.
  *Indicator* - miles of system non-motorized trails during the snow-free season
  *Indicator* - Semi-Primitive Non-Motorized acres during the snow-free season
  *Indicator* - Acres managed for a non-motorized setting during the snow season

- **Issue #3** The Proposed Action designates some motorized single-track trails for ATV use. This may affect the quality of the experience for motorcycle riders and other users as the trail setting and level of challenge changes when it becomes a two-track trail. Some people want to maintain or increase the miles of single-track motorized trails.
  *Indicator* - miles of designated motorcycle trail

- **Issue #4** The Proposed Action manages the Huckleberry Basin prescription area on the Soda Springs District as open to cross-country motorized use during the snow-free season. Some people feel motorized travel should be restricted to designated routes on the *entire* Caribou planning unit to provide management consistency and to benefit resource conditions.
  *Indicator* - acres open to cross-country motorized travel during the snow-free season

- **Issue #5** The Proposed Action exceeds prescription OMRD ceilings in some prescription areas. The RFP sets OMRD ceilings to reduce motorized disturbance to wildlife and to maintain desired recreation settings. The analysis will disclose the effects of these higher OMRD ceilings to wildlife and recreation settings.
  *Indicator* – OMRDs by alternative compared to the OMRD ceiling in prescription areas that exceed the ceilings; and the effects of the overage on wildlife and the desired recreation setting

- **Issue #6** The Proposed Action designates some motorized travel routes through areas that Idaho Department of Fish and Game, IDF&G, would like to see managed as non-motorized. If these routes were managed as designated non-motorized trails, larger non-motorized areas would be created. The IDF&G want the Travel Plan to reduce wildlife disturbance from motorized travel and provide more non-motorized areas for hunting.

*Indicator* - acres within areas over 1,000 acres managed for a non-motorized experience during the snow-free season

- **Issue #7** The Proposed Action designates motorized travel routes and proposes route closures that have the potential to affect the soil resource, especially on soils that rate "high" for sensitive soil risk.
  *Indicator* - miles of designated motorized routes on soils that rate "high" for sensitive soil risk, based on unstable soil and erosion hazard mapping.

- **Issue #8** The Proposed Action designates motorized travel routes during the snow-free season within riparian areas or Aquatic Influence Zones (AIZs). Some people are concerned with the effects of designated motorized routes on watershed conditions. The Proposed Action designates motorized travel routes that cross perennial or intermittent streams. Effects of motorized routes on streams listed by the State of Idaho as not meeting water quality standards are of special concern. These are referred to as 303d streams for Section 303(d) of the Federal Clean Water Act.
  *Indicator* - miles of snow-free designated motorized route within a watershed and within the AIZ.
  *Indicator* – the number of snow-free designated motorized route crossings of perennial streams.
  *Indicator* – miles of snow-free designated motorized route within 303D watersheds.
  *Indicator* – the number of snow-free designated motorized route crossings of 303D streams.

- **Issue #9** The Proposed Action designates snow-free motorized travel routes within AIZs, or Aquatic Influence Zones. Some people are concerned with the effects of designated motorized travel routes on fish and fish habitat. Motorized travel routes have the potential to affect aquatic and riparian-dependent species, particularly where they encroach upon riparian areas and water. Potential impacts to fish habitat include decreases in riparian vegetation, its benefits to riparian areas and water (shading, large wood delivery, bank stabilization, filtering and nutrients), increases in erosion, and increases in sediment delivery to water.
  *Indicator* - designated motorized route densities within AIZs of fish-bearing streams
  *Indicator* - the number of snow-free designated motorized route crossings of fish-bearing streams

## *Resources of Concern*

Resources of concern brought forward by the public, forest staff, or other agencies are described below. The information gathered regarding these concerns will be considered by the decision maker.

### *Recreation Opportunities*

Some people are concerned with the safety and quality of the recreation experience. The Proposed Action designates some travel routes that "dead-end." Dead-end roads and trails decrease the quality of the experience and could encourage non-compliance with route closures. Some people feel the Proposed Action does not provide enough motorized opportunity to contribute to local economies. Some people feel the Proposed Action does not provide enough non-motorized settings to contribute to local economies. The Proposed Action closes some routes with earthen berms, barrier rocks, and/or debris. Some people are concerned for the safety of using a snowmobile on these routes.

The Proposed Action does not provide additional or special access to persons with disabilities. Some people feel the Travel Plan should provide special access for those with mobility problems. The Proposed Action does not provide additional or special access to hunters for game retrieval. Some people feel the Travel Plan should provide special access for game retrieval.

### *Noxious Weeds*

The Proposed Action designates motorized and non-motorized routes during the snow-free season. Travel and travel routes have the potential to spread noxious weeds.

### *Heritage Resources*

The Proposed Action designates motorized and non-motorized travel routes. The Proposed Action closes and/or decommissions some travel routes. Road and trail use on non-system routes and route closures have the potential to affect heritage resources.

### *Roadless Areas*

The Proposed Action designates motorized routes within Inventoried Roadless Areas. Designated motorized routes have the potential to affect the existing roadless area character.

### *Forest Management Access and Costs*

The Proposed Action closes some motorized travel routes. This has potential to affect the ease of motorized access for forested vegetation management, livestock grazing and fire suppression. Designated motorized travel routes and non-motorized system trails require management and maintenance. What are the relative costs of the Proposed Action and alternatives?

### *Issues not carried through the Analysis*

The following issues and comments were received through public and internal scoping. The interdisciplinary team did not carry them forward in the analysis because they were either: 1) outside the scope of the Proposed Action; 2) already decided by Forest Plan, law, regulation, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence.

#### *Changing OMRD Ceilings from Plan Standards to Plan Guidelines*

The RFP sets Open Motorized Route Density ceilings (OMRDs) to reduce motorized disturbance to wildlife, to maintain desired recreation settings, and to help achieve various prescription objectives. The OMRD ceilings are plan standards rather than plan guidelines. Plan standards must be met when considering forest actions. Guidelines may not be met under special circumstances. Some people feel that the OMRD ceilings should be management guidelines rather than standards, giving the forest more flexibility in managing public travel on the Forest.

The decision to use OMRD ceilings as standards, rather than guidelines, was made during the RFP FEIS. This change is not within the scope of the analysis. If the decision adjusts some of the prescribed OMRD ceilings it will require a plan amendment, but the OMRD ceilings will remain plan standards.

#### *Changing Access Management for Recommended Wilderness Areas*

Some people feel that Caribou Mountain and Mount Naomi Recommended Wilderness prescription areas should be managed as non-motorized year-round to protect potential wilderness attributes; however, this does not comply with RFP direction for Recommended Wilderness areas. The FEIS for the RFP considered the effects of snowmobile travel on the potential wilderness attributes of these areas. The decision was made in the RFP to manage these areas as non-motorized during the snow-free season but allow snowmobile travel during the snow season.

### *Prohibiting ATV Travel on the Forest*

Some people want ATV travel prohibited on the forest. EO 11644 and EO 11989 were created to establish policies and procedures to control and direct the use of OHVs on public lands, not to prohibit OHV use in its many forms. OHV travel, including ATV travel, is a recognized use of national forests.

Some people feel that the Forest Service should not allow motorized travel if the agency cannot enforce total compliance with the Travel Plan. Education and enforcement will continue to be priorities for the Forest under all alternatives. It is assumed that over time, education and enforcement along with effective closure methods will successfully limit public motorized travel to designated routes. Education and enforcement efforts for all alternatives are described in Chapter Two.

# Other Related Efforts

## *Draft National OHV Policy*

The policy currently being developed would require OHVs to stay on designated travel routes and specifically defined off-highway use areas on all National Forests and Grasslands. The draft policy does not define snowmobiles as OHVs. The RFP and the Proposed Action and alternatives comply with the *draft* policy.

## *Final Rule for Roadless Areas*

In July of 2004, the Forest Service issued an Interim Directive regarding IRA management which reinstated the previous policy that IRA management should be decided at the local level if the Forest has a revised Plan which "has considered the protection and management of inventoried roadless areas" (ID 1920-2004-1; Bosworth Letter, June 7, 2001). As stated, the 2003 Caribou RFP did carefully consider protection and management of all 34 IRAs on the Forest; therefore, the prescription direction in the RFP will be followed regarding access management in IRA's.

In May of 2005 the Department of Agriculture issued a Final Rule for Roadless Areas. The Final Rule allows State governors to propose locally supported regulations regarding the management of Roadless Areas within their states. The State of Idaho has initiated this process, and plans to present management recommendations for Idaho's Roadless Areas to the Department of Agriculture by March of 2006.

# CHAPTER 2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

## Introduction

This Chapter describes and compares the alternatives considered for the Caribou Travel Plan Revision Final Environmental Impact Statement. It includes a description of each alternative considered. Alternative maps for snow-free travel are in the map packet. Alternative maps for snow season travel are included in this Chapter.

This section also presents the alternatives in comparative form, defining the differences between each alternative and providing a basis for choice among options by the decision maker and the public.

The National Environmental Policy Act (NEPA) Regulations (40 CFR 1502.14) require rigorous exploration and objective evaluation of reasonable alternatives. According to NEPA, federal agencies are also required to include and discuss appropriate measures to mitigate adverse environmental impacts that could result from implementing a Proposed Action.

### *Travel Route Numbering on Alternative Maps*

Road and trail numbers depicted on the alternative maps may not match road and trail numbers on the 2002 Caribou Travel Map or the Proposed Action maps. The Pocatello and Malad Districts were combined into the Westside District in 1998 and some trail numbers were duplicated between the two districts. To eliminate this duplication, the first two numerals of the road and trail numbers on the Westside District maps may be different than those used for the Proposed Action maps.

### *Alternative Development*

Alternatives were developed based on the purpose and need, the new transportation inventory, and in response to the nine significant issues. Interdisciplinary team members and other resource specialists identified areas of concern as well as opportunities for mitigation of effects. Two interested parties, the Idaho Department of Fish and Game (IDF&G) and the Southeast Idaho Recreation Alliance (SIRA), presented changes to the Proposed Action that would address their issues and concerns. The IDF&G wanted less disturbance of wildlife from motorized travel and SIRA wanted the Travel Plan to offer additional non-motorized settings forest-wide and year-round. Alternatives were developed in response to the issue of reducing motorized travel disturbance to wildlife and the desire for additional non-motorized settings.

## Alternatives Considered in Detail

Feasible alternatives for over 2,000 miles of travel routes could be numerous and variable. NEPA does not require the agency to analyze an infinite array of alternatives (FSH 1909.15, 65.12 Exhibit 1). Alternatives were developed by considering a full range of reasonable management options, while meeting the intent of RFP's desired conditions.

The analysis considers six alternatives in detail. Design features and mitigations have been incorporated into the alternatives to reduce impacts on resources or other forest uses:

- **Alternative 1** - No action.
- **Alternative 2** - The Proposed Action.
- **Alternative 3** - Developed from wildlife issues provided by IDF&G.

- **Alternative 4** - Developed from non-motorized recreation issues provided by SIRA.
- **Alternative 5** - Developed from the Proposed Action with specific changes in response to resource concerns, and the quality of motorized opportunities.
- **Alternative 5R** - developed from Alternative 5 with specific changes in response to public comment concerning mountain bike opportunity adjacent to Pocatello, single-track motorized trails, and the quality of non-motorized and motorized travel.

The alternative descriptions include the miles of travel route by vehicle or travel mode, and specific management as it pertains to snow-free and snow season travel. Management differences between alternatives and comparison of effects are summarized at the end of this Chapter.

## *Features Common to all alternatives, including Alternative 1, No Action*

Access would be provided to private land within National Forest boundaries as required by Section 1323 (a) of the Alaska Land Conservation Act of 1979.

Routes on private land within the Caribou Forest boundary are open to public use only through rights-of-way or easements obtained for the purposes of public access.

As stated in the RFP, "…the Travel Plan does not restrict responses to emergency events to protect human life, property values and structures and forest resources" (RFP 3-38).

All travel routes and areas are open to hikers, stock, ski and snowshoe travel unless specifically closed to such uses. Hikers and stock users are not restricted to travel routes. The decision will determine the non-motorized and non-mechanized trail system to be maintained over time.

Most forest areas restrict snow-free motorized travel to designated routes. Exceptions vary by alternative.

As stated in the RFP, "any motorized vehicle access on a restricted road or trail or in a restricted area shall be for official administrative business only and shall be officially approved" (RFP 3-38). Motorized access for permitted activities, such as livestock operations, mineral development, and outfitter and guide operations, on National Forest System lands is independent of public access but requires approval through the permit process and/or operating plan. Some of these routes are not designated for public use and are depicted as closed or as non-motorized trails on alternative maps.

A variety of resource protection measures and policies are currently in place to mitigate potential adverse effects of travel and travel routes on the Forest. CFR 261.5 part A and B allows District Rangers to close, re-designate, or impose restrictions on roads or trails at any time if further use poses an immediate risk to public safety or if adverse effects on forest resources are occurring. These closures or restrictions are intended to be short-term in nature.

### *Summer or Snow-free Travel*

As stated in the RFP, "Unless otherwise posted, motorized access is allowed for parking, wood gathering and dispersed camping within 300' of an open designated *road.*" Off-route travel to the parking spot must not create resource damage (RFP 3-38, Access Standard #5). This standard provides the public reasonable access off of designated roads to park their vehicle and fish, picnic, camp, retrieve game, etc. during the snow-free season. If monitoring indicates that this activity is causing unacceptable resource damage, the forest can post the area as closed to "off-route" motorized travel.

The categories of system travel routes during the snow-free season are:

- **Designated road** open to motorized vehicles **over 50 inches** in width, such as sedans, SUVs or trucks, and non-motorized travel
- **Designated motorized trail** open to motorized vehicles **under 50 inches** in width, such as ATVs, motorcycles, and non-motorized travel
- **Designated motorcycle trail** (single track) open for **motorcycle use** and non-motorized travel
- **Designated non-motorized trails** open for non-motorized travel, *including mountain bikes* and designated non-motorized trails open to foot and stock only. These trails are routes that the Forest will maintain and manage for a non-motorized experience for hikers, equestrians, and, in some instances, mountain bikes.

### *Winter or Snow Travel*

Most forest areas are open to cross-country snowmobile use during the snow season. The travel plan identifies **designated snowmobile trails** for winter travel. These are designated motorized travel routes that cross through big game winter range prescription areas. Designated snowmobile routes vary by alternative. Some forest areas are closed during the snow season to provide a non-motorized experience for people and wildlife. These areas vary by alternative.

### *Trail Maintenance*

Over time, the forest objective is that all system travel routes, motorized and non-motorized, will be maintained to Forest Service standards to provide for user enjoyment, safety, and resource protection. These standards vary depending on the intended use. They allow for a range of route conditions from primitive native surfaced routes to paved surface routes designed for low-clearance vehicles. Much of the improvement associated with bringing individual travel routes up to standard falls within the category of routine maintenance and would proceed as funding is secured. Portions of some travel routes may require relocation to meet standards. Authorization of some of the actual road or trail relocation work may require supplemental analysis and in some cases a subsequent NEPA decision. Road and trail maintenance standards are set by their maintenance level or trail class and are described in FSH 7709.56 and FSH 2309.18.

### *Signing Protocol*

Travel routes are "closed, unless designated open" to motorized use as indicated on the current Travel Plan map. The Forest is committed to signing motorized and non-motorized routes to improve the recreation experience and to increase compliance. The Forest will begin signing priority routes during the first field season after the decision.

### *Education and Enforcement*

Enforcement and education of the travel plan is essential to protect forest resources and travel experiences. The Forest is committed to education and enforcement efforts for the Travel Plan. Key features of these efforts include: comprehensive outreach to all users through a variety of methods and media; an emphasis on achieving education and compliance through partners and volunteers; and exploring non-traditional funding to expand education, signing, and enforcement efforts.

## *Design Features and Monitoring Common to All Alternatives*

RFP standards and guidelines will be applied under all alternatives. All alternatives will require a plan amendment to adjust OMRD ceilings in some prescription areas. This is discussed in more detail in alternative comparisons at the end of this Chapter. Best Management Practices (BMPs) addressing soil, water, and noxious weeds will be applied to all construction or maintenance of travel routes and route closures. Following the decision, all areas proposed for ground disturbing activities and non-system routes proposed to become system routes will be surveyed for heritage resources with State Historical Preservation Office review.

Forest Plan monitoring involves both legally required monitoring activities and monitoring that is conducted based on the availability of funding and personnel. Forest Plan monitoring that could indicate adverse impacts to forest resources from road and trail use include:

- Annual reviews of BMPs and the updating of projects in the Forest's Watershed Improvement Needs Inventory are designed to protect water quality (RFP 5-3).
- Riparian properly functioning condition will be re-evaluated at the stream level by 2008 to determine rate of movement towards desired future conditions (RFP 5-7).
- Fish habitat is monitored annually where needed to determine if conditions are outside of desired AIZ attributes (RFP 5-13).
- Wildlife occurrences and territories are monitored to determine if management activities are providing adequate habitat to maintain populations of Management Indicator Species and to assist in recovery of listed species (RFP 5-15).
- Condition surveys are conducted on system trails per national direction; these include stream crossings and trails in riparian areas.
- Road and trail closure effectiveness will be monitored. Direct encounters of prohibited use and evidence of prohibited use such as tire tracks will be monitored. Visual checks of access points to closed travel routes and law enforcement records will measure the presence or absence of prohibited use with some accuracy. Action would be taken when use exceeds four trips per week or when adverse resource damage is occurring.

Ground disturbance or other activities associated with this action will follow RFP standards and guidelines for sage and Sharp-tailed grouse, Bald eagle, and Peregrine Falcon. This direction states:

- If management activities would impact courtship; limit physical, mechanical, and audible disturbances in the breeding complex during the breeding season (March to May) within three hours of sunrise and sunset each day. Where management actions will disturb nesting grouse, avoid manipulation or alteration of vegetation during the nesting period (CNF RFP 3-32 Grouse Guidelines).
- Vegetation management, such as timber harvest or thinning, which could disturb an active Bald eagle nest, can occur only between September 1 and January 31 or when the nest is documented as unoccupied. All human activities should be minimized from February 1 to August 1 (RFP 3-27 Bald Eagle Guidelines in occupied nesting zones).
- For proposed projects within two miles of known Peregrine Falcon nests, minimize human activities (rock climbing, aircraft, ground and water transportation, high noise levels, and permanent facilities) which could cause disturbance to nesting pairs and young during the nesting period between March 15 and July 31 (RFP 3-29 Peregrine Falcon Guidelines).

## *Alternative 1, No Action*

Including a "no action" alternative in the analysis is required by the Council on Environmental Quality regulations and provides a baseline for comparing the action alternatives. This alternative consists of the management and restrictions for travel routes and areas as depicted on the 2002 Caribou Travel Map with the addition of the 2003 Special Order[4]. In 2003, a Special Order was added to the 2002 Caribou Travel Plan Map that prohibited cross-country motorized travel during the snow-free season on most areas of the forest. In areas that were formerly open to cross-country motorized travel, any road or trail depicted on the 2002 Travel Map became a designated motorized route. Huckleberry Basin, northeast of Soda Springs, allows cross-country motorized travel as mapped in RFP prescription and shown on the area map in Chapter One. The 2003 Special Order will be in effect until the travel plan analysis and decision are complete. Winter access decisions made in the RFP are also carried forward in this alternative.

[4] Travel Plans are legally enforced through the issue of a Special Order signed by the Forest Supervisor.

This alternative has 1,010 miles of designated road, 670 miles of designated ATV trail, and 170 miles of designated motorcycle trail, and 590 miles of designated non-motorized trail, with eight miles of non-motorized trail that allow mountain bike travel on West Fork and Gibson Jack trails.

### *Snow-free or Summer Travel*

Mountain bike restrictions and the Winschell Dugway non-motorized trail remain the same as depicted on the 2002 Travel Map. The Huckleberry Basin area is open to cross-country motorized travel as mapped in RFP prescriptions. This alternative retains the closure dates of all routes and areas as depicted on the 2002 Caribou Travel Plan Map.

### *Snow Season or Winter Travel*

Designated snowmobile routes in winter range are the same as depicted on the 2002 Travel Map. Areas managed as non-motorized during the snow season are the same as depicted on the 2002 Travel Map with these exceptions:

- Mt. Naomi Recommended Wilderness is open to snowmobile use during the snow season, as mapped in RFP prescriptions.
- Additional closures to motorized travel (snowmobiles) during snow season are the eastern slope of Bonneville Peak, the Bear Creek area—north of Caribou Mountain, and Meade Peak—east of Georgetown, as mapped in the RFP prescriptions.

### *Corrections and Mapping Protocols for Alternative 1*

The map of Alternative 1, No Action, includes corrections to the 2002 Travel Map. The 2002 Travel Map was a product of combining the 1998 Travel Map with the more general Forest Visitor Map. Management intent was that restrictions and route designations depicted on the 1998 Travel Map would not change. The 2002 Travel Map contains site-specific errors and omissions. One notable error is Corral Creek Trail, south of Pocatello, is depicted as a non-motorized route. This trail has been managed as an ATV trail for many years. Some travel routes depicted on the 2002 Travel Map could not be located on the ground or on satellite imagery. These routes were dropped from the travel route inventory and the No Action Alternative as they were incorrectly mapped or no longer in existence.

This alternative does not depict some system travel routes that were built in areas that had no travel restrictions. These system routes are shown on the Alternative 1 map, but are not shown as designated motorized routes for the No Action Alternative.

## *Features Common to Alternatives 2, 3, 4, 5, and 5R*

### *Trail Construction*

New trail construction of trail sections under 1/2 mile is considered with this decision and varies by alternative. Proposed new construction consists of "connector" segments which would tie existing motorized travel routes together.

### *Non-system Travel Routes*

Designating non-system travel routes for motorized travel is considered with this decision and varies by alternative.

### *Travel Route Closures*

Travel routes not needed for public access or other approved access will be closed. Travel route closures and methods are considered with this decision. The routes to be closed vary by alternative. If a travel route is to be closed, the closure method is the same for all alternatives. For example, if Trail XYZ is proposed to be closed in Alternatives 3, 4, and 5, the method of closure is the same for all alternatives. The various methods of closures are discussed in Appendix B. Individual travel route closure methods are mapped and

available in the project record. Chapter One defines "route closure" and "decommission" of routes. See Appendix B for further descriptions of travel route closure and decommissioning methods.

## Alternative 2, the Proposed Action

The Proposed Action for the Caribou Travel Plan Revision was created by district staffs using the updated roads and trails inventory, The 2003 Forest Roads Analysis, the goals and objectives identified in the Revised Forest Plan (RFP), and *previous* public comments on travel access. The Proposed Action considered issues of non-motorized settings, motorized opportunity, and the potential of resource impacts from designated travel routes. This alternative has 970 miles of designated road, 690 miles of designated ATV trail, and 140 miles of designated motorcycle trail, and 700 miles of designated non-motorized trail, with eight miles of non-motorized trail that allow mountain bike travel. This alternative closes 60 miles of designated motorized routes.

### Summer or Snow-free Season Travel

Mountain bike restrictions remain the same as depicted on the 2002 Travel Map. The alternative retains the closure dates of all routes and areas as depicted on the 2002 Caribou Travel Plan map. Site-specific seasonal closures may be determined by the Ranger. Other features of this alternative include:

- The Huckleberry Basin area, just east of Soda Springs, is open to cross-country motorized travel.
- A core area within the Stump Peak drainage, northwest of Afton, WY, is managed for a non-motorized setting during the snow-free season.
- The Winschell Dugway is managed as a designated motorized trail open to vehicles under 50 inches in width or ATVs if further analysis and design prove that the ATV trail is feasible to build and maintain and that the ATV trail would meet Plan standards and guidelines.
- Trail 331, on the eastern slopes of Elkhorn Mountain, is managed as a designated motorcycle trail.
- This alternative proposes to decommission five miles of motorized trail in areas that have parallel routes.

### Winter or Snow Travel

Designated snowmobile routes in winter range are the same as depicted on the 2002 Travel Map, with additional routes through areas of new winter range prescription. Areas managed as non-motorized during the snow season are the same as depicted on the 2002 Travel Map with these exceptions:

- Mount Naomi Recommended Wilderness is open to snowmobile-travel during the snow season, as mapped in RFP prescriptions.
- Additional closures to motorized travel (snowmobiles) during snow season are the eastern slope of Bonneville Peak (east of Inkom), Bear Creek area (north of McCoy Creek Road), and Meade Peak (east of Georgetown) as mapped in the RFP prescriptions.

## Alternative 3

Alternative 3 was developed from wildlife issues provided by IDF&G. IDF&G would like the travel plan to manage large areas as non-motorized during the snow-free season to reduce wildlife disturbance from motorized travel and to offer a non-motorized hunting experience. The alternative manages some designated roads and trails as closed to motorized travel during the snow-free season to create large non-motorized areas in Upper West Portneuf Range, the East Portneuf Range, Elkhorn Mountain, and Oxford Peak on the Westside District and in the Bear River Range on the Montpelier District in addition to the Stump Creek non-motorized area (northwest of Afton, WY).

This alternative has 940 miles of designated road, 490 miles of designated ATV trail, 100 miles of designated motorcycle trail, and 930 miles of designated non-motorized trail, with eight miles of non-motorized trail that allow mountain bike travel. This alternative closes 325 miles of designated motorized routes.

### *Snow-free Travel*

Mountain bike restrictions and seasonal closures remain the same as the No Action and the Proposed Action. Other features of this alternative include:

- Huckleberry Basin area is open to cross-country motorized travel.
- The Winschell Dugway is managed as a designated non-motorized trail.
- Trail 331, on the eastern slopes of Elkhorn Mountain, is a non-motorized trail.

### *Snow Travel*

Snow-season travel remains the same as in Alternative 2, the Proposed Action.

## *Alternative 4*

Alternative 4 was developed from issues provided by a coalition of interested parties, the Southeast Idaho Recreation Alliance, or SIRA. SIRA is a group of local trail users, conservation groups, and recreation organizations. SIRA wants the Travel Plan to manage more areas for a "non-motorized" setting during the snow and snow-free seasons. This alternative manages some designated roads and trails as closed to motorized travel during the snow-free season creating more non-motorized areas forest-wide. These areas are similar to the non-motorized areas in Alternative 3. This alternative manages additional areas as non-motorized during the snow season. This alternative was based on comments provided by SIRA; however, not all features of the alternative reflect their views including mountain bike opportunity and snowmobile use in recommended wilderness areas. The alternative has 900 miles of designated road, 430 miles of designated ATV trail, and 100 miles of designated motorcycle trail, and 1,030 miles of designated non-motorized trail, with eight miles of non-motorized trail that allow mountain bike travel. The alternative closes 430 miles of designated motorized routes.

### *Summer or Snow-free Travel*

Mountain bike restrictions and seasonal closures remain the same as the No Action and Proposed Action. Other features of this alternative include:

- The Huckleberry Basin area is managed for motorized travel on designated routes during the snow-free season. This will require a plan amendment.
- The Winschell Dugway is managed as a designated non-motorized trail.
- Trail 331, on the eastern slopes of Elkhorn Mountain, is managed as a non-motorized trail.

### *Winter or Snow Travel*

Designated snowmobile routes in winter range are the same as depicted on the 2002 Travel Map. Areas of new winter range *do not* have designated snowmobile routes going through them. Areas managed as non-motorized during the snow season are the same as depicted on the 2002 Travel Map with these exceptions:

- Mt. Naomi Recommended Wilderness is open to snowmobile travel during the snow season, as mapped in RFP prescriptions.
- Closures to snowmobile travel during snow season are the eastern slope of Bonneville Peak, Bear Creek area, and Meade Peak as mapped in the RFP prescriptions, and additional areas in Mink Creek, Gibson Jack and Trail Creek on the Westside District as mapped in the Alternative 4 Snow Season Travel Map.
- The boundary for the Bonneville Peak snowmobile closure has been changed from RFP prescription. The boundary moves north to take in "Strawberry Fields" as depicted on the Alternative 4 Snow Season Travel Map. This alternative will require a plan amendment to change the prescription boundary.

## *Alternative 5*

This alterative was developed from the proposed action with specific changes in response to resource concerns, the quality of motorized opportunities, and the findings of the Travel Plan Roads Analysis. This alternative emphasizes improving motorized opportunities through loop routes and maintaining non-motorized areas. Closure boundaries have been altered for some non-motorized snow season areas to improve compliance.

This alternative has 970 miles of designated road, 660 miles of designated ATV trail, 140 miles of designated motorcycle trail, and 700 miles of designated non-motorized trail, with 511 miles of non-motorized trail that allow mountain bike travel. This alternative closes 90 miles of designated motorized routes.

### *Snow-free Travel*

Snow free travel for this alternative is the same as the Proposed Action with these exceptions:

- Mountain bikes are restricted to designated motorized routes on the Westside District with some exceptions. The West Fork and Gibson Jack trails are managed as open to mountain bike travel. On the Soda Springs and Montpelier Districts, mountain bikes are restricted to motorized and non-motorized system routes.

- Motorized travel is restricted to designated routes during the snow-free season in the Huckleberry Basin area. Changing this prescription from 5.2c to 5.2b will require a plan amendment.

- This alternative does not manage the Winschell Dugway as a designated trail, motorized or non-motorized, due to maintenance concerns. Portions of the trail can be traveled by hikers and stock users but the route will not be maintained to standard.

- This alternative manages Slate Mountain Trail, just west of Pocatello, as a single-track motorcycle trail. This trail was mapped incorrectly in the Draft map package, Map #13.

- This alternative manages Crestline Trail, south of Pocatello, as a motorized trail open to ATVs.

- This alternative will provide direction to explore a preliminary design and analysis for new trail construction for a designated motorized trail paralleling Cub River Road from Albert Moser Campground to Willow Flat Campground. This trail will allow trail users of all kinds to travel to other recreation destinations without mixing with full-sized vehicle traffic on Cub River Road.

Alternative 5 proposes three new motorized loop opportunities on the Montpelier District:

#### *Motorized Loop #1:*

A designated motorized trail exists between Squirrel Hollow and Main Canyon. ATVs use the trail from both sides of the watershed divide but a 200 yard length of rocky ridge keeps the routes from connecting. There is an opportunity to relocate the trail to the north of the ridge. The route goes through forested vegetation near the top of the slope. The reroute improves an existing tight switchback.

#### *Motorized Loop #2:*

A designated road exists into the Hawks Roost area. A collection of non-system logging roads and user-created trails exist south of Summit View Campground. Fire wood gatherers and ATV riders have created a route within a quarter of a mile of the Hawks Roost Road. A properly located connector to these two routes would create a loop for motorized use in close proximity to popular camping areas.

*Motorized Loop #3:*
The Green Mountain Road runs along the top of the east face of Green Mountain. A different road of unknown origin (possibly mineral exploration) leaves the Diamond Creek Road at a dispersed camping area and proceeds southwest eventually becoming a two-track route at the south end of a large, open basin. A minor reroute of the user-created connector will put the trail in a more appropriate location, following a mountain brush and aspen ridge up to the Green Mountain Road.

### *Snow Travel*

Snow Season travel is the same as Alternative 2, the Proposed Action, with these exceptions:

- The boundary for the Bonneville Peak snowmobile closure has been adjusted from RFP prescription. The boundary moves north to take in "Strawberry Fields" and moves west up the slope as depicted on the Alternative 5 Snow Season Travel map. This alternative would require a plan amendment to change the prescription area boundary.
- The boundaries of the Gibson Jack snowmobile closure, west of Pocatello, are changed to improve compliance.
- Three areas in the vicinity of Emigration Summit, in the Bear River Range, are managed as non-motorized during the snow season.

## *Alternative 5R*

This alterative is based on Alternative 5 with specific changes in response to public comment on the DEIS. Changes include managing more non-motorized routes as open to mountain bikes adjacent to Pocatello and retaining more routes as single-track motorcycle trails. Closure boundaries have been altered for some non-motorized snow season areas to improve compliance and recreation experience.

This alternative has 970 miles of designated road, 650 miles of designated ATV trail, 150 miles of designated motorcycle trail, and 640 miles of designated non-motorized trail, with 490 miles open to mountain bike travel. This alternative closes 90 miles of motorized routes.

### *Snow-free Travel*

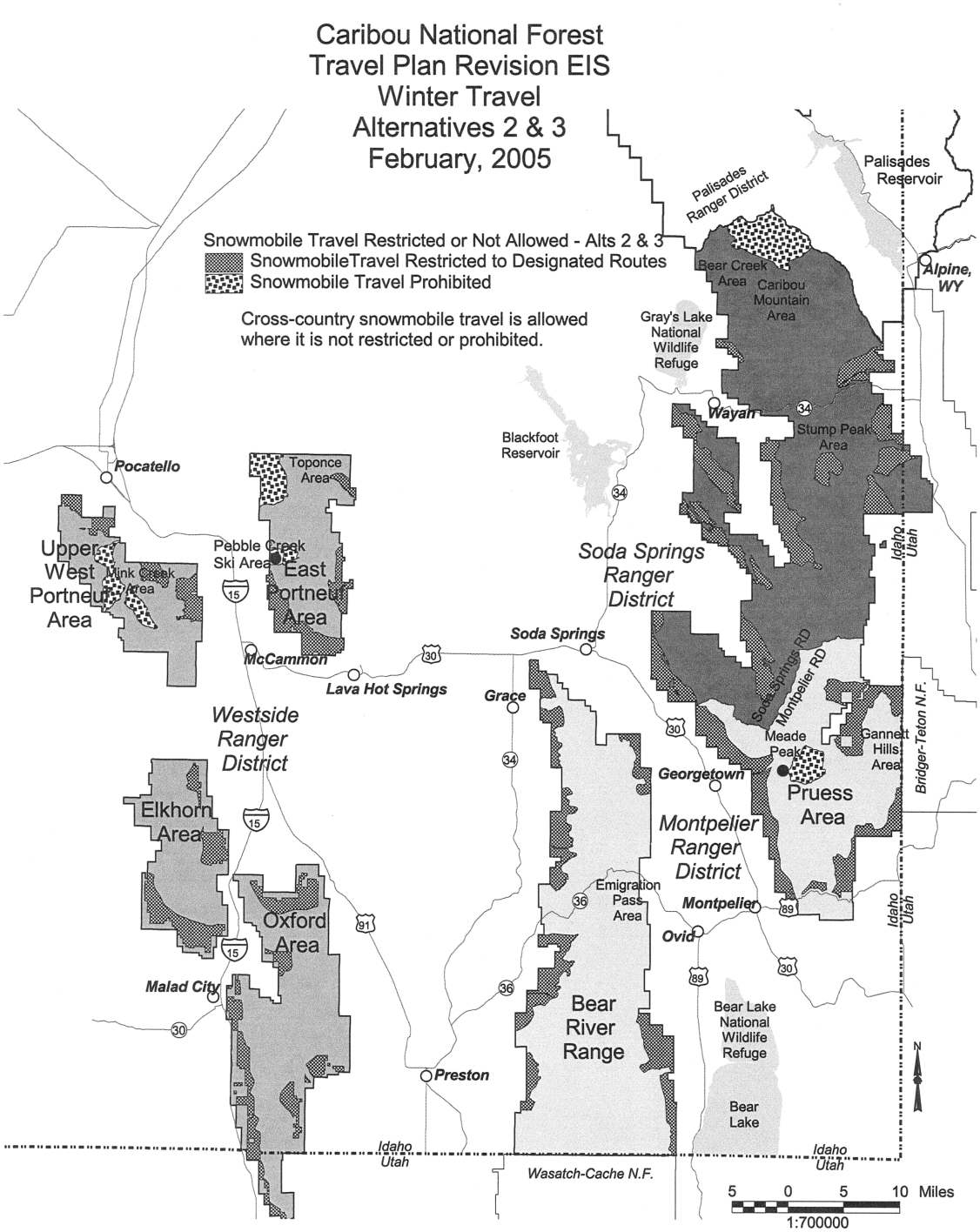
Snow-free travel for this alternative is the same as Alternative 5 with these exceptions:

- Mountain bikes are restricted to *existing* motorized and non-motorized system routes on the Soda Springs and Montpelier Districts. Additional non-motorized trails are open for mountain bike travel on the Westside District. These include West Fork and Gibson Jack trails and associated trails in the Gibson Jack and Mink Creek areas. See the Alternative 5R maps.
- This alternative manages Crestline Trail, south of Pocatello, as a single-track motorcycle trail.
- Due to construction and maintenance concerns, the Winschell Dugway, on Caribou Mountain, is not managed as a system trail. To bring this trail to standard for non-motorized or motorized use will require additional public involvement and analysis. This analysis will be initiated within one year. Under this alternative, the southern portion of the trail can be traveled by hikers and stock users, but the route will not be maintained to standard.
- This alternative would provide direction to explore a preliminary design and analysis for new trail construction for a designated motorized trail paralleling Cub River Road from Albert Moser Campground to Willow Flat Campground and paralleling the South Fork of Mink Creek Road. These trails would allow trail users of all kinds to travel to other recreation destinations without mixing with full-sized vehicle traffic on these popular recreation roads.

### *Snow Travel*

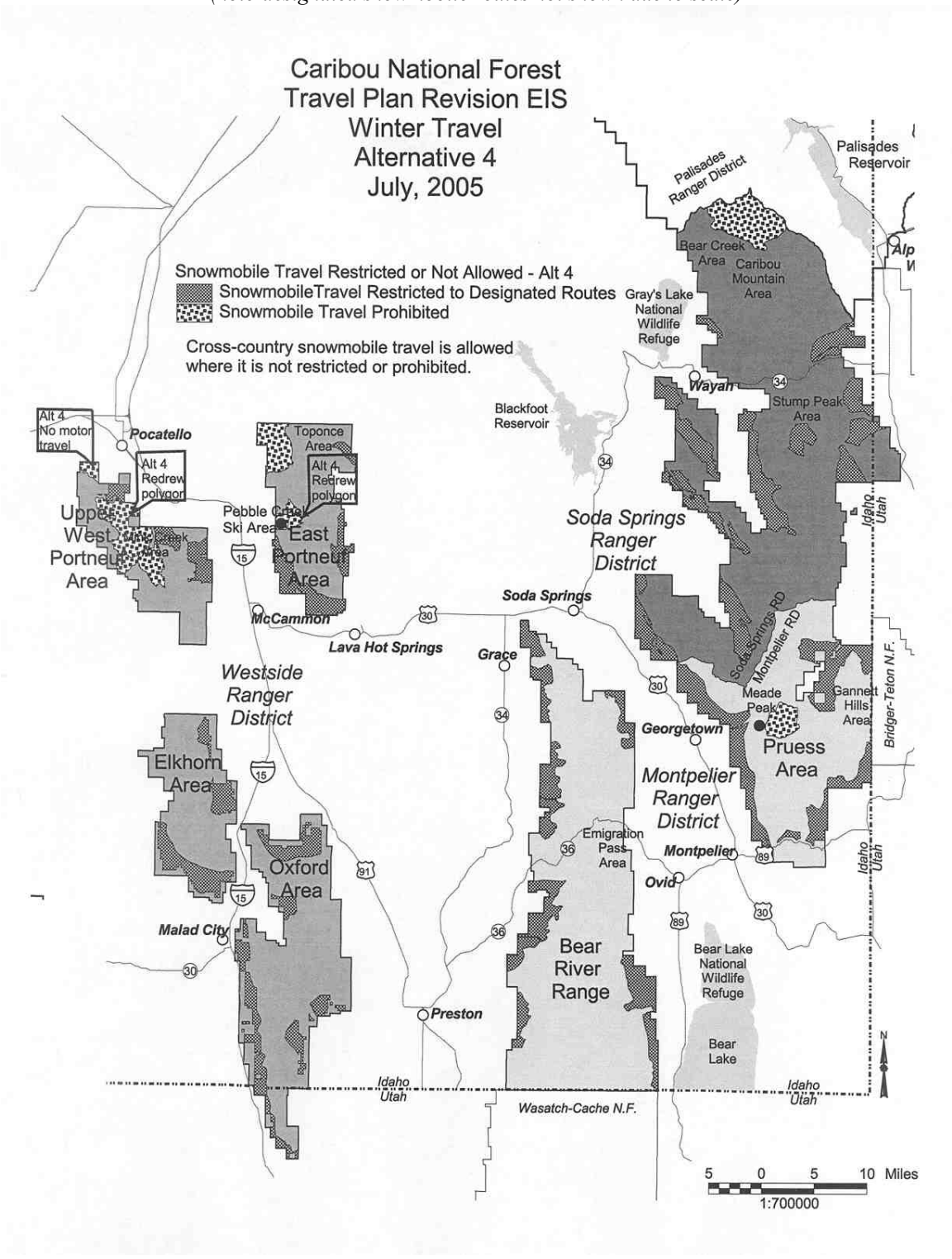
Snow Season travel is the same as Alternative 5; however, the boundaries of the Gibson Jack and Mink Creek non-motorized areas, west of Pocatello, are adjusted to improve compliance. See Alternative 5R Winter Travel Map.

***Map 2.1 - Alternative 2 and 3 – Snow Season Travel***
***(note-designated snowmobile routes not shown due to scale)***

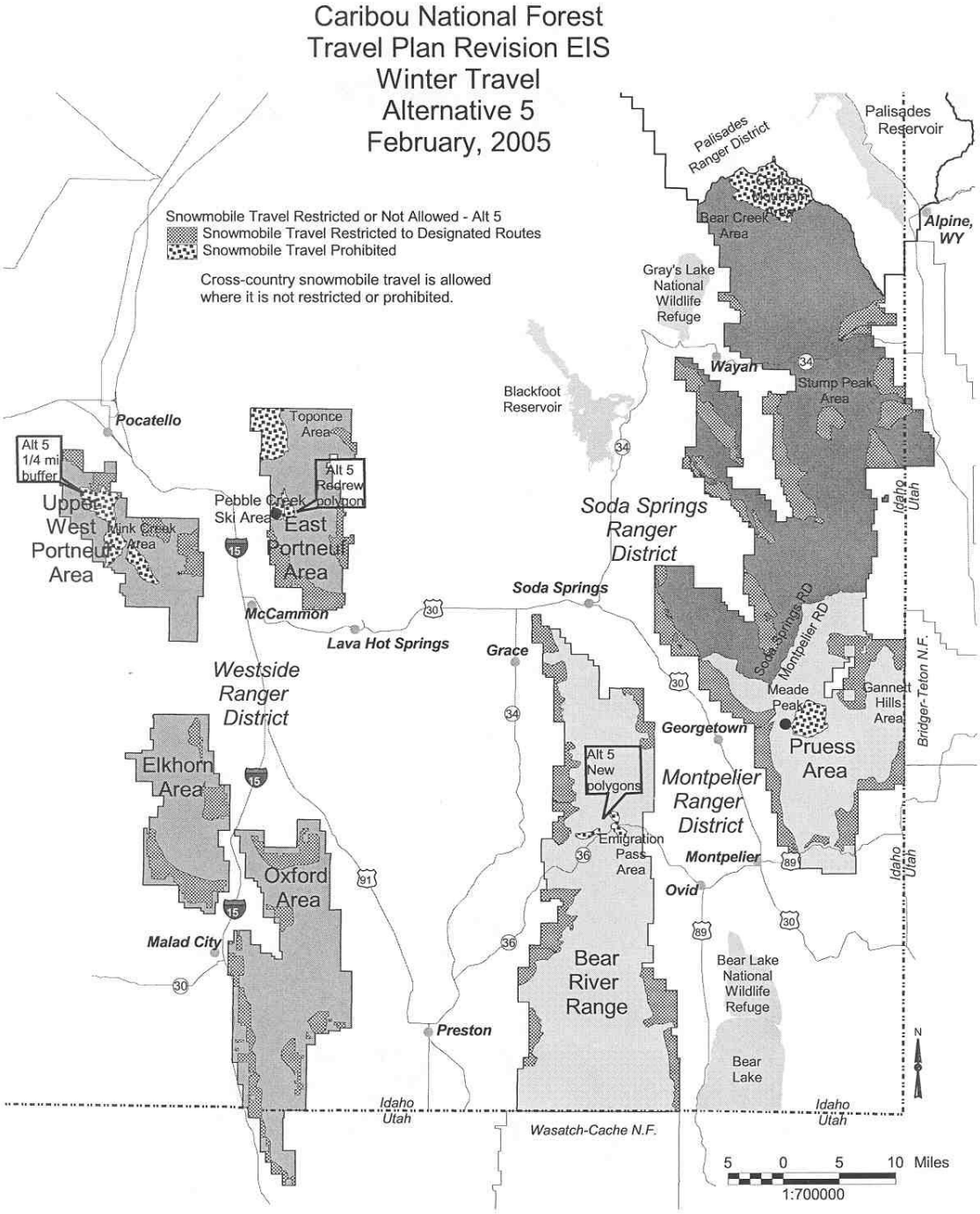


***Map 2.2 - Alternative 4 – Snow Season Travel***

*(note-designated snowmobile routes not shown due to scale)*



***Map 2.3 - Alternative 5 – Snow Season Travel***
(note-designated snowmobile routes not shown due to scale)



***Map 2.4 - Alternative 5R – Snow Season Travel***
*(note-designated snowmobile routes not shown due to scale)*

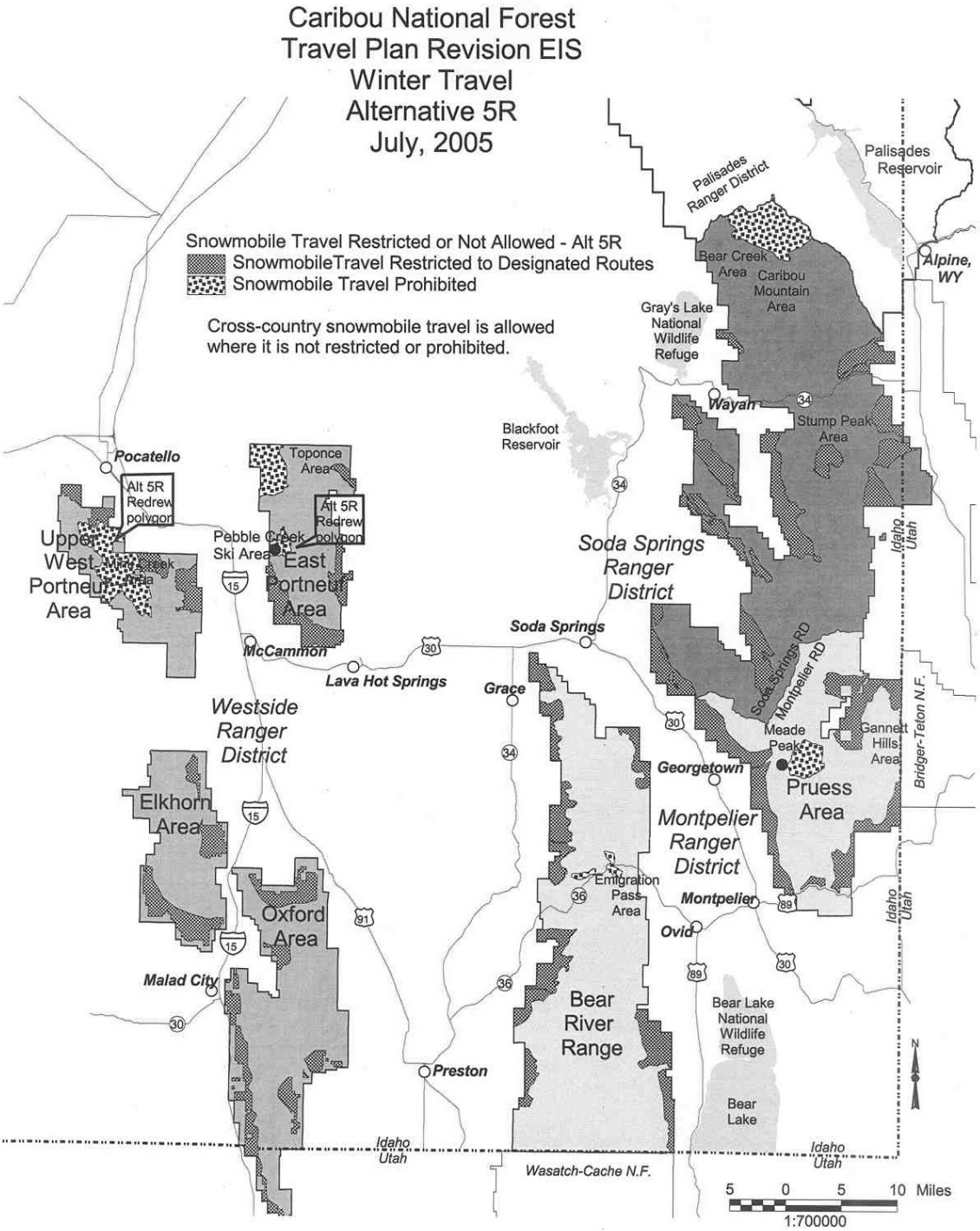


***Table 2.1 -- Road and Trail Miles by Alternative during the Snow-free Season***

| Westside Ranger District-Pocatello Section | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs & motorcycles may legally travel some of these routes) | 111 | 110 | 107 | 89 | 108 | 107 |
| ATVs, motorcycles, m.bikes, foot and stock | 87 | 112 | 75 | 36 | 109 | 102 |
| motorcycles, m.bikes foot and stock | 46 | 23 | 15 | 42 | 23 | 30 |
| m.bikes, foot and stock | 8 | 8 | 8 | 8 | 11 | 20 |
| foot and stock only | 135 | 119 | 141 | 168 | 110 | 82 |

***Table 2.1 -- Road and Trail Miles by Alternative during the Snow-free Season***

| Westside Ranger District-Malad Section | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs & motorcycles may legally travel some of these routes) | 76 | 75 | 72 | 69 | 74 | 74 |
| ATVs, motorcycles, m.bikes, foot and stock | 127 | 130 | 73 | 66 | 127 | 127 |
| motorcycles, m.bikes foot and stock | 39 | 38 | 28 | 18 | 42 | 42 |
| m.bikes, foot and stock | 0 | 0 | 0 | 0 | 0 | 2 |
| foot and stock only | 99 | 96 | 159 | 180 | 78 | 68 |

***Table 2.1 -- Road and Trail Miles by Alternative during the Snow-free Season***

| Montpelier Ranger District-Bear River Range | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs & motorcycles may legally travel some of these routes) | 307 | 286 | 279 | 281 | 289 | 293 |
| ATVs, motorcycles, m.bikes, foot and stock | 185 | 195 | 124 | 145 | 196 | 199 |
| motorcycles, m.bikes foot and stock | 40 | 42 | 25 | 29 | 43 | 45 |
| m.bikes, foot and stock | 0 | 0 | 0 | 0 | 109 | 105 |
| foot and stock only | 81 | 106 | 202 | 165 | 0 | 0 |

***Table 2.1 -- Road and Trail Miles by Alternative during the Snow-free Season***

| Montpelier Ranger District-Pruess Section | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs & motorcycles may legally travel some of these routes) | 182 | 159 | 147 | 147 | 166 | 165 |
| ATVs, motorcycles, m.bikes, foot and stock | 49 | 53 | 44 | 44 | 50 | 50 |
| motorcycles, m.bikes foot and stock | 48 | 37 | 29 | 9 | 28 | 28 |
| m.bikes, foot and stock | 0 | 0 | 0 | 0 | 143 | 133 |
| foot and stock only | 113 | 131 | 158 | 179 | 0 | 0 |

***Table 2.1 -- Road and Trail Miles by Alternative during the Snow-free Season***

| Soda Springs District | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs & motorcycles may legally travel some of these routes) | 335 | 337 | 337 | 315 | 332 | 332 |
| ATVs, motorcycles, m.bikes, foot and stock | 225 | 201 | 176 | 135 | 178 | 172 |
| motorcycles, m.bikes, foot and stock | 0 | 0 | 0 | 0 | 1 | 3 |
| m.bikes, foot and stock | 0 | 0 | 0 | 0 | 248 | 230 |
| foot and stock only | 151 | 243 | 266 | 328 | 0 | 0 |

***Table 2.1 -- Road and Trail Miles by Alternative during the Snow-free Season***

| Forest-wide | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Full sized vehicles, (licensed ATVs & motorcycles may legally travel some of these routes) | 1012 | 968 | 942 | 902 | 969 | 972 |
| ATVs, motorcycles, m.bikes, foot and stock | 673 | 692 | 493 | 427 | 660 | 649 |
| motorcycles, m.bikes, foot and stock | 172 | 139 | 97 | 98 | 137 | 147 |
| m.bikes, foot and stock | 8 | 8 | 8 | 8 | 511 | 489 |
| foot and stock | 578 | 694 | 925 | 1019 | 188 | 146 |

# Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope of the travel plan revision, duplicative of the alternatives considered in detail, or determined to be components that would cause unnecessary environmental harm. Therefore, a number of alternatives were considered but dismissed from detailed consideration for reasons summarized below.

## *An Alternative that Designates All Routes for Motorized Travel and /or Builds New Routes*

Some people want the decision to "maximize" all possible motorized routes to meet the growing demand for motorized travel on the forest. A "motorized travel emphasis" alternative would "grandfather-in" all existing travel routes on the ground as designated motorized road or trail, and/or construct new designated motorized routes. This alternative would not meet RFP direction to provide a transportation plan that offers a variety of recreation opportunities. This alternative would not meet the intent of OMRD ceilings to reduce wildlife disturbance and retain recreation settings or the guidelines of ROS categories mapped for forest areas. Although all designated routes would be open to hikers, mountain bikers, and stock or horse use, this alternative would offer few areas with a non-motorized setting on the forest. This alternative does not meet the purpose and need of a revised travel plan that complies with programmatic direction for travel and access of the 2003 RFP.

## *An Alternative that Closes Most Routes to Motorized Travel*

Some people want the decision to "maximize" non-motorized experiences to meet the demand for non-motorized settings for people and wildlife on the forest. An alternative that emphasized non-motorized settings forest-wide, would close many existing motorized routes and manage large forest areas as "non-motorized." This alternative would not meet RFP direction to provide a transportation plan that offers a variety of recreation opportunities. This alternative does not meet the guidelines of ROS categories as mapped for forest areas. This alternative would offer little motorized travel opportunity other than established main travel routes. This alternative does not meet the purpose and need of a Revised Travel Plan that complies with programmatic direction for travel and access of the 2003 RFP.

## *An Alternative that Closes Routes to Motorized Travel Seasonally*

The 2002 Travel Plan contains seasonal restrictions and these restrictions are carried forward in all alternatives. Some people want the decision to close additional motorized routes seasonally to reduce wildlife disturbance and to meet the demand for non-motorized settings for hunting. The issue of reducing wildlife disturbance was provided to the Interdisciplinary Team by IDF&G. IDF&G staff wanted an alternative that closed motorized routes year-round not just during certain times of year.

# Comparison of Alternatives

This section provides a narrative summary and table of the effects of implementing each alternative. Information in the narrative is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives.

*Table 2.2 -- Comparison of Alternatives by Selected Issue Indicators*

| Issue Indicator | Alt. 1 | Alt. 2 | Alt. 3 | Alt. 4 | Alt. 5 | Alt. 5R |
|---|---|---|---|---|---|---|
| Miles of motorized routes (snow-free season) | 1,860 | 1,800 | 1,530 | 1,430 | 1,770 | 1,770 |
| Acres of nonmotorized setting and % of Caribou (snow-free season) | 270,860<br>26% | 313,930<br>30% | 393,000<br>38% | 410,960<br>39% | 316,360<br>30% | 316,360<br>30% |
| Miles of nonmotorized trails (snow-free season) | 590 | 700 | 930 | 1,030 | 700 | 640 |
| Acres managed as non-motorized during and % of Caribou (snow season) | 36,850<br>(3.5%) | 36,850<br>(3.5%) | 36,850<br>(3.5%) | 46,830<br>(4.5%) | 40,986<br>(4.0%) | 46,535<br>(4.5%) |
| Miles of motorcycle trails | 170 | 140 | 100 | 100 | 140 | 150 |
| Acres open to X-country mot. travel (snow-free season) | 29,400 | 29,400 | 29,400 | 0 | 0 | 0 |
| OMRD overages and # of Rx areas | exceeded by max. of 0.8 in 15 Rx. areas | exceeded by max. of 0.5 in 11 Rx. areas | exceeded by max of 0.4 in 6 Rx. areas | exceeded by max. of 0. 2 in 4 Rx. areas | exceeded by max of 0.3 in 7 Rx. areas | exceeded by max of 0.3 in 9 Rx. areas |
| % of Caribou in non-motorized areas over 1,000 acre blocks | 24% | 29% | 37% | 38% | 29% | 29% |
| Motorized routes on soils with high risk | 195 | 167 | 163 | 135 | 153 | 148 |
| Motorized routes within AIZs | 683 | 608 | 523 | 493 | 595 | 595 |
| Motorized routes within AIZs of 303D Streams | 44 | 41 | 41 | 40 | 41 | 41 |
| Miles of motorized routes per square mile within fish-bearing AIZs | 3.73 | 3.07 | 2.72 | 2.53 | 2.97 | 2.95 |

# Recreation

## Summer or Snow-free Season

Alternatives 2, 5 and 5R provide a variety of motorized, mechanized and non-motorized opportunities, and would meet plan intent for ROS settings with some adjustments. Alternatives 2, 5 and 5R would change the interior of Stump Peak drainage from motorized to a non-motorized setting. Alternatives 3 and 4 would change additional forest areas from semi-primitive motorized to semi-primitive non-motorized.

## Motorized and Non-motorized Opportunity

**Alternative 1** offers the most motorized routes with 1,860 miles; however, some trails dead-end and there are redundant motorized routes. Alternative 1 offers the least amount of non-motorized acres, with 26% of the forest managed for a non-motorized setting.

**Alternative 2** offers motorized routes to most areas with 1,800 miles. Alternative 2 offers an additional non-motorized setting in the core of the Stump Peak area, which increases non-motorized acres to 30% of the Forest.

**Alternatives 3 and 4** would have 1,530 and 1,430 miles of motorized routes respectively. These alternatives offer the greatest amount of non-motorized acres with 38% and 39% of the forest respectively. Under Alternatives 3 and 4 close some popular motorized routes.

**Alternatives 5 and 5R** maintain existing motorized access to most forest areas with 1,770 miles of motorized routes. These alternatives maintain motorized access into many forest areas while retaining existing non-motorized settings. These alternatives provide improved motorized experience by creating loops and alternate routes adjacent to popular roads. Alternative 5 and 5R offer additional mountain bike opportunity on non-motorized trails throughout the forest.

## Disability Access

All alternatives would provide equal access to people with disabilities; wheelchair travel is considered non-motorized travel. Generally, alternatives that retain many popular existing motorized routes, (Alternatives 1, 2, 5 and 5R), would be preferred by people with disabilities who rely on motorized vehicles to access forest areas. Alternatives 3 and 4, which offer more non-motorized areas, would be preferred by people with disabilities who want additional non-motorized settings.

## Game Retrieval for Hunters

Generally, alternatives that retain more motorized routes would be preferred by hunters who want the greatest degree of motorized access to retrieve game. Alternatives 3 and 4 would be preferred by hunters seeking additional non-motorized settings. Alternatives 2, 3, 4, 5 and 5R would be preferred by hunters seeking a non-motorized experience the Stump Peak area.

Motorcycle riders have opportunities in all alternatives, but some prefer a single-track motorized trail. Designated motorcycle trail miles are decreased in Alternatives 2, 3, 4, 5 and 5R. These alternatives offer between 100 and 150 miles of single-track motorcycle trail.

Alternatives 1, 2, and 3 manage the Huckleberry Basin prescription area on the Soda Springs District as open to cross-country motorized use as identified in the RFP. Alternatives 4, 5, and 5R manage motorized travel on designated routes forest-wide, providing management and enforcement consistency. This change would require a plan amendment.

### *Winter or Snow Season*

All alternatives offer a variety of non-motorized and motorized opportunity. Alternatives 2 and 3 implement the new closure areas identified in the RFP and offer designated snowmobile routes through new areas of big game winter range. Alternatives 5 provide some additional non-motorized areas in Bear River Range and within the Bonneville Peak prescription area. Alternative 4 and 5R set more areas aside for non-motorized use by refining the boundaries of existing closure areas. These areas are popular with skiers and are not likely to displace existing snowmobile use. Alternatives 4, 5, and 5R would require a plan amendment to change the prescription boundary for the Bonneville Peak non-motorized area.

### *OMRDs*

All alternatives would require a plan amendment to change the OMRD ceilings for specific prescription areas. With the exception of Alternative 1 and 2, the ceiling overages represent a low number of miles and would not fundamentally change the areas' setting for recreational use and travel.

## *Wildlife*

Travel routes have the potential to affect wildlife and wildlife habitat. All action alternatives are under the RFP Open Motorized Route Density ceilings (OMRDs) in most forest areas, which will reduce the risk of wildlife disturbance from motorized travel. All alternatives offer large areas that are managed as non-motorized during the snow-free season. Alternative 1 offers the least number of acres within 1,000 acre blocks managed as non-motorized during the snow-free season. These areas represent 24 percent of forest acres. Alternatives 3 and 4 offer more acres within 1,000 acre non-motorized blocks, representing 37 and 38 percent respectively. Alternatives 2, 5, and 5R offer 29 percent of forest acres in 1,000 acre non-motorized blocks. Alternatives 2, 3, 4, 5, and 5R are expected to meet the desired condition for wildlife and for wildlife habitat.

## *Soils*

Designated motorized travel routes can affect sensitive soils. Alternative 1 has the most designated roads and trails within areas of high sensitive soil risk. Alternative 4 has the least designated routes within areas of high sensitive soil risk. Alternatives 2, 3, 5, and 5R have less designated routes in areas of sensitive soil risk than the existing condition but more than 4. All alternatives are expected to meet forest plan standards and guidelines for soils.

## *Riparian Areas and Aquatic Resources*

Alternatives 2, 3, 4, 5, and 5R reduce risk to water resources from travel routes by managing less designated motorized travel routes, less motorized travel routes in AIZs, and less stream crossings than Alternative 1, the existing condition. The action alternatives include improving and maintaining road and trails to standard and closing many user-created routes. These actions can mitigate risks to riparian and water resources from travel routes and uses. All action alternatives reduce potential risks to riparian areas and water resources; however, Alternatives 3 and 4 would reduce potential risks to water resources more than Alternatives 2, 5, and 5R. All alternatives are expected to meet forest plan standards and guidelines for riparian resources.

## *Fisheries and Aquatic Resources*

It is expected that Alternatives 1 and 2 will have the most impact upon aquatic biota and their habitat. Alternatives 3 and 4 will have the least. Alternatives 5 and 5R, when considered in the range of alternatives, have a median amount of impact upon aquatic biota and their habitat. All alternatives are expected to meet forest plan standards and guidelines for fish habitat.

# CHAPTER 3. AFFECTED ENVIRONMENT

This Chapter summarizes the existing condition of physical, biological, social, and economic environments of the Caribou and surrounding area. In some cases, a resource summary is not presented in detail because the topic is not relevant to the issues or alternative analysis. Environmental Consequences are found in Chapter Four.

## Tribal Treaty Concerns

### *Introduction*

A revised travel plan has the potential to affect tribal members' ability to use and access the Caribou including hunting, fishing, and gathering. Other tribal concerns could be the potential for travel routes to contribute to the spread of noxious weeds which can affect native plant populations. This concern is discussed more specifically under the "noxious weeds" section. Travel routes have the potential to impact water quality, fish and fish habitat, wildlife and wildlife habitat, which could also concern tribal members. The existing condition for these resources is discussed under their own heading in the Chapter. A portion of the Westside District was originally part of the Fort Hall Reservation but these lands were ceded to the United States around the turn of the century. On the "ceded lands," the Tribes also retain the right to graze. Access needed for grazing could also be a concern.

### *Analysis Area*

The portions of the Caribou and Cache NFs administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee NF.

### *Analysis Methods*

This section will discuss the existing condition for access and resource availability as it relates to the exercise of tribal-treaty rights.

### *Treaty Rights Defined in the Fort Bridger Treaty of 1868*

The reserved rights include hunting, fishing, gathering, and other practices such as trade. While the Treaty itself only specifies hunting, the lawsuit "State of Idaho vs. Tinno" established that any rights not specifically given up in the Treaty were, in fact, reserved by the Tribes.

### *Background*

The Shoshone-Bannock Tribes retain the lands of the Fort Hall Reservation, in southeast Idaho. The current reservation boundary encompasses about 544,000 acres of land along the Snake River. The original reservation was over 1.8 million acres but due the expansion of European settlers, Congress required the Tribes to cede much of this land. The Tribes did, however, retain grazing rights on the ceded lands. Many areas of the Westside District of the Caribou-Targhee NF are ceded lands. As described previously in this document, the Fort Bridger Treaty established off-reservation treaty rights on all unoccupied lands. The Caribou-Targhee is also part of the ancestral homeland of the Northwest Band of the Shoshoni. In their 1863 Treaty, they assented to the Fort Bridger Treaty. Chief Pokatello claimed the area from Raft River to the Portneuf for himself and his people. This area includes the Westside Ranger District of the Caribou-Targhee NF (Treaty with the Shoshoni-Northwestern Bands, July 30, 1863). Thus, tribal members of the Northwest Band also have rights to hunt, fish, and gather on all unoccupied lands of the United States.

Prior to European settlement of the west, the Shoshone and Bannock peoples were comprised of many smaller nomadic bands inhabiting a vast area. Their aboriginal territory includes six states and ranged north into Canada and south to Mexico. The bands were generally extended family groups who moved across the western landscape hunting, fishing, and gathering with the changing seasons. The Fort Hall area was a traditional wintering area for many of the bands. The Caribou-Targhee NF is an integral part of the Shoshone Bannock Tribes ancestral lands.

Few "traditional use sites" have been documented through consultation with the Tribes. This is due to privacy issues. For this analysis, we assume that the Caribou was, and is, used for traditional practices such as hunting, fishing, and gathering and traditional activities such as ceremonies and religious practices. To protect the privacy of the Tribes, these activities will be analyzed in general terms. Many tribal members hunt, fish, and gather for subsistence and to maintain their traditional way of life. Access for these activities is important. Some tribal members rely on motorized access to reach forest areas and some rely on full-sized vehicle access to reach forest areas. Forest Service managers have a responsibility to ensure that the resources continue to support these traditional tribal uses, while maintaining reasonable access to forest areas.

# Recreation

## *Introduction*

This section provides background information describing general trends for outdoor recreation, existing management direction, and the current condition of forest roads and trails. The analysis then discusses current uses and opportunities by travel mode and season.

Caribou Travel Plan alternatives will affect the quantity and quality of recreation settings and opportunities. Significant recreation issues that are discussed in this section are: non-motorized settings, motorized opportunity, single-track motorcycle trails, cross-country motorized travel in Huckleberry Basin prescription area, and the existing condition of areas that exceed prescribed Open Motorized Route Densities ceilings, or OMRDs. Other concerns discussed in the analysis are: seasonal closures, safety of trails, the quality of experiences, access for persons with disabilities, and motorized access for hunters retrieving big game. These issues and concerns are discussed in general terms for the entire Caribou and by recreation area or canyon. The public and other interested parties are concerned with the management of some specific travel routes. The existing condition and management of these individual routes is also disclosed.

## *Analysis Method*

The existing condition for recreation uses is described by comparing current travel uses with existing travel opportunities by travel mode and by season. Non-motorized travel and non-motorized opportunities and settings are discussed first, followed by motorized travel and opportunities. Summer or snow-free travel is discussed followed by snow season travel. The following indicators are used to describe the existing condition of recreation opportunities:

- Acres managed for a non-motorized setting during the snow and snow-free season and miles of non-motorized trail illustrate the existing opportunity for non-motorized experiences.
- The miles of designated motorized travel routes describe the existing opportunity for motorized travel during the snow-free season. Acres open to snowmobile travel quantify the existing opportunity for motorized travel during the snow season.
- Miles of designated motorcycle trail indicate the existing single-track opportunity for motorcycle travel.

In Chapter Four, Environmental Consequences, these indicators illustrate the differences between alternatives for recreation travel. Trail miles and acres have been rounded to the nearest ten for comparative purposes.

## Analysis Area

The analysis area is the Caribou and Cache NF areas administered by the Westside, Soda Springs, and Montpelier Ranger Districts. Some information is drawn from the Caribou-Targhee Forest as a whole, the State of Idaho and the Intermountain Region, which includes southern Idaho, Utah, Nevada and northwest Wyoming.

## Seasons of Use

For the purpose of defining travel access, the FEIS will use the terms snow season and snow-free season. Idaho weather is unpredictable, and forest elevations vary from just over 5,000 feet to 10,000 feet above sea level. Defining a season with specific dates may not reflect the conditions on the ground. The 2002 Caribou Travel Plan depicts seasonal closure dates; however, these dates represent a "typical" closure date. Conditions might allow a route to be opened early or may require a route to be closed longer than stated on the map. The actual date that travel route gates are opened vary from year to year and are decided by the District Ranger.

## Background

Outdoor recreation provides valuable quality-of-life benefits to Idahoans and citizens throughout the United States. It also contributes to the health and well-being of individuals and communities. The Caribou NF provides outdoor recreation opportunities to local communities and visitors. Typical summer and fall activities include camping, hiking, horseback riding, hunting, fishing, OHV travel, mountain biking, and picnicking. From December thru mid-March, the Caribou offers a blanket of snow for cross-country skiing, snowmobiling, snowshoeing, dog-sledding, snowboarding, and downhill skiing.

The following discussion addresses recreation uses and settings as they relate to the management of forest roads and trails. Most of the travel on forest roads and trails is for leisure. The majority of public comments regarding travel management supported maintaining or increasing non-motorized settings or maintaining or increasing motorized travel opportunities. Most people want the Forest Service to manage travel routes to benefit their recreation preferences and activities.

Factors affecting recreation and forest travel routes on the Caribou include:

- A rapidly growing, aging population.
- More people living in urban and suburban settings.
- Increased road and trail travel.
- New technologies that are changing access and recreation use.
- Diversification of recreation activities.
- The loss of travel and recreation opportunities on and across private lands.

## Recreation Use and Demand

According to U.S. Census figures, the nation's population grew 13 percent between 1990 and 2000. Population growth for Idaho, and the adjacent states of Utah, Washington, and Oregon, was over 25 percent for the same timeframe (2000 U.S. Census). The southern portions of the forest, on the Westside and Montpelier Districts, receive "over-flow" recreation visits from Northern Utah residents. As the Salt Lake City metropolitan area grows and spreads northward towards the Idaho-Utah border, forest use by Utah residents will increase. As an area's population increases, so will the demand for outdoor recreation.

Forest Service research indicates that participation in a wide variety of outdoor recreation activities is increasing nationally (2000 RPA Assessment).

Idaho's landscapes are diverse, from the rugged northern and central mountains to the Snake River Plain. Over 68 percent of Idaho land is public land. Statewide, outdoor recreation opportunities are diverse and abundant. The Idaho Statewide Comprehensive Outdoor Recreation and Tourism Plan (Idaho, SCORTP, 2003) includes an assessment of outdoor recreation supply and demand for the state. Idaho's population out-participated the nation in 19 of 28 comparable outdoor recreation activities. Idahoans hike more often than the national average and participate more in wildlife activities including hunting, fishing, and wildlife viewing. Idahoans also participate in OHV travel and snowmobiling at a higher rate than the nation and these participation rates are growing (SCORTP, Idaho State Trails Plan, 154).

The SCORTP discusses statewide concerns for recreational trails, of which the majority are found on National Forests. The SCORPT indicates that trail users want more motorized trails for ATV and motorcycle travel and more non-motorized trails for equestrians, mountain bikers, and hikers. Both motorized and non-motorized trail users want trails that are close to home. All types of trail users feel that Idaho's trails need improved information, signing, and maintenance (Idaho, SCORPT).

In 2000, the Forest Service began using a sampling system and method of estimating use known as the National Visitor Use Monitoring (NVUM) project. NVUM sampling on the Caribou-Targhee NF in 2000 estimated recreation use on the combined forests at 2.2 million forest visits for that year. The FEIS for the RFP, estimates that recreation visits to the Caribou will continue to increase annually between one and four percent.

The 2000 NVUM sampling for the Caribou-Targhee National Forest indicates the top five recreation activities of forest visitors were viewing scenery, viewing wildlife, snowmobiling, general relaxation, and hunting. The top primary activities were snowmobiling, hunting, fishing, OHV travel, and viewing nature. It should be noted that this sampling was for one year only. Recreation visits and activities vary from year to year depending on many factors.

Use trends need to be watched closely. Researchers indicate the only thing that is predicable in outdoor recreation is change. Technology will introduce new recreational pursuits. Management will need to adapt to changing recreation uses on the Forest (2000 RPA Assessment, 69).

## *Management Direction*

The RFP states that system roads and trails will provide access for the management of recreation, special uses, timber, range, minerals, and fire protection. It also describes a road and trail system that provides a variety of opportunities, both motorized and non-motorized, (RFP 3-36 to 40).

The RFP goals that pertain to travel planning include:

- Forest roads and trails provide for user safety and are maintained to minimize impacts to forest resources.
- The transportation system is developed and maintained at the minimum level necessary to manage resources, provide access, and protect facilities.
- Forest and local governments work cooperatively towards resolution of RS 2477 assertions.

An objective identified in the RFP is to revise the Caribou travel plan to incorporate RFP direction for access management (RFP 3-36 to 40). RFP standards and guidelines that are applicable to travel planning include:

- OMRD shall not exceed the limits identified in the Plan OMRD Map. OMRD is defined as the miles of designated motorized roads and trails per square mile within a specific prescription polygon.
- The OMRD standard and restrictions depicted on the travel plan map do not restrict responses to emergency events to protect human life, property values, structures, and forest resources.
- The travel planning process shall consider additional areas for non-motorized winter recreation.
- Any motorized vehicle access on a restricted road or trail or in a restricted area shall be for official administrative business only and shall be officially approved.
- Unless otherwise posted, motorized access is allowed for parking, wood gathering, and dispersed camping within 300 feet of an open designated road.
- The construction of new or maintenance of existing motorized and non-motorized access routes should be consistent with the Recreation Opportunity Spectrum (ROS) class in which they are located.

The RFP does not specifically identify special access for people with disabilities. The Forest will continue to comply with Section 504 of the Rehabilitation Act of 1973 as amended. Off-road vehicle restrictions apply to all persons including persons with disabilities. The Act does not require travel plans to make exceptions for persons with disabilities (RFP FEIS 4-10). The forest does provide equal opportunities for all individuals to participate in a variety of recreation activities.

The RFP does not specifically identify exceptions to motorized travel restrictions for game retrieval. In most forest areas, game retrieval with a motorized vehicle must be accomplished on designated motorized routes.

## *ROS Classes*

ROS is a planning tool used to divide outdoor settings and activities into categories: Primitive, Semi-primitive Non-Motorized, Semi-primitive Motorized, Roaded Modified, Roaded Natural, Rural, and Urban. The Forest Service uses ROS categories to inventory and manage recreation settings and experiences. In general, ROS categories are defined by the quality of the setting and the distance from roads and motorized trails, (USDA FS ROS Guide 1990). Statewide, national forest system lands provide a significant amount of areas that retain the more primitive ROS settings (SCOPRT).

***Table 3.1 -- Acres of ROS Classifications on the Caribou NF***

| | |
|---|---|
| Semi-Primitive Non-motorized (SPMN) | 26% |
| Semi-Primitive Motorized (SPM) | 29% |
| Roaded Modified and Roaded Natural (RM, RN) | 45% |

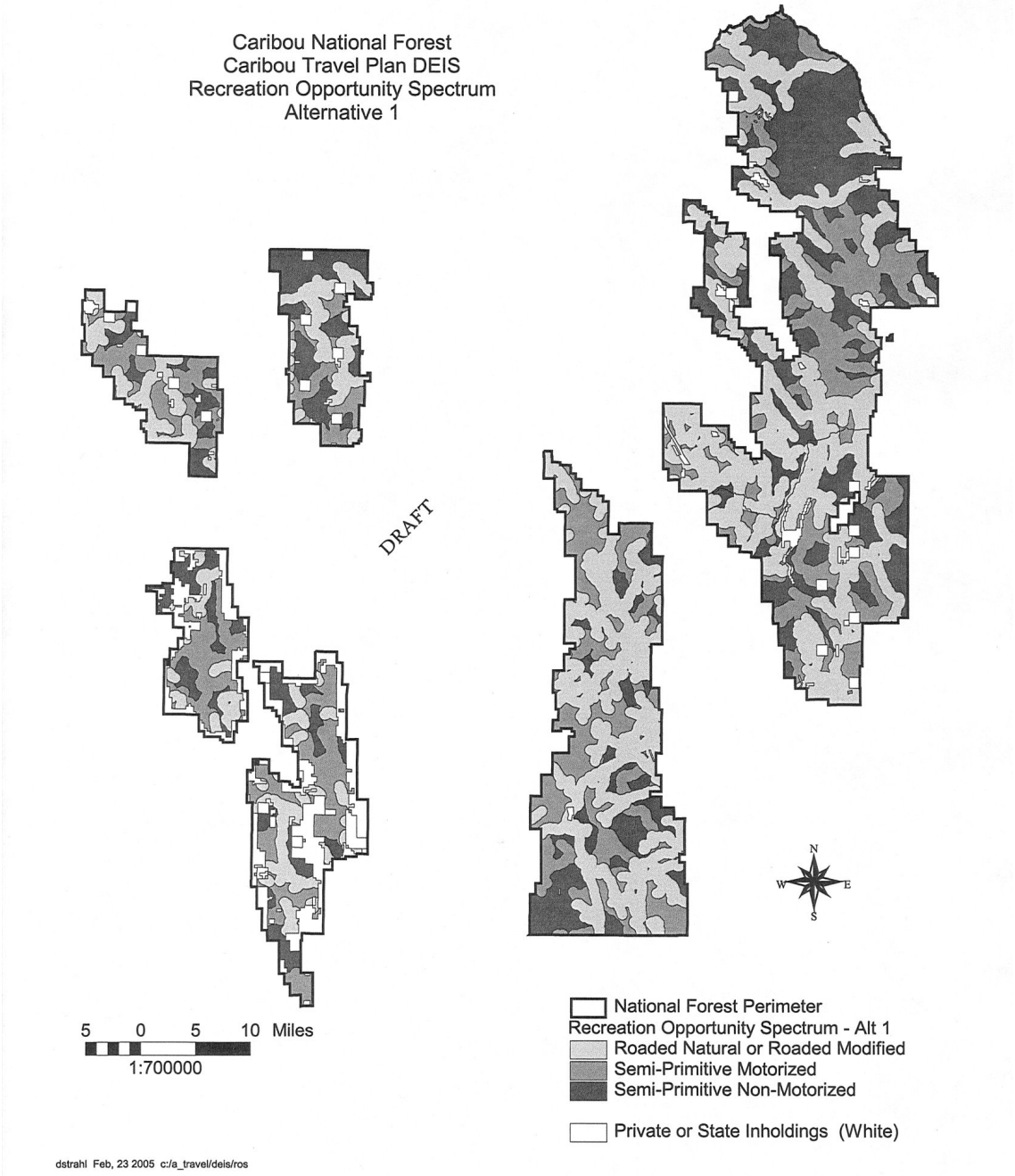
| | |
|---|---|
| Snow Season - non-motorized | 3.5% |
| Snow Season - motorized | 96.5% |

ROS estimates used for this analysis are different than the ROS estimates used for the FEIS of the RFP. Modifications to the ROS inventory were made in response to the improved accuracy of the travel route inventory and the minimum acre limit for Semi-Primitive Non-Motorized areas, SPNM, was reduced to maintain these important non-motorized areas. The Caribou does not have areas that would be classified as "Primitive", which is defined as an area three miles or more from a motorized route. 26 percent of forest acres are mapped as SPNM, which are acres over one half mile from a designated motorized route with few facilities and development. Most SPNM areas are found on the Soda Springs and Montpelier Ranger Districts. 29 percent of forest acres are mapped as Semi-Primitive Motorized (SPM), which means these areas are within one half mile of a motorized route with few facilities and development. These areas are

distributed throughout the forest. The remainder of the Caribou is classified as Roaded Modified and Roaded Natural. These are areas that are within one half mile of a designated road and generally offer more facilities, information, and management presence. The Caribou has no areas that are classified as Rural or Urban.

The snow season setting is divided into two classes: motorized and non-motorized. Most of the Caribou, 96.5 percent, is open to cross-country snowmobile travel and is managed as motorized. These areas include big game winter range prescriptions, 18 percent of forest acres, which restrict snowmobiles to designated routes. Currently, 3.5 percent of forest acres are managed as non-motorized during the snow season. Toponce, east of Pocatello, and Bear Creek, north of McCoy Creek Road, are the larger areas managed as non-motorized during the snow season.

***Map 3.1 - Alternative One - Snow-free ROS map.***



The Forest manages over 60 developed recreation sites including campgrounds, organization camps, trailheads, and cabin rentals. Most of these developed sites can be reached by full-sized vehicles on improved roads. Developed sites such as campgrounds, trailheads, and organizational camps serve as points of departure for popular motorized and non-motorized trails. Under the 2002 Travel Plan with the 2003 Special Order, the Caribou offers over 1,010 miles of designated roads, over 600 miles of designated ATV trails, 170 miles of motorcycle trail and 600 miles of designated non-motorized trails during spring, summer, and fall. The majority of designated forest trails are managed for multiple use, meaning they are available for most modes of travel, motorized and non-motorized.

### *Bear Lake-Caribou Scenic Byway*

The Tincup Highway, also known as State Highway 34, is the Forest's portion of the Bear Lake-Caribou Scenic Byway. As part of the National Scenic Byway Program, area counties and communities have created a scenic byway corridor management plan. The Caribou NF is a partner in the planning process. Many forest visitors use the Tincup Highway as an access corridor to back country roads and motorized and non-motorized trails.

### *Road and Trail Maintenance*

The Caribou roads are maintained with federal and cooperator funds. For more information on system roads and maintenance see the Transportation section of this Chapter. Annually, less than 20 percent of the Forest's system trails receive maintenance and clearing. Most system trails were not constructed, they evolved over time by repeated travel, motorized and non-motorized. Many system trails do not meet today's standards for erosion control and stream crossings. Most trail maintenance activities are completed by volunteers or cooperators. In the State of Idaho, a portion of OHV registration fees goes towards the maintenance of designated motorized trails through the OHV Grant Program and the Trail Ranger Program. Many popular motorized trails receive regular maintenance and reconstruction through these programs. Less popular motorized trails and non-motorized trails are not as likely to receive partnership funds for maintenance. Trail condition records for the forest are not complete at this time. Staff observations indicate that over 80 percent of the Forest's system trail miles need some maintenance for improved drainage of the trail surface. Staff observations estimate between ten and fifteen percent of system trail miles need reconstruction and/or relocation.

### *Non-system Travel Routes*

Some non-system roads were designed and built to standard by the Forest Service, others are historic mining and timber roads, travel routes created to maintain facilities, and two-track routes that forest visitors have created through repeated use. These unplanned travel routes may be located in riparian zones, have steep grades, and have poor drainage. User-created travel routes often occur on ridgelines or as short-cuts between designated roads or trails. Many of these user-created travel routes are signed and closed in areas that restrict motorized travel to designated routes.

Before the 2003 RFP, over 40 percent of Caribou acres were managed as open to cross-country, motorized travel. These areas were located on the Soda Springs Ranger District and the northern two-thirds of the Bear River Range of the Montpelier District. Steep terrain and thick vegetation constrained the actual amount of acres that received cross-country motorized use; however, many travel routes were created in these areas through repeated cross-country motorized travel. Some of these travel routes have been in use for many years.

The RFP has a guideline that allows for vehicular travel off of a designated road up to 300 feet to park, camp, fish, and picnic if no resource damage occurs. These routes are not designated "system" roads or trails. Generally, these routes are found along popular roads adjacent to streams and creeks. Off-route travel has been prohibited off of some popular roads such as the St. Charles Canyon road and the Pebble

Creek road. Signs, fencing, and rock barricades have been installed in many high-use areas to protect stream banks and vegetation from human and vehicle impacts. These measures have helped to restore streamside vegetation, reduce soil compaction, and sediment delivery into waterways.

### *Non-motorized Travel During the Snow-free Season*

Non-motorized snow-free travel includes hiking, horseback riding, and mountain biking. Hunting may involve travel by motorized vehicle or by non-motorized means. Hunting is discussed separately in this section. Generally, non-motorized day-use occurs in close proximity to developed campgrounds and to area communities. The NVUM survey indicates that 13 percent of visitors to the Caribou-Targhee participate in OHV riding, so conversely, it can be assumed that 87 percent of forest visitors do not participate in OHV riding. The survey did ask forest visitors about the types of facilities that they used, and 23 percent said they used hiking, biking and horseback trails. These percentages are based on one year of survey data for the Caribou and Targhee National Forests, and were gathered in 2000. Recreation behaviors vary from year to year based on variables such as weather, economy, and national events.

Many people seek non-motorized settings to experience less noise from motorized vehicles, equipment and urban settings, (Travel Plan public comment). Many places on the Forest do not offer "natural quiet" due to their small size and proximity to valley development and roadways. (FEIS, Appendix R). There are some localized forest areas that are buffered from adjacent development and roadways with vegetation and topography. These areas can provide "natural quiet".

### *Hiking and Horse-back Riding*

The Mink Creek Recreation Area and the East Portneuf Range of the Westside District are within a twenty minute drive of the greater Pocatello are and receive more walking and hiking than the rest of the Forest. Non-motorized activities in this "urban interface" area will increase with the valley population. In the Bear River Range, Bloomington Lake non-motorized area is a destination for many forest visitors looking for a scenic hike. Mount Naomi Recommended Wilderness area is managed as non-motorized and receives some "over flow" hikers and stock users from the Wasatch Front. Caribou Mountain Recommended Wilderness area is also managed as non-motorized and receives some hikers and stock use.

### *Mountain Biking*

Compared with horseback riding and hiking, mountain bikes are a relatively new mode of transportation on the Forest. Mountain bike use is common in the Upper West Portneuf area due to the proximity to the valley population and students who attend Idaho State University. Mountain bike travel is incidental in other areas of the forest but use is expected to expand with time.

### *Non-motorized Opportunity and Settings*

Hiking and stock travel is unrestricted on the forest with few exceptions. There are over 1,430 miles of system trail, motorized and non-motorized, available for these activities.

In 1987, a travel plan decision was made to restrict mountain bikes to designated motorized routes forest-wide. There are approximately 840 miles of designated motorized trails for mountain bike travel. Some of these routes are two-track ATV trails and some are single-track motorized trail. Many mountain bike riders are unaware of the existing restrictions of the travel plan and they use many routes that are restricted to foot and stock use only. The West Fork Trail and the Gibson Jack Trail are the only non-motorized trails on the forest that allow mountain bike travel.

There are many opportunities for non-motorized and mountain bike travel; however, some trail users prefer non-motorized settings on a maintained single-track trail. Some people object to sharing the trail with motorized travelers because they don't like the noise and exhaust fumes and some are concerned with the safety of sharing trails with motorized vehicles (Caribou Travel Plan Revision comments). Some people object to sharing the trail with mountain bikes because they don't like being surprised by bikes on blind curves or hills (Caribou Travel Plan Revision comments).

On the Westside District, the forest manages 41,010 acres on the northern portion of the District for a non-motorized setting during the snow-free season. These areas include the West Mink Creek Research Natural Area and portions of the Gibson Jack Research Natural Area directly adjacent to Pocatello as well as the Toponce area, east of Pocatello. Portions of Bonneville Peak, Haystack Mountain, and Pebble Basin are also managed as non-motorized during the snow-free season. There are few areas managed for a non-motorized setting in Elkhorn and Oxford Peak areas.

The Forest manages Caribou Mountain Recommended Wilderness Area and Bear Creek, north of McCoy Creek road, for a non-motorized setting. Due to their larger size, these non-motorized areas receive heavy use during hunting season but due to their remoteness they receive lower use in the spring and summer.

The Forest manages the Worm Creek/Bloomington Lake area for a non-motorized experience during the snow-free season. Mt. Naomi Recommended Wilderness Area offers a large non-motorized setting that is adjacent to Utah's Mt. Naomi Wilderness. These areas receive moderate use from Bear Lake Valley and Utah residents. Additional non-motorized areas occur along the Idaho/Wyoming border in the Gannett Hills of the Montpelier Ranger District. These areas offer few facilities, are remote and receive low use.

The forest offers a variety of non-motorized settings, from the remote interior of Mt. Naomi Recommended Wilderness to the paved trails of Cherry Springs Nature Area. Demand for non-motorized settings is greatest adjacent to City of Pocatello. The Toponce area is the only large non-motorized area in close proximity to Pocatello. The West Fork of Mink Creek and Gibson Jack offer non-motorized areas and trails close to Pocatello, and these areas can be crowded during nice summer weekends. Forest-wide, 600 miles of system trail are managed for a non-motorized experience but many of these trails are not maintained and some are in remote areas.

### *Motorized Travel during the Snow-free Season*

The NVUM survey indicates that 13 percent of visitors to the Caribou-Targhee participate in OHV travel as part of another activity such as camping or hunting and 8 percent of visitors listed "OHV travel" as their primary activity. The survey defines OHV users as people who use ATVs and motorcycles on the forest. Snowmobile use was not included as OHV use. The survey did ask forest visitors about the types of facilities that they used, and 15 percent said they used "motorized developed trails". These percentages are based on one year of survey data for the Caribou and Targhee National Forests, and were gathered in 2000. Recreation behaviors vary from year to year based on variables such as weather, economy, and national events.

Popular OHV roads and trails close to communities, campgrounds, and major roadways receive heavy use during summer weekends and holidays. Before the RFP, 40 percent of forest acres were open to cross-country motorized travel and OHV travelers became accustom to unrestricted motorized access in these areas. The Southern Bear River Range receives high OHV use from Utah residents due to it's proximity to the Utah border.

### *Full-sized Vehicle Travel*

Driving for pleasure is a common activity for forest visitors. This activity occurs on the better maintained primary and secondary roads throughout the forest and is most common during summer weekends and holidays.

### *ATV Travel*

ATV use on the Forest has grown in the last few years. Some ATV riders prefer a semi-primitive setting on a two-track trail as opposed to a low standard road. Some ATV riders prefer loop trails as opposed to trails that dead-end (SCORPT, Travel Plan Revision comments).

Designated motorized travel routes in close proximity to Pocatello, Malad, Preston, Soda Springs, and Montpelier receive some weekday and evening use and heavy weekend and holiday use. Before the popularity of ATV travel, some forest areas open to motorized use received few motorized visitors due to their remote nature. Within the last ten years, ATV use in remote areas has increased (staff observation, Caribou Travel Plan Revision comments).

### *Motorcycle Travel*

In the 1980s, most forest travel routes were unrestricted single-track trails that were used by hikers, stock users, and motorcycles. Over the years, many single-track motorized routes have been converted to double-track trails either by repeated ATV travel or by the Forest Service reconstructing the trail for ATV-use.

Some people who travel on motorcycles prefer a single-track trail that provides some challenge. Some motorcycle riders prefer loop trails as opposed to trails that dead-end (Caribou Travel Plan Revision comments and SCORPT). The Idaho SCORPT identifies the loss of single-track motorcycle trails to ATV use as a concern statewide.

### *Motorized Opportunity*

The existing condition for road and trail management is the travel restrictions shown on the 2002 Caribou Travel Map with the 2003 Special Order. Before the RFP, 42 percent of the Forest was managed as open to cross-country motorized travel. For these unrestricted areas, the 2003 Special Order designated any road or trail depicted on the map as a motorized route. This was a short-term measure to stop cross-country motorized travel until a travel planning analysis and decision could be implemented. Some of these designated travel routes were not constructed or maintained for motorized travel.

Currently, the Forest manages over 1,010 miles of designated road open to motorized vehicles over 50 inches in width. Some of these roads can be traveled in a low clearance two-wheel drive vehicle and others are restricted to high clearance four-wheel drive vehicles. The Forest offers over 670 miles of designated motorized trail that are available to ATV riders and motorcycle riders. Some low-use designated roads can also be used for ATV travel if county or state regulations permit such use. The current travel plan offers over 170 miles of designated single-track motorcycle trails. These routes are not designed for ATVs and some segments of these routes are not safe for ATV use.

The forest offers a variety of travel routes and settings for OHV travel in most areas of the forest. The more accessible and better maintained roads and trails receive the most use. Designated roads and motorized trails adjacent to campgrounds and waterways receive heavy use especially during summer weekends and holidays. Designated motorized roads and trails that are “off the beaten path” receive moderate to low use. Designated road opportunities range from driving paved scenic canyon roads such as St. Charles Canyon road to the more steep and challenging Hillyard Canyon road. ATV trails range from gentle two-track roads to narrow, rocky challenges. The Boundary Trail is a thirty-mile loop in the Portneuf Range, east of Inkom. The Highline Trail is a 55 mile route along the backbone of the Bear River

Range. These routes offer long-distance ATV travel. There are many motorized trail opportunities for ATVs but use could be better distributed with additional trailhead facilities and improved trail information.

The Forest offers over 170 miles of designated motorcycle trail but portions of these travel routes have already been converted to two-track routes by illegal ATV use.

### *Cross-country Motorized Travel*

29,400 acres in Huckleberry Basin are managed as open to cross-country motorized travel during the snow-free season. This area contains many miles of old logging roads to explore by full-sized vehicle, ATV, or motorcycle.

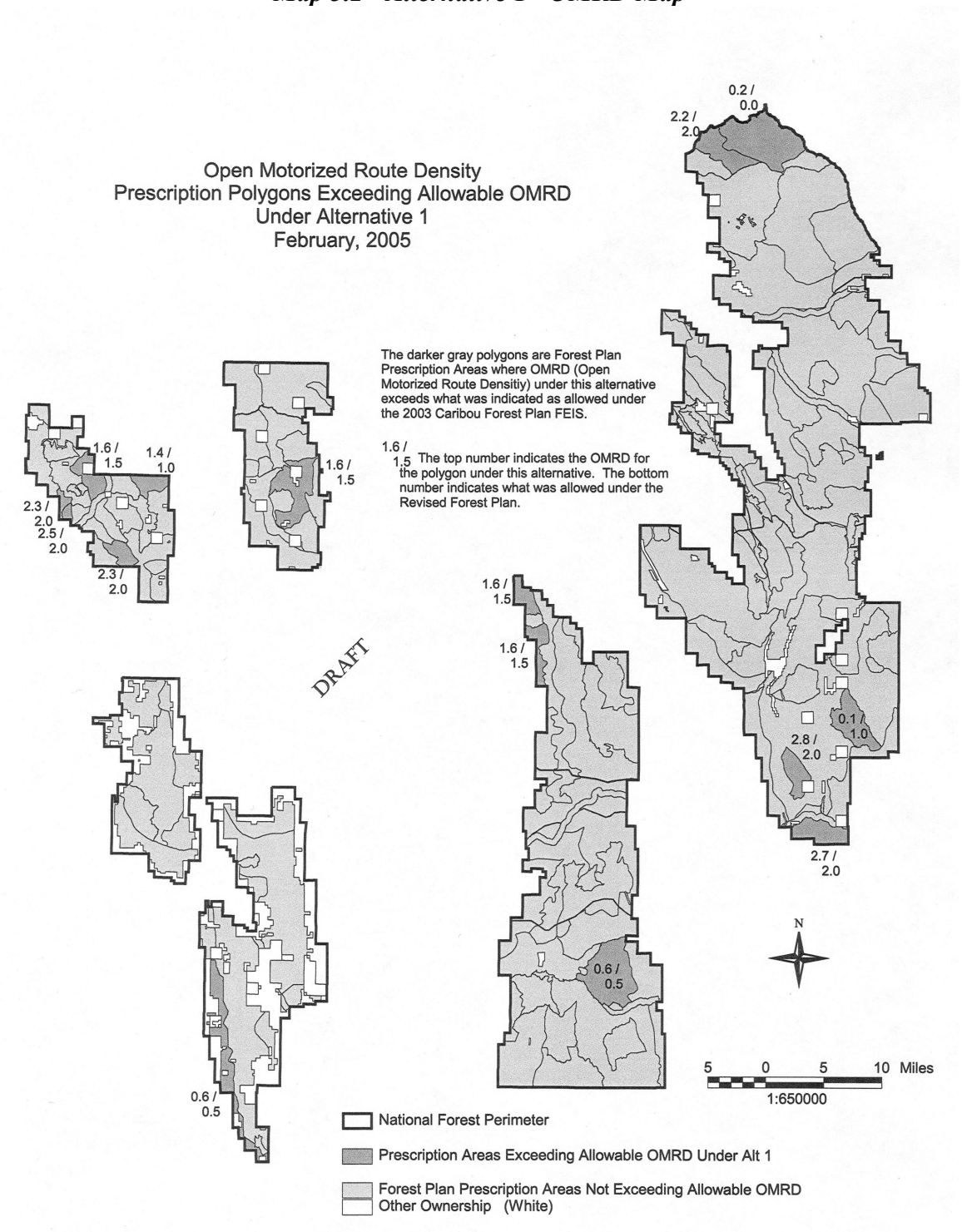
### *Seasonal Closures*

The 2002 Travel Plan closes 34 miles of designated travel routes during the spring and/or fall for a variety of reasons including wildlife concerns and wet road conditions. These closures limit access by wheeled motorized vehicle to some forest areas during hunting season and early in the spring. Seasonal closures are implemented with gates. Most of the seasonal closures are located on the northern portion, or Pocatello section, of the Westside District.

## *Plan OMRDs and Recreation Setting*

The RFP sets OMRD ceilings on the number of miles of designated motorized roads and trails in each prescription area to reduce disturbance to wildlife and to maintain the desired recreation setting. In limiting the miles of motorized route, OMRDs can help define and manage for a recreation "carrying capacity" for forest areas. OMRDs range from zero in areas recommended for Wilderness consideration to 3.5 in areas of concentrated use. The 2002 Travel Plan with the 2003 Special Order exceeds the OMRDs in 15 prescription areas as mapped. In 8 prescription areas the "overage" is under 0.2 miles per square mile. The Home Canyon prescription area, north of U.S. Highway 89, and the Montpelier Canyon prescription area, south of U.S. Highway 89; exceed OMRD ceilings by .8 an .7 miles per square mile respectively. Home Canyon and Montpelier Canyon areas are managed for a "Roaded Natural" setting.

## *Map 3.2 - Alternative 1 - OMRD Map*



## Hunting and Travel

Hunting of big game, upland game, and waterfowl is a popular activity on the Forest. These activities occur in late summer, fall, and early winter and are dependent on travel routes. Hunters may rely on a combination of motorized and non-motorized travel means to reach their destination and to retrieve game.

### Motorized Travel for Hunting

Before the RFP, over 40 percent of forest acres were open to cross-country motorized travel. These areas coincided with popular big game hunting units and some hunters became accustomed to unrestricted motorized access in these areas. Today, much of the forest is restricted to designated motorized routes and some hunters rely on the existing designated motorized routes to scout, access hunting areas, and to retrieve game.

### Non-motorized Travel for Hunting

Idaho Department of Fish and Game (IDF&G) have indicated that some hunters prefer to hunt in areas managed as non-motorized. In response to these concerns and other issues, Idaho Fish and Game restricted ATV and motorcycle use *while hunting* in *some* hunting units of the forest. Hunters cannot take a motorized vehicle off of a designated road as defined in IDF&G regulations. This has changed the hunting experience for all hunters in these specific areas of the Forest.

Horse and stock use is often associated with scouting and hunting for big game in areas that provide a semi-primitive setting such as Caribou Mountain and portions of the Stump Creek drainage. The Caribou Mountain area is popular for big game hunting because it offers a large non-motorized area that has good hunting opportunity.

### Game Retrieval & Disabled Hunter Access

Some hunters would like motorized access on roads and trails otherwise closed to motorized travel to retrieve downed deer and elk. The opportunity to retrieve game with a motorized vehicle is popular with some hunters, while others find it intrusive (Caribou Travel Plan Revision comments). The RFP does not provide for "special access" off of designated roads and trails for game retrieval. Under the existing travel plan there are many designated motorized roads and trails to facilitate game retrieval. It is likely that the lack of designated motorized routes in some forest areas determine where people plan to hunt. The RFP and current travel plan does not provide special access to hunters with disabilities. The Forest does provide equal opportunities for all individuals to participate in a variety of recreation activities, including hunting.

### Fishing and Travel

People visit the Caribou to fish; however, the Forest does not offer many quality fishing opportunities when compared to the volume and variety of fishing available off-forest. Anglers use motorized and non-motorized travel routes to reach their favorite river, stream, or pond.

## Non-motorized Use during the Snow Season

Snowshoeing, back-country skiing, and snowboarding activities are popular on the Forest. The Mink Creek Recreation Area and the Portneuf Range of the Westside District receive the bulk of these uses due to the proximity to the Pocatello area and Idaho State University. The Portneuf Range Yurt System attracts back-country skiers to the Bonneville Peak area. The "backside" of Pebble Creek Ski Area offers a unique opportunity to ride the ski-lift to the upper portions of Bonneville Peak and then ski or snowboard down the "undeveloped" eastern slopes. This has been a popular activity for many years.

Trail Canyon Winter Sports Area, just outside of Soda Springs, receives ski and snowmobile use. The pull-offs and parking lots of Emigration Canyon are used by skiers and snowmobilers. Currently, skiers and

snowmobilers use some of the same winter facilities without apparent conflict. This seems to occur in areas where both uses are not concentrated, indicating that conflict may be related to crowding (forest staff observation).

Skiing, snowboarding, snowshoeing, and dog-sled travel is unrestricted on the Forest with few exceptions. There are many opportunities for these types of travel; however, some non-motorized winter travelers prefer a non-motorized setting for reasons of noise, fumes, safety, and wildlife disturbance (RFP and Travel Plan Revision comments).

The Forest offers 36,850 acres, or 3.5 percent of the forest, for a non-motorized setting during the winter. Some of these acres are in Mink Creek Recreation Area, just south of Pocatello. Idaho State University and the City of Pocatello are partners in providing Nordic ski opportunities in the Pocatello area. The State of Idaho Park and Ski program provides funds for signing and plowing of parking lots. The Mink Creek Area offers plowed parking lots and marked trails. The City of Pocatello operates Mink Creek Nordic Ski Area under a special use permit. Pebble Creek Ski Area offers skiing and snowboarding to over 40,000 visitors annually.

The Mink Creek Area, Toponce, and the "backside" of Pebble Creek Ski Area offer a non-motorized setting during the snow-season. There are occasional conflicts between skiers and snowmobiles in these areas.

Trail Canyon Winter Sports Area offers a non-motorized setting and marked ski trails just outside of Soda Springs. The forest restricts snowmobiles to designated routes on 18 percent of forest acres for big game winter range. These areas may provide a non-motorized setting in winter, but they are managed for big game security not non-motorized recreation and they offer few facilities and no marked or groomed trails.

## *Motorized Use during the Snow Season*

Winter in southeast Idaho can last from November to early March. Snowmobiling is a popular activity on the Forest. Southeast Idaho is a national destination for snowmobiling (SCORPT). The slopes of the Bear River Range, Oxford Peak, and Crystal Summit receive heavy use from local riders, Utah residents, and other visitors. The State of Idaho and local snowmobile clubs help provide groomed trails, signing, and warming shelters. Snowmobile registration fees contribute to these efforts. District staff and partners sign and/or groom 300 miles of snowmobile trails.

### *Snowmobile Travel and the Safety of Route Closure Methods*

In the last ten years, the Forest has closed some roads and trails with earth berms to discourage wheeled vehicle travel. There is a concern that berms built for route closures could be a safety hazard to snowmobile riders during the snow season. Snowmobile hazards, both man-made and natural, occur throughout the Forest. Public comment received on other Forest actions has described incidents of snowmobiles hitting and or getting stuck on earth berms (Henry's Lake Travel Plan Implementation EA, 2003).

### *Snowmobile Opportunity*

Most acres, 96.5 percent, of the Forest are open to cross-country snowmobile use during the snow season. The 2002 Travel Plan restricts snowmobile use in some areas identified as winter range for big game. Other areas restrict snowmobiles to designated routes as they pass through big-game winter range. On the Caribou, snowmobile opportunities can be restricted by lack of good snow conditions but most forest areas are available for snowmobile travel.

## Travel Plan Compliance and Enforcement

Travel plans require education and enforcement to be an effective tool for managing motorized and non-motorized travel. Successful travel plan education has to provide three messages to forest travelers:

- Vehicular travel on forest roads and trails is regulated. This means mountain bikes, motorcycles, Three-wheelers, Four-wheelers, SUVs, trucks, and cars.
- The rules and regulations need to be clear and understandable to most people.
- Vehicular travel on the forest is restricted to protect resources, for reasons of user safety, or to provide a non-motorized experience.

The rules and regulations are available on the Travel Plan Map. The Caribou Travel Map can be purchased at most forest offices and the Idaho Falls Visitors Center. Forest offices are not open after 4:30 pm and they are not open on weekends. The Visitor Center in Idaho Falls is open on weekends during summer months. The 2002 Caribou Travel Map is complicated and has numerous errors. The forest needs to improve on the readability of the travel plan map and the availability of travel regulations to help forest users comply with the Travel Plan. Many people do not understand that traveling off a designated route can cause damage to forest resources. Education efforts need to include the message of why a route is restricted, i.e. to protect a fawning and calving area or to protect a rare plant community. The forest uses the Tread Lightly Program and other information to help people understand that repeated off-route use can cause damage and in some areas just one vehicle traveling through a sensitive area, such as a wet meadow, can do long-term harm to water quality, soils, vegetation, and wildlife habitat. Forest staff sends out press releases about travel regulations several times a year. Press releases focus on the resource reasons for travel regulations and the on-going enforcement partnership with IDF&G.

Travel plan compliance is directly related to enforcement and "presence" of forest staff on roads and trails. As with any program, people are more likely to comply to the rules if they feel they may receive a ticket. Travel plan violations occur year-round especially in areas formerly managed as open to cross-country motorized travel during the snow-free season. Non-compliance with the travel plan increases before and during hunting seasons as more people are out traveling on the forest to scout for and to pursue game (annual staff observations). IDF&G have included "travel regulation" information, their hunting regulations, and other publications. The Forest Service and IDF&G work as partners to educate hunters about travel plan regulations. Field contacts and news releases are used to remind hunters of travel regulations on the Forest. The additional visibility of field officers helps reduce violations.

Enforcement records of travel plan non-compliance, warnings and violation notices, do not necessarily reflect trends or problem areas as enforcement efforts fluctuate with available staff and funding. Some years indicate higher non-compliance but more tickets and warnings are issued when more enforcement personnel are in the field.

## Specific Travel Routes of Interest

### The Northern Section of Trail 331 on Elkhorn Mountain

The origin of this trail is unknown. It may have been a game trail that evolved into a recreation trail. Many established travel routes on the Forest began as game trails. Trail #331 was mapped as a designated motorized trail on the 1984 Caribou Travel Plan map. This trail is shown as trail #131 on the 2002 Caribou Travel Map.

The trail is located in two prescription areas, Elk and Deer Winter Range and Rangeland Vegetation Management. Elk and Deer Winter Range access direction is to restrict motorized vehicles to designated routes during the snow and snow-free seasons. Rangeland Vegetation Management is to restrict motorized

vehicles to designated routes during the snow-free season. The trail area is mapped within the ROS category of Semi-primitive Motorized.

Large portions of the trail have deteriorated over time from lack of use and maintenance. Some trail segments are no longer visible on the ground (Fall 2004 field visit). In the last ten years, public access onto the Forest across private land has been lost in this area. This trail offers the only motorized public access on the eastern slopes of Elkhorn Mountain. The northern portion of this trail provides motorized access for forest personnel to administer and manage a special use permit to graze cattle.

### *The Winschell Dugway on Caribou Mountain*

Caribou City, along with Keenan City and Iowa Bar, sprang up shortly after gold was discovered on Mt. Pisgah in 1870 by Carriboo Jack and others (Idaho State Historical Society, Reference #5, pg. 6). After the discovery, the mountain was renamed Carriboo Mountain. The original spelling for the city and mountain was Carriboo, after the Carriboo area in British Columbia, Canada. To avoid confusion, the modern spelling will be used in this document. The Winschell Dugway was a freight route for Caribou City and other mining operations from the 1880s and later (from the 1990 book, *The Mountain: Carriboo*). In 1889, William Winschell built the freight route with hand tools and dynamite. After the gold rush subsided around 1910, Caribou City slowly declined. Caribou City was almost abandoned by 1920 (Idaho State Historical Society, Reference #5, pg. 6).

With the demise of the Caribou area mining towns, the Winschell Dugway became a popular "jeep" route for fall hunting, sight-seeing, and access into the historic mining area. During the 1950s and up to the mid-1980s, the most common motorized vehicle on the forest was a full-sized four-wheel or two-wheel drive vehicle such as a Jeep or truck. All-terrain vehicles, ATVs, were not commonly used on forest roads and trails until the late 1980s (RIM records, field observations).

Through the 1970s and 80s, the steep, dirt road was often impassable to trucks and Jeeps when the surface was wet in the spring and fall months. Full-sized vehicles using the road during wet conditions created rutting and drainage problems and the need for yearly maintenance. In the mid 1980s, the Soda Springs District Ranger closed the route to motorized vehicles. The decision was made to prevent erosion and for user safety (former District Ranger, personal communication). The surrounding area was also closed to provide a large area with a non-motorized setting. The Winschell Dugway has been mapped as a non-motorized trail for the past 20 years.

The Winschell Dugway is located in the Caribou Mountain Special Emphasis Prescription Area. The prescription area goals include maintaining and interpreting the historic values associated with Caribou Mountain. The access standard allows motorized travel on designated routes during the snow-free season. Guidelines describe maintaining the ROS classes of Roaded Natural, Semi-primitive Motorized, and Semi-primitive Non-motorized (RFP, 4-28-30).

In 1996, a landslide occurred along the southeast slope of Caribou Mountain. The slide obliterated the remnants of a large water ditch built during the mining operations of the late 1800s and early 1900s. The slide event illustrates the unstable nature of the soils and hydrology in some locations on Caribou Mountain including the vicinity of the old wagon road. Today, the Winschell Dugway has an intact roadbed on its southern end as it departs from Morgan Meadows but the road template soon disappears as one travels north to Caribou City. On the southern end of the route, illegal ATV use is evident. As the route travels north, the roadbed becomes intermittent. Small landslides and/or soil creep along with heavy downfall have entirely obscured the roadbed in numerous locations. In several locations, there is evidence that the wagon road was re-routed as one route became impassable, and an alternative route was created to keep the road passable for wagons and horses. Intermittent and year-round streams also bisect the former roadway.

The northern segment of the old route does not meet agency trail standards, motorized or non-motorized. There is no recreational travel on this portion of the wagon road.

### *Cub River Road and South Fork of Mink Creek Road*

The Cub River area receives heavy summer recreation use. This area is in close proximity to Logan, Utah, and the Wasatch Front. The road is extremely busy during the six months that it is free of snow. Recreation sites exist along the entire seven miles of road from the Forest boundary to Willow Flat Campground. Designated motorized trails are found to the north and west of this recreation area. The only travel route connecting these recreation destinations is the Cub River road, forcing ATV users to utilize the road to travel from camping areas to trail systems. Mixing ATVs with the full-sized vehicle traffic on this road has been a safety concern.

Franklin County has accepted responsibility for maintenance of the Cub River road from the Forest Boundary to Willow Flat Campground. This has led the County Sheriff to increase patrols and issue warnings and citations for violations of State laws pertaining to registration, licensing, and insurance of OHVs using the road. Compliance with Idaho State laws regarding insurance and registration is difficult for out-of-state, weekend visitors. The existing transportation system is not meeting the needs of Cub River trail users.

The Mink Creek area receives heavy summer recreation use. This area is in close proximity to Pocatello. This travel route is popular with people who prefer dispersed camping areas. Designated motorized trails are found to the north and west of this dirt road. The only travel route connecting these trails is the South Fork of Mink Creek road, forcing ATVs and other trail users to utilize the road to travel from camping areas to trail systems. Mixing ATVs with the full-sized vehicle traffic on this road has been a safety concern.

## Roadless Areas

### *Introduction*

The Roadless Area Conservation Rule, implemented in 2001, does not prohibit motorized trails within Inventoried Roadless Areas. However, designated travel routes have the potential to affect the existing wilderness characteristics and roadless values of Inventoried Roadless Areas, or IRAs. This section will discuss the existing wilderness potential and roadless values of the Caribou's 34 IRAs specific to designated motorized roads and trails. A map of the IRAs is included at the end of this discussion.

### *Analysis Method*

The analysis relies on the findings of the FEIS for the 2003 RFP, Appendix C which discusses the existing wilderness attributes of each IRA and Appendix R which analyzes the roadless characteristics of the each IRA. It is important to note that there is a difference between evaluating effects on the wilderness potential of IRAs and evaluating effects on the roadless characteristics of IRAs. The IRAs' existing wilderness potential will be discussed first, followed by their existing roadless values.

### *Plan Direction*

In preparation for revising its Forest Plan, the Caribou NF completed an IRA re-inventory describing changes in the boundaries and character of the 34 IRAs in the Forest from 1985 to 1996. In 2001, the Forest Service published an Advanced Notice of Proposed Rulemaking (ANPR) describing how to evaluate IRAs for management decisions. During the revision process, the Forest then conducted an Inventoried Roadless Area Re-evaluation using the five principles for evaluating IRAs that were published in the

ANPR. The results from this re-evaluation were incorporated into Alternative 7R of the FEIS for the RFP which subsequently became the 2003 RFP for the Caribou.

In July of 2004, the Forest Service issued an Interim Directive regarding IRA management which reinstated the previous policy that IRA management should be decided at the local level if the Forest has a revised Plan which "has considered the protection and management of inventoried roadless areas" (ID 1920-2004-1; Bosworth Letter, June 7, 2001). As stated, the 2003 Caribou RFP did carefully consider protection and management of all 34 IRAs on the Forest; therefore, the prescription direction in the RFP will be followed regarding access management in IRAs.

The RFP manages the IRAs under a variety of prescriptions. IRAs that rated higher for roadless area values and/or had special features are managed under prescription categories one, two, and three; which have a resource protection emphasis. Over 60 percent of the forest's IRA is managed under the prescription categories one, two, and three. The remaining 40 percent is managed under a variety of prescriptions including forested vegetation and phosphate leasing prescriptions. OMRD ceilings are used to retain the existing setting for most forest IRAs.

## *Wilderness Potential*

As part of revising a forest plan, IRAs are re-evaluated for their wilderness potential. As defined in FSH 1909.12, Chapter Seven, Appendix C of the 2003 RFP evaluates the existing wilderness potential of each IRA by the three criteria of Availability, Capability, and Need. Availability considers other resource or management concerns including forested vegetation, livestock grazing, and gas and mineral potential. Need considers the demand for wilderness and if an area would offer a unique wilderness setting or represent an ecosystem not already represented within the National Wilderness System. The Capability assessment describes to what degree an IRA possesses the six characteristics of wilderness:

- Apparent Naturalness
- Opportunity for Solitude
- Opportunity for Primitive Recreation
- Challenging Experiences
- Special ecological, geological, or cultural features
- Manageability

The Forest's IRAs do not offer much opportunity for solitude, primitive recreation, or challenge due to their size and the fact that the sights and sounds of human development are often evident for the lower valleys. Most of the Caribou IRAs rate low for manageability, which is based on the size of the area and the configuration of an area's boundary. From this process, two areas were recommended for wilderness consideration: a portion of Caribou Mountain IRA and a portion of Mt. Naomi IRA. These areas are managed under a recommended wilderness prescription that protects and retains their existing wilderness characteristics.

## *Roadless Values*

In the past, roadless areas were only considered for their potential as designated wilderness. It is now recognized that roadless areas have significant ecological as well as social values beyond their wilderness consideration. Roadless areas:

- Provide sources of clean drinking water.
- Function as biological strongholds for populations of Threatened and Endangered Species.
- Provide large relatively undisturbed landscapes important for biological diversity and the long-term survival of many species.

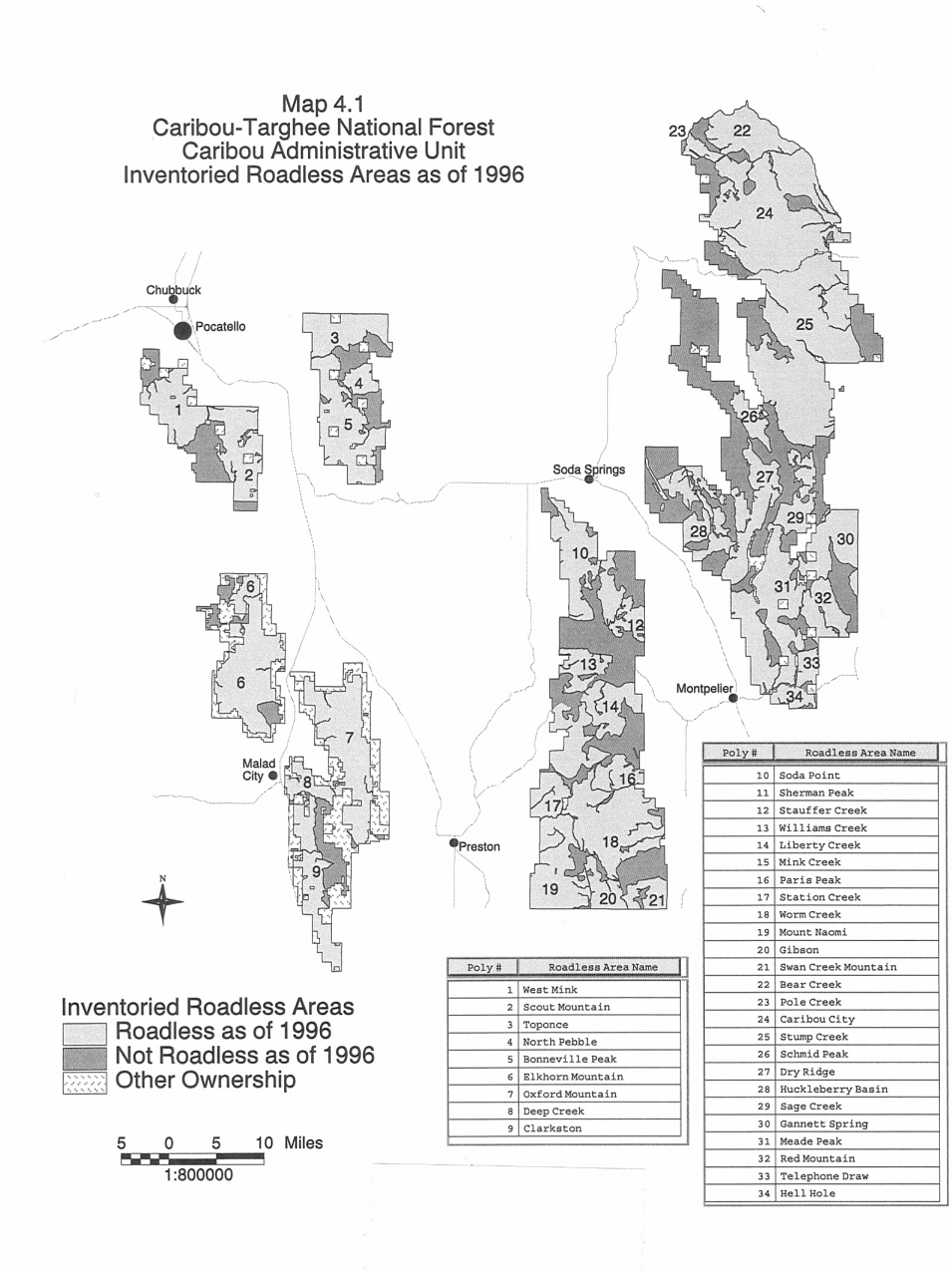
- Provide opportunities for primitive, semi-primitive non-motorized, and motorized recreation.
- Serve as bulwarks against the spread of non-native invasive plant species.
- Offer reference areas for study and research. (RFP FEIS, 3-194,195)

"Roadless Areas" refer to areas that do not have constructed and maintained roads and that are substantially natural. The word "roadless" implies to many people that no roads exist in the areas. Roadless area criteria state that the area does not "…contain improved roads maintained for travel by standard passenger-type vehicles." Many of the forest's IRAs have unimproved or historic roads. Some of these roads are managed as motorized trails.

Each IRA's wilderness potential and roadless area values and the miles of motorized routes within the IRA are summarized in Appendix B of this analysis. In some cases, the improved accuracy of GPS data and GIS mapping is depicting roads within IRAs which were intended to be the road boundary of the IRA. Appendix C and Appendix R of the FEIS for the RFP contain the complete description of the wilderness potential and roadless area characteristics of each IRA on the Caribou portion of the Caribou-Targhee NF.

The Caribou's IRAs offer many unique features and settings, however many have un-constructed roads within their boundaries. In 1996, the Forest completed a re-inventory of the IRAs to capture and map the changes in areas that no longer met roadless criteria as described in the Forest Service Handbook 1909.12. These are areas that had pre-existing constructed roads that were not identified in 1985 as well as adjacent acres that were not identified as "roadless" but met the criteria.

***Map 3.3 - Inventoried Roadless Areas for the Caribou Planning Unit***




| Poly # | Roadless Area Name |
|---|---|
| 1 | West Mink |
| 2 | Scout Mountain |
| 3 | Toponce |
| 4 | North Pebble |
| 5 | Bonneville Peak |
| 6 | Elkhorn Mountain |
| 7 | Oxford Mountain |
| 8 | Deep Creek |
| 9 | Clarkston |

| Poly # | Roadless Area Name |
|---|---|
| 10 | Soda Point |
| 11 | Sherman Peak |
| 12 | Stauffer Creek |
| 13 | Williams Creek |
| 14 | Liberty Creek |
| 15 | Mink Creek |
| 16 | Paris Peak |
| 17 | Station Creek |
| 18 | Worm Creek |
| 19 | Mount Naomi |
| 20 | Gibson |
| 21 | Swan Creek Mountain |
| 22 | Bear Creek |
| 23 | Pole Creek |
| 24 | Caribou City |
| 25 | Stump Creek |
| 26 | Schmid Peak |
| 27 | Dry Ridge |
| 28 | Huckleberry Basin |
| 29 | Sage Creek |
| 30 | Gannett Spring |
| 31 | Meade Peak |
| 32 | Red Mountain |
| 33 | Telephone Draw |
| 34 | Hell Hole |

# Heritage

## *Introduction*

Designating user-created travel routes as system routes has the potential to affect heritage resources. Closing and decommissioning user-created routes and system routes also has the potential to affect heritage resources. The Winschell Dugway is a historic wagon road and future management of this route needs to consider the Winschell Dugway's historic attributes.

## *Analysis Area*

The analysis area for direct, indirect, and cumulative effects is the portions of the Caribou and Cache NFs administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee NF.

## *Analysis Methods*

Before implementing a revised travel plan, areas of high probability within areas proposed for ground disturbance will be surveyed and evaluated by an archaeologist in an effort to locate and record any historic and/or archaeological properties. In the event that significant archaeological and/or historical resource sites are discovered and proposed actions or management will have an adverse effect on the site, mitigation will occur in consultation with the appropriate State Historic Preservation Office and the Shoshone-Bannock Tribes. Survey methods will include pedestrian transects and visual assessments of the projected Area of Potential Effects (APE) for all site-specific undertakings. The percentage of assessment area to be surveyed is dependant upon identified site location probability and actual areas affected by proposed actions. Coverage of un-surveyed areas will be performed in compliance with the National Historic Preservation Act Section 106 Process. 100 percent of high cultural-site-probability areas will be inventoried. Cultural resources property significance, i.e. National Register of Historic Places eligibility, shall be determined by a Forest Service Cultural Resources Specialist in consultation with the SHPO. If significant cultural resource properties fall within the area of potential effects or impact area of site-specific undertakings, mitigation measures will be recommended in order to achieve a "no adverse effect" determination. All inventory reports will be submitted to the SHPO at completion of the NHPA Section 106 process.

## *Background*

Archaeological sources indicate historic and prehistoric use of the Caribou for camping, hunting, fishing, gathering, grazing, mining, harvesting timber, and traveling. Archaeological investigations of known and undiscovered cultural resources may offer insights into the historic and prehistoric land uses and settlement patterns of the area. One of the goals of land managers is to protect and preserve cultural resources within an agency's jurisdiction. In order to fulfill this responsibility, an inventory of these resources is essential. Once site locations are identified, the information can then be provided to planners so that management decisions can be made to avoid or mitigate the affects of proposed project activities.

## *Laws and Regulations*

Cultural resources may be identified as those resources either directly or indirectly related to the material life ways of a cultural group or groups as specified by the Code of Federal Regulations (CFR), 36 CFR 296.3. Cultural resources may refer to sites, areas, buildings, structures, districts, and objects which possess scientific, historic, and social values. The significance of the National Register of Historic Places (NRHP) eligibility of cultural resources is determined by the Forest Archaeologist in consultation with the SHPO.

Cultural resource site locations are not disclosed in this document. In order to protect and preserve cultural resources, detailed descriptions and locations are exempt from disclosure under the Freedom of Information

Act as stated in the Forest Service Policy (FSH 6209.13, section 11.12) in accordance with the Archaeological Resources Protection Act (ARPA) of 1979 (16 USC 170hh) and the National Historic Preservation Act (NHPA) of 1966 (16 USC 470w-3). Such information is disclosed in full to the SHPO in order to facilitate decisions on sites which should be included on the NRHP or which sites should be designated as significant.

Notification and involvement of the Shoshone-Bannock Tribes and Northwest Band of Shoshone concerning Native American cultural resource matters will be carried out as specified by the Code of Federal Regulations 36 CFR 296.7, 36 CFR 800 Section 101(d)(6)(B) and in accordance with Presidential Memorandum concerning Government-to-Government consultation signed April 29,1994.

Cultural resources are non-renewable resources. As such, Federal regulations have been passed which prohibit destruction of significant cultural sites and obligate Federal agencies including the Forest Service to protect and manage cultural resource properties. The Antiquities Act of 1906, the Historic Sites Act of 1935, the National Historic Preservation Act of 1966 with its 1992 Amendments, the Archaeological and Historic Preservation Act of 1974, the Archaeological Resources Protection Act (ARPA) of 1979, and the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 exemplify the long and progressive history of regulations concerning the protection of significant archaeological resources.

## *Management Direction*

The Caribou NF RFP identifies goals and standards towards the management of heritage Resources on the Caribou NF. They include:

- Identifying archaeological and historic properties.
- Managing archaeological and historic resources and maintenance of archaeological and historic resources for educational, scientific, and public benefit.
- Protecting archaeological and historic properties through stabilization and monitoring efforts. Monitor those which may be adversely affected by management decisions.

## *Existing Conditions of Heritage Resources*

Evidence of prehistoric occupation and use are present on the Forest and include significant open sites and rock shelters. Important archaeological evidence including stone circles, hunting blinds, bison kill sites, projectile points, and rock art panels are found in various locations throughout the Forest. Significant historical sites include homesteads, mining sites, Civilian Conservation Corp camps, and wagon trails.

Since the passage of the National Historic Preservation Act in 1966, the Caribou-Targhee NF has been actively identifying, evaluating, and documenting archaeological and historical resource sites throughout the Forest. Currently, approximately five percent of the Forest has undergone archaeological survey.

The 2002 Travel Plan with the 2003 Special Order provides protection to known archaeological and historic resources. Examples of "protection" measures include managing an area as non-motorized or managing travel routes that lead to the resource area as designated non-motorized routes. Terrance Canyon, on the Soda Springs District, is managed as a non-motorized area to protect remnants of the historic Lander Trail. Portions of the Hudspeth Cutoff Trail, on the Westside District, can only be reached by a non-motorized trail.

The Huckleberry Basin area is managed as open to cross-country motorized use during the snow-free season. This management may not protect unknown cultural resources from the adverse impacts of motorized travel.

# Air Quality

## *Introduction*

Some people are concerned with motorized travel on the forest adversely affecting air quality from motor emissions.

## *Analysis Area*

The analysis area for air quality is the portions of the Caribou and Cache National Forests administered by the Westside, Soda Springs, and Montpelier Ranger Districts.

## *Existing Condition*

The Federal Clean Air Act is a legal mandate designed to protect human health and welfare. National Ambient Air Quality Standards (NAAQS) are defined in the Clean Air Act as levels of pollutants above which may result in detrimental effects on human health and welfare.

Class I areas have the highest air quality protection standards while Class II areas have a moderate level of protection. All lands within the Forest have been designated as Class II areas as authorized by the Clean Air Act. The nearest Class I area to the Caribou is the Bridger Wilderness, which is approximately 100 kilometers east of the Forest.

Generally, conditions of excellent air quality exist on the National Forest System lands administered by the Forest. Occasionally air quality is affected adversely from pollutants from adjacent communities such as Pocatello and Soda Springs. These effects occur during winter inversions or when stable air masses develop under stationary high-pressure systems. Management activities on the Forest such as prescribed burning, mining, road construction, and road and trail use produce particulate matter and carbon monoxide emissions. These activities create fugitive dust and smoke that are carried and dispersed by prevailing winds (RFP FEIS 3-244).

# Soils

## *Introduction*

Caribou Travel Plan alternatives have the potential to affect soil resources including travel routes located on sensitive soils.

## *Analysis Area*

The analysis area is the portions of the Caribou and Cache NFs administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee NF.

## *Analysis Methods*

The analysis evaluates the effects of trails and roads on the soil resource related to their season of use and their type of use. It is an assessment of the effects on soils that are sensitive to erosion and soils that have potential mass instability. Soils that are sensitive to erosion and have potential mass instability are given a high, medium, or low soil-risk rating based on the degree roads and trails may affect soil productivity and watershed health. Soil attributes assigned in GIS were used to evaluate soil-risk. The analysis will use the indicator of miles of designated motorized travel routes on soils with high risk to compare impacts by alternative.

## Soil Quality and Forest Service Directives

National laws and regulations concerning the soil resource have been interpreted for project implementation in the Forest Service Manuals, Handbooks, and Regional Guides. All land management activities occurring on National Forest system lands must comply with these laws, regulations, and policies.

## Plan and Handbook Direction

The Revised Forest Plan provides goals and direction for long-term soil productivity. This direction includes limiting detrimental soil disturbances and retaining ground cover. To insure theses goals are leading toward the desired future condition described in the RFP (RFP 3-5), standards and guidelines are also provided (RFP 3-6 and 3-7) along with direction from the Forest Service Soil Management Handbook to maintain or improve long-term soil productivity and hydrologic function.

Designated transportation facilities such as roads and trails are considered "dedicated use" for lands that comprise the road and trail prism. In this context, impacts to soil productivity resulting directly from the presence of system roads and trails are not evaluated for compliance with Region Four Soil Quality standards and guidelines because the affected land is managed for transportation and is not managed for site productivity. Effects to soil productivity from the presence of new trail construction, decommissioning of travel routes and roads, and trails re-routed to reduce resource impacts will be evaluated as acres that may be added to or removed from the productive land base.

The Caribou lies within the Overthrust Mountains. Land types are divided into sections and subsections based on surface geology and soil types. The subsection characteristics are described for each analysis area. Soil conditions are also discussed for each of the activity areas. Soils are mapped and described in the Soil Survey of the Caribou National Forest (USDA-FS 1990). Erosion hazard and mass stability are of particular concern with roads and trails on the landscape. The Caribou is divided into activity areas to assess soil capabilities. A brief description of the activity areas follows.

### Caribou Block

The Caribou Block includes the eastern portion of the Montpelier Ranger District and the Soda Springs Ranger District. This area has the greatest soil erosion potential and potential for mass instability. Landscapes and soils were formed from fluvial and glacial processes and gravitational transfer by landslides. Most landslides and landslide-prone areas are associated with groundwater. In the past, areas were mined for gold in Caribou Basin and Caribou Mountain. Past mining activities have affected many of the streams that drain this area. The landscapes in the southern portion of the Caribou Block have localized mass wasting. Unstable slopes are not as prevalent as in the northern portion. These subsections have phosphoria deposits and contain active phosphate mining.

### Bear River Range Block

The Bear River Range is located on the Montpelier Ranger District and includes the northern portion of the Cache National Forest. The Bear River Range has two subsections: the Bear River Karst Highlands on the east and the Cache Valley Front on the western side of the range. The Bear River Karst Highlands subsection consists of glaciated mountains, canyons, broad basins, meadows, and foothills. These landforms have very few areas that are unstable and soils that have erosion potentials occur along the steep foot slopes. Cache Valley Front subsection comprises the west face of the Bear River Mountain Range consisting of very steep mountain faces formed from limestone, dolomite, and quartzite that have been modified by ground water processes, glaciations, stream deposition, and fault blocking. These landforms have few isolated areas that are unstable.

### ***Pocatello Block***

The Pocatello Block or Westside District contains two subsections: the eastern portion occurs in the Portneuf Uplands subsection and the western portion is in the Basin and Range Transitional Mountains subsection. The Portneuf Uplands subsection is located in the Portneuf River drainage; it consists of high mountains with narrow valleys and steep foothills formed from marine limestone, dolomite, chert, sandstone, mudstone, siltstone, and quartzite. Tuff and ash from the Salt Lake formation have influenced the soils. Basin and range block faulting is also present. The Basin and Range Transitional Mountains subsection is described in the Malad Block.

### ***Malad Block***

The Elkhorn Peak and the Oxford Peak portions of Malad block are located in the Basin and Range Transitional Mountain subsection. These subsections have had volcanic influences and in areas where pumice is being mined are very susceptible to erosion. They have the highest potential for erosion of all areas on the Forest.

## *Mass Stability*

The roads and trails system of the Forest has contributed to landslides and soil creep on areas prone to mass movement. Road cuts and fills often increase steepness and place added burdens on slopes that may add to the risk of mass instability (Meeuwig et al. 1976). Removing the stabilizing force of roots and vegetation from the road prism also contributes to mass wasting from travel routes (Swanston and Dyrness, 1973). Mass movements have been documented on main system roads in the Forest. The Herman-McCoy Creek Road was located and constructed on unstable landforms and several landslides have occurred on the road prism in the past several years. Small cut-slope failures have also occurred in various areas on some forest roads.

## *Sensitive Soils and Soil Risk Rating*

The existing road and trail system that is located on sensitive soils generates surface erosion and sediment. Soil erosion occurs from travel routes because they lack vegetative cover and their running surface is compacted. The amount of erosion generated from travel routes is dependent on the type of surfacing, maintenance level, and design type, amount of use, and season of use. The existing road and trail system also affects mass stability. Routes located on unstable slopes or landslide prone areas increase the potential for mass failures.

An overall area rating of soil risk is based on the mapping of unstable soils and soils with high erosion hazards. These soils are collectively defined as sensitive soils. For this analysis, GIS was used to identify land types that are susceptible to surface erosion and mass movement using the four blocks as analysis areas. The percentage of sensitive soils that occur in within each Sixth code HUC watershed was used to determine the degree of risk. The following table identifies the values as low, moderate, and high for surface erosion and mass movement potential. Travel route densities within the watershed and the unimproved conditions of roads were both considered in determining the watershed risk factor.

*Table 3.2. - Soil Risk Ratings by Acres and Percent of Activity Areas*

| Acres and Percent Sensitive Soil Risk by Analysis Block | | | | | | |
|---|---|---|---|---|---|---|
| **Activity Area** | **High Risk** | | **Moderate Risk** | | **Low Risk** | |
| | **Acres** | **Percent** | **Acres** | **Percent** | **Acres** | **Percent** |
| Caribou Block | 166,160 | 31.3 | 240,766 | 45.3 | 124,095 | 23.4 |
| Bear River Range Block | 0 | 0 | 158,218 | 60.0 | 105,699 | 40.0 |
| Pocatello Block | 0 | 0 | 82,088 | 57.8 | 60,034 | 42.2 |
| Malad Block | 0 | 0 | 198,890 | 68.0 | 63,645 | 32.0 |

The Caribou National Forest Roads Analysis Report contains additional information regarding travel routes within individual watersheds (USDA-FS 2002). The four activity areas were analyzed to determine how many existing miles of designated motorized travel route occurred within areas of high, moderate, and low risk. The following table displays the results for each activity area.

*Table 3.3 - Existing Miles of Designated Motorized Routes on Soils of Low, Moderate and High Soil Risk by Activity Area*

| Roads or Trails Open to Motorized Use | Existing |
|---|---|
| **Pocatello Block** | |
| Low Soil Risk | 125.6 |
| Moderate Soil Risk | 117.9 |
| High Soil Risk | 0.0 |
| **Total Open Road and Trail (Miles)** | **243.5** |
| **Malad Block** | |
| Low Soil Risk | 69.7 |
| Moderate Soil Risk | 171.3 |
| High Soil Risk | 0.0 |
| **Total Open Road and Trail (Miles)** | **241.0** |
| **Bear River Range Block** | |
| Low Soil Risk | 245.1 |
| Moderate Soil Risk | 293.3 |
| High Soil Risk | 0.0 |
| **Total Open Road and Trail (Miles)** | **538.4** |
| **Caribou Block** | |
| Low Soil Risk | 256.7 |
| Moderate Soil Risk | 386.0 |
| High Soil Risk | 195.1 |
| **Total Open Road and Trail (Miles)** | **837.8** |
| **Forest Totals, Open Routes, Soil Risk** | |
| Low Soil Risk | 697.0 |
| Moderate Soil Risk | 969.4 |
| High Soil Risk | 195.1 |
| **Caribou Total Designated Motorized Road and Trail (Miles)** | **1861.5** |

## *Current Condition of Specific Travel Routes*

The Forest currently has approximately 1,011 miles of open motorized roads and 850 miles of trails open to motorized traffic—for a total of 1,861 miles of motorized access. Hydrologic and soils issues are two common concerns with location and design of roads or trails. System travel routes with sediment or

wetland impacts and/or erosion concerns can be improved with proper location, maintenance, or structural improvements (bridges).

The four proposed activities or conditions that create a concern for impacts to the soil resource include:

- New construction.
- Designated travel routes that have degraded to low standard.
- Conversion of a non-system trail to a designated motorized trail.
- Routes on soil types that rated a "high" concern level (based on GIS data).

Specific trails are discussed in more detail below. The travel routes have been identified by the public as routes of concern or the routes are proposed as additions to the transportation system.

## ***Malad Block***

### *Trail #331 Elkhorn Mountain*

This designated motorized trail is a faint single-track trail. Trail #331 has an alignment that is not susceptible to erosion but would require some short segments to be relocated to prevent excessive erosion. Site-specific evaluation of the soils indicates that they are suitable for trail widening and relocation. Opportunities exist for improving the old road prism to further control erosion and make the trail more usable to motorized travel. Some areas adjacent to the trail could benefit from watershed improvement activities. These areas have low ground cover due to livestock activities.

## ***Bear River Block***

### *Non-System Route - Trail Hollow*

This short, user-created connector route is in dry Douglas-fir habitat and is not on a sensitive soil type. No water or riparian crossings were identified. This route connects Forest Road 20436DA and Forest Road 20482.

### *Non-System Route - Mill Fork (Left and Right Forks)*

These existing short, user-created connector routes through forested vegetation are not on sensitive soil types. No water or riparian crossings were observed. These routes connect old road prisms and a system trail. Steep sections could be re-routed to incorporate a switchback which would reduce the grade. The Left Fork route connects Forest Road 20437A with Forest Road 20437B. Right Fork route connects Forest Road 20437A with Trail #2317.

### *Non-System Route - Mill Fork, South Loop*

This existing user-created connector-trail occurs between two road prisms. It connects the Right Fork of Mill Creek with an old road south of Eightmile Campground. This route is relatively gently and is not located on sensitive soil types. No water or riparian crossings were observed. This route connects Forest Road 20437A with Forest Road 20425D.

### *Trail #2345 - Red Pine Ridge*

This is an existing system trail with a user-created re-route on the eastern end. It is not on sensitive soil types and no water or riparian crossings were observed.

### *Non-System Route - Grunder Hollow*

This travel route is an old bermed road prism that leads to a water trough. The trail is located at the bottom of the draw and captures the trough's over-flow for 200 yards. The route is poorly located and relocation would be difficult. This travel route connects Forest Road 20401 and Forest Road 20982.

### *Non-System Route - Mill Hollow to Bartlett*

This short route is an existing, user-created connector-route between Mill Hollow road system and roads in the Camp Bartlett area. This route follows a ridge through forested vegetation and open, rocky flats. It is not on sensitive soil types. No water or riparian crossings were observed. The route connects Forest Road 20966 and Forest Road 20988.

### *Trail #2362 - Midnight Mountain*

This route is a long, user-created trail that follows an old bermed road for part of its length. The old road was used to install cattle troughs and a waterline. It is not on sensitive soil types. No water or riparian crossings were identified for this trail. The route needs reconstruction to improve drainage.

### *Non-System Route - Telegraph Hollow*

This route is a user-created trail connecting Paris Canyon) to Bloomington Canyon. It is not on sensitive soil types. This trail goes through forested and brush vegetation in Telegraph Hollow up to the ridge then down a steep draw to Bloomington Canyon. The southern end of this route is steep. Moving the trail ten feet to either side of the draw would facilitate drainage of summer rains and possible snowmelt. The route connects Forest Road 21088 and Forest Road 20409.

### *Non-System Route - The Sinks area (Right Fork of Williams)*

This is a network of old timber sale roads and short, user-created connector routes. The routes are not on sensitive soil types. Connecting trails are through forested or mountain brush vegetation. No water or riparian crossings were observed. Trail connects Forest Road 21274 and Forest Road 20909.

### *Non-System Route - Bear Hollow*

This is a user-defined route created by full-size vehicles and extended by ATVs. It follows the bottom of Bear Hollow. This route which does not show signs of running water from snow melt or summer rains. It is not on sensitive soils and does not cross water or riparian habitat.

### *Forest Road #20933 - Dry Fork (Mill Canyon)*

This route needs to be relocated to avoid a washed-out boulder field. The route is not on sensitive soils.

### *Trail #2358 - Squirrel Hollow to Main Canyon*

This route is proposed new-construction to replace a piece of an existing system trail. ATVs have access from both sides of the ridge dividing Squirrel Hollow and Main Canyon but a series of rock outcrops and ledges prevent a through-route. A sharp switchback can be avoided on the Main Canyon side. The route is not on sensitive soils and does not cross water or riparian habitat. It was observed that a grade of less than ten percent can be maintained to connect the two routes and avoid the switchback.

### *Trail #2316 - Highline Trail near Horseshoe Basin*

South of Horseshoe Basin, two routes exist. One route is an old logging road and the other route is the designated trail location. They run parallel to each other for approximately 0.4 miles. It is recommended that only one route be maintained. The preferred route is the old road prism with a minor re-route at the north end. In addition, it should be restricted to trail machines only at the tree-line south of the basin (no full sized vehicles).

## ***Caribou Block***

### *Trail #092 Winschell Dugway Trail*

This old wagon trail was a freight route for Caribou City when it was an active gold mining operation in the 1880's. The Winschell Dugway was still used by hunters and forest visitors in up to the 1980's. This route often became impassable to full size vehicles in the spring and late fall when the soil was moist. The soils

in the area have a large amount of clay with a layer of sandy clay loam. Typically, trail conditions worsen with traffic. The trial has been managed as non-motorized for approximately 20 years. The trail is still visible from Morgan Meadows on the south; but, as it progresses northward, it becomes less visible. The soils are mapped as unstable slopes and the erosion hazard is moderately high. The Caribou City Roadless Area has unstable soils on 76 percent of its acres, and 31 percent of the area has soils with a high erosion hazard rating, (Appendix R RFP DEIS 2003). The Winschell Dugway is located with this unit.

### *Trail #20776 and #20149 - Dunns Canyon/Terraces*

This is an existing trail. Portions of the trail occur on sensitive soil types. The "Terraces" portion follows a route constructed by dozers sometime in the 1960s. Terracing projects were common on the forest during the 1950's and 1960's to prevent erosion on steep hillsides. ATVs have been traveling this route. Portions of the route parallel the bottom of Dunns Canyon which contains an intermittent stream. The route climbs up a ridge and then side-slopes to the saddle above Montpelier Creek. The route does not occur within riparian areas. No excessive erosion or gully development was noted on this route.

### ***Non-System Route - Green Mountain***

This is a new connector-trail proposed to connect two road prisms following a brush and aspen ridge. A user-defined route has been established. It is not on sensitive soils and does not cross water or riparian areas. It is recommended that a minor re-route be made at the bottom to avoid a steep pitch otherwise the location follows a rocky ridge. The route connects Forest Road 20342 and Forest Road 2064.

### *Non-System Route - Hawks Roost*

A portion of this existing travel route is user-created by firewood gatherers. This route is located within sensitive soil types. No water or riparian areas are crossed. The firewood route is gentle in grade but needs additional work to improve drainage. A portion of the travel route is within the drainage bottom and needs to be relocated to higher ground. The travel route connects Forest Road 20680 and Forest Road 20684.

### *Left Fork of Georgetown*

This area is mapped for sensitive soils types. Field visits were made to the Right Fork of Georgetown Road (20225), the Left Fork of Georgetown Road (21095), and the Hawks Roost Road (20680). Existing conditions of these roads do not indicate concern for erosion or other soil risks. The Right Fork Road serves as an access to the City of Georgetown's culinary water system and access to patented phosphate in-holdings. The stream is intermittent and is crossed several times by the road. All of the crossings were dry in September. There are drainage problems that cause large pools of water where ruts have formed. The Hawks Roost Road is a little-traveled road that goes to a sheep trough and then becomes the Hawks Roost motorized trail. The road crosses a dry drainage below the spring and has no soil concerns.

# Riparian Areas and Aquatic Resources

## *Introduction*

Travel routes have the potential to affect riparian areas. Designating motorized and non-motorized routes within AIZs and designating travel routes that cross perennial or intermittent streams have the potential to affect watershed condition, water quality, fisheries, and beneficial uses. Impacts could be mitigated in most cases by a combination of route relocation, reducing the number of stream crossings, hardening remaining crossing points, graveling the approaches to water crossings, moving crossings to less sensitive locations, or replacing them with a culvert or a bridge. Indicators for this issue are:

- Miles of designated motorized routes within a watershed (Fifth Code).
- Miles of designated motorized mileage within AIZs of streams.
- The number of times designated motorized routes cross perennial streams.

## Analysis Area

The analysis area for direct, indirect, and cumulative effects consists of the portions of the Caribou and Cache Forests administered by the Malad, Pocatello, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee National Forest.

## Analysis Methods and Data Sources

The analysis uses data from the travel route inventory, final 1998 and draft 2003 lists of Water Quality Limited (303d) Idaho streams, Forest Service GIS data layers, and data from other sources.

This discussion refers to Hydrologic Unit Codes (HUCs), which is a numbered, hierarchical system to catalog watersheds. The analysis uses level Five (HUC-5) watersheds as the scale of this analysis. For analysis of 303(d) streams, the smaller HUC level Six (HUC-6) sub-watersheds were used. Use of the smaller HUC-6s will result in a more localized analysis for these streams. In this project area, the full HUC-5s vary in size between 50 to 200 square miles and the HUC-6s from six to 100 square miles; however, only the portions within the Forest boundary of these watersheds and sub-watersheds are analyzed.

## General Resource Protection

Resource protection requirements for the Forest Service are outlined in 36 CFR 219. Requirements include conservation of soil and water resources, protection of streams, providing special attention to riparian areas and floodplains, and avoiding management practices that are detrimental to water quality such that they affect beneficial uses. Basic protection of these resources is inherent in all alternatives. Protection measures include goals, objectives, standards and guidelines found in the RFP, other project reports and findings, previous monitoring studies, regional guides, other applicable management practices, and site-specific project design.

## State Water Quality Laws and Regulations

The Forest is obligated to comply with State water quality rules and regulations. The Idaho Administrative Procedures Act addresses water quality standards and anti-degradation. The U.S. 9th Circuit Court of Appeals found that this policy obligates the Forest Service to maintain water quality at levels necessary to preserve existing uses. In reaching this decision, they recognized that "water quality" represents a range of conditions and not a single point. The court also dismissed the claim that this policy requires there be no effect to water quality (Idaho Sporting Congress v. Thomas, 97-35339). The true measure of water quality impacts is not based on effects to aquatic features; it is based on maintaining beneficial uses.

## Water Quality Regulatory Framework and Practices

As a part of the State's role in enforcement of the federal Clean Water Act, Idaho Department of Environmental Quality field crews survey conditions of area streams. Data and observations made in these surveys are then reviewed to determine the support of designated and existing biotic, recreational, economic, and aesthetic beneficial uses that should be maintained for waters of the state.

## 303d Streams Listing

Water quality, as identified by the State of Idaho, is adequate to support identified beneficial uses (fishing, swimming, etc.) for most streams on the Forest. Section 303(d) of the Federal Clean Water Act covers the protection of beneficial uses of surface waters. For waters identified as not meeting water quality standards, each state establishes total maximum daily loads (TMDLs) for pollutants at the level necessary to meet water quality standards. A TMDL Implementation Plan and a Water Quality Management Plan are developed to determine actions needed to reduce pollutants. Actions include the implementation of Best Management Practices (BMPs) for activities that could affect water quality.

Streams are scheduled to be reviewed by the state every two years. The table below gives the final list of 303d streams, dated 1998, for streams on the forest. The table also includes extensions in stream lengths from the draft list, dated June 2, 2003. Streams on the Forest governed by the Blackfoot TMDL are all captured in the 1998 list with the same pollutants and are not repeated separately. Streams in the Portneuf TMDL Implementation Plan Part 7a (IDEQ, 2003b) are also listed.

***Table 3.4 - Final 1998 List of Water Quality Limited (303d) Streams (IDEQ, 1998)***

| Stream Name | Location (upper bound to lower bound) | Pollutant | Stream Miles |
|---|---|---|---|
| Angus Creek | Headwaters to Blackfoot River | ***Sediment*** | 8.0 |
| Blackfoot River | Several segments | Sediment, flow alteration, nutrients, organics | 2.5 |
| Boulder Creek | Headwaters to Stump Creek | Unknown | 6.5 |
| Bridge Creek | Source to Grays Lake | Unknown | Unknown |
| Deep Creek | Headwaters to Mouth | Unknown | 14.0 |
| Diamond Creek | Headwaters to Blackfoot River | Sediment | 20.0 |
| Dry Creek | Headwaters to Thomas Fork | Nutrients, sediment | 8.7 |
| Dry Valley Creek | Headwaters to Blackfoot River | Sediment | 11.1 |
| Fivemile Creek | Headwaters to Bear River | Unknown | 11.0 |
| Harrison Creek | Source to Grays Lake | Unknown | Unknown |
| Hawkins Creek | Headwaters to Marsh Creek | Nutrients, sediment | 15.1 |
| Lanes Creek | Headwaters to Blackfoot River | Sediment | 10.4 |
| Maple Creek | Left Fork to Cub River | Bacteria, unknown | 8.1 |
| Maybe Creek | Maybe Canyon waste dump to Dry Valley Creek | Unknown | 2.9 |
| Meadow Creek | Headwaters to North Creek | Metals, sediment | 3.1 |
| North Creek | Unnamed tributary to 3.2 km below Mill Hollow to Ovid Creek | Unknown | 8.1 |
| Sheep Creek | Headwaters to Lanes Creek | Sediment | 7.9 |
| Slug Creek | Headwaters to Blackfoot River | Sediment | 23.6 |
| Snowslide Canyon | Headwaters to Montpelier Creek | Sediment | 5.5 |
| Sugar Creek | Headwaters to Cub River | Nutrients, sediment | ND |
| Weston Creek | Headwaters to Bear River | Nutrients, sediment | 19.6 |
| Williams Creek* | RF Williams Creek to Bear River | Nutrients, sediment | 5.0 |
| Wrights Creek | Headwaters to Daniels Reservoir | Sediment | 11.1 |
| * = No perennial reach on the Forest | | | |

***Table 3.5 - Draft 2003 List of Water Quality Limited (303d) Streams (IDEQ, 2003a)***

| Stream Name | Location (upper bound to lower bound) | Pollutant | Stream Miles |
|---|---|---|---|
| Beaver Dam Creek | No data | Sediment | 5.1 |
| Cabin Creek | No data | Habitat alteration, Sediment | 3.0 |
| Campbell Creek | No data | Habitat alteration, Pathogens, Sediment | 2.9 |
| Chicken Creek | No data | Habitat alteration, Sediment | 6.6 |
| Co-op Creek | No data | Nutrients, Sediment | 3.4 |
| NF Deer Creek | No data | Habitat alteration, Sediment | 3.2 |
| SF Deer Creek | No data | Habitat alteration, Sediment | 11.7 |
| Draney Creek | No data | Habitat alteration, Pathogens, Sediment | 6.9 |
| Eightmile Creek | No data | Habitat alteration, Sediment | 4.4 |
| Fourmile Creek | No data | Habitat alteration, Sediment | 7.6 |
| Georgetown Creek | Right Hand Fork | Unknown | 5.4 |
| Goodheart Creek | No data | Habitat alteration, Sediment | 7.5 |
| Henderson Creek | No data | Habitat alteration, Sediment | 5.0 |
| Indian Mill Creek | No data | Unknown | 4.6 |
| Jenkins Hollow | No data | Habitat alteration, Sediment | 12.6 |
| Liberty Creek | No data | Unknown | 6.0 |
| Little Beaver Creek | No data | Habitat alteration, Sediment | 3.6 |
| Luthi Canyon | No data | Unknown | 4.3 |
| Meadow Creek | No data | Habitat alteration, Sediment | 3.2 |
| Mill Canyon | Upper | Metals, Habitat alteration, Selenium, Sediment | 2.4 |
| Mill Canyon | Lower | Metals, Selenium, Sediment | 1.0 |
| Mill Creek | Middle | Pathogens | 2.0 |
| Montpelier Creek | Source to mouth | Sediment | 32.1 |
| North Creek | Source to mouth | Unknown | 18.0 |
| Paris Creek | Upper | Habitat alteration, Flow alteration, Sediment | 5.5 |
| Pruess Creek | Source to mouth | Habitat alteration, Sediment | 6.1 |
| Rasmussen Creek | No data | Habitat alteration, Sediment | 6.3 |
| Rock Creek | No data | Habitat alteration, Sediment | 3.7 |
| Sheep Creek | No data | Flow alteration, Sediment | 22.6 |
| Skinner Creek | Source to mouth | Nutrients, Sediment | 9.6 |
| Smoky Creek | No data | Habitat alteration, Sediment | 10.8 |
| South Wilson Creek | No data | Habitat alteration, Sediment | 4.7 |
| Steel Canyon | No data | Habitat alteration, Sediment | 0.9 |
| Stump Creek | Source to ID/WY | Unknown | 56.1 |
| Sulphur Canyon | No data | Unknown | 12.2 |
| Trail Creek | Headwaters to Blackfoot River | Sediment | 8.0 |
| Trail Hollow | No data | Habitat alteration, Sediment | 10.7 |
| West Cherry Creek | No data | Habitat alteration, Sediment | 4.5 |
| Whiskey Creek | No data | Habitat alteration, Pathogens, Sediment | 5.2 |
| White Canyon | No data | Habitat alteration, Sediment | 3.2 |
| Worm Creek** | Source to UT/ID | Unknown | 46.9 |
| ** = Delisted in late 1998, relisted in 2003. | | | |

*Table 3.6 - Water Quality Limited Streams in the Portneuf TMDL Implementation Plan.*

| Stream Name | Location (upper bound to lower bound) | Pollutant | Stream Miles |
|---|---|---|---|
| Birch Creek | Headwaters to Marsh Creek | Nutrients, Sediment | unknown |
| Cherry Creek | Headwaters to Birch Creek | Nutrients, Sediment | 7.4 |
| Hawkins Creek | Headwaters to Marsh Creek | Nutrients, Sediment | 15.1 |
| Walker Creek | Headwaters to Marsh Creek | Sediment | 6.1 |

The most frequent named pollutants are sediment and habitat alteration. The presence of excessive nutrient levels, though named as pollutants for some stream designations as a whole, do not appear to be a problem on the Forest, (Forest Service condition surveys).

## Clean Water Act and BMPs

The purpose of the Clean Water Act is to restore and maintain the integrity of the nation's waters. In accordance with the act as amended by the Water Quality Act of 1987, the Forest develops and applies Best Management Practices (BMPs) when constructing roads and trails. The Forest BMPs include a monitoring and feedback system that would apply to any route construction or modification. The Forest Plan directs that BMP and beneficial use monitoring for water quality limited waters (303d) is to be done on an annual basis (RFP 5-14). The implementation of BMPs will prevent or minimize increases in sediment delivery to streams.

### Past BMP Effectiveness

From 1998 to 2004, the Caribou-Targhee National Forest conducted 23 BMP reviews of timber sales and roads. These reviews found that if BMPs were implemented; water quality was protected, soil erosion was controlled, and sediment delivered to streams was minimized.

## Revised Forest Plan Direction

The RFP states that the roads and trails of the forest transportation system that are needed for long-term objectives are maintained in a manner that provides for user safety and minimizes impacts to forest resources. Roads and trails not needed for long-term objectives are stabilized and culverts are removed. The RFP also states that forest roads and trails are managed to maintain or improve watershed condition (RFP pg 3-36).

The Desired Future Condition for Prescription 2.8.3 - Aquatic Influence Zone conditions includes:

- Roads in riparian areas are few and stable.
- Roads exist in riparian areas only where there are no practical alternatives.
- Some road corridors are apparent but roads in sensitive landscapes are few and stable.

Plan standards and guidelines for AIZs include limiting new construction of roads, proper design and maintenance of culverts and stream crossings, and avoiding channel changes on streams or drainages (RFP-3-15). All new and replacement culverts, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species.

## Overview of Current Condition

Riparian/wetland attributes directly influence the quantity and quality of water and aquatic habitat. Riparian/wetland areas are productive but limited on the Forest and receive intense use by both animals and humans. Few riparian areas within southeast Idaho remain in an undisturbed condition. Most have been impacted by human activities such as mining, agriculture, urban expansion, and livestock grazing. Disturbance has been both direct and indirect. Direct disturbances modify the riparian area through mechanical, chemical, or biological means such as grazing and beaver activity. Indirect changes occur

through changes in stream flow regimes which in turn affect the amount and timing of available water for riparian vegetation. In the past, stream channels were re-routed to the edges of meadows and valleys to increase the available land for agriculture. Streams were re-routed to provide water for mining operations. As a result, stream stability was impaired and some riparian areas were depleted by lowered water tables. The result has been an overall departure from potential acreages and overall quality.

## *Travel and Sediment*

One of the main impacts of travel, motorized and non-motorized, over unconsolidated surfaces is to dislodge and loosen soil material making it susceptible to being carried or washed into the drainage network to become sediment. The amount of soil dislodged depends on the mode of travel, type of surface on which the travel occurs, and level of use. Generally speaking, foot travel has the least potential for displacing soil material. As the weight, size, and torque of the travel-mode increases, so does the potential to loosen soils. Concentration of use also increases the potential to displace soil. The correlation between increases in traffic and sediment has been documented in the case of logging roads in the Northwest (Reid, 1984). Routes composed of un-surfaced native material have greater potential to produce sediment than do routes surfaced with gravel and even less occurs from paved surfaces. The more surface area bared and disturbed, the greater the likelihood for the material to become sediment. As a rule, an un-surfaced primitive road would be more likely to produce sediment than a single-track trail. Roads and trails can act as channels that multiply sediment loads to the streams during runoff events. Sediment from roads is often greater than sediment from all other land management activities combined including skidding and yarding in logging operations (Furniss, et al 1991).

The proximity of travel routes to stream channels is important. NRCS in Idaho (NRCS, 2002) advocates 100 feet, non-disturbed buffer between roads and streams to maintain water quality. Roads and trails that have a non-disturbed buffer of vegetation protecting streams are highly effective in controlling sediment (Belt, et al 1992).

Native surfaces and some types of graveled surfaces, such as those covered with road-base material only, are more at risk to shearing and displacement of surface materials if they are traveled on when wet. On the Caribou, these conditions occur during the Fall and Spring when excess moisture is greatest. Transport of sediment to live water is also more likely under these conditions. Travel when soils are unusually dry dislodges material which can be dispersed by the wind to streams. Level-of-use is important because each pass a vehicle makes can dislodge materials from the surface. More vehicles can translate to more material being dislodged and transported.

## *Surface Erosion of Roads and Trails*

Road maintenance practices can affect surface erosion and sedimentation. Small changes in road and trail drainage can result in large changes in erosion and the routing of eroded sediments. The potential for increases in sediment delivered to streams tends to be greatest in silty and non-cohesive soils. Many roads, trails, and foot paths have been created in the bottoms of ephemeral and intermittent drainages. These travel routes cannot be properly drained because they are the drainage path. Upgrading design of these travel routes to Best Management Practices and Forest Standards will reduce impacts to water and riparian areas. These needs are greatest in and near AIZs to minimize erosion and amount of sediment reaching streams.

## *Roads and Pollutants*

Roads and motorized trails can deliver pollutants to stream channels. Chemicals such as surfacing oils, de-icing salts, and herbicides may be applied for maintenance, safety, or noxious weeds. Streams may also become contaminated by material from vehicles including accumulation of small spills, such as crankcase oil, fuel, brake pad lining dust, and hydraulic fluid or from accidental spills of hazardous or harmful

materials being transported. Applied or spilled materials may have access to water bodies depending on drainage systems and runoff patterns.

## Routes and Runoff

Roads and trails by design are smoother and harder surfaces than the land from which they are built. Paving or compaction of surface layer reduces its porosity and permeability which lowers the infiltration capacity. This causes runoff to occur from smaller precipitation or melt events and increases the volume of runoff over natural conditions. For these reasons, roads and trails generate runoff more frequently from rain and snowmelt and also generate greater volumes which then enter the road drainage system. Road ditches can re-route water within and sometimes between watersheds and can form a sub-watershed within the existing natural watershed. The potential for this effect is greatest in AIZs. In areas where roads and trails are in AIZs, these ditch flows can reach streams and can create a substantial change in the hydrologic system.

## Hydrologically Disturbed Area

Roads and trails are hydrologically disturbed areas. The table below shows the existing condition of mileages and disturbed area for designated routes and closed but not fully decommissioned routes on the Forest as a whole. The widths in the table represent conservative but reasonable estimates of the width of hydrologic disturbance for these routes. They are typically wider than the nominal running surfaces themselves to account for cut and fill slopes, turnouts, etc.

***Table 3.7 - Acres of Disturbance from System Routes for Caribou***

| Class of Route | Miles | Width | Acres |
|---|---|---|---|
| Designated non-motorized trail | 585 | 4 | 284 |
| Designated Motorcycle trail | 172 | 4 | 42 |
| Designated ATV trail | 672 | 5 | 407 |
| Route closed | 148 | 5 | 89 |
| Designated Road | 1012 | 16 | 2208 |
| Road closed | 523 | 15 | 951 |
| **Total** | **3112** | | **4022** |

The 4,022 acres of total hydrologic disturbance, which includes closed routes, represents 0.40 percent of the project area. This amount is less than one fifth of the 2.5 percent of watershed in roads that Furniss (1991) reports can affect stream conditions. It is less than two percent of the maximum 30 percent hydrologic disturbance guideline given in the Forest Plan (RFP 3-16). As closed routes recover, the amount of hydrologic disturbance from routes will decrease and the effects will also be reduced. The percent of hydrologic disturbance from routes is therefore not expected to be sufficient to cause widespread degradation of streams or watershed conditions and in general leaves a considerable margin of safety. Where routes are concentrated or conditions more sensitive to disturbance due to erosive soils, or other factors, site-specific impacts to hydrologic and riparian resources can occur. These effects would be minimized by implementation of Best Management Practices and maintaining designated routes to standard.

## Travel Routes and Mass Wasting

Roads and trails can be subject to failure through mass wasting processes. The mechanisms behind road-related mass wasting failures include removing slope support in road and trail cuts, increasing the weight on fill slopes, groundwater saturation of the road/trail prism, intercepting subsurface flow, hill slope drainage rerouting, and initiating debris flows at failed stream crossings. If the failure extends to a stream channel, the initial failure and subsequent surface erosion of the slide will deliver sediment directly to the

channel. Some forest roads and trails have experienced these failures. These system roads and trails were redesigned and/or relocated and occasionally closed to prevent future failures.

## Travel Routes and Channel Stability

Where road prisms are constructed in the flood-prone area of a stream, meanders can be shortened and the flow area for the stream at flood stage can be constricted. Constriction of channel meanders shortens the stream length which necessarily increases the stream gradient. Increased flow can cause increased scouring of the channel bottom, banks, floodplain, and shallow terraces thus increasing the sediment load and potentially triggering a destabilizing channel adjustment.

Travel routes have the potential to capture streamflow. This hazard is great where routes are constructed in valleys of low topography and where cuts and fills remove or alter topographic barriers. When native surfaced routes or road ditches capture streamflow, the lack of vegetative cover or surface hardening can result in sediment being eroded from the affected route. Frequently, the diverted water returns to the channel downstream carrying fine sediment to the channel.

Construction of roads in forested areas near channels can require the removal of the trees that would normally fall into the channel. The large, woody material from these trees can be a major factor in maintaining channel stability. If there are insufficient amounts of other riparian vegetation or coarse rocky material to compensate for the loss of the large woody material, removing these trees can negatively affect the stability of the channel. Two examples of roads displacing the channel location are on parts of Meadow Creek—which is displaced by FR425 and Strawberry Creek—part of which is displaced by State Highway 36. In both cases, these streams have abundant rocky material and the displacement of the channel itself has not caused destabilization of the channel elsewhere though aquatic habitat has been affected.

## Road Location and Riparian Risk

In the 2002 Caribou National Forest Roads Analysis, a major factor in assessing road risk to water quality and riparian resources was the percentage of the road within the AIZ. Roads that have more than half of their length in an AIZ were judged to cause a high risk to water quality and riparian resources. Roads with less than half of their length in the AIZ were assigned as presenting low risk to those resources. Roads that ranked high for overall risk (riparian and wildlife values) and ranked low for need had a high priority for redesign or removal. The section of Eightmile Road (FR425) in Meadow Creek was ranked in the 2002 Caribou Roads Analysis as having a high watershed risk, with more than 50 percent in the AIZ. Roads with overall high risk receive priority for capital improvement. The Meadow Creek road was surfaced with gravel in 1994 with the purpose of reducing sediment delivery to Meadow Creek.

## User-Created Trails and Erosion

User-created travel routes tend to occur on flatter terrain at the bottom of a draw, where they cannot be drained, or perpendicular to the slope, where they can quickly rut and become the path of drainage. Properly designed and maintained system roads and trails have cross-drainage features such as rolling dips and water bars to minimize erosion or sediment transport. User-created roads and trails do not have these features and over time erosion increases. Generally, user-created routes have the most potential to impact the watershed processes, water quality and riparian health. The Forest conducted detailed inventory and assessment of the existing condition for all travel routes which included locating and mapping user-created routes. The “non-designated” user-created routes that were mapped are included in the assessment of cumulative watershed effects.

## Culverts and Bridges

A culvert is often used when a road crosses a stream. If a culvert’s capacity is exceeded or the culvert capacity is reduced by trapped debris or collapse, stream flow can overtop the road fill frequently causing

erosion of the fill and sediment delivery to the stream. More recent culvert installations tend to use culverts with greater diameters placed lower in the channel and at shallower gradients. Larger culvert diameters provide greater flow capacity to avoid overtopping during peak runoff periods, provide for bed load and woody debris transport, reduce velocities, reduce impacts to channel stability immediately below the culvert (lower velocities), and compensate for the slight loss of flow capacity from setting the culvert at a lower elevation and gradient. The overall result of these practices improves fish, amphibian, and aquatic macroinvertebrate passage and reduces the potential for sediment from failure of culverts during floods. Forest staff monitors culverts for blockages during the spring and summer and clears them as needed. Most forest system roads cross streams with the use of a culvert but most designated trails do not have culverts. Designated trails commonly rely on fords; but bridges are becoming more common on motorized trail crossings, due to the increase in motorized trail funding. These bridges are constructed so that there is no obstruction to flow at or below the floodplain.

## *Wetlands and Floodplains*

Travel routes can affect wetlands by direct encroachment or through changes in hydrology. Travel routes can modify both surface and subsurface drainage in and near wetlands causing changes in wetland moisture regimes.

Executive Order 11990 directs Federal agencies to provide leadership and take action to minimize the destruction, loss, degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibility. Most key roads on the Forest were constructed before the issuance of EO 11990 and many have resulted in impacts to wetlands. Relocation and improved design of roads that impact wetlands is a priority on the Forest. An example is the reconstruction of FR409 at Telegraph Flat in the Bear River Range on the Montpelier Ranger District. In 2004, the road was reconstructed in part so that surface and shallow subsurface flow to wetlands on the south side of the road could be restored.

Floodplains are the lowland and relatively flat areas adjoining inland and coastal waters. According to EO 11988, Floodplain Management prohibits federal agencies from funding actions that would modify or encourage construction within the 100 years floodplain unless there is no practical alternative.

## *Channel Dynamics*

Stream channels are dynamic and can respond to changes in the watershed. Changes in profile, pattern, and dimension are frequent responses. Streams transport and deposit large pieces of woody debris, sediment, and fine organic matter, providing physical structure and diverse aquatic habitat in the channel. When travel routes encroach directly on stream channels, these processes can be modified. Wood and sediment can be trapped behind stream crossings, reducing downstream transport and increasing the risk of crossing failure. Road alignment and road fills can isolate floodplains, constrict the channel, constrain channel migration, and simplify riparian and aquatic habitat. In some places, road and trail encroachment can divert streamflows to the opposite bank, resulting in unstable side slopes. Hardening embankments to protect roads can cause changes to the natural pattern of channel migration or energy dissipation.

## *Designated Motorized Travel Route*

The following tables give the existing condition for mileage of designated motorized travel routes by ranger district or district block and by HUC-5 watersheds. A prominent stream name is included to assist the reader with a general reference for the HUC location.

*Table 3.8 - Existing Designated Motorized Routes within Watersheds*

| *Westside District - Malad* | | | |
|---|---|---|---|
| **HUC-5, major streams on Forest** | **HUC-mi$^2$** | **Miles** | **Density** |
| 1601020204 Jenkins Hollow | 5.34 | 6.1 | 1.1 |
| 1601020205 Weston Cr | 24.20 | 26.8 | 1.1 |
| 1601020206 Fivemile Cr | 7.08 | 13.2 | 1.9 |
| 1601020207 Gooseberry Cr | 10.22 | 16.1 | 1.6 |
| 1601020405 Water Canyon (Utah) | 1.53 | 1.4 | 0.9 |
| 1601020408 Henderson Cr | 33.69 | 33.6 | 1.0 |
| 1601020410 Elkhorn Cr | 14.25 | 18.9 | 1.3 |
| 1601020411 Wright Cr | 18.08 | 22.9 | 1.3 |
| 1601020412 Third Cr | 41.38 | 54.2 | 1.3 |
| 1704020807 Mill Cyn | 51.27 | 48.1 | 0.9 |
| **Total** | **207.04** | **241.3** | |
| **Average density** | | | **1.2** |

*Table 3.8 - Existing Designated Motorized Routes within Watersheds*

| *Westside District - Pocatello* | | | |
|---|---|---|---|
| **HUC-5, major streams on Forest** | **HUC-mi$^2$** | **Miles** | **Density** |
| 1704020606 Thirty Day Cr | 0.64 | 0.0 | 0.0 |
| 1704020620 Michaud Cr | 4.73 | 6.1 | 1.3 |
| 1704020621 Midnight Cr | 8.91 | 17.0 | 1.9 |
| 1704020801 Casick Cr | 4.55 | 7.9 | 1.7 |
| 1704020802 Mink Cr | 48.77 | 79.2 | 1.6 |
| 1704020803 Webb Cr, Inman Cr, Sawmill Cr, Jackson Cr | 20.88 | 13.1 | 0.6 |
| 1704020804 Green Cyn, Spider Cr, Upper Rock Cr, Lower Rock Cr, Robber Roost Cr, Harkness Cr | 33.97 | 34.8 | 1.0 |
| 1704020805 Lost Cr | 7.02 | 3.9 | 0.6 |
| 1704020808 East Bob Smith Cr | 5.69 | 5.4 | 0.9 |
| 1704020809 Pebble Cr | 36.79 | 46.6 | 1.3 |
| 1704020811 Toponce Cr, Bear Camp Gulch, Pine Hollow | 35.60 | 29.6 | 0.8 |
| **Total -- Walker Cr, Quinn Cr** | **207.55** | **243.6** | |
| **Average density** | | | **1.2** |

*Table 3.9 - Existing Designated Motorized Routes within Watersheds*

| *Montpelier District - Eastside* | | | |
|---|---|---|---|
| **HUC-5, major streams on Forest** | **HUC-mi$^2$** | **Miles** | **Density** |
| 1601010204 Wood Cyn | 0.43 | 2.0 | 4.7 |
| 1601010205 Pruess Cr, Dry Cr | 27.14 | 28.4 | 1.0 |
| 1601010206 Giraffe Cr | 6.80 | 4.2 | 0.6 |
| 1601020102 Jones Cyn | 3.13 | 1.3 | 0.4 |
| 1601020103 Rattlesnake Cyn | 8.66 | 16.3 | 1.9 |
| 1601020104 Georgetown Cr | 49.44 | 53.6 | 1.1 |
| 1601020105 Montpelier Cr | 47.90 | 73.2 | 1.5 |
| 1601020107 Bear Hollow | 0.75 | 3.0 | 4.0 |
| 1704010507 Crow Cr | 92.27 | 87.9 | 1.0 |
| 1704020712 U. Diamond Cr | 5.11 | 8.8 | 1.7 |
| 1704020713 Slug Cr | 0.23 | 0.2 | 0.9 |
| **Total** | **241.86** | **278.9** | |
| **Average density** | | | **1.2** |

*Table 3.9 - Existing Designated Motorized Routes within Watersheds*

| Montpelier District - Bear River Range | | | |
|---|---|---|---|
| **HUC-5, major streams on Forest** | **HUC-mi$^2$** | **Miles** | **Density** |
| 1601020101 Bailey Cr | 9.80 | 12.4 | 1.3 |
| 1601020102 Eightmile Cr | 30.05 | 49.7 | 1.7 |
| 1601020103 Pearl Cr, Stauffer Cr | 22.39 | 26.3 | 1.2 |
| 1601020106 North Cyn, Mill Cr | 53.31 | 93.8 | 1.8 |
| 1601020108 Paris, Bloomington Cr | 78.20 | 85.6 | 1.1 |
| 1601020109 Fish Haven Cr | 19.08 | 17.9 | 0.9 |
| 1601020202 Oxkiller Cyn | 2.36 | 0.1 | 0.0 |
| 1601020203 Cub River, Deep Cr | 54.84 | 52.6 | 1.0 |
| 1601020206 Worm Cr (Cub R) | 1.95 | 0.0 | 0.0 |
| 1601020209 Mink Cr | 36.20 | 45.5 | 1.3 |
| 1601020211 Main Cyn | 26.50 | 42.1 | 1.6 |
| 1601020212 Nelson Cyn | 3.95 | 11.3 | 2.9 |
| 1601020213 Trout Cr, McPherson | 30.21 | 38.6 | 1.3 |
| 1601020303 Logan R, Beaver Cr | 42.73 | 62.5 | 1.5 |
| **Total** | **411.57** | **538.4** | |
| **Average density** | | | **1.3** |

*Table 3.10 - Existing Designated Motorized Routes within Watersheds*

| Soda Springs District | | | |
|---|---|---|---|
| **HUC-5, major streams on Forest** | **HUC-mi$^2$** | **Miles** | **Density** |
| 1601020101 Wood Cyn | 2.63 | 6.5 | 2.5 |
| 1601020102 Fossil Cyn, Sulphur | 16.21 | 25.4 | 1.6 |
| 1601020103 Rattlesnake Cyn | 0.94 | 2.8 | 3.0 |
| 1601020104 Georgetown Cr | 0.09 | 0.1 | 1.1 |
| 1704010409 (Targhee NF) | 1.46 | 3.6 | 2.5 |
| 1704010410 (Targhee NF) | 0.01 | 0.0 | 0.0 |
| 1704010411 McCoy Cr | 88.12 | 60.6 | 0.7 |
| 1704010500 Salt R | 0.42 | 0.9 | 2.1 |
| 1704010501 Smith Cyn | 26.30 | 25.6 | 1.0 |
| 1704010503 Jensen Cr | 10.24 | 6.5 | 0.6 |
| 1704010507 Pole Cyn | 2.79 | 0.0 | 0.0 |
| 1704010508 Stump Cr, Smoky Cr | 75.93 | 88.6 | 1.2 |
| 1704010509 Tincup Cr | 75.62 | 49.7 | 0.7 |
| 1704010510 Jackknife Cr | 43.94 | 13.4 | 0.3 |
| 1704020505 (Targhee NF) | 0.17 | 0.2 | 1.2 |
| 1704020507 Grays Lake | 27.84 | 27.2 | 1.0 |
| 1704020708 Blackfoot Res | 2.20 | 1.9 | 0.9 |
| 1704020709 Meadow Cr | 0.28 | 0.0 | 0.0 |
| 1704020710 Trail Cr, Wooley Vly | 4.17 | 7.0 | 1.7 |
| 1704020711 Lanes, Angus | 72.99 | 82.4 | 1.1 |
| 1704020712 Diamond Cr | 42.37 | 60.9 | 1.4 |
| 1704020713 Slug Cr, Dry Valley | 65.59 | 95.4 | 1.5 |
| **Total** | **560.31** | **558.7** | |
| **Average density** | | | **1.0** |

## Route Mileages and Stream Crossings in AIZs by HUC-5

Tables below give the existing mileage of designated travel routes that are within the Aquatic Influence Zones (AIZs) for each HUC-5 watershed, by district. For the purposes of this study, all perennial streams were presumed to be fish bearing, so that a 300 feet buffer on each side (600 feet total width) was used. Intermittent streams used a buffer of 75 feet on each side, for a total of 150 feet width, which is greater than the standard AIZ width of 50 feet given in the Forest Plan. Densities within AIZs were found to average about four times more than the densities for the HUC-5 watersheds as a whole. In a few cases, the AIZ densities show high values. The cause is the same as for mileage of watersheds as a whole, which shows that only a small portion (sliver) of the AIZ lies within the analysis area and contains one or more travel routes.

## Route Crossings of Streams by HUC-5

Roads and trails often cross streams. Effects of these stream crossings vary according to stream morphology, geomorphology of banks, and associated valley bottoms and crossing design. A well-designed crossing that takes these factors into account can minimize the impacts. Poorly designed stream crossings can create hydraulic connectivity between streams and roads and trails. User-created crossing points frequently become a rill or gully by which sediment from compacted, un-vegetated trail surfaces is efficiently channeled into streams. Capture of stream flow by roads can lead to loss of stream function. Generally, the greater the number of stream crossings, the greater potential effect to water quality, aquatic habitat, and watershed function. Wider travel routes expose more surface area and present a potentially greater opportunity for sediment to enter the drainage network and reach water. Stream crossings broken down by HUC-5 for each district or portion of a district are also presented.

***Table 3.11 - Designated Motorized Route Miles in AIZs and Route Stream Crossings***

| District | AIZ-mi$^2$ | Miles | Density | Stream Crossings |
|---|---|---|---|---|
| Malad District | 19.40 | 89.7 | 4.6 | 131 |
| Montpelier District | 61.45 | 288.2 | | 317 |
| Pocatello District | 21.36 | 87.3 | | 120 |
| Soda Springs District | 75.77 | 218.1 | | 204 |
| **Total** | **177.98** | **683.3** | | **772** |

***Table 3.12 - Designated Motorized Route Miles in AIZs and Route Stream Crossings***

| *Westside District - Malad* | | | | |
|---|---|---|---|---|
| **HUC-5, major streams on Forest** | **AIZ-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
| 1601020204 Jenkins Hollow, Steel Cyn | 0.39 | 3.9 | 10.0 | 1 |
| 1601020205 Weston Cr, Dry Cyn, Black Cyn | 2.05 | 9.3 | 4.5 | 14 |
| 1601020206 Clifton Cr, Fivemile Cr | 0.63 | 3.9 | 6.2 | 12 |
| 1601020207 Gooseberry Cr, Oxford Cr, Chicken Cr, Michael Cr, Davis Cr | 0.74 | 2.9 | 3.9 | 3 |
| 1601020405 Water Canyon (Utah) | 0.10 | 0.1 | 1.0 | 0 |
| 1601020408 Twomile Cyn, Fourmile Cyn, Henderson Cr, Muddy Cr, Burnett Cyn, Trail Cr | 3.46 | 13.6 | 3.9 | 12 |
| 1601020410 Elkhorn Cr, Bill Morgan Cyn | 1.21 | 7.9 | 6.5 | 8 |
| 1601020411 Wright Cr, Cliff Cyn, Tom Perry Cyn, Indian Mill Cr | 2.19 | 7.6 | 3.5 | 22 |
| 1601020412 Third Cr, Heath Hollow, New Cyn, Dry Cr, Deep Cr, 1$^{st}$, 2$^{nd}$, 3$^{rd}$ Cr | 4.09 | 14.1 | 3.4 | 16 |

| *Westside District - Malad* | | | | |
|---|---|---|---|---|
| **HUC-5, major streams on Forest** | **AIZ-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
| 1704020807 Mill Cr (Birch Cr), SF Hawkins Cr, Potter Cr, Reese Cr, Big Cr, Station Cr, Rowley Cr, North Cyn, Cherry Cr, Aspen Cr | 4.54 | 26.4 | 5.8 | 43 |
| **Total** | **19.40** | **89.7** | | **131** |
| **Average** | | | **4.6** | **13** |

*Table 3.12 - Designated Motorized Route Miles in AIZs and Route Stream Crossings*

| *Westside District - Pocatello* | | | | |
|---|---|---|---|---|
| **HUC-5, major streams on Forest** | **AIZ-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
| 1704020606 Thirty Day Cr | 0.05 | 0.0 | 0.0 | 0 |
| 1704020620 Michaud Cr, Birch Cr | 0.39 | 0.0 | 0.0 | 0 |
| 1704020621 Midnight Cr, Crystal Cr | 0.76 | 5.8 | 7.6 | 13 |
| 1704020801 Cusick Cr, City Cr | 0.41 | 1.6 | 3.9 | 0 |
| 1704020802 Mink Cr, Gibson Jack, Dry Cr, | 5.38 | 27.8 | 5.2 | 26 |
| 1704020803 Webb Cr, Inman Cr, Jackson Cr | 2.41 | 7.5 | 3.1 | 13 |
| 1704020804 Green Cyn, Spider Cr, Upper & Lower Rock Cr, Robbers Roost, Quinn Cr, Harkness Cr, Walker Cr, Bell Marsh, Goodenough Cr, Rowe Cr | 2.95 | 8.8 | 3.0 | 27 |
| 1704020805 Birch Cr (Lost Cr) | 0.49 | 0.7 | 1.4 | 0 |
| 1704020808 East Bob Smith Cr | 0.48 | 2.9 | 6.0 | 2 |
| 1704020809 Pebble Cr | 3.54 | 18.5 | 5.2 | 25 |
| 1704020811 Toponce Cr | 4.50 | 13.7 | 3.0 | 14 |
| **Total** | **21.36** | **87.3** | | **120** |
| **Average** | | | **4.1** | **11** |

*Table 3.13 - Designated Motorized Route Miles in AIZs and Route Steam Crossings*

| *Montpelier District – Eastside* | | | | |
|---|---|---|---|---|
| **HUC-5, major streams on Forest** | **AIZ-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
| 1601010204 Wood Cyn | 0.01 | 0.4 | 40.0 | 0 |
| 1601010205 Pruess Cr, Dry Cr, Beaver Cr | 4.10 | 16.3 | 4.0 | 5 |
| 1601010206 Giraffe Cr | 0.81 | 0.3 | 0.4 | 0 |
| 1601020102 Sulphur Cyn, Jones Cyn | 0.24 | 1.2 | 5.0 | 0 |
| 1601020103 Rattlesnake Cyn | 0.44 | 9.7 | 22.0 | 0 |
| 1601020104 Georgetown Cr, Joes Gap | 3.66 | 25.7 | 7.0 | 21 |
| 1601020105 Montpelier Cr | 6.05 | 36.0 | 6.0 | 35 |
| 1601020107 Bear Hollow | 0.02 | 0.0 | 0.0 | 0 |
| 1704010507 Crow, Rock, Spring, Robinson Cr's | 11.06 | 39.0 | 3.5 | 59 |
| 1704020712 Upper Diamond Cr | 0.66 | 3.7 | 5.6 | 2 |
| 1704020713 Upper Slug Cr | 0.00 | 0.0 | 0.0 | 0 |
| **Total** | **27.05** | **132.3** | | **122** |
| **Average** | | | **4.9** | **11** |

*Table 3.13 - Designated Motorized Route Miles in AIZs and Route Steam Crossing*

| Montpelier District – Bear River Range | | | | |
|---|---|---|---|---|
| **HUC-5, major streams on Forest** | **AIZ-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
| 1601020101 Largilliere, Winchell, Bailey Cr | 1.15 | 2.8 | 2.4 | 2 |
| 1601020102 Eightmile Cr, Wilson Cr, Trail Cr | 3.92 | 18.2 | 4.6 | 43 |
| 1601020103 Pearl Cr, Skinner Cr, Co-op Cr, Beaver Cr, Stauffer Cr, Fern Cr | 2.52 | 3.6 | 1.4 | 7 |
| 1601020106 North Cyn, Emigration Cr, Copenhagen Cr, Mill Cr | 4.02 | 26.1 | 6.5 | 44 |
| 1601020108 Paris Cr, Bloomington Cr, Dry Cyn, St Charles Cr | 6.07 | 31.2 | 5.1 | 29 |
| 1601020109 Fish Haven Cr | 1.35 | 6.2 | 4.6 | 15 |
| 1601020202 Oxkiller Cyn | 0.08 | 0.0 | 0.0 | 0 |
| 1601020203 Cub River, Sugar Cr, Maple Cr, Crooked Cr, Deep Cr | 4.77 | 18.9 | 4.0 | 39 |
| 1601020206 Worm Cr (Cub R) | 0.11 | 0.0 | 0.0 | 0 |
| 1601020209 Mink Cr, Strawberry Cr, Birch Cr | 2.40 | 11.2 | 4.7 | 2 |
| 1601020211 Main Cyn | 1.08 | 12.9 | 11.9 | 0 |
| 1601020212 Nelson Cyn | 0.30 | 0.3 | 1.0 | 0 |
| 1601020213 Trout Cr, Burton Cyn, Dry H, Water H, McPherson Cyn, Hawkins H., Egbert Cyn, Water Cyn, Christensen Cyn | 3.15 | 4.7 | 1.5 | 3 |
| 1601020303 Logan R, Beaver Cr | 3.48 | 19.8 | 5.7 | 11 |
| **Total** | **34.40** | **155.9** | | **195** |
| **Average** | | | **4.5** | **14** |

*Table 3.14 - Designated Motorized Routes in AIZs and Route Stream Crossings*

| Soda Springs District | | | | |
|---|---|---|---|---|
| **HUC-5, major streams on Forest** | **AIZ-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
| 1601020101 Wood Cyn | 0.26 | 2.2 | 8.5 | 1 |
| 1601020102 Fossil Cyn, Sulphur | 1.08 | 10.0 | 9.3 | 5 |
| 1601020103 Rattlesnake Cyn | 0.03 | 0.2 | 6.7 | 0 |
| 1601020104 Georgetown Cr | 0.00 | 0.0 | 0.0 | 0 |
| 1704010409 (SF Bear Cr, Targhee NF) | 0.03 | 0.0 | 0.0 | 0 |
| 1704010410 (Targhee NF) | 0.00 | 0.0 | 0.0 | 0 |
| 1704010411 McCoy Cr | 17.96 | 20.6 | 1.1 | 35 |
| 1704010500 Salt River (WY) | 0.02 | 0.0 | 0.0 | 0 |
| 1704010501 Smith Cyn, Deer Cr, Miller Cr, Limekiln Cr, Salt R | 2.86 | 13.0 | 4.5 | 7 |
| 1704010503 Jensen Cr, Toms Cyn, Water Cr | 1.08 | 1.0 | 0.9 | 1 |
| 1704010507 Pole Cyn, Sage Cr, Deer Cr, Crow Cr, Rock Cr, Spring Cr, Robinson Cr | 0.33 | 0.0 | 0.0 | 0 |
| 1704010508 Stump Cr, White Cyn, Smoky Cr, Horse Cr, Draney Cr, Boulder Cr, Cow Cr, Webster Cyn | 10.36 | 41.9 | 4.0 | 14 |
| 1704010509 Tincup Cr | 11.35 | 26.4 | 2.3 | 23 |
| 1704010510 Jackknife Cr | 9.51 | 10.8 | 1.1 | 14 |
| 1704020505 (Targhee NF) | 0.01 | 0.0 | 0.0 | 0 |
| 1704020507 Grays Lake | 3.20 | 6.8 | 2.1 | 22 |
| 1704020708 Blackfoot Res | 0.09 | 0.4 | 4.4 | 0 |
| 1704020709 Meadow Cr | 0.00 | 0.0 | 0.0 | 0 |
| 1704020710 Trail Cr, Wooley Vly | 0.40 | 4.5 | 11.3 | 2 |

| *Soda Springs District* | | | | |
|---|---|---|---|---|
| **HUC-5, major streams on Forest** | **AIZ-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
| 1704020711 Lanes, Angus | 8.02 | 31.9 | 4.0 | 23 |
| 1704020712 Diamond Cr | 4.59 | 24.4 | 5.3 | 32 |
| 1704020713 Slug Cr, Dry Valley | 4.59 | 24.0 | 5.2 | 25 |
| **Total** | **75.77** | **218.1** | | **204** |
| **Average** | | | **2.9** | **9** |

## *Routes in AIZs of 303(d) Streams*

The following tables give the existing mileage and number of stream crossings for designated travel routes in the Aquatic Influence Zones (AIZs) of 303(d) streams by HUC-6. All streams included on the final 1998 draft 2003 303(d) lists and from the Portneuf TMDL were included. All 303(d) streams were analyzed using a 300 foot buffer. Miles of designated travel routes within the AIZs of 303(d) streams are of greater concern because beneficial uses for these streams are impaired. For streams that have sediment identified as the pollutant, these routes can be contributors of the pollutant causing the degradation.

***Table 3.15 - Designated Motorized Routes in AIZs of 303(d) Streams by District***

| **District** | **AIZ-Area-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
|---|---|---|---|---|
| Malad | 3.25 | 7.6 | 2.34 | 14 |
| Montpelier | 5.34 | 19.83 | 3.71 | 59 |
| Pocatello | 0.52 | 0.9 | 1.73 | 2 |
| Soda Springs | 0.56 | 0.2 | 0.36 | 40 |
| **Total** | **9.67** | **28.53** | | **115** |
| **Average** | **2.42** | **7.13** | **2.03** | **23** |

***Table 3.16 - Designated Motorized Routes in AIZs of 303(d) Streams***

| *Westside District - Malad* | | | | |
|---|---|---|---|---|
| **HUC-6, 303(d) stream(s)** | **AIZ-Area-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
| 160102020402 Jenkins Hollow, Steel Cyn | 0.12 | 0.5 | 4.17 | 1 |
| 160102020502 Trail H., Weston Cr. | 0.02 | 0.2 | 10.00 | 1 |
| 160102020601 Fivemile Creek | 0.09 | 0.7 | 7.78 | 6 |
| 160102040802 Henderson Creek West Cherry Creek | 0.42 | 0.7 | 1.67 | 1 |
| 160102040803 Fourmile Creek | 0.26 | 0.0 | 0.00 | 0 |
| 160102041103 Indian Mill Cr, Wright Cr | 0.82 | 2.6 | 3.17 | 3 |
| 160102041202 Campbell Creek | 0.05 | 0.0 | 0.00 | 0 |
| 160102041203 Deep Creek | 0.00 | 0.0 | 0.00 | 0 |
| 170402080701 Hawkins Creek | 0.23 | 0.9 | 3.91 | 1 |
| 170402080704 Cherry Creek | 1.24 | 2.0 | 1.61 | 1 |
| **Total** | **3.25** | **7.6** | | **14** |
| **Average** | **0.33** | **0.76** | **3.2** | **1.4** |

*Table 3.16 - Designated Motorized Routes in AIZs of 303(d) Streams*

| *Westside District - Pocatello* | | | | |
|---|---|---|---|---|
| **HUC-6, 303(d) stream(s)** | **AIZ-Area-$mi^2$** | **Miles route** | **Density mi/ $mi^2$** | **Stream Crossings** |
| 170402080405 Walker Creek | 0.52 | 0.9 | 1.73 | 2 |

*Table 3.17 - Designated Motorized Routes in AIZs of 303(d) Streams*

| *Montpelier District - Eastside* | | | | |
|---|---|---|---|---|
| **HUC-6, 303(d) stream(s)** | **AIZ-Area-$mi^2$** | **Miles route** | **Density mi/ $mi^2$** | **Stream Crossings** |
| 160101020504 Preuss Cr | 0.81 | 0.6 | 0.74 | 1 |
| 160101020505 Dry Cr | 1.05 | 0.4 | 0.38 | 1 |
| 160102010402 Georgetown Cr | 0.08 | 0.8 | 10.00 | 4 |
| 160102010501 L. Montpelier Cr | 0.70 | 5.4 | 7.71 | 5 |
| 160102010502 U. Montpelier Cr, Little Beaver Cr, Snowslide Cyn, Whiskey Cr | 2.29 | 7.0 | 3.06 | 8 |
| 170401050703 Rock Creek | 0.37 | 0.0 | 0.00 | 0 |
| 170401050706 Beaver Dam Creek | 0.17 | 0.4 | 2.35 | 1 |
| 170401050707 NF & SF Deer Creek | 0.50 | 1.3 | 2.60 | 1 |
| **Total** | **5.97** | **15.90** | | **21** |
| **Average** | **0.98** | **2.39** | **3.2** | **3.4** |

| *Montpelier District – Bear River Range* | | | | |
|---|---|---|---|---|
| **HUC-6, 303(d) stream(s)** | **AIZ-Area-$mi^2$** | **Miles route** | **Density mi/ $mi^2$** | **Stream Crossings** |
| 160102010203 Eightmile Cr, S. Wilson Cr. | 1.74 | 9.1 | 5.23 | 19 |
| 160102010301 Co-op Cr, Skinner Cr | 0.55 | 1.0 | 1.82 | 0 |
| 160102010602 Liberty Cr, Middle Mill Cr | 0.19 | 0.0 | 0.00 | 0 |
| 160102010604 Meadow Creek, North Cr | 0.44 | 3.5 | 7.95 | 6 |
| 160102010805 Upper Paris Creek | 0.09 | 0.5 | 5.56 | 1 |
| 160102020301 Worm Creek (Cub R) | 0.49 | 1.4 | 2.86 | 6 |
| 160102020302 Sugar Creek | 0.45 | 0.0 | 0.00 | 0 |
| 160102020303 Maple Creek | 0.17 | 0.0 | 0.00 | 0 |
| 160102021104 Williams Creek | 0.18 | 1.7 | 9.44 | 6 |
| **Total** | **4.30** | **17.2** | | **38** |
| **Average** | **0.53** | **1.96** | **3.6** | **4.1** |

*Table 3.18 - Designated Motorized Routes in AIZs of 303(d) Streams*

| Soda Springs District | | | | |
|---|---|---|---|---|
| **HUC-6, 303(d) stream(s)** | **AIZ-Area-mi$^2$** | **Miles route** | **Density mi/ mi$^2$** | **Stream Crossings** |
| 160102010202 Sulphur Canyon | 0.32 | 2.1 | 6.56 | 4 |
| 170401050802 Draney Creek, Smoky Creek | 0.83 | 3.7 | 4.46 | 8 |
| 170401050803 L. Stump Cr, White Cyn | 0.41 | 1.0 | 2.44 | 5 |
| 170401050804 Boulder Creek | 0.99 | 0.6 | 0.61 | 2 |
| 170401050805 Upper Stump Creek | 0.66 | 0.0 | 0.00 | 0 |
| 170401050902 Lower Tincup (Luthi) | 0.56 | 0.2 | 0.36 | 0 |
| 170401051001 Lower Jackknife (Cabin) | 0.33 | 0.1 | 0.30 | 1 |
| 170402050703 Bridge Cr, Harrison Cr | 0.39 | 0.6 | 1.54 | 2 |
| 170402071003 Trail Creek | 0.23 | 2.3 | 10.00 | 2 |
| 170402071101 Angus Creek, Blackfoot River, Rasmussen Creek | 1.02 | 3.7 | 3.63 | 1 |
| 170402071102 Dry Valley Cr, Maybe Cr | 0.49 | 3.0 | 6.12 | 3 |
| 170402071103 Sheep Creek | 0.77 | 0.0 | 0.00 | 0 |
| 170402071104 Mill Canyon | 0.20 | 0.3 | 1.50 | 0 |
| 170402071106 Lanes Creek | 0.38 | 2.6 | 6.84 | 4 |
| 170402071201 Lower Diamond Cr | 0.11 | 0.1 | 0.91 | 0 |
| 170402071202 Middle Diamond Cr | 0.63 | 2.5 | 3.97 | 3 |
| 170402071203 Upper Diamond Cr, Goodheart Creek | 0.86 | 4.9 | 5.70 | 3 |
| 170402071303 Lower Slug Creek | 0.22 | 0.1 | 0.45 | 0 |
| 170402071304 Upper Slug Creek | 0.38 | 2.6 | 6.84 | 2 |
| **Total** | **9.78** | **30.4** | | **40** |
| **Average** | **0.51** | **1.98** | **3.6** | **1.6** |

# Fisheries and Aquatic Resources

## *Introduction*

This section of the analysis discusses relevant issues, direction, and existing conditions for fisheries and aquatic resources. Designated motorized travel routes have the potential to affect aquatic and riparian-dependent species, particularly where they encroach upon riparian areas and water.

## *Analysis Area and Methods*

The analysis areas are the portions of the Caribou and Cache National Forests administered by the Caribou-Targhee National Forest. Potential impacts to fish habitat include decreases in riparian vegetation and its benefits to riparian areas and water (shading, large wood delivery, bank stabilization, filtering, and nutrients), increases in erosion, and increases in sediment delivery to water. Indicators used to discuss existing condition and compare alternatives are miles of designated motorized route within riparian areas of fish bearing streams and the number of times snow-free designated motorized routes cross fish bearing streams.

## Existing Fisheries Management Direction

### Revised Caribou Forest Plan

The goal of the RFP is to restore native ecosystems to a healthy, resilient state using a combination of active management activities and natural processes. Management direction is improved to maintain or restore riparian vegetation, channel stability and function, and other aquatic resources. Standards and guidelines are established for riparian and aquatic areas, which provide for the protection of these resources and dependent species. Restoration of ecological systems is a key component of maintaining the viability of native and desired nonnative species. One management emphasis is restoration of native cutthroat trout populations.

### Forest Service Manual

Manual direction includes:

- 2620.45 Each District Ranger has the authority and responsibility to implement management direction and ensure that standards and objectives for wildlife and fish (including endangered, threatened, and sensitive animal and plant species) are met.
- 1640.3 It is Forest Service policy to emphasize the protection, enhancement, and maintenance of habitats for production of wildlife and fish.
- 2670.22 Develop and implement management practices for Sensitive species to ensure that species do not become threatened or endangered because of Forest Service actions. Maintain viable populations of all native and desired nonnative wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands.
- 2670.32 Avoid or minimize impacts to species whose viability has been identified as a concern.
- 2672.1 Sensitive Species Management: Sensitive species or native plant and animal species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing. There must be no impacts to sensitive species without an analysis of the significance or adverse effects on the populations, their habitat, and on viability objectives when making decisions that would significantly reduce sensitive species numbers.

### Interagency Yellowstone Cutthroat Trout Memorandum of Agreement

Conservation goals and objectives have been developed for Yellowstone cutthroat trout in the Memorandum of Agreement for Conservation and Management of Yellowstone Cutthroat Trout among Montana, Idaho, Wyoming, Nevada, Utah, US Forest Service, Yellowstone National Park, and Grand Teton National Park (Anonymous 2000). Although these are general and rather broadly worded, they provide some conservation direction. The agreement has a goal to ensure the persistence of Yellowstone cutthroat trout within its historic range and to manage them to provide adequate numbers and populations. The interagency agreement includes objectives to secure and enhance conservation populations and restore populations.

### Bonneville Cutthroat Trout Interagency Conservation Agreement

The goal of the conservation agreement is to ensure the long-term existence of Bonneville cutthroat trout within its historic range by coordinating conservation efforts among states, tribal governments, federal management agencies, and other involved parties. Conservation actions include enhancing and maintaining habitat, specifically, restoring altered channel/habitat features, and natural hydraulic/sediment regimes.

## *Existing Condition*

The Caribou portion of the Caribou-Targhee National Forest supports a diversity of both native and non-native fish. The fish species on/near the Caribou are listed below with their common names, scientific names, and status. This list is followed by narrative descriptions of each native and some selected non-native fish.

***Table 3.19 - Fish Species List: Native Fish***

| Common Name | Scientific Name | Status |
|---|---|---|
| Yellowstone cutthroat trout | Oncorhynchus clarki bouvieri | ***S, SC-A*** |
| Bonneville cutthroat trout | Oncorhynchus clarki utah | S, SC-A |
| Mountain whitefish | Prosopium williamsoni | |
| Bonneville cisco | Prosopium gemmifer | SC-A |
| Bear Lake whitefish | Prosopium abyssicola | SC-A |
| Bonneville whitefish | Prosopium spilonotus | SC-A |
| Leatherside chub | Lepidomeda copei | SC-C |
| Utah chub | Gila atraria | |
| Mottled sculpin | Cottus bairdi | |
| Piute sculpin | Cottus beldingi | |
| Bear Lake sculpin | Cottus extensus | SC-A |
| Longnose dace | Rhinichthys cataractae | |
| Speckled dace | Rhinichthys osculus | |
| Redside shiner | Richardsonius balteatus | |
| Utah sucker | Catostomus ardens | |
| Bluehead sucker | Catostomus discobolus | |
| Mountain sucker | Catostomus platyrhynchus | |

Status Codes

S: USDA Forest Service Regional Forester Sensitive species designation (Forest Service Manual 2670.5). Those plant and animal species identified by the Regional Forester for which population viability is a concern as evidenced by:

A. Significant current or predicted downward trends in population numbers or density.
B. Significant current or predicted downward trends in habitat capability that would reduce a species existing distribution.

SC: Idaho Fish & Game Species of special concern: native species that are either low in number, limited in distribution, or have suffered significant population reductions due to habitat losses, but is not likely to become threatened in the near future. There are 3 categories:

A. SC-A: Species, which meet one or more of the criteria listed above and for which Idaho presently contains, or formerly constituted, a significant portion of their range (i.e. priority species).
B. SC-C: Species that may be rare in the state but for which there is little information on their population status, distribution, and/or habitat requirements (i.e. undetermined status species).

*Table 3.20 - Fish Species List: Introduced Non-native Fish*

| Common | Scientific Name |
|---|---|
| Rainbow trout | Oncorhynchus mykiss |
| Brown trout | Salmo trutta |
| Brook trout | Salvelinus fontinalis |
| Lake trout | Salvelinus namaycush |
| Channel catfish | Ictalurus punctatus |
| Walleye | Stizostedion vitreum |
| Yellow Perch | Perca flavescens |
| Carp | Cyprinus carpio |
| Brown bullhead | Ictalurus nebulosus |
| Green sunfish | Lepomis cyanellus |
| Bluegill | Lepomis macrochirus |
| Black crappie | Pomoxis nigromaculatus |
| Largemouth bass | Micropterus salmoides |
| Smallmouth bass | Micropterus dolomieui |

### *Yellowstone cutthroat trout (Oncorhynchus clarki bouvieri)*

The U.S. Fish and Wildlife Service was petitioned to list Yellowstone cutthroat trout in August 1998. In February 2001, U.S. Fish and Wildlife Service determined the petition did not provide substantial information to indicate listing may be warranted. In January 2005, a Federal Court asked U.S. Fish and Wildlife Service to re-visit their decision. The Fish and Wildlife re-assessment is pending. Yellowstone cutthroat trout currently retains its status as a Sensitive species on the Regional Foresters Sensitive Species List. The Caribou portion of the Caribou-Targhee National Forest is currently addressing the needs of Yellowstone cutthroat trout by maintaining consistency with its revised Forest Plan and an interagency conservation memorandum of agreement for Yellowstone cutthroat trout prepared and signed in 2000.

Both large-spotted and fine-spotted varieties of Yellowstone cutthroat trout occur on the Forest. The two varieties have been observed inhabiting same streams and, in fact, the same habitat within the stream. While some biologists prefer to split these forms of Yellowstone cutthroat trout when analyzing effects, there has been no genetic, behavioral, or biologic reason to do so to date.

Intensive surveys for Yellowstone cutthroat trout distribution have been conducted on the Caribou-Targhee National Forest since 1996. The subspecies appear to be well distributed throughout the parts of the Forest within the Snake River Basin but populations in various streams or stream segments vary in strength. While some populations are threatened by competition and interbreeding with nonnative, introduced fish species, others appear to be thriving in some streams or stream reaches. Apparently, some populations have been replaced by nonnative, introduced fish species. Distribution surveys of the 55 Sixth Code HUCs within the Caribou half of the Forest that were historically inhabited by Yellowstone cutthroat trout determined 39 Sixth Code HUCs have strong populations, 12 Sixth Code HUCs have depressed populations, and four Sixth Code HUCs have no Yellowstone cutthroat trout present where they have historically occurred.

### *Bonneville cutthroat trout (Oncorhynchus clarki utah)*

U.S. Fish and Wildlife Service received a petition to list Bonneville cutthroat trout as Threatened in February 1998. The agency responded the petition presented substantial information indicating that listing this species may be warranted. They initiated a status review of the subspecies. On October 9, 2001, US Fish and Wildlife Service determined the Bonneville cutthroat trout do not currently warrant listing. The Bonneville cutthroat trout currently retains its status as a Sensitive species listed on the Regional Foresters Sensitive Species list. The Caribou-Targhee National Forest is currently addressing the needs of

Bonneville cutthroat trout by maintaining consistency with the revised Caribou Forest Plan. An interagency conservation agreement for Bonneville cutthroat trout was prepared and signed in 2000.

Intensive surveys for Bonneville cutthroat trout distribution have been conducted on the Caribou-Targhee National Forest since 1998. The subspecies appear to be distributed throughout the southern part of the Forest but populations in various streams or stream segments vary in strength. While some populations are threatened by competition and interbreeding with nonnative, introduced fish species, others appear to be impacted by habitat alterations. Some populations have been completely replaced by nonnative, introduced fish species. Of the 35 Sixth code HUC's expected to support Bonneville cutthroat trout populations, six HUC's had populations that were considered strong, 15 had populations that were considered depressed, and 14 included watersheds where populations were expected but were absent.

Habitat degradation within the range of Bonneville cutthroat trout has fragmented and reduced the complexity of aquatic habitat. Lentsch et al (2000) has identified water development, livestock grazing, timber harvest, road construction, energy development, and mining activities as primary causes of Bonneville cutthroat trout habitat loss.

The Caribou-Targhee Forest Fish Distribution Crew has sampled all Bonneville cutthroat trout streams on the Forest between 2000 and 2001. Habitat has been impacted by land management activities in all of these streams to various degrees. The primary impacts documented were from grazing, dewatering (irrigation), roads and trails (passage barriers, riparian vegetation, and sedimentation), and recreational vehicle use.

### *Mountain whitefish (Prosopium williamsoni)*

Mountain whitefish are widely distributed throughout the western United States and occur in large streams on the Caribou section of the Caribou-Targhee National Forest. They are considered abundant.

### *Leathersides (Lepidomeda copei)*

Little is known about the Leatherside in Idaho. Available information suggests it was never abundant and rarely reported. Prime Leatherside habitat generally occurs at a lower elevation in the watershed than prime cutthroat trout habitat. They have not been observed in high gradient stream reaches.
The natural distribution of Leathersides in Idaho was confined to the upper Snake River and Wood River drainages and the Bonneville Basin. Even though extensive stream sampling has occurred throughout its range, observations of the species have been limited. In 2000, Leathersides were collected in upper Tygee Creek and Tincup Creek on the Caribou portion of the Forest. A historic collection has been documented in Angus Creek.

Leathersides are currently listed as a State of Idaho Species of Special concern for three reasons:

- The current distribution is not well known and may be greatly reduced compared to its original range.
- Little is known about their basic habitat requirements. This makes it difficult to make recommendations concerning management of rehabilitation of waters where this fish occurs.
- Leathersides occur in areas that have and will be impacted by future water development projects (Wilson and Belk 1996).

A Leatherside distribution map was updated in March 2001 for the Caribou portion of the Caribou-Targhee National Forest. There were two Sixth code HUC's with Leathersides present. An additional Sixth Code HUC containing Leatherside chub, Tygee Creek, is located just outside of the Forest boundary. We do not currently know the status of the populations. It is likely they occur elsewhere on the Forest but they have only currently been documented in distribution surveys.

The Idaho Department of Fish & Game and the Forest have been conducting fisheries surveys on the Caribou portion of the Caribou-Targhee National Forest for decades. During this time, there have been extremely limited documented observations of the species. Forest-wide species status is unknown.

## Selected Non-Native Species Descriptions

14 non-native fish species have been introduced to or just downstream of the waters of the Caribou portion of the Caribou-Targhee National Forest. Of those 14 species, three are particularly important to describe because they are valued by some anglers and are considered a threat to some native fish species on the Forest.

### Rainbow trout (Oncorhynchus mykiss)

Rainbow trout have been introduced to the Snake River above Shoshone Falls and the Bear River System. Naturally reproducing populations occur in many streams on the Forest. Idaho Department of Fish & Game still stocks non-native Rainbow trout in some streams on the Forest to cater to some recreational anglers. Current and future rainbow trout releases will primarily be sterile fish. Rainbow trout may interbreed with native cutthroat trout, and rainbow trout compete with cutthroat trout for habitat.

### Brown trout (Salmo trutta)

Successful introductions of Brown trout to Idaho waters began in 1948. The species is now well established in several river systems including the Snake and Bear Rivers. Brown trout use some streams on the Caribou portion of the Forest to spawn. They may prey upon native cutthroat trout and other fish species.

### Brook trout (Salvelinus fontinalis)

Brook trout have been extensively planted in lakes, rivers, and streams in the West including on the Caribou portion of the Caribou-Targhee National Forest. Brook trout compete for habitat with native cutthroat trout and they have completely displaced some cutthroat populations on the Forest. Brook trout also prey upon cutthroat trout juveniles and other native fish.

## Road and Trail Impacts to Fisheries

Roads and trails present a moderate threat to fish and their habitat throughout most of the planning area. Roads and/or trails have frequently been established parallel to streams and often serve as sources of sediment to water bodies. In addition, these roads and trails may affect riparian vegetation—potentially affecting stream temperature, frequency of large instream wood, and available floodplain. These impacts increase stream bank instability and sediment deposits in the stream channels (Furniss et al. 1991), likely affecting cutthroat trout and other aquatic species. Generally, the closer the road or trail is to streams and the less maintenance and surfacing of the road/trail, the more sediment delivery (Furniss et al. 1991). Generally, the wetter the weather during road/trail use, the more sediment delivered to streams from erosion during motorized use. Fine sediment, when delivered to streams, has the potential to affect aquatic habitat. Fine sediment fills the spaces between and covers spawning gravels, decreasing spawning success. Sedimentation can fill pools that would otherwise be valuable rearing and adult habitat, (Kaufman et al. 1983 and Platts 1991).

Recent projects on the Forest have addressed some impacts from roads/trails and off-trail motorized use upon Bonneville and Yellowstone cutthroat trout habitat. These include projects at Sugar, Maple, Clear, McCoy, Emigration, Eightmile, Beaver, Mill, and Preuss Creeks and Blackfoot and Cub Rivers. These projects will continue as the funding is available and by priority. Watershed improvement projects within Yellowstone or Bonneville cutthroat trout strongholds generally have priority for funding.

Watersheds are considered to have high road densities if they have greater than 1.8 miles of road per square mile (USDA Forest Service and USDI Bureau of Land Management 1997). High road densities are more likely to affect watershed drainage patterns and deliver sediment to streams. In addition, one would assume a higher road density would indicate more activities associated with land management and resource use, with the risk of associated impacts to aquatic habitat and biota within the watershed. The table below shows the watersheds with high road density, the primary species at risk in the watershed, their population status, and their associated meta-population.

***Table 3.21 - Watersheds with High Road Densities***

| Watershed(s) | Species at Risk | Population Status | Associated Metapopulation |
|---|---|---|---|
| Mabey Creek | Yellowstone Cutthroat Trout | Depressed | Blackfoot |
| Diamond Creek | Yellowstone Cutthroat Trout | Depressed | Blackfoot |
| Slug Creek | Yellowstone Cutthroat Trout | Extirpated | Blackfoot |
| Crow Creek | Yellowstone Cutthroat Trout | Strong | Palisades/Salt |
| Montpelier Creek | Bonneville Cutthroat Trout | Depressed | Bear River East |
| Eightmile Creek | Bonneville Cutthroat Trout | Depressed | Bear River East |
| Pearl Creek | Bonneville Cutthroat Trout | Depressed | Bear River East |
| Skinner/Coop Creeks | Bonneville Cutthroat Trout | Depressed | Bear River East |
| North Creek | Bonneville Cutthroat Trout | Depressed | Bear River East |
| Emigration Creek | Bonneville Cutthroat Trout | Strong | Bear River East |
| Paris Creek | Bonneville Cutthroat Trout | Depressed | Bear River East |
| Mink Creek | Yellowstone Cutthroat Trout | Depressed | Portneuf/American Falls |

### *Cross-Country Motorized Use during the Snow-Free Season*

Motorized vehicle use that is not confined to road or trail surfaces is difficult to manage and associated impacts to riparian and aquatic habitat are difficult to address due to their potential frequency, magnitude, and reoccurrence. During recent stream surveys, off-trail motorized vehicle impacts to aquatic and riparian habitat have been documented in the Palisades/Salt and Blackfoot Yellowstone cutthroat trout meta-populations and the Bear River Bonneville cutthroat trout meta-populations.

## Threatened, Endangered, and Sensitive Plants _____

### *Introduction*

Currently, there are no Threatened and Endangered species listed for the Caribou portion of the Caribou-Targhee National Forest. There are three plant species on the Caribou that are listed as sensitive for the Intermountain Region.

### *Existing Condition for Sensitive Plants*

This assessment takes into account the habitat and known population areas of the three sensitive plants species.

#### *Starveling Milkvetch (Astragalus jejunus var. jejunus)*

Throughout its range, Starveling milkvetch is found on dry barren ridges, bluffs or river terraces, on shale, tuff, clay, sandstone, and cobblestone. In Idaho, starveling milkvetch occurs on knolls, ridges, and other exposures of raw, loose, sparsely vegetated, and light-colored shale. It seems to be restricted to calcareous

shale having a fine to stone size texture. These bright outcrops stand-out visually from the landscape (ICDC 2004).

#### *Analysis Area for Starveling Milkvetch*

The analysis area for Starveling Milkvetch is on the Montpelier District basically in the area north of Montpelier Reservoir in an area of known and suspected habitat where shale is exposed.

### *Cache Beardtongue (Penstemon compactus)*

Cache Beardtongue is endemic to the northern part of the Bear River Range in Cache County, Utah, and adjacent Franklin County, Idaho. Cache Beardtongue occurs on bedrock slabs, rock outcrops, cliff bands, or gravelly, shallow soil habitats. It occurs on along high elevation ridges and associated summits or upper slopes areas ranging from flat to moderately steep. All populations of Cache Beardtongue in Idaho occur on carbonate substrate, either St. Charles Limestone or Fish Haven Dolomite, between about 8,600 to 9,400 feet elevation. The dry, open sites tend to be dominated by low herb and/or low shrub subalpine plant communities near the fringe of or fingering into Douglas-fir (*Pseudotsuga menziesii*) and limber pine (*Pinus flexilis*) woodlands. Rock and bare soil cover is high (Mancuso 2003).

#### *Analysis area for Cache beardtongue*

The general analysis area is the southern portion of the Bear River Range above 8,600 feet in area of known occurrences.

### *Payson's Bladderpod (Lesquerella paysonii)*

Payson's Bladderpod is largely endemic to the carbonate mountain ranges of west central Wyoming and adjacent Idaho. Two disjunct populations are known from southwestern Montana. In Idaho, it occurs on the ridges and high peaks of the Snake River Range above the escarpment that parallels the Snake River. These populations are contiguous with its known distribution in Wyoming and extend about 12 miles northwest into Idaho from the border. One population is disjunct from its main range in Idaho, occurring 19 miles to the southwest on Caribou Mountain. Some populations are very small, while others cover large areas and contain many thousands of individuals. There is little evidence of threats to viability. Payson's Bladderpod is found on sparsely vegetated ridgelines and at a lesser degree on slopes in openings in sagebrush and forested stands. Elevation ranges are from 6,000 to 9,950 feet with most populations above 8,000 feet (Moseley 1996). Payson's Bladderpod is generally found on Caribou Mountain.

## Wildlife

### *Introduction*

Motorized and non-motorized forest roads and trails have the potential to affect wildlife and their habitat depending on the season of use and the mode of travel. These impacts, discussed in CNF RFP FEIS Appendix D, are displayed at the end of this section and summarized in Chapter 4. The RFP sets Open Motorized Route Density ceilings to enhance wildlife habitat and reduce wildlife disturbance. The direct, indirect, and cumulative impacts of these travel route ceilings were analyzed in the FEIS for the RFP. The current travel plan does not meet OMRDs in some prescription areas. Idaho Fish and Game (IDF&G) is concerned about motorized travel and wildlife disturbance. They would like the Caribou Travel Plan to manage more large areas as non-motorized to reduce wildlife disturbance from motorized travel. The existing roads and trails and their relationship with wildlife disturbance is disclosed in the section. The affected environment for Threatened, Endangered, Sensitive, and Management Indicator Species (MIS), Migratory Birds, and Big Game is also described.

## Analysis Area

The analysis area for direct, indirect, is the southern portion of the Caribou National Forest and the northern portion of the Cache National Forest administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee National Forest. Potential species occurrence and cumulative impacts are based on suitable habitat down to the valley bottom or lower elevation to account for seasonal migration into the forest and neighboring forested habitat for long distance migration of forest carnivores.

## Analysis Method

Wildlife Reports (CNF WWP 2005), survey data, known locations, aerial photos, known habitat types, and field visits have been used to determine the existing condition. The wildlife species of concern for this project are divided into five groups:

- Threatened and Endangered (T&E) Species identified by the U.S. Fish and Wildlife Service (USFWS)
- Sensitive Species identified by the Regional Forester
- Management Indicator Species identified in the Revised Forest Plan
- Migratory Land Birds as required by Executive Order
- Big Game (mule deer and elk).

Information is from the Biological Evaluation (BE) for sensitive species, Biological Assessment (BA) for Threatened or Endangered species, Wildlife Reports, and White Papers. The final BE and BA will be part of the Project Record.

## Forest Plan Direction

The RFP sets OMRD ceilings for many prescription areas to benefit the recreation setting and for wildlife security concerns. OMRD standards range from 0 $mi/mi^2$ to 3.0 $mi/mi^2$. OMRD ceilings were based the existing density of designated travel routes but also included reductions in specific areas due to wildlife or other concerns. The south end of the Bear River Range was given a lower prescribed OMRD due to concerns for mule deer and connectivity to the Wasatch-Cache National Forest to the south (Appendix D-33).

## Existing Condition for Wildlife

The Forest provides a wide variety of diverse habitats for approximately 334 species of terrestrial vertebrate wildlife known or suspected to occur on the forest. Habitats can be broadly classified as forested, rangeland, and riparian cover types. Within these types, reside several wildlife species of management concern. The following are species considered in the analysis and the species to be considered further in the effects analysis.

## Threatened and Endangered Species

Four Threatened and Endangered Species may occur on the Caribou portion of the Caribou-Targhee National Forest (USFWS 2005). They are the Gray wolf, Canada lynx, Bald eagle, and the Yellow-billed cuckoo.

### Gray wolf (Canis lupus)

The Caribou is within the Greater Yellowstone and Central Idaho nonessential experimental population areas; Interstate-15 is the dividing line. There are more than six packs established. Wolves have been documented near the CNF on four occasions since 2000. Currently, no packs are located on the CNF (USFWS et. al. 2005). When deciding to reintroduce wolves into Yellowstone, the USFWS (1994b) response to road closures stated, “Wolves are adaptable to a wide variety of human activities, except for deliberate killing. Experiences in North America indicate that human disturbance, even around active den

sites, is not a significant factor affecting wolf survival or population growth. …at this time, land-use restrictions do not appear necessary for wolf populations to recover in Idaho or Wyoming."

### *Canada lynx (Lynx Canadensis)*

The Montpelier and Soda Springs Ranger Districts in addition to the Wasatch-Cache NF provide "linkage habitat" between "lynx habitat", or Lynx Analyst Units, on the Targhee, Bridger-Teton, and the Ashley NF. The 2003 Revised Caribou Forest Plan Standards and Guidelines were developed to meet the LCAS "Conservation Measures to Address Movement and Dispersal." Lynx have not been identified on the CNF from hair snare or winter track surveys (USDA 2005a) but movement through the forest may have occurred last fall when one lynx moved north out of Utah (KSL TV 2004). Forest roads do not deter migration movement of lynx. Paved two-lane roads and larger highways can alter lynx movement (Ruediger et al. 2000). Because there are no LAUs within the Westside, Soda Springs, or Montpelier Ranger Districts (Caribou Zone) the LCAS conservation measures for lynx habitat (LAUs) would not apply.

### *Bald eagle (Haliaeetus leucocephalus)*

Recovery goals in Idaho have been exceeded in all cases (Sallabanks 2005) for Bald eagles. The Caribou NF provides nesting and winter habitat near large water bodies. Four active nests territories are on the Caribou. These nests were established with the existing motorized road and trail density. All four were productive in 2003. Winter use areas also occur on the Caribou. The Greater Yellowstone Bald Eagle Working Group (1996) stated "Snow machines and all terrain vehicles are especially disturbing, probably due to associated random movement, loud noise and operators are generally exposed" (Walter and Garret 1981).

### *Yellow-billed cuckoo (Coccyzus americanus)*

This bird is found along the Snake River. Occupancy is not expected on the Caribou, as the forest does not contain 50 acres of large cottonwood stands with a willow understory (Trec, Inc 2004). The largest stand of cottonwoods is a very narrow corridor along the Cub River. Smaller stands are found in Tincup Creek and McCoy Creek. Developed campgrounds and dispersed campsites are located in the largest remaining stands of cottonwoods. The existing roads built adjacent to the Cub River, Tincup Creek, and McCoy Creek impacted riparian habitat and may have reduced historic levels of cottonwoods.

## *Sensitive Species*

The Regional Forester identifies Sensitive Species when population viability is a concern. An expected downward trend in population numbers and/or habitat could indicate the need to identify a species as "sensitive." Sensitive Species have been identified for the Caribou and are discussed here. In addition, the Goshawk, Columbian sharp-tailed grouse, and sage-grouse are Management Indicator Species (MIS) for the Revised Forest Plan for the Caribou.

### *Spotted bat (Euderma maculatum)*

Spotted bats depend on rocky outcrops and cliffs for crevice roost locations. The spotted bat will forage over a variety of habitat types feeding primarily on moths. There has been one audio sighting of this bat in southeast Idaho, east of Grays Lake, but the exact location and proximity to the Caribou is not known (Gillies *per. comm.*). Impacts to snags and insects are the same as those listed below for the big-eared bat.

### *Townsend's (Western) big-eared bat (Corynorhinus townsendii)*

The Western bat occupies caves and underground mines on the Forest (Pierson, E. D. et al. 1999). This bat is found in Minnetonka Cave. Bat-gates have been installed at the entrance to Minnetonka and at the entrance to five mine shafts on the Caribou to protect bat habitat (CNF WWP 2005). Snags are potential

bat roosting habitat. Bats forage on insects that use riparian and upland vegetation. Existing roads allow firewood cutting of snags and roads and trails can impact riparian vegetation.

### *Pygmy rabbit (Brachylagus idahoensis)*

Pygmy rabbits are typically found in dense stands of big sagebrush growing in deep, loose sediment. In Idaho, they are closely associated with large stands of tall, dense sagebrush. Roberts (2003, 9) found active burrows on the Curlew National Grasslands and east of Bear Lake. Timothy and Keysor (2005 per. comm.) have not found pygmy rabbits during surveys in suitable habitat and are not aware of pygmy rabbits or suitable habitat on the Caribou. However, existing roads may have reduced suitable sagebrush habitat.

### *North American Wolverine (Gulo gulo)*

Wolverines are found on the Forest (USDA 2002c Wolverine map). Caribou, Preuss, and Bear River Ranges provide suitable habitat. The Westside RD has very limited habitat due to its lower elevations. It is thought that snowmobiling in denning habitat may disrupt wolverines (R. Inman 2004 per. comm.). Forest roads have not deterred migration movement of wolverines (Inman et al. 2004). The Forest is cooperating with the Wildlife Conservation Society on a study of wolverine in the Greater Yellowstone Area to better understand the effects of recreation activities on wolverine populations and habitat (Orme 2005 per. comm.). The study is ongoing and results are not available at this time. RFP guidelines restrict intrusive human disturbance within one mile around known active den sites from March 1 to May 15 (RFP 3-33).

### *Trumpeter swan (Cygnus buccinator)*

Swans nest on marshes, lakes, still water, or rivers with dense aquatic plants and tall emergent vegetation. Swans have been transplanted to the Bear Lake National Wildlife Refuge south of Montpelier. There is no winter or nesting habitat for swans on the Caribou. Road or trail use was not indicated as a reason to list the trumpeter swans as threatened (USFWS 2003a2).

### *Harlequin duck (Histrionicus histrionicus)*

Suitable nesting habitat is characterized by low-gradient stream reaches of approximately ten meters or larger in width, high macro-invertebrate productivity, high canopy coverage, numerous mid-stream loafing sights, and shrubby stream bank vegetation. McCoy Creek is at the southern edge of their range. McCoy Creek was surveyed in 1990 and its habitat assessed as marginally suitable for Harlequin Duck breeding. The construction of the McCoy Creek road my have precluded use of marginal habitat. Dispersed camping along McCoy Creek has caused a loss of ground vegetation in localized areas from soil compaction and trampling.

### *Peregrine falcon (Histrionicus histrionicus)*

Two active nests are located near the forest boundary, south of Grays Lake and north of Alexander Reservoir. The two large water bodies provide waterfowl as prey for the falcon. Both nests were successful in 2002 and 2000 (Sallabanks 2004) with existing road and trial densities and activities. The RFP guideline minimizes human activities and habitat alteration that would adversely affect prey availability within two miles of known nests. Roads have not been identified as adversely affecting peregrine falcons (USFWS 1999c) but roads and trails can impact riparian habitat used by their prey species.

### *Northern goshawk (Accipiter gentilis)*

The RFP lists the Northern goshawk as a Management Indicator Species, or MIS. Goshawks nest in mature dense forest stands on the Caribou (Reynolds, 1992). Northern goshawk management recommendations state, "…in all forest types road densities should be managed at the lowest level possible to minimize disturbance in nest areas, post-fledging family areas, and foraging areas." To clarify this statement, the

Forest Biologist asked Dr. Reynolds if there are any studies which document effect of roads on goshawks. Reynolds was unaware of any studies of this type. Reynolds stated that such a study would be difficult due to the need to isolate roads from other variables that would disturb or effect goshawks. Currently, there are no known published guidelines recommending road density standards in goshawk territories. Known goshawk territories are distributed across the forest. Considering 25 of 29 territories on the Soda Spring and Montpelier Ranger Districts, 2004 surveys found nine territories occupied and eight successful. Three new nests were discovered. The Trail Creek territory, located within one half mile of a high standard gravel road and an archery range, produced two young in 2005. RFP standards and guidelines for Goshawk prohibit new system roads in active nest areas. (USDA 2003b 3-30)).

### *Columbian sharp-tailed grouse (Tympanuchus phasianellus columbianus)*

The RFP lists this species as a Management Indicator Species (or MIS). Nesting habitat occurs at lower elevations on the Caribou. Chokecherry, serviceberry, and aspen provide winter forage. Existing roads and associated use along roads may have reduced additional riparian vegetation or contributed to harm or death due to vehicle collisions.

RFP Grouse Guidelines (sage-grouse and sharp-tailed) (USDA 2003b 3-32) include**:**

- If management activities would impact courtship; limit physical, mechanical, and *audible disturbances* in the breeding complex during the breeding season (March to *[through]* May) within three hours of sunrise and sunset each day.
- Where management actions will disturb nesting grouse, avoid manipulation or alteration of *vegetation* during the nesting period (May to *[through]* June).

### *Greater sage-grouse (Centrocercus urophasianus)*

The RFP lists this species as a Management Indicator Species. The forest provides summer brood rearing habitat for sage grouse and a limited amount of nesting and winter foraging habitat. The sagebrush habitat used during the winter and near leks is at lower elevations on adjacent private land. Leks are areas were one or more male grouse "display" or "dance" to attract female grouse. The majority of the suitable sagebrush habitat on the forest is the same as areas identified and managed as big game winter range. Existing roads and associated use along roads may have reduced additional sagebrush vegetation or caused disturbance to grouse leks or nest sites. Roads can be used as lek sites (Connelly et al. 2000, 970); however, construction of roads, power lines, fences, reservoirs, ranches, farms, and housing developments has resulted in sage grouse habitat loss and fragmentation (Connelly et al. 2000, 974). "Fences, roads, and water developments have further influenced the landscape and increased access into sagebrush habitats." (Connelly et al. 2004, 7-1).

**RFP Guidelines (sage-grouse and sharp-tailed)** (RFP 3-32)**:**

- If management activities would impact courtship; limit physical, mechanical, and *audible disturbances* in the breeding complex during the breeding season (March to May) within three hours of sunrise and sunset each day.
- Where management actions will disturb nesting grouse, avoid manipulation or alteration of *vegetation* during the nesting period (May to *[through]* June). Ten miles should be considered suitable as grouse habitat (CNF RFP 3-32 sage-grouse guideline) and minimize human activities within view of or <0.5 km (0.3 mile) from leks during the early morning and late evening when birds are near or on leks. (Connelly et al. 2000, 974).

### *Great gray owl (Strix nebulosa)*

Great gray owls nest in abandoned raptor nests or the top of broken trees. Existing roads allow firewood cutting of snags which reduces the potential owl nesting habitat (Hayward 1994).

### *Flammulated owl (Otus flammeolus)*
Flammulated owls are found in mature and old forest habitat on the Caribou. Existing roads allow firewood cutting of snags which reduces the potential owl nesting habitat. Snags are discussed in the woodpecker section below.

### *Boreal owl (Aegolius funereus)*
Boreal owls use tree cavities in mature forest. Existing roads allow firewood cutting of snags which reduces the potential owl nesting habitat.

### *Three-toed woodpecker (Picoides tridactylus)*
The three-toed woodpecker nests in large, 12 inch diameter, snags and feeds on bark beetle larvae in recently killed trees. Existing roads allow firewood cutting of snags which reduces potential woodpecker foraging and nesting habitat (Wisdom et al. 2000, 112). Miles of open roads will be used to compare impacts to snags as designated by RFP Guideline, "Woody debris and dead standing snags are available, by permit, within 300 feet of an open motorized road for public firewood gathering unless the area is designated otherwise" (USDA 2003b, 3-46). Each mile of open road represents 72.7 acres of potential firewood gathering. Currently there are 1,011.9 miles of open road and 592,281 acres of forested habitat (52 percent of the Caribou) that are capable of suitable wildlife snags. If all of the open roads were adjacent to forested habitat, firewood cutting is allowed on 73,565 acres, or 12 percent of forested habitat.

### *Columbia Spotted frog (Rana luteiventris)*
Wetland habitat adjacent to springs, seeps, or streams occurs on the Caribou; however, the spotted frog has not been found on the forest. The predicted range of the spotted frog does not include southeast Idaho. *Impacts of roads on amphibians are discussed in the boreal toad section below.*

## *Migratory Birds*
The Idaho Bird Conservation Plan (Ritter 2000) identifies riparian, wetlands not associated with rivers, and sagebrush as high priority habitats for migratory birds. The Coordinated Implementation Plan for Bird Conservation in Idaho (IWJV 2005) was revised and updated to include aspen woodlands as priority habitats (CNF WWP 2005, birds).

- Riparian: Stream bank vegetation is found along perennial streams on the Caribou. Existing roads and associated use along roads may have reduced additional riparian vegetation.
- Wetlands not associated with rivers: Seeps, springs, and small beaver ponds provide habitat on the Caribou. Livestock water troughs and ponds are also available for bird use in the area. Existing roads may have reduced these types of wetlands.
- Sagebrush: Sagebrush is found throughout the Caribou. Existing roads may have reduced additional sagebrush habitat.
- Aspen woodlands: Aspen is found throughout the Forest. Large aspen trees provide potential nesting for cavity-nesting birds.

## *Other Species of Interest*

### *Merriman turkey (Meleagris gallopavo merriami)*
IDF&G released approximately 50 wild turkeys in the early 1990s near Riverdale. Populations are not surveyed; however, IDF&G staff estimate that there are currently over 500 birds. In 2005, birds are

regularly seen in the Mink Creek and Cub River areas of the Bear River Range, usually in large flocks along the roads (Keysor pers. comm.).

### *Western (boreal) toad (Bufo boreas boreas)*

There are several known locations of boreal toads on the forest, including Tincup Creek, McCoy Creek, Pole Creek, South Sage Creek, and Lanes Creek. Roads can impact suitable habitat. Vehicle collisions can decrease amphibians and reptile population and restrict migration (Wisdom et al 2000, 122). Roads are a risk factor and some researchers recommend vehicle use should be restricted to designated roads, trails, and areas (Maxell 2000, 88). The draft monitoring report (USDA 2005) indicated that boreal toad populations on the Targhee portion of the Caribou-Targhee NF have not declined.

### *Northern leopard frog (Rana pipiens)*

The Northern leopard frog has been found on the Caribou in the South Fork of Toponce Creek. The population is located in ponds near an existing open road. The frog has also been sighted in Oneida Narrows and Oneida Reservoir (IDF&G 2005) in addition to other observations in Idaho (Peterson 2002). NatureServe (2005) describes threats to the leopard frog as, "Threats and degree of threat vary greatly across the range. Threats include habitat loss, commercial overexploitation, and, in some areas, probably competition/predation by bullfrogs or other introduced species". In Ontario, Canada, leopard frog population density was negatively affected by vehicular traffic within a radius of 1.5 km (Carr and Fahrig 2001)."

### *Uinta chipmunk (Tamias umbrinus)*

"The population of Uinta chipmunk at Bloomington Lake is one of only four populations known in Idaho. In Idaho, the chipmunk is usually found in semi-open forest stands of rugged, mountainous areas. Larrison and Johnson (1981) state that the species is common at Bloomington Lake; where it is easily observed. Uinta chipmunk is an Idaho Department of Fish and Game Species of Special Concern, which includes species which are either low in numbers, limited in distribution, or have suffered significant habitat losses (Moseley and Groves 1990). Uinta chipmunk is demonstrably secure, though it may be quite rare in parts of its range. Home ranges are generally small, from one-half to ten acres (NatureServe 2005).

### *Big Game (Mule Deer and Elk)*

The Caribou contains summer and fall foraging habitat for mule deer and elk with a lesser amount of winter range. The RPF guideline related to the roads and trails states (RFP, 3-31), "Where summer or fall habitat conditions, including security areas, are identified as a factor in not meeting State population objectives, work with State wildlife management agencies to address the issue." Security is an area of cover (vegetative or topographic) over one-half mile from an open motorized route and over 250 acres.

Summer habitat effectiveness is defined as the presence of available habitat that is usable by elk from late green-up to hunting season (Christensen, *et al*, 1993). Factors that influence summer habitat effectiveness include roads, special features such as wet sites, riparian areas, movement corridors, cover, domestic livestock grazing, and land ownership patterns. Roads have been identified as the most significant consideration for elk summer range. During hunting season, vulnerability results from a complex relationship between access, cover, topography, hunter density, type of season, and weather. The measure of this factor is the level of compatibility between the Forest Service and State management plans, such as number of bulls per hundred cows (Christensen, *et al*, 1993) (RFP 3-235).

The Forest Plan has identified approximately 18 percent of the Caribou as winter range for big game. These areas were determined from big game flight information gathered by IDF&G (RFP 3-235). Some existing roads provide corridors for snowmobile use and human disturbance during winter months.

Elk are distributed across Idaho and are classified as habitat generalists. Elk populations can be influenced by human harvest. Because harvest is highly influenced by access to and on public lands, the most critical habitat factor facing managers is the use of roads (Kuck and Compton, 1999). Overall, elk populations statewide are near all time highs and objectives are generally being met statewide for total cows, bulls, and adult bulls; however, some zones are not meeting these objectives. The IDF&G Plan objectives for elk include various bull to cow ratios. Areas on the Caribou are generally meeting or exceeding these objectives (RFP FEIS 3-238, Table 3.72).

Mule deer are the most abundant and widely distributed big game animal in Idaho. Winter range is a critical component of mule deer habitat. Mule deer are susceptible to high mortality during periods of prolonged deep snow and low temperatures. Mule deer populations have declined since the 1960s statewide. Mule deer are adapted to transitional, seral habitats which are maintained by periodic wildfire. Due to wildfire suppression, wildfire is not occurring at historic levels and these habitats have declined. Generally, annual mortality is due to predation, winterkill, accidents, hunting, weather, and possible competition with elk and disease (Kuck and Compton, 1999) (RFP FEIS 3-235).

Human disturbance on big game winter range can cause elk and deer to flee, increasing their energy expenditure and decreasing their chance of survival. Olliff et al. (1999, 23) stated, "Aune (1981) also reported that snowmobile activity in YNP resulted in average elk flight distances of 33.8 m, compared to average flight distances of 53.5 m in response to skiers." Likewise Canfield et a. (1999, 7) stated, "…snowmobiles are less disturbing than cross-country skiers." Freddy (1986a) and Freddy et al. (1986) found that responses by mule deer to persons afoot, when compared to snowmobiles, were longer in duration, more often involved running, and involved greater energy costs. … Parker et al. (1984:484) observed, "Flight distances decline from early to late winter as the animals become habituated and as body energy reserves are depleted. Greater flight distances occur in response to skiers or individuals on foot than to snowmobiles, suggesting that the most detrimental disturbances to the wintering animal is that which is unanticipated." "Restricting recreational use of spring ranges that are important for assuring recovery from winter weight loss [is also important]. During summer, the biological focus for ungulates includes restoring the winter-depleted body condition and accumulating new fat reserves." Olliff et al (1999, 23) also quotes, "During winter in Rocky Mountain National Park, elk were relatively undisturbed by visitor activities occurring on roads, but they exhibited longer flight distances from an approaching person than from an approaching vehicle" (Shultz and Bailey 1978). Ward (1973) reported that elk are easily conditioned to repeated patterns of human activity, but tend to be disturbed by deviations from normal patterns.

During the Forest Planning process, IDF&G identified the Malad and Portneuf Ranges and the south end of the Bear River Range as areas of concern for mule deer. The Diamond Creek area was identified as an area of concern for elk. (RFP FEIS 4-233).

Reducing OHV travel improves mule deer and elk populations (reproductive success) by increasing security and foraging opportunities, decreasing vulnerability to hunting and poaching, and decreasing energy expenditure in the winter (IDF&G 2005e). Road density and distance from roads and motorized trails influence big game hunting vulnerability. Currently, 15 prescription areas are over the RFP OMRD ceilings. Big game hunting vulnerability is expected to increase with open motorized route densities. Big game hunting vulnerability is expected to decrease in large areas, over 1,000 acres, that are ½ mile from a designated motorized route. Currently 252,585 acres are in non-motorized areas over 1,000 acres in size.

*Table 3.22 - Prescription Areas that Exceed Plan OMRD Ceilings*

| No. | Rx Area Name | General Location | NCF RFP Prescription | OMRD | Over |
|---|---|---|---|---|---|
| 01 | Slate Mtn | south of Pocatello | (Semi-primitive Recreation Rx) | 1.5 | 0.1 |
| 02 | Indian Creek | south of Pocatello | (Semi-primitive Recreation Rx) | 1.0 | 0.4 |
| 03 | Elk Meadow | south of Pocatello | (Semi-primitive Recreation Rx) | 2.0 | 0.3 |
| 04 | Crystal area | south of Pocatello | (Semi-primitive Recreation Rx) | 2.0 | 0.5 |
| 05 | Box Canyon | south of Pocatello | (Forest Vegetation Management Rx) | 2.0 | 0.3 |
| 06 | Pebble | east of Pocatello | (Range Vegetation Management Rx) | 1.5 | 0.1 |
| 07* | First Creek | northeast of Malad | (Winter Range Rx) | 1.5 | - |
| 08 | Clarkston | southeast of Malad | (Winter Range – Critical Rx) | 0.5 | 0.1 |
| 09 | Soda Point | north Bear River Range | (Winter Range – Critical Rx) | 1.5 | 0.1 |
| 10 | McPherson | north Bear River Range | (Winter Range – Critical Rx) | 1.5 | 0.1 |
| 11* | Skinner Creek | southeast of Soda Springs | (Forest Vegetation Management Rx) | 2.0 | - |
| 12 | Worm Creek | south Bear River Range | (Semi-primitive Recreation Rx) | 0.5 | 0.1 |
| 13* | Red Pine | south Bear River Range | (Forest Vegetation Management Rx) | 1.5 | - |
| 14 | Pole Creek | northwest of McCoy Creek | (Range Vegetation Management Rx) | 2.0 | 0.2 |
| 15 | Bear Creek | north of McCoy Creek | (Non-motorized Rec. & Wildlife Security Rx) | 0.0 | 0.2 |
| 16 | Red Mountain | west of Geneva | (Non-motorized Rec. & Wildlife Security Rx) | 1.0 | 0.9 |
| 17 | Home Canyon | northeast of Montpelier | (Forest Vegetation Management Rx) | 2.0 | 0.8 |
| 18 | Hell Hole | east of Montpelier | (Range Vegetation Management Rx) | 2.0 | 0.7 |

* Prescriptions 7, 11, & 13 do not meet OMRD ceilings under some alternatives, so they are also listed.

# Economic Environment

## *Introduction*

Public comments included concerns that any change or lack of change in travel management will adversely affect local economies and businesses that rely on local recreation opportunities.

## *Analysis Area*

The analysis area is the Caribou NF Zone of Influence which is the same scale used for the FEIS of the RFP. This zone includes eight counties in Idaho: Bannock, Bear Lake, Bingham, Bonneville, Caribou, Franklin, Oneida and Power; and Lincoln County, Wyoming. Rich and Box Elder Counties in Utah are not included due to the limited acres of the Forest that occur in Utah.

## *Analysis Method*

Initial findings and existing condition are taken from the FEIS for the RFP. Similar economic analyses for recreation and access were considered (North Belts Travel Plan DEIS, Helena NF). Findings were also

based on Forest Service research on estimating the economic impacts of recreation response to resource management decisions (GTR SE-91, Southern Research Station, English et al.).

## *Existing Condition*

Counties within the "zone of influence" of the Caribou have some characteristics in common including an average of 40 percent of the county's land-base lies in federal ownership. The largest portions of the Caribou are within Bonneville and Caribou Counties. It is likely that these counties would be the most affected by potential changes in use and access. Each county's economic relationship to the forest is summarized below:

- The City of Pocatello lies within the boundaries of Bannock County. This county is considered "urban" and serves as a center for health care, retail, and commercial concerns. The forest provides recreation, clean water, and phosphate to supply local processing facilities.
- Bear Lake County's employment base includes wood products, light manufacturing, agriculture, and construction. Seasonal homeowners and retirees are attracted to the scenery of Bear Lake and the forest background. The forest provides timber resources for the local mill, firewood, and recreation. St. Charles Canyon and Minnetonka Cave draw summer tourists.
- Bingham County contains no forest system lands but it lies in close proximity to the Forest. Major employment is agriculture, wood products, food-processing, education, and health services. The forest provides recreation and hunting opportunities.
- Bonneville County is considered "urban" with the City of Idaho Falls. Employment is diverse but dominated by the Idaho National Laboratory (INL). The Caribou-Targhee NF provides recreation year-round.
- Caribou County relies on the phosphate industry for employment but also supports a small but stable agricultural sector. The forest provides timber resources, livestock forage, and recreation.
- Franklin County employment includes agriculture, manufacturing, education, and health care. The Forest provides recreation, hunting, and snowmobile opportunities that draw Utah residents. Livestock grazing, timber, and firewood are also important products from the Forest.
- Oneida County employment includes agriculture, pumice mining, and education. Some people live in Malad and work as far away as Ogden, Utah; this has created local construction activity. The forest provides livestock grazing, hunting, and recreation.
- Power County employment includes agriculture, phosphate and food processing, trade, and services. The Forest provides livestock grazing, recreation, and a phosphate supply to the local processing facilities.
- Lincoln County's major employers are agriculture, mining/oil, and gas facilities. This part of Wyoming is attractive to retirees due to low property taxes and no income tax. The forest provides recreation along with phosphate mining (2003 RFP FEIS, Economics).

While some of the "zone of influence" counties rely somewhat on forest products, recreation opportunities are also important for economic benefits. Some "zone of influence" businesses rely on people buying groceries, gas, equipment, and supplies as part of their motorized, mechanized and non-motorized forest activities.

# Roads

## *Introduction*

Transportation facilities provide important access to the Forest for a variety of uses, including recreation, timber harvest, livestock grazing, and mining. The Caribou Travel Plan alternatives will affect future access for forest management. This section discusses the existing condition for roads and the forest road system.

## *Analysis Method*

The analysis method used will compare the existing designated road systems with findings from the Forest-wide Roads Analysis and the Travel Plan Revision Roads Analysis. Access for mineral activities, including phosphate mining, is discussed at the end of this section.

## *Analysis Area*

The analysis areas are portions of the Caribou and Cache National Forest administered by the Westside, Soda Springs, and Montpelier Districts of the Caribou-Targhee National Forest.

## *Road Development History*

Historically, roads were developed to provide access for local ranchers, miners, and loggers. Many of these roads were once trails that facilitated forest use during the westward migration of the mid to late 1800's. Many settlers passed through the area on their way to California and the Pacific Northwest. Towns sprang up along major routes and became trade centers for the pioneers. Some settlers moved on to other areas while some remained and turned to ranching, farming, logging, and mining. Many worked in the railroad transportation industry.

Through road construction public access has improved, local population pressure has increased, and additional roads have been pioneered for hunting, firewood gathering, and other recreational activities. More recently, timber and mineral interests have required new and/or improved access. Over time, an extensive transportation system has evolved.

## *Plan Direction*

The RFP standards and guidelines that apply to roads include:

- Roads analysis shall be used to inform road management decisions including reconstruction or obliteration of roads
- Road construction, reconstruction, and maintenance standards and criteria shall be guided by roads analysis and documented through the use of road management objectives
- For roads scheduled for decommissioning, the site-specific analysis shall disclose and analyze effects of closure methods (RFP pg. 3-37).

RFP direction for trails is discussed under the Recreation section of this chapter.

## *Current Forest Transportation System*

Transportation facilities, such as roads, bridges, and culverts, provide important access to the Forest. Access is needed for a variety of uses including recreation, timber harvest, livestock grazing, and mining. The current system is a combination of planned and unplanned roads. Most roads on the Forest were originally constructed for commercial access including grazing, timber, and mineral extraction. The majority of planned roads have been located, designed, and constructed to an approved standard. The main arterial and collector routes, as well as some of the local routes, fall into this category and are the backbone of the transportation system.

Arterial and collector routes are generally higher standard roads and provide primary access to the forest. Local roads also provide important access to the Forest and their design standards depend upon the intended use. Single-purpose logging and mineral access roads are included in this planned category since their location and standards have been approved prior to construction. Most unplanned routes are lower standard two-track roads that forest-users have pioneered. Typically, these roads were not constructed to a standard and were located based on topography, vegetation, or forest-user convenience. As funding allows, these poorly located and unplanned roads are being closed, relocated, or reconstructed to reduce environmental impacts through ongoing timber management activities. For example, opportunities to relocate roads out of riparian areas, redesign roads to reduce steep grades, improve drainage by adding culverts or dips, and reduce surface erosion with gravel surfacing are accomplished through timber sale projects.

During the analysis for the 1985 Forest Plan, the transportation inventory, particularly roads, was updated. Many miles of non-system roads were added to the classified system in order to track these roads and manage the system. To comply with the 1985 Forest Plan direction of no net increase in open road densities, most newly constructed single-purpose roads for timber that provided new access were closed after management activities were completed. The inventoried road system on the Caribou, including the Curlew Grasslands, stayed in the range of 1,800 miles with approximately 700 miles managed as closed.

## *Roads Analysis Process*

In January 2001, the Chief of the Forest Service approved a new road management policy requiring that all road management activities, including construction, reconstruction, or obliteration must be preceded by a roads analysis that identifies need for a road and emphasizes a minimum road system. In 2002, the Forest-wide Roads Analysis was completed for the Caribou. It evaluated the need for and the environmental impacts of "key forest roads." These "key roads," as defined in the roads analysis process, were in most cases the higher standard roads that are maintained for low clearance (passenger car) vehicles. Smaller scaled Roads Analyses have been performed in recent years to identify project level road management opportunities. As part of the Caribou Travel Plan revision, a second Travel Plan Roads Analysis was completed on all classified and unclassified roads on the forest. This analysis considers the need for these roads and weighs those needs against the environmental effects. The analysis makes recommendations for managing these roads.

For the 2003 Revised Forest Plan and the 2002 Forest-wide Roads Analysis, the transportation system, including the road inventory, was captured on a GIS layer using existing maps of inventoried system roads and trails. This was adequate for developing programmatic direction in the Revised Forest Plan and for performing the Forest-wide Roads Analysis as it dealt with the "key" higher standard (passenger car) system roads. Recommendations were developed for these higher standard roads and strategies were developed for analyzing and managing the remainder of the road system. The analysis validated the need for these key roads as the backbone of the forest transportation system. It also stated that, overall, the balance of the transportation system was meeting the basic access needs of the forest but that additional, mostly short-term access would be needed for managing the suitable timber base and for mineral exploration and development. Further information regarding the existing road system and the strategies for managing the existing road system can be found in the 2002 Forest-wide Roads Analysis.

## *Updated Transportation Inventory*

For the 2005 Revised Caribou Travel Plan and the accompanying 2005 Travel Plan Roads Analysis, an updated and more detailed inventory of all travel routes was developed. This inventory started with the GIS travel layer used for the 2003 Revised Forest Plan and 2002 Forest-wide Roads Analysis. This layer was then superimposed over 1999 aerial photos (digital orthophotoquads). Roads and trails were then

moved, added, or deleted, as necessary, to reflect the actual locations and conditions on the ground. GPS data collected in the field was also incorporated. With improved mapping, the miles of roads and trails changed from the mileages used in the 2003 Revised Forest Plan and 2002 Forest-wide Roads Analysis.

The transportation layer for the No Action Alternative was developed using this updated GIS transportation layer and the interim travel plan direction of the RFP. This interim direction incorporated the existing travel plan direction in areas that were previously closed to cross-country motorized travel. These areas managed motorized travel on designated routes. In the forest areas that were previously open to cross-country motorized travel, the direction was to allow motorized travel on any road or trail that was shown on the 2002 Caribou travel map. Based on this direction, the total miles of open road were estimated at 1,012 miles and the total miles of closed roads were estimated at 523 miles.

## *Road Operation and Maintenance*

The forest performs road maintenance on the forest road system as funding allows. On the combined Caribou-Targhee NF, it is estimated that only 21 percent of the road system receives some annual maintenance. Higher standard "passenger car" roads receive more maintenance than lower standard roads. Priorities are based on environmental concerns or as needed to implement forest projects. The forest cooperates with local counties to perform maintenance or improvements on primary forest access roads. Additional road maintenance and improvements are performed by special use permit holders, timber purchasers, and mining companies. Forest road maintenance budgets are expected to stay flat or decline in the future. Identifying unneeded roads to reduce road maintenance costs will help the Forest Service improve road conditions forest-wide.

## *Forest Access*

County roads and state highways provide access to the National Forest. Some of these roads and highways traverse into or through the forest. Other state and county roads connect to forest arterial, collector, and local roads at the forest boundary where traffic is dispersed onto secondary forest roads. Some of forest roads serve as the primary "through route" across the forest, often connecting local communities. The forest has worked closely with adjacent counties to maintain and improve legal public access to the forest and will continue to work with private landowners and local counties to legally secure additional public access routes. The 2002 Forest-wide Roads Analysis has a listing and maps of legal public access routes to the Forest key road system. Additional needs exist to provide public access to lower standard forest roads and forest trails.

## *Mineral Resources and Access*

Roads needed for mining, oil, or gas activities on the Forest range from small, temporary exploration roads to large, temporary but longer-term haul roads for mining operations. Environmental impacts created by these roads are assessed in site specific NEPA analysis conducted for each mining activity. The use, maintenance, and reclamation of these roads are outlined and performed according to the Mine/Exploration and Reclamation Plan submitted by the mining company and reviewed by the administering agencies.

Roads are usually administered under a lease, Plan of Operations, or Special Use Permit. Upon approval and prior to construction, a bond is secured for the reclamation of the roads in the event the mining company is unwilling or unable to complete the agreed reclamation requirements. Mining roads are usually closed to public access during operations for safety reasons. Once mining activities are completed, most of these single use roads are reclaimed or closed to motorized vehicles. Site-specific analysis and long term needs will determine the long term management of these roads. Occasionally, a mine road will upgrade or reduce environmental impacts from existing forest development roads. Where the situation is favorable, pre-mine roads are obliterated and the road created for mineral exploration or development is adopted for permanent use.

# Noxious Weeds

## *Introduction*

Travel routes and travel, motorized, mechanized and non-motorized, can spread noxious weeds. The risk of noxious weed spread will be measured by comparing Forest acres open to cross-country motorized travel and miles of routes open to motorized and non-motorized travel during the snow-free season.

## *Analysis Area*

The affected area for direct, indirect, and cumulative effects for assessing the risks of noxious weed spread is the portions of the Caribou and Cache National Forests administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee National Forest.

## *Analysis Methods*

This section presents current conditions and trends for noxious weeds. This analysis uses the definition of noxious weeds found in the 1974 Federal Weed Act. Noxious weeds are those plants of foreign origin, not widely prevalent in the United States; that can injure crops, ecosystems, interests of agriculture, or fish and wildlife resources. Designated travel routes and acres open to cross-country motorized travel increase the risk of the spread of noxious weeds. Comparing miles of designated motorized routes and acres open to cross-country motorized travel by alternative will be used to indicate the relative risk of each alternative contributing to the spread of noxious weed infestations on the Forest.

## *Plan Direction*

The Land and Resource Management Plan (LRMP) for the CNF has identified specific standards and guidelines that apply forest-wide; for noxious weed management, as follows:

### *Noxious Weeds and Invasive Plant Species (RFP 3-20 and 21)*

**Goals**

1. Minimize the establishment and spread of noxious weeds and other invasive plant species through the application of Forest Direction, Integrated Pest Management (IPM), and Best Management Practices (BMPs).
2. The Forest is an active member of cooperative weed management areas established across the forest.

**Standards**

1. Only weed-free hay, straw, pellets, and mulch shall be used n the Forest.
2. All seed used shall be certified to be free of noxious weed seeds from weeds listed on the current All States Noxious Weeds List.
3. Gravel or borrow material sources shall be monitored for noxious weeds and other invasive species. Sources infested with noxious weeds shall be closed until the weeds are successfully controlled.
4. Noxious weeds shall be aggressively treated throughout the Forest, unless specifically prohibited, following the Caribou Noxious Weed Strategy.
   Using Integrated Pest Management, methods of control and access shall be consistent with the goals of each prescription area.

**Guidelines**

1. Weed treatment projects, especially those using herbicides, should be timed to achieve desired effects on target vegetation, while having

minimal effects on non-target vegetation.

2. Protect biological control insectaries and allow harvest for distribution to other weed infestations, providing the original insectaries can be maintained.
3. Monitor, as needed, disturbed areas, such as landings, skid trails, roads, mines, burned areas, etc., for noxious weeds or invasive species and treat where necessary.
4. Evaluate the potential for invasion by noxious weeds into proposed vegetation units and wildland fire use plan areas and modify units or mitigate where necessary.

## *Existing Condition*

Invasive species which include noxious weeds have been identified by the Chief of the Forest Service as one of the four threats to healthy forest ecosystems. Invasive plants are aggressive non-natives which can grow, adapt, multiply, and spread to unmanageable levels over time. Noxious weed infestations persist and spread due to a variety of factors including continuing drought conditions and the ability of noxious weeds to out-compete native plants for space, nutrients, water, and sunlight. Noxious weeds have no native enemies (insects or diseases) to limit their reproduction and spread, and can cause serious economic and ecological damage. (Westbrooks, 1998).

State legislatures have the responsibility of designating their state's Noxious Weed List. Idaho's Noxious Weed List is published by the University of Idaho. There are now 36 plants listed in this publication which is available to the public. The forest also has infestations of Whitetop, which is found commonly in adjacent states. There are also some plants of local concern that are being closely watched. These are listed in the RFP FEIS along with acres, treatments and other information. (RFP FEIS, 3-259).

In 2003 the RFP reported 85,514 acres infested, but only a little over 5,900 acres being treated annually. The limited amount of treatments is related to limited budgets and the expense of treating isolated plants in the timeframe needed to control reproduction. Since 2003, better information on infestations has been collected. There are only 31,128 acres infested by 15 species. These are located as shown in the following table.

***Table 3.23 - Acres of Noxious Weeds by Ranger District /2***

| Ranger District | Total Approximate District Acres | Acres Infested | Acres Treated |
|---|---|---|---|
| | | | |
| Westside | 217,409 | 8,192 | 2,530 |
| Soda Springs | 350,972 | 7,225 | 880 |
| Montpelier | 440,307 | 15,711 | 1,041 |
| Total | 1,008,688 | 31,128 | 4,451 |

/2 2004 Caribou-Targhee Noxious Weed Report

Leafy spurge is the only species that occurs in concentrated areas of large acreage on the Forest. This plant occurs in large acreages in Black Canyon and Dry Canyon on the Westside Ranger District. These areas have been treated with chemicals, insects and more recently, heavy sheep grazing (RFP FEIS, p. 3-258 to 259).

The Forest operates under an Integrated Pest Management program which allows use of the best control techniques for the target species. All control options have limitations, thus the need to have several choices for each infestation.

In 2001, the Caribou-Targhee Forest developed a forest-wide Noxious Weed Strategy to implement a successful and integrated noxious weed program. The purpose of the Strategy is to increase Forest emphasis on weed management and to improve the Forest's capability to deal with weed management issues. It also sets the priorities for treatment. Prevention of new invasions through education and awareness is the first priority, followed by eradication of new invasions and the final priority is containment of existing infestations.

The Forest is an active partner in Cooperative Weed Management Areas (CWMAs). CWMAs are coalitions of land management agencies, tribal agencies, private landowners and others with an interest in reducing the infestations and spread of noxious weeds. These associations allow members to pool their resources, treat priority areas and not restrict themselves to artificial boundaries. The Utah and Idaho CWMA covers the western half of the Forest, and the Highlands CWMA covers the eastern portion of the Forest.

Noxious weeds can be introduced intentionally or accidentally. Most forest infestations are accidental and tend to move along established corridors. Seeds and plant parts can attach themselves to vehicles, people's clothing and footwear or animals' feet or hair. People, animals, and birds can spread weeds by inadvertently picking up the seeds as they travel through an area or, in the case of animals and birds, by eating the vegetation and eliminating the seeds in another location. The Forest requires weed-free hay to be used on the forest. Since 1990, the statewide Weed-Free Hay Program has reduced the spread of noxious weeds on the National Forests of Idaho.

Contaminated motorized vehicles are one pathway for the introduction of noxious weeds. Motorized vehicles often travel greater distances than other travel methods and knobby tires can pick up vegetation or seeds. Gravel from contaminated pits and livestock feed can also spread weed seeds. Once brought into a new area, weeds can remain unnoticed for long periods before they start to spread. (RFP FEIS, p. 3-256). The source of many weed infestations and other introduced plant species has been traced to disturbed sites such as travel corridors (roads, trails, skid trails, etc.), trailheads, parking areas, campsites, fire suppression activities, harvest units, and landings.

Cross-country motorized travel off of designated routes can contribute to the spread of noxious weeds through the transport of seed on stock, people, and vehicles. Cross-country motorized travel can contribute to this trend through loss of native vegetation and soil disturbance. Currently, cross-country motorized travel is allowed on 29,400 acres of the Huckleberry prescription area. Below is a summary of the miles of designated travel routes and acres open to cross-country motorized travel by Ranger District.

### *Westside Ranger District*

- The Westside Ranger District consists of 217,409 acres with:
- 490 miles of designated motorized travel routes
- 240 miles of travel routes designated for non-motorized travel
- There are no acres open to cross country motorized travel

### *Soda Springs Ranger District*

- The Soda Springs Ranger District consists of 350,972 acres with:
- 560 miles of designated motorized travel routes
- 150 miles of travel routes designated for non-motorized travel
- 29,400 acres open to cross country motorized travel

### *Montpelier Ranger District*

- The Montpelier Ranger District consists of about 440,307 acres with:

- 810 miles of designated motorized travel routes
- 190 miles of travel routes open to non-motorized travel
- There are no acres open to cross country motorized travel

# Forested Vegetation and Access

## *Introduction*

The transportation plan, including public access, can affect current and future access for forested vegetation management and activities.

## *Analysis Area and Methods*

The analysis areas are the portion of the Caribou and Cache National Forest administered by the Westside, Soda Springs, and Montpelier Districts of the Caribou-Targhee National Forest. In this section, the existing condition for forested vegetation management access is discussed.

## *Background*

Since the early 1950's, roads have been built by timber sale purchasers and through public works projects to access and haul commercial timber. These roads have provided continued access for forest management and opportunities for public forest product collection and other types of outdoor recreation.

## *Existing Condition*

Forest management activities, including timber harvest, are used to promote healthy, productive forest conditions. These treatments can reduce or suppress insect and disease infestations, improve tree growth, manipulate wildlife habitat, and salvage economic values. An important indication of forest health is the diversity and distribution of stand ages and species. The greater the diversity and distribution of stand ages and species, the more resistant the forest is to large scale damage from any single insect or disease agent. A key element in the implementation of forest management practices that promotes biodiversity is the presence of an effective network of forest access roads. This network is required to provide access for the heavy machinery needed to move logs and other forest vegetation off-site to processing facilities and forest product gatherers to reach and remove vegetative resources. It also facilitates movement of personnel to conduct other forest management activities such as tree planting, thinning, fuels treatment, and fire suppression.

There are approximately 1,850 miles of system travel routes open to motorized use at some time during the year within the Caribou. These roads are the main avenues of access to the Caribou portion of the Caribou-Targhee NF from county or state highways. Many were developed for long-term land and resource management purposes including vegetation management for multiple resource objectives. There are approximately 84,000 acres of land within the Forest's suitable timber base. Nearly 360 miles of open system travel routes, or 20 percent, pass through these lands with a primary management emphasis of scheduled wood fiber production while maintaining or restoring forested ecosystem processes.

# Non-Forested Vegetation

## *Introduction*

Recreational travel has the potential to affect the condition of non-forested vegetation by the inadvertent introduction of exotic species and by crushing and trampling of vegetation.

## Analysis Area and Methods

The affected areas for direct, indirect, and cumulative effects to upland non-forested vegetation are the portions of the Caribou and Cache NFs administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee National Forest. This section presents current conditions and trends for upland non-forested vegetation

## Plan Direction for Non-forested Vegetation

The RFP for the CNF has identified specific standards and guidelines that apply forest-wide; and pertain to the management of upland non-forested vegetation. It is expected that this direction will be used and followed to protect non-forested vegetation and to provide for healthy, satisfactory plant communities, as follows:

### Upland Non-forested Vegetation Plant Communities (RFP 3-22)

**Goal**

Provide habitat capable of: a) supporting populations of native plant species and their pollinators; b) contributing to recovery of federally listed species, and c) supporting plant biodiversity to meet social needs, biological diversity, and ecological and functional integrity.

**Guidelines**

Where practical, disturbed sites should be allowed to revegetate naturally where the seed source and social conditions are favorable (e.g. low erosion potential, deeper soils) and noxious weeds are not expected to be a problem.

## Existing Conditions

The 2003 FEIS for the RFP describes the condition of non-forested upland vegetation (3-93 - 127; 3-271 - 275). Approximately 45 percent of the forest is considered to be non-forested upland vegetation. Of this, about 86 percent is classified as sagebrush/mountain shrub. Upland vegetation is considered to be vegetation away from streams and is not streamside vegetation or vegetation in riparian areas.

The description of the vegetation associated with riparian areas and forested ecosystems will be discussed under the riparian and forested ecosystem portions of this Chapter.

*Table 3.24 - Acres of Upland Non-Forested/Woodland Vegetation Types/1*

| Vegetation Type | Acres | Percent Total of Non-Forested Acres |
|---|---|---|
| Sagebrush/Mountain shrub | 404,500 | 86% |
| Mountain mahogany | 20,000 | 4% |
| Maple | 24,700 | 5% |
| Juniper | 11,900 | 2% |
| Rock (including mines) | 7,900 | 2% |
| Water | 200 | Less than 1% |
| **Total** | **469,200** | **100%** |

/1 Source is Table 3.30 of the FEIS for the CNF Revised Forest Plan, 2/03

A wide variety of non-forested vegetation cover types occur on the Forest. The types range from open sagebrush-grasslands to wet meadows and riparian areas and from drier Juniper and Mountain Mahogany sites to moist Bigtooth Maple stands found in canyon bottoms and foothills. Factors such as climate, soils, aspect, elevation, and past disturbance determine the type of vegetation that exists on a site which may differ from the potential natural vegetation or climax community (RFP FEIS 3-94).

Recent rangeland inventories indicate that for the most part, conditions are generally satisfactory with either stable or upward apparent trends (RFP FEIS 3-121 to 127). Approximately 79% of rangelands are considered to be in satisfactory condition (FEIS, p3-124). Reasons for non-satisfactory conditions include departure from historical succession related to historical grazing activities, changes in fire regimes due to suppression activities, and invasions of undesirable herbaceous and grass species.

Generally, the sagebrush/mountain shrub vegetation types in less than satisfactory condition have been invaded by other cover types such as Douglas-fir as a result of fire suppression. The tall forb communities in less than satisfactory condition have been impacted by historic over-grazing and reseeding to grass species. The woodland cover types consisting of juniper, maple, and mountain mahogany have expanded outside their natural range because of fire suppression.

Recreation activities, cross-country motorized travel, and travel on forest roads and trails were not identified in the RFP FEIS as contributors to diminished non-forested vegetation communities.

# Livestock Access

## *Introduction*

The Caribou Travel Plan could affect access to and on National Forest lands for livestock permittees. Permittees holding grazing permits are concerned about motorized access to facilities within their allotments. Facilities include fences, troughs, livestock handling facilities, and locations for sheep herder camps. This section presents current access conditions for range administration and livestock permittee access to forest areas.

## *Analysis Area and Methods*

The areas for direct, indirect, and cumulative effects to livestock grazing are the portions of the Caribou and Cache NFs administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee NF.

## *Plan Direction for Livestock Grazing*

The RFP for the Forest has identified a specific guideline that applies forest-wide. The Forest may authorize access by livestock permittees for administrative activities.

### *Livestock Grazing Permits (RFP page 3-43)*

**Guidelines**

Permittees may be allowed motorized access to maintain or develop range improvements assigned in their grazing permits or for other authorized administrative activities. AMP's and Annual Operating Instructions should include direction to comply; travel permits should be issued to authorize this use.

## *Existing Conditions*

Livestock grazing has been an historic and traditional use of the Caribou for over 100 years. Livestock forage is an important forest product and many permittees use this forage to meet part of their year-round grazing needs (RFP FEIS, 3-102). Grazing on the NF is authorized by Congress and is a significant use on the Forest. Presently about 263 grazing permittees are authorized to graze their livestock on 130 grazing allotments. About 694,000 acres (67 percent) of the Caribou are suitable for grazing cattle and sheep (RFP

FEIS, Appendix B). According to the 2003 Annual Statistical Grazing Report, 21,775 cattle and 68,651 sheep are permitted to graze the Forest. To facilitate management of the program, existing improvements include over 482 miles of fence, 370 troughs, 733 stock ponds, 51 miles of pipeline, five wells, and 22 corrals (Forest INFRA database). Livestock grazing permittees are required to maintain existing structural range improvements and to manage their allotments in accordance with the terms and conditions of their grazing permit (FS-2200-10, Term Grazing Permit). Closed roads within allotments can currently be used by permittees with authorization by local District Rangers. This use is only for administrative purposes directly associated with the management of their grazing permit.

# Fire Management and Access

## *Introduction*

The transportation system, including motorized and non-motorized trails, has the potential to affect access to monitor and/or suppress wildfires and to implement prescribed fires. Roads and trails can contribute to human-caused fires both intentional and accidental.

## *Analysis Area*

The analysis areas are the portions of the Caribou and Cache NFs administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee NF.

## *Existing Condition*

Over the last fifteen years, periods of drought throughout the Western United States have resulted in stressed vegetation that is more susceptible to uncharacteristic wildland fire. While the Caribou has not experienced wildland fires to the same extent or severity as other areas in the West, the potential for uncharacteristically large wildland fires exists on the Forest (RFP FEIS 3-249).

During wildland fires, access to the fire is very important. Easy access helps people and equipment reach the fire within a short time of discovery. Wildland fire emergency crews may need to use non-system roads that are not designated for public use. Any type of road or trail can serve as access to the fire or as the beginning of a constructed fireline.

The 2000 National Fire Plan and the 2004 Healthy Forests Initiative both emphasize measures designed to reduce the risk to communities and the environment from wildfires. These measures include prescribed fire and other means of fuel reduction. Access for fire management, including suppression and fuels reduction, needs to be considered in travel planning.

Forest roads and trails allow the public to access forest areas. Forest roads and trails allow the public to access forest areas. This access can also lead to human-caused fires. On the Caribou-Targhee, 70 percent of wildland fires are contributed lightning ignitions. The remaining 30 percent are a combination of human-caused ignitions including railroad fires, arson, and escaped campfires (Forest fire records).

# CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

This Chapter presents the environmental consequences of implementing the six alternatives. It also presents the scientific and analytical basis for the comparison of alternatives by indicators presented in Chapter Two.

## Tribal Treaty Concerns

### *Effects Common to All Alternatives*

- All alternatives will maintain a variety of motorized, mechanized and non-motorized access.
- All alternatives are expected to maintain the forest resources that are important to Tribal members.
- Motorized access that may be needed for Tribal grazing activities is not governed by the Travel Plan and will not be affected by travel plan alternatives.
- All alternatives limit motorized access onto the Shoshone-Bannock Reservation through the Toponce area during the snow and snow-free season, as directed in the RFP.

### *Alternative 1 (No Action)*

Under this alternative, motorized and non-motorized access for Tribal members to hunt, fish, and gather would remain as it currently exists. 74 percent of the Forest is managed for a "motorized setting" and 26 percent is managed as non-motorized. The existing risks to forest resources from motorized travel and travel routes would also remain the same.

### *Alternative 2*

Under this alternative, designated motorized travel routes are reduced by 60 miles. Some of these routes are redundant or little-used routes. Motorized access would not change in most forest areas. Under this alternative 70 percent of the Forest is managed for a "motorized setting" and 30 percent is managed as non-motorized. The alternative would reduce the risk of motorized route impacts to fish and riparian areas by decreasing travel routes in riparian areas and decreasing stream crossings. This alternative would decrease wildlife disturbance from motorized travel within Stump Peak by creating a large non-motorized area in this drainage. While this alternative reduces travel routes, most motorized opportunities and non-motorized settings remain as they are managed today.

### *Alternative 3*

Under this alternative, designated motorized travel routes are reduced by 325 miles. Under this alternative 62 percent of the Forest is managed for a "motorized setting" and 38 percent is managed as non-motorized. Tribal members that rely on motorized vehicles to hunt, fish, or gather may not be able to some reach forest areas. Tribal members that rely on non-motorized means to hunt, fish, or gather would have additional areas that provide a non-motorized setting. This alternative manages the second lowest number of designated motorized routes. This alternative represents a greater reduction of risks of motorized route impacts to fish and riparian areas than Alternatives 2, 5 and 5R. This alternative decreases motorized travel disturbance to wildlife by creating additional non-motorized areas in the Elkhorn, Oxford, Stump Peak, Worm Creek, and Snowdrift Mountain.

### *Alternative 4*

Effects of this alternative are similar to Alternative 3. This alternative decreases designated travel routes by 430 miles. Under this alternative 61 percent of the Forest is managed for a "motorized setting" and 39

percent is managed as non-motorized. Tribal members that rely on motorized vehicles to hunt, fish, or gather; may not be able to reach some forest areas. Tribal members that rely on non-motorized means to hunt, fish, or gather will have additional areas that provide a non-motorized setting. This alternative manages the lowest number of designated motorized routes. This alternative represents the greatest reduction of risks of motorized route impacts to fish and riparian areas by decreasing motorized routes in riparian areas and decreasing stream crossings. This alternative decreases motorized travel disturbance to wildlife by creating additional non-motorized areas in the Elkhorn, Oxford, Stump Peak, Worm Creek, and Snowdrift Mountain.

### *Alternatives 5 and 5R*

These alternatives decrease designated travel routes by 90 miles. Under these alternatives 70 percent of the Forest is managed for a "motorized setting" and 30 percent is managed as non-motorized. The alternatives would reduce the risk of motorized route impacts to fish and riparian areas by decreasing travel routes in riparian areas and decreasing stream crossings. The alternatives would decrease wildlife disturbance from motorized travel within Stump Peak by creating a large non-motorized area in this drainage. While the alternatives reduce travel routes, most motorized opportunities and non-motorized settings remain as they are managed today.

## Conclusion

Alternative 1, the existing condition, provides motorized access to many forest areas. Alternatives 2, 5, and 5R retain most existing motorized access to forest areas, with the exception of the interior of the Stump Peak drainage. Alternatives 3 and 4 reduce the risks of impacts to forest resources by closing 325 and 430 miles of motorized routes. Tribal members who rely on non-motorized access for traditional uses will have more non-motorized settings under Alternative 3 and 4, than under Alternatives 2, 5 and 5R. Tribal members who rely on motorized access for traditional uses may not be able to reach some forest areas under all alternatives; however, Alternatives 2, 5 and 5R offer more motorized access than Alternatives 3 and 4.

### *Irreversible and Irretrievable Commitments of Resources*

Under all alternatives there will be no irreversible or irretrievable commitments of resources concerning motorized and non-motorized access and the condition of forest resources important to Tribal members.

### *Cumulative Effects*

The cumulative effects analysis area for tribal concerns is southern and central Idaho. This area is considered because it contains a majority of the "unoccupied" lands used by the Tribes. Within this area, the ability of Native Americans to practice their traditional culture has been reduced through loss of "unoccupied lands" and degradation of resources over time. Dams along the Snake River have affected salmon runs and limited the availability of salmon. Development of open space, access restrictions, and land disposals has reduced unoccupied lands for traditional uses. Fire suppression, grazing, mining, and timber harvest have changed the vegetation and affected water quality. The Idaho National Laboratory (INL) restricts access to vast acreages of federal lands. In recent years, these trends are slowly being reversed and federal land managers have become more informed regarding trust responsibilities. Elk, moose, and white-tailed deer numbers have increased. Federal and state agencies are working to enhance native fish and wildlife habitat. In the shift toward ecosystem management, federal land managers have reintroduced natural processes such as fire across the landscape. Efforts to improve the condition of natural resources collectively serve to protect Tribal interests.

The Caribou portion of the Caribou-Targhee NF is just a part of the cumulative effects area. The action alternatives would reduce risks to forest resources from motorized routes while retaining motorized and

non-motorized access for Tribal members. None of the alternatives would add to the past negative, cumulative impacts to forest resources and access for traditional Tribal uses.

# Recreation

### *Environmental Consequences*

## *Introduction*

This section discloses the environmental consequences of implementing the six alternatives considered in detail. Effects are discussed by tracking the following indicators: acres of non-motorized settings, miles of designated non-motorized trail, miles of designated motorized route compared to RFP ceilings, miles of designated motorcycle trail, miles of mountain bike trail and acres that allow cross-country motorized travel during the snow-free season. Summer, or snow-free season, travel effects are discussed first; followed by winter, or snow season travel effects. The analysis compares existing recreation use with the opportunities offered by each alternative. The effects of each alternative on other recreation concerns such as season of use, quality of experience, access for game retrieval and disabled access are also discussed. Some members of the public and others expressed interest in the impacts of management of specific travel routes. These routes and effects by alternative are also disclosed. Cumulative effects are discussed at the end of this section.

## *Effects Common to All Alternatives, including the No Action*

### *Displacement*

Implementation of any travel plan alternative could result in the displacement of some forest visitors. A travel plan that does not offer the desired setting or the desired mode of transportation on a preferred road, trail or area could displace some people to other areas or they could chose other activities.

### *Non-motorized travel*

The opportunity to travel cross-country by non-mechanized means in most forest areas and on most travel routes is the same for all alternatives. Most forest areas allow cross-country travel on foot or stock; some special use areas and active mines are exceptions.

### *Existing Semi-primitive Non-motorized Areas*

During the snow and snow-free season, the **existing** semi-primitive non-motorized areas remain non-motorized, these include portions of: West Mink Creek and Gibson Jack (south of Pocatello), Toponce (east of Inkom), Bloomington Lake (Bear River Range), Gannett Hills, Bear Creek (north of McCoy Creek Road) and the Caribou Mountain and Mount. Naomi Recommended Wilderness areas. Effects from additional non-motorized areas vary by alternative.

### *Maintenance and Reconstruction*

Implementation of any travel plan alternative will require some road and trail maintenance, construction, reconstruction, and relocation for designated travel route conditions to meet Forest Service road and trail standards. This would occur over time and some of these actions would require additional analysis and pubic involvement. All alternatives offer between 590 and 1,030 miles of designated non-motorized trails. Many of these trails have not been maintained and some are in close proximity to motorized routes. Over time, appropriated funds, partnerships, and outside funding will maintain and reconstruct these non-motorized trails to meet Forest Service standards.

### *Seasonal Closures*

Forty miles of designated motorized routes are closed seasonally in all alternatives. These miles are primarily designated roads and are closed to minimize wildlife disturbance or to protect the road surface

from wheeled vehicles when conditions are wet and muddy. These closures will continue to affect fall and spring motorized access for activities like hunting and gathering of forest products.

### *Education and Enforcement*

Travel Plan education and enforcement will continue under all alternatives. The analysis cannot predict which alternative would be easier or less costly to implement and enforce on the ground. More travel routes could be more costly to patrol but more closures could be more costly to enforce. All alternatives would require funding for education, travel route signing, and enforcement.

### *Plan OMRD ceilings*

All alternatives exceed prescribed OMRD ceilings in some areas of the forest. Generally speaking, overages contain both roads and trails. In areas managed as semi-primitive motorized and non-motorized, a substantial increase in densities could effect the quality of the recreation experience, degrading the "semi-primitive" ROS setting. In the Bear Creek area, north of Soda Springs, the overage is due to a motorized trail along the perimeter of the area; the trail is managed under the Targhee Forest Plan and Travel Plan. The Bear Creek prescription area is managed under a non-motorized recreation and wildlife security prescription. This overage, caused by the adjacent trail, is not affecting the recreation setting within the Bear Creek prescription area. Home Canyon is over the OMRD ceilings in all alternatives. This area has a prescription emphasis for forested vegetation management and is managed for a Roaded Natural setting. Home Canyon contains popular motorized trails in close proximity to Montpelier, ID.

## *Effects Common to Alternatives 2, 3, 4, 5, and 5R*

These alternatives designate less motorized travel routes than the existing Travel Plan. Reducing motorized roads and trails from 1,860 miles to a range of 1,800 to 1,430 miles will reduce the estimated cost to maintain roads and trails to standard. There will be additional "one time" costs associated with closing routes. These differences vary by miles of travel route closed in each alternative.

## *Effects Common to Alternatives 1 through 4*

### *Mountain Bike Travel*

These alternatives restrict mountain bike travel to designated routes. Currently, 850 miles of designated motorized trail are available to mountain bikes. In these alternatives, the only non-motorized trails available to mountain bike are the West Fork Trail and the Gibson Jack Trail just adjacent to Pocatello. Under these alternatives, illegal mountain bike use will continue on trails managed for foot and stock only.

## *Alternative 1, No Action*

This alternative reflects the travel restrictions shown on the 2002 Caribou Travel Map with the 2003 Special Order which is the existing condition. In areas that were formerly managed as open to cross-country motorized travel, any road or trail depicted on the 2002 travel map became a designated motorized route. Alternative 1, the No Action Alternative is described in full in Chapter Two. See Chapter Three, Recreation for the Snow-Free ROS map of this Alternative.

*Table 4.1 - Alternative 1 Issue Indicators*

| SPNM acres and % of Forest | Miles of non-motorized trail | Miles of motorized travel routes | Miles of motorcycle trail | Acres open to x-country motorized | Winschell Dugway |
|---|---|---|---|---|---|
| 270,860<br>26% | 600 | 1,860 | 170 | 29,400 | Non-motor. System trail, not maintained |
| **Snow Season Non-motorized Acres** | | | **Snow Season Motorized Acres** | | |
| 36,850 (**3.5%**) | | | 1,005,507 (**96.5%**) | | |

### *Non-motorized Setting, Summer or Snow-free Season*

This alternative manages 270,860 acres as non-motorized during the snow-free season. The non-motorized areas adjacent to Pocatello will continue to receive high use during peak times of the summer. Toponce, a short drive from Pocatello, could serve as a reasonable alternative to the high use areas in Mink Creek and Gibson Jack for people seeking a non-motorized setting close to home. Caribou Mountain, Bear Creek (north of Caribou Mountain), and Gannett Hills (adjacent to Wyoming) offer a remote non-motorized setting with few facilities. Mt. Naomi Recommended Wilderness and Bloomington Lake offer a more accessible non-motorized setting in the Bear River Range. This alternative would be the least attractive to people with disabilities who are seeking more non-motorized areas. This alternative offers eight miles of mountain bike trail that are non-motorized, Gibson Jack and West Fork trails. This alternative offers the least amount of non-motorized areas and acres of the alternatives.

### *Motorized Opportunity for Snow-free Travel*

This alternative offers the most miles of motorized routes, 1,860 miles. Counting only the miles of motorized routes within prescription areas with an OMRD ceiling, there are 1,510 miles out of an allowable mileage of 1,880. This alternative could be the most advantageous for people with disabilities who rely on motorized travel to experience the forest. There are no designated motorized travel routes within Caribou Mountain and Mount Naomi Recommended Wilderness areas and there are no designated motorized routes within Toponce, Worm Creek/Bloomington Lake, Bear Creek, and in the Gannett Hills area. This alternative would provide a variety of motorized route settings and opportunities.

### *Full-sized vehicles*

Over 1,010 miles of designated road provide many opportunities for "driving for pleasure." These roads allow full-sized vehicle travel in many forest areas for hunting, fishing, and gathering forest products. Some roads are dead-ends and poorly maintained. See the Alternative 1 discussion under Chapter Four, Roads for more information on designated road access.

### *ATV travel*

670 miles of ATV trail are available in many forest areas to meet the growing demand for ATV travel; however, some trails dead-end and loop opportunities have not been considered in this no-action alternative.

### *Motorcycle Travel*

This alternative offers 170 miles of designated motorcycle trail, the highest miles of any alternative. This alternative would also benefit mountain bike riders who prefer a single-track trail and don't object to sharing a trail with motorcycles.

### *Cross-country Motorized Travel*
This alternative manages the Huckleberry Basin prescription area, east of Soda Springs, as open to cross-country motorized travel during the snow-free season. As identified in the RFP, this prescription area is the only area on the forest that allows cross-country motorized travel during the snow-free season. This management creates a mixed message for education and enforcement of the travel plan and can be confusing to the public, (Travel Plan public comments).

### *Hunting and Travel*
This alternative offers the greatest number of designated motorized routes of the alternatives. This alternative could be the most advantageous for hunters who rely on motorized access to scout, hunt, and retrieve game. Caribou Mountain and Toponce are large non-motorized areas that offer a quality hunt in a non-motorized setting. This alternative does not provide additional non-motorized areas for hunters who prefer this type of setting and experience.

### *Non-motorized Travel (Snow Season)*
Non-motorized winter travel is allowed on most areas of the Forest. This alternative manages 36,850 acres or 3.5 percent of the forest, as non-motorized during the snow season. Not all non-motorized areas are easily accessible in the winter. Areas within the Mink Creek area are heavily used for skiing, snowboarding, and other non-motorized winter travel. The Bonneville Peak non-motorized area, better known as the "backside" of Pebble Creek, offers a large non-motorized area for back-country travel. This alternative does not manage some popular areas in and around the Portneuf Yurt System as non-motorized. Occasional conflicts between ski travel and snowmobile travel in these areas would continue.

### *Snowmobile Travel*
This alternative manages 96.5 percent as open to snowmobile use. Some of these areas, 18 percent of total forest acres, restrict snowmobile travel to designated routes to protect wintering big game from disturbance. This alternative does not provide designated snowmobile routes through areas of new winter range along the Bear River Range. This alternative would provide snowmobile opportunities but some favorite play areas would not be available due to the lack of access through the lower winter range prescription areas.

### *Maintenance Costs*
In areas that were formerly managed as open to cross-country motorized travel, any road or trail depicted on the 2002 Travel map became a designated motorized route. This alternative has the highest miles of designated travel routes that were not designed or maintained for motorized travel. These travel routes would require reconstruction and relocation to meet Forest Service road and trail standards. Some actions would require additional analysis and public involvement.

### *Plan OMRD Ceilings and Recreation Experience*
This alternative exceeds the prescription OMRD ceilings in 15 prescription areas. These areas are discussed under the existing condition section of Chapter Three. This alternative has the greatest departure from Plan OMRD ceilings of the alternatives. The overages range from 0.1 to 0.8 miles of motorized roads and trails per square mile of area. Areas where this could affect the recreation setting due to the amount exceeded and the size of the prescription area are:

- Crystal Creek Rx Area, in Mink Creek, over by 0.5 miles per square mile
- Home Canyon Rx Area, east of Montpelier, over .8 miles per square mile
- Hell Hole Rx Area, south of Montpelier, over .7 miles per square mile

## Specific Travel Routes of Interest

### Trail #331 on Elkhorn Mountain (Trail #131 on Proposed Action maps)

This alternative manages the section of Trail #331 between Potter Creek and Rowley Canyon as an ATV trail, as depicted on the 2002 Travel Map. The trail would need reconstruction to meet Forest Service trail standards for ATV use. The Westside Ranger District has updated their road and trail numbering system; this trail is now referred to as Trail # 311 on all Alternative maps. This trail is depicted as Trail #131 on the 2002 Travel Map.

### The Winschell Dugway

The Winschell Dugway would remain a designated non-motorized system trail. The existing condition of the northern end of the trail makes it marginal for even foot and horse traffic. Given existing conditions, it is questionable that this trail could be reconstructed and maintained over time to meet the lowest Forest Service standard for foot and horse use.

### Cub River Road

This alternative does not change motorized access in the corridor of the Cub River Road. Safety concerns for ATVs and full-sized vehicles will continue along this route.

## Alternative 2, the Proposed Action

This alternative is the Proposed Action as described in Chapter Two. This alternative will benefit people who want to retain many of the existing recreation opportunities and settings that have been available in the past.

*Table 4.2 - Alternative 2 Issue Indicators*

| SPNM acres, percent of Forest | Miles of non-motorized trail | Miles of motorized travel routes | Miles of Motorcycle trail | Acres open to x-country motorized | Winschell Dugway |
|---|---|---|---|---|---|
| 313,930<br>30% | 700 | 1,800 | 140 | 29,400 | Managed as ATV trail, if feasible |
| **Snow Season Non-motorized Acres** | | | **Snow Season Motorized Acres** | | |
| 36,850 (**3.5%)** | | | 1,005,507 (**96.5%)** | | |

### Non-motorized Setting, Snow-free Season

This alternative manages 313,930 acres as non-motorized during the snow-free season. Most existing non-motorized areas are retained in this alternative, with additional non-motorized acres available in the Stump Peak drainage. Stump Peak is a popular area for hiking and stock use especially during hunting season. This alternative does not offer additional mountain bike opportunity over the existing condition.

### Motorized Use and Opportunity

This alternative offers 1,800 miles of motorized routes. Counting only the miles of motorized routes within prescription areas with an OMRD limit, there are 1,410 miles out of an allowable mileage of 1,880. This alternative is advantageous to people with disabilities that rely on motorized travel to experience the forest. In addition to the non-motorized areas described in Alternative 1, there are no designated travel routes within the interior of Stump Peak drainage. As with Alternative 1, this alternative provides a variety of motorized route settings and opportunities.

### *Full-sized vehicles*
Opportunities for full-sized vehicle travel are similar for Alternative 1, 5, and 5R. Many popular designated roads remain open to motorized travel. See the Alternative 2 discussion under Chapter Four, Roads for more information on designated road access.

### *ATV travel*
Over 690 miles of ATV trail are available in forest areas to meet some of the demand for ATV travel; however, some trails dead-end and loop opportunities have not been considered.

### *Motorcycle Travel*
This alternative offers approximately 140 miles of designated motorcycle trails. These trails are also available to mountain bike riders who prefer a single-track trail and don't object to sharing a trail with motorcycles. 30 miles of designated motorized trail are proposed to be converted to two-track ATV trail. It is expected that use of these converted trails would increase, due to the greater number of ATV riders compared to motorcycle riders.

### *Cross-Country Motorized Travel*
This alternative manages the Huckleberry Basin prescription area as open to cross-country motorized travel during the snow-free season. Effects are the same as Alternative 1.

### *Plan OMRD Ceilings and Recreation Experience*
This alternative does not meet plan OMRD ceilings in 11 prescription areas. Overages range from 0.1 to 0.4. Home Canyon is over by 0.2 miles per square mile. Redundant motorized routes are not designated within the prescription area, which reduces the overage from the existing condition. The six areas on the Westside District that are over the plan OMRDs have no new designated routes proposed. Improved GIS mapping has shown higher miles or different alignments than previous mapping indicated for these areas. This alternative meets the OMRD ceilings more successfully than Alternative 1, but not as closely as Alternatives 3, 4, 5, and 5R.

### *Hunting and Travel*
This alternative could be advantageous to hunters who rely on motorized access to scout, hunt, and retrieve game; however, this alternative does not provide motorized access to all forest areas. Caribou Mountain, Toponce, and Stump Peak area provide large non-motorized areas that offer a quality hunt in a non-motorized setting.

### *Maintenance Costs*
In this alternative, some designated travel routes have not been designed or maintained for motorized travel. A portion of these travel routes would require reconstruction and relocation to meet Forest Service road and trail standards. Some actions would require additional analysis and public involvement. The costs to maintain travel routes to standard would be less in this alternative than Alternative 1 but higher than Alternatives 3, 4, 5, and 5R. There would be one-time costs to close approximately 60 miles of motorized route.

### *Non-motorized Travel (Snow Season)*
Effects for this issue are the same as Alternative 1.

### *Snowmobile Travel*

Snowmobile restrictions and effects are similar to Alternative 1 with the exception that new winter range areas have designated snowmobile routes through them. See Winter Map for Alternative 2 in Chapter Two. This alternative provides a variety of snowmobile opportunities including areas that are reached through winter range.

## *Specific Travel Routes of Interest*

### *Trail #331 on Elkhorn Mountain*

This alternative manages the section of Trail #331 between Potter Creek and Rowley Canyon as a motorcycle trail. Managing this route as a single-track motorized trail rather than an ATV trail, would reduce potential use of the route

### *The Winschell Dugway*

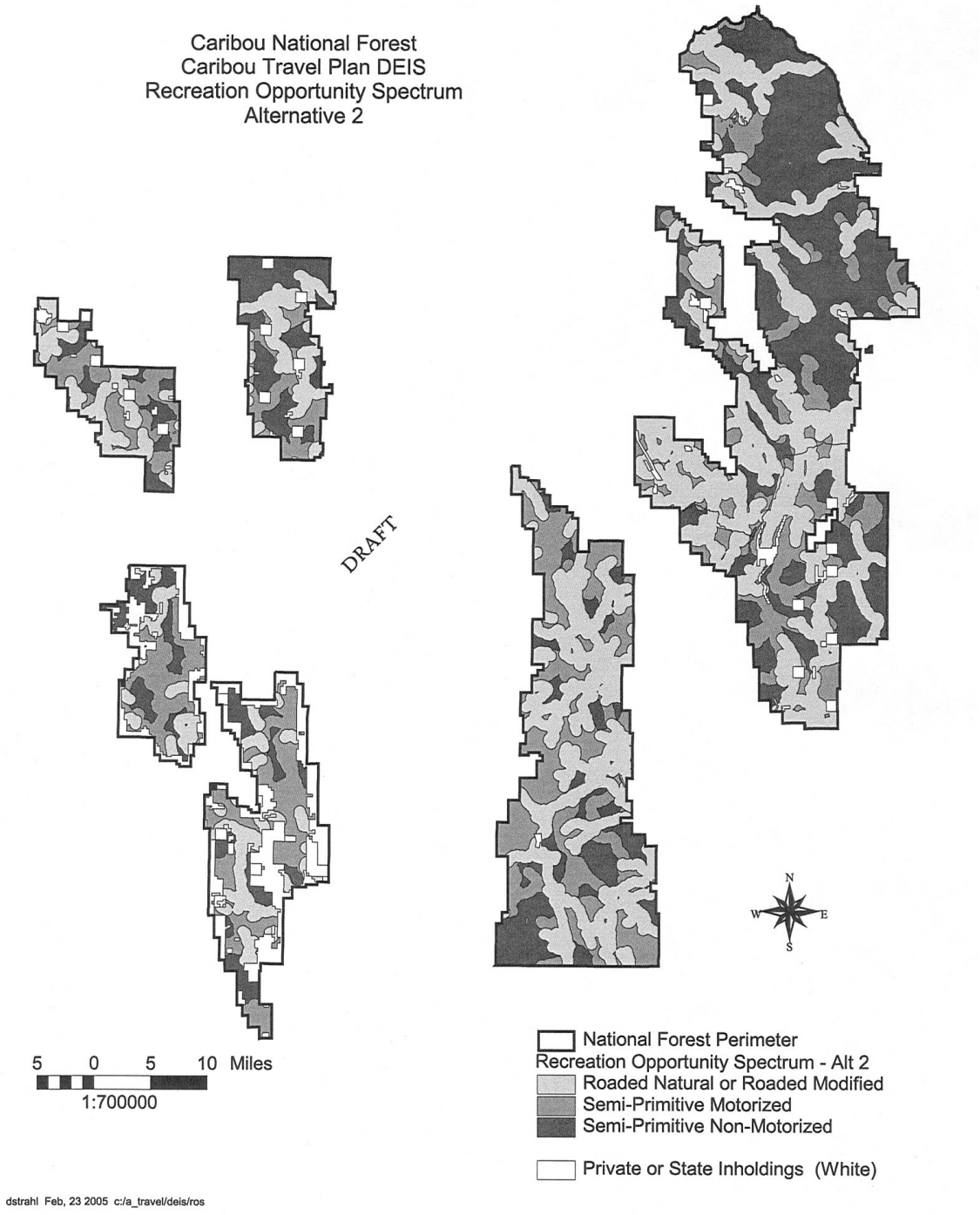
Under this alternative, the Winschell Dugway is proposed as a designated motorized trail for ATV use if further analysis and design show that an ATV trail is feasible to build and maintain and would meet RFP standards and guidelines for soil and water resources.

An ATV route would be popular due to the scenery, historic flavor, and unique setting of Caribou Mountain. The route would tie into other area trails, creating a loop opportunity. The trail experience could include interpretive opportunities that would tell the story of the gold miners of the late 1800s. Taking into account typical wet conditions in the spring and fall, an ATV trail could only be available for travel during the months of July, August and September.

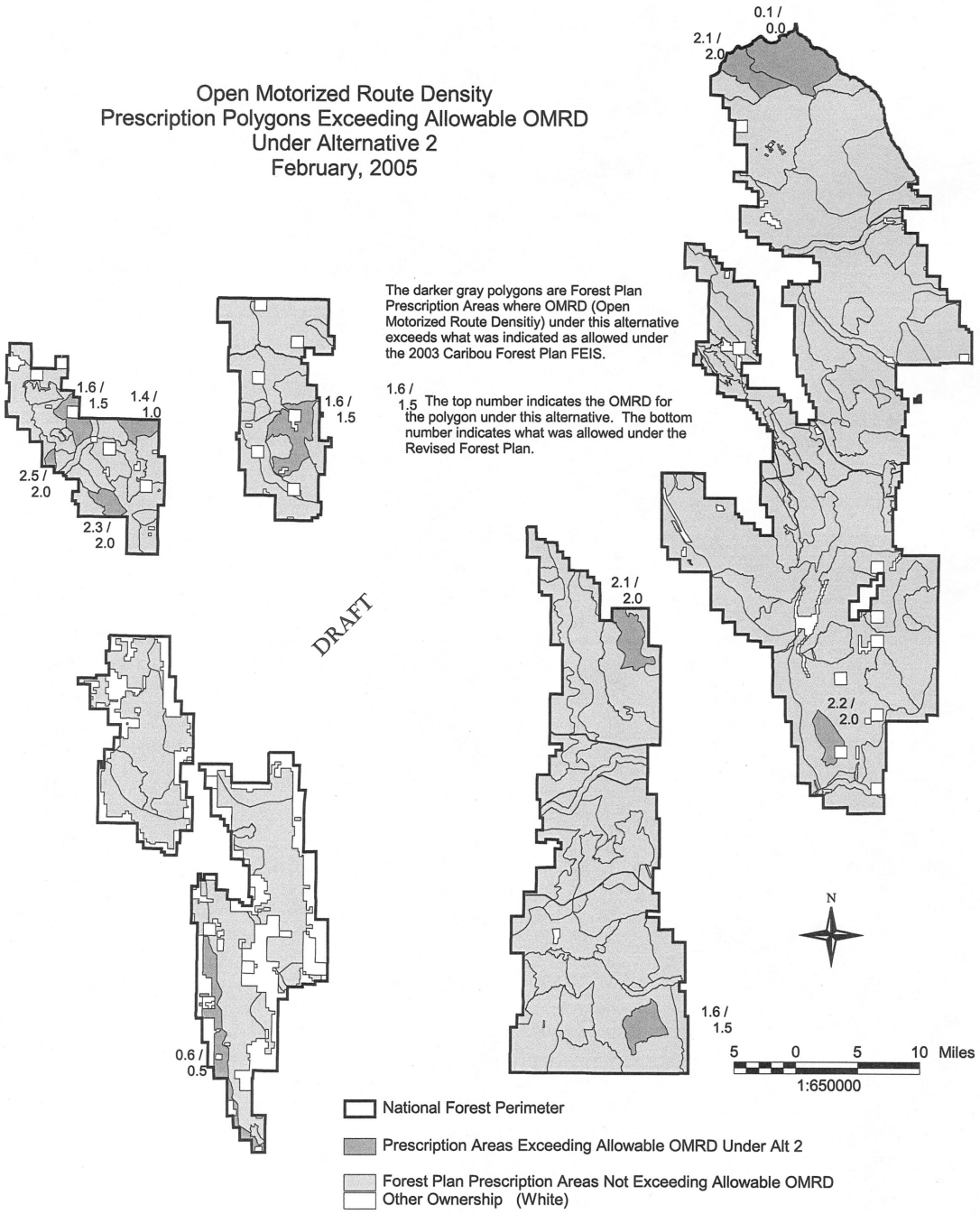
### *Cub River Road*

The alternative does not change motorized access in the corridor of the Cub River Road and safety concerns for ATVs and full-sized vehicles will continue along this route.

***Map 4.1 - Alternative 2 - Snow-free Season ROS Map***



***Map 4.2 - Alternative 2 - Prescription Areas over OMRD Ceilings***



## Alternative 3

This alternative emphasizes managing some roads and trails for non-motorized travel to create larger non-motorized areas to reduce motorized disturbance to wildlife during the snow-free season. This alternative will benefit people who want additional non-motorized areas forest-wide. This alternative will benefit hunters who prefer a non-motorized setting.

*Table 4.3 - Alternative 3 Issue Indicators*

| SPNM acres, percent of Forest | Miles non-motorized trail | Miles motorized travel routes | Miles Motorcycle Trail | Acres open to x-country motorized | Winschell Dugway |
|---|---|---|---|---|---|
| 393,000<br>38 % | 930 | 1,530 | 100 | 29,400 | Managed as non-motor. system trail |
| **Snow Season Non-motorized Acres** | | | **Snow Season Motorized Acres** | | |
| 36,850 (**3.5%)** | | | 1,005,507 (**96.5%)** | | |

### Non-motorized Settings for Snow-free Season

This alternative manages 393,000 acres as non-motorized during the snow-free season. In addition to the non-motorized areas of Alternative 1 and 2, additional areas are managed as non-motorized. This alternative manages "core" areas in Mink Creek, Elkhorn Mountain, Oxford Peak, and Snowdrift Mountain as non-motorized and enlarges the Worm Creek/Bloomington Lake and Deer Creek non-motorized areas. This alternative does not offer additional mountain bike opportunity over the existing condition. This alternative would increase opportunities for people with disabilities who are seeking more non-motorized areas on the Forest.

### Motorized Opportunity for Snow-free Travel

This alternative offers 1,530 miles of motorized routes. Counting only the miles of motorized routes within prescription areas with an OMRD ceiling, there are 1,174 miles out of an allowable mileage of 1,880. This alternative provides a variety of motorized route settings and opportunities but 38% of forest areas cannot be accessed by motorized means. This alternative closes approximately 325 miles of motorized routes.

### Full-sized vehicles

This alternative designates 940 miles of road. Some forest areas would still be accessible with a full-sized vehicle. See the Alternative 3 discussion under Chapter Four, Roads for more information on designated road access.

### ATV travel

490 miles of ATV trail would be available. This alternative reduces existing ATV routes by 190 miles and would not meet the demand for ATV trails as well as Alternatives 1, 2, 5, and 5R. Many trails dead-end and loop opportunities are less than Alternatives 2, 5, and 5R. In this alternative, portions of the Highline Trail in the Bear River Range and the Boundary Trail, in the Portneuf Range, are managed as non-motorized. These routes are popular long-distance ATV trails. This use would be displaced to other forest trails.

### Motorcycle Travel

This alternative designates approximately 100 miles for motorcycle travel, reducing existing miles by 70 miles. These trails are also available to mountain bike riders who prefer a single-track trail and don't object

to sharing a trail with motorcycles. This alternative would not provide as much single-track motorized opportunity as Alternatives 1, 2, 5 and 5R.

### *Cross-country Motorized Travel*
This alternative manages the Huckleberry Basin prescription area as open to cross-country motorized travel during the snow-free season. Effects are the same as Alternatives 1 and 2.

### *Hunting and Travel*
This alternative reduces access for hunters who rely on motorized vehicles to scout and for hunters who rely on motorized vehicles for game retrieval in some forest areas. This alternative offers more opportunity for a non-motorized hunting experience in Stump Peak, Elkhorn Mountain, Oxford Peak, and Snowdrift Mountain.

### *Maintenance Costs*
A portion of the designated travel routes would require reconstruction and relocation to meet Forest Service road and trail standards. Some actions would require additional analysis and public involvement. In this alternative, the costs of maintaining motorized routes to standard would be less than Alternatives 1, 2, 5, and 5R as there are fewer motorized routes to maintain. There would be one-time costs to close approximately 325 miles of motorized route.

### *Plan OMRD Ceilings and Recreation Experience*
This alternative does not meet OMRDs in six prescription areas, overages range from 0.1 to 0.4 miles of motorized route per square mile. Three areas are over OMRDs on the Westside District; two have semi-primitive recreation prescriptions and one is managed under a forested vegetation prescription. It is expected that the overages would not affect the existing recreation settings. This alternative comes closer to meeting OMRDs than Alternatives 1, 2, 5, and 5R.

### *Non-motorized Travel (Snow Season)*
Effects for this issue are the same as Alternative 2.

### *Snowmobile Travel*
Effects for this issue are the same as Alternative 2.

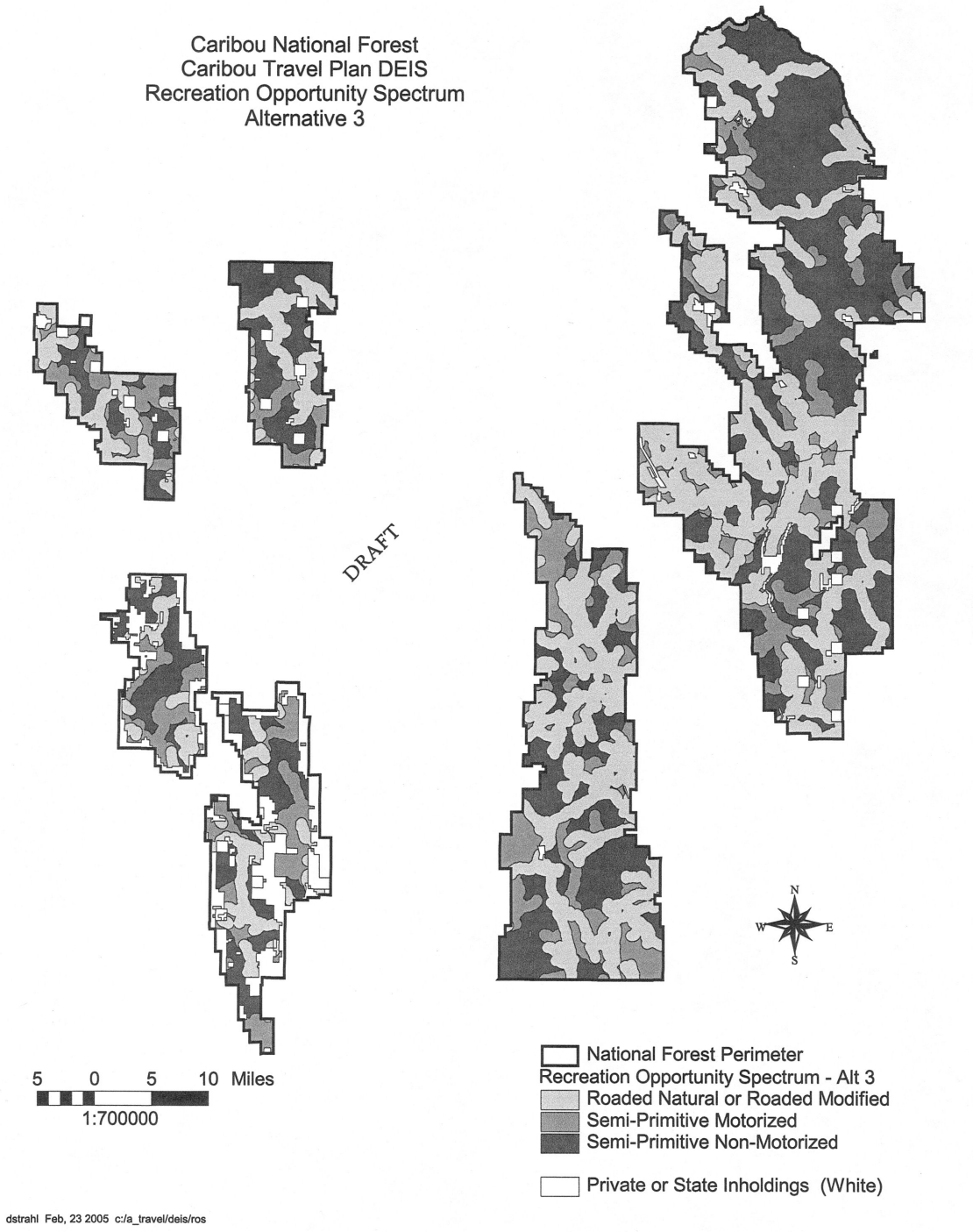
## *Specific Travel Routes of Interest*

### *Trail #331 on Elkhorn Mountain*
This alternative manages the section of Trail #331 between Potter Creek and Rowley Canyon as a designated non-motorized trail. This would create a larger non-motorized area during the snow-free season along the eastern slopes of Elkhorn Mountain.

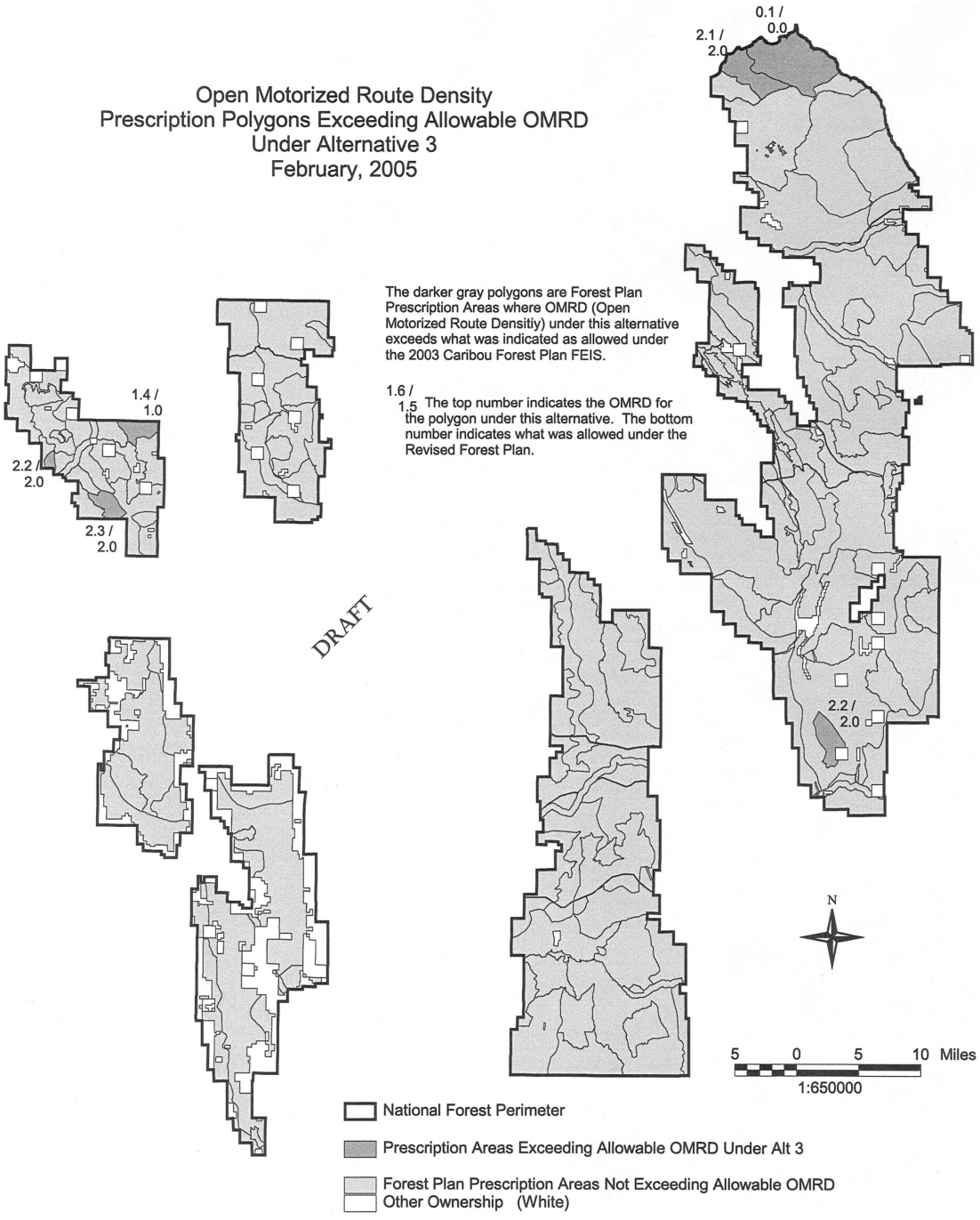
### *The Winschell Dugway*
The Winschell Dugway is managed as a non-motorized trail. Effects are the same as Alternatives 1, 4, 5, and 5R.

### *Cub River Road*
The alternative does not change motorized access in the corridor of the Cub River Road and safety concerns for ATVs and full-sized vehicles will continue along this route.

***Map 4.3 - Alternative 3 - Snow-free Season ROS Map***



***Map 4.4 - Alternative 3 - Prescription Areas over OMRD Ceilings***



## Alternative 4

This alternative emphasizes managing additional areas as non-motorized during the snow and snow-free seasons to create more areas for a non-motorized recreation setting. This alternative would be preferred by people seeking a non-motorized setting in many areas of the forest year-round.

*Table 4.4 - Alternative 4 Issue Indicators*

| SPNM acres, percent of Forest | Miles non-motorized trail | Miles motorized travel routes | Miles of Motorcycle Trail | Acres open x-country motorized | Winschell Dugway |
|---|---|---|---|---|---|
| 410,960<br>39% | 1,030 | 1,430 | 100 | 0 | Managed as non-mot. system trail |
| **Snow Season Non-motorized Acres** | | | **Snow Season Motorized Acres** | | |
| 46,850 (**4.5 %**) | | | 995,350 **(95.5%)** | | |

### Non-motorized Settings for Snow-free Season

This alternative offers the most acres managed for a non-motorized setting, with 39 percent of the Forest. In addition to the non-motorized areas of Alternatives 1 and 2, more acres adjacent to Pocatello are managed as non-motorized. This would help meet demand in and around Pocatello for additional non-motorized areas. This alternative manages "core" areas in Elkhorn Mountain, Oxford Peak, and Snowdrift Mountain as non-motorized and enlarges the Worm Creek/ Bloomington Lake and Deer Creek non-motorized areas. This alternative does not increase mountain bike opportunity on non-motorized trails. This alternative would increase opportunities for people with disabilities who are seeking more non-motorized areas on the Forest.

### Motorized Use and Opportunity

This alternative offers 1,430 miles of motorized routes. Counting only the miles of motorized routes within prescription areas with an OMRD ceiling, there are 1,174 miles out of an allowable mileage of 1,880. This alternative decreases opportunities for people with disabilities who rely on motorized travel to experience the forest. This alternative provides a variety of motorized route settings and opportunities, but some forest areas are only accessible by non-motorized means.

### Full-sized vehicles

This alternative designates 900 miles of road. Some forest areas would still be accessible with a full-sized vehicle. See the Alternative 4 discussion under Chapter Four, Roads for more information on designated road access.

### ATV travel

430 miles of ATV trail are available in some forest areas. This alternative reduces existing ATV routes by 250 miles and does not meet the demand for ATV trails as well as Alternatives 1, 2, 5, and 5R. Many trails dead-end and loop opportunities are less than Alternatives 2, 5, and 5R. In this alternative, portions of the Highline Trail, a popular ATV route, is managed as non-motorized.

### Motorcycle Travel

This alternative designates 100 miles for motorcycle travel, reducing existing miles by 70 miles. These trails are also available to mountain bike riders who prefer a single-track trail and don't object to sharing a trail with motorcycles. This alternative would not provide as much single-track motorized opportunity as Alternatives 1, 2, 5 and 5R.

### *Cross-country Motorized Travel*
This alternative manages motorized travel on designated routes in the Huckleberry Basin prescription area during the snow-free season. The positive effects of this management would include less confusion by the public and a consistent message for education and enforcement.

### *Hunting and Travel*
This alternative lessens access for hunters who rely on motorized access to scout, hunt, and retrieve game in some areas. This alternative offers more opportunity for a non-motorized hunting experience in Stump Peak, Elkhorn Mountain, Oxford Peak, and Snowdrift Mountain.

### *Non-motorized Travel (Snow Season)*
This alternative provides additional non-motorized settings in Mink Creek, Gibson Jack, and Trail Creek (adjacent to Pocatello); 4.5 percent of forest acres are managed for non-motorized setting during the winter. The "backside" of the Pebble Creek closure boundary includes "Strawberry Fields" to provide a non-motorized setting in this area which is popular with skiers.

### *Snowmobile Travel*
Snowmobile restrictions and effects are similar to Alternative 1 with the exception of no designated snowmobile routes through areas of "new" winter range prescription under the 2003 RFP. This alternative would reduce snowmobile opportunities due to the lack of access routes through winter range prescriptions along the Bear River Range.

### *Maintenance Costs*
A portion of the designated travel routes would require reconstruction and relocation to meet Forest Service road and trail standards. Some actions would require additional analysis and public involvement. In this alternative, the costs of maintaining routes to standard would be less than Alternatives 1, 2, 3, 5, and 5R. There would be one-time costs to close approximately 430 miles of designated motorized route.

### *Plan OMRD Ceilings and Recreation Experience*
This alternative exceeds OMRD ceilings in four prescription areas, overages range from 0.1 to 0.2. Elk Meadows prescription area is over OMRDs on the Westside District which is managed under a forested vegetation prescription. Hell Hole and Bear Creek prescription areas are over and have been discussed earlier for all alternatives. Red Pine prescription area is over by 0.1 and is managed for forest vegetation. It is expected that the overage will not change the existing recreation setting in this area. This alternative has the least amount of prescription areas over the plan OMRD ceilings when compared to the other alternatives.

## *Specific Travel Routes of Interest*

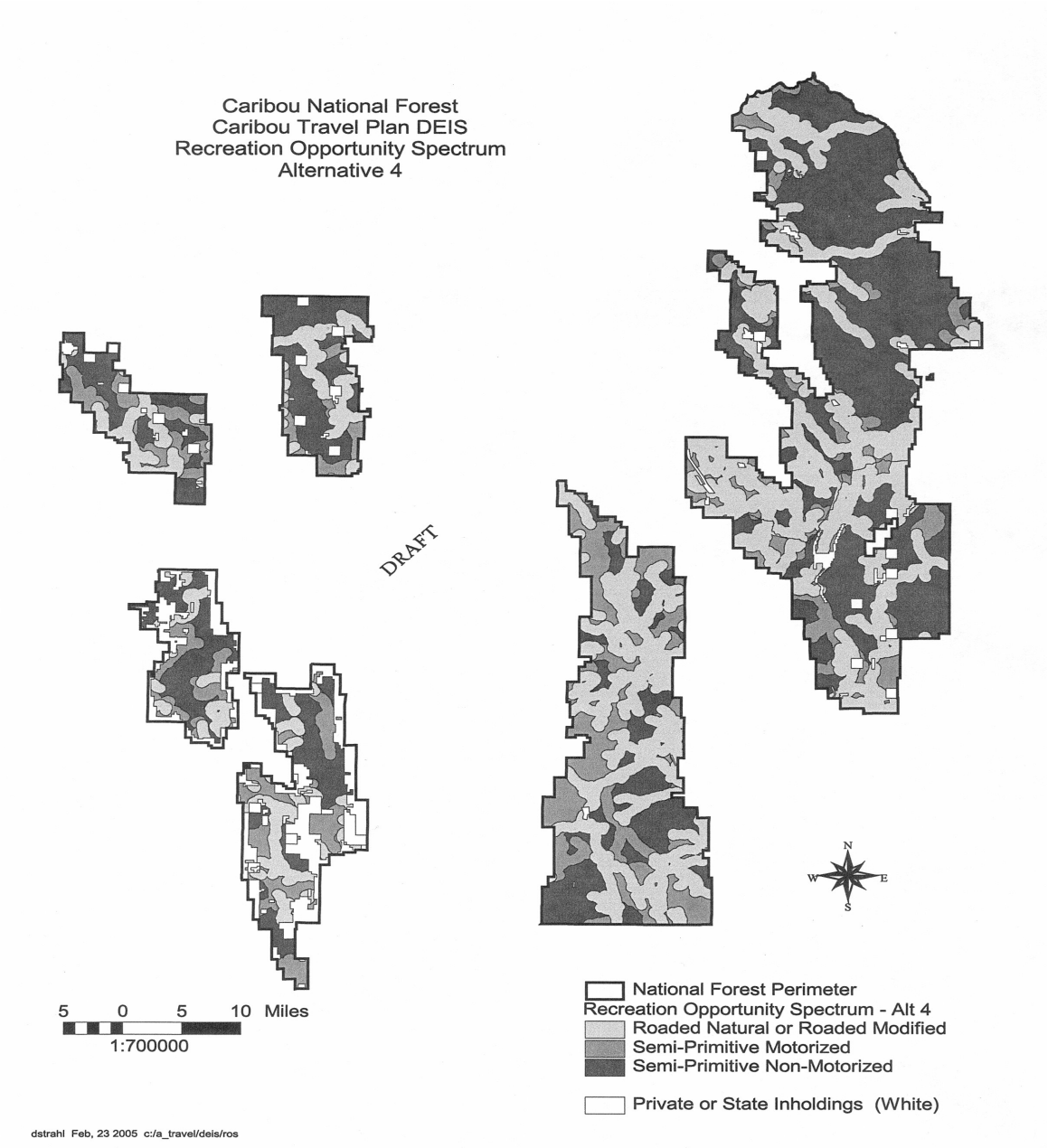
### *Trail #331 on Elkhorn Mountain*
This alternative manages the section of Trail #331 between Potter Creek and Rowley Canyon as a designated non-motorized trail. This would create a larger non-motorized area along the eastern slopes of Elkhorn Mountain.

### *The Winschell Dugway*
The Winschell Dugway is managed as a non-motorized trail. Effects are the same as Alternatives 1, 3, 5, and 5R.

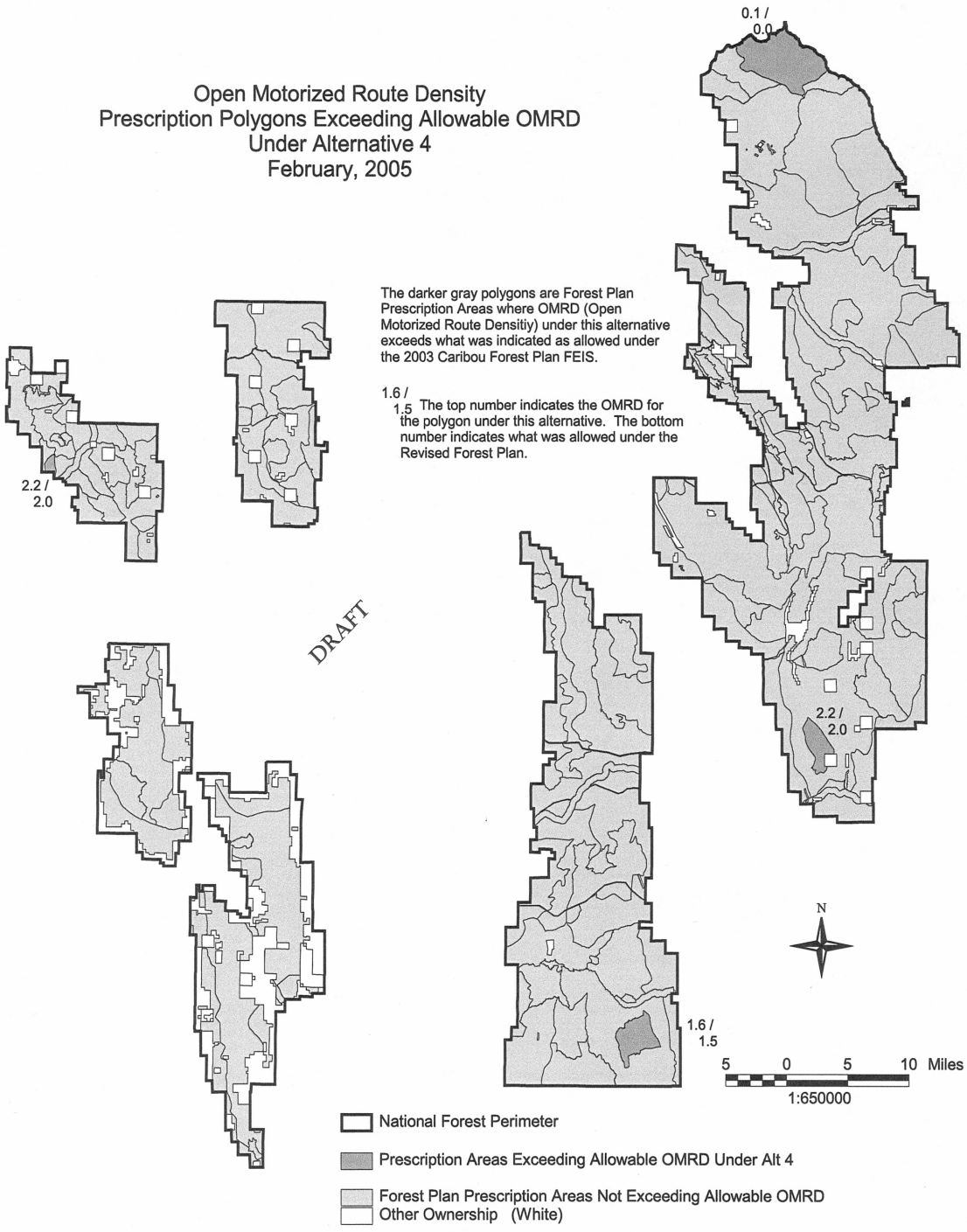
### *Cub River Road*

The alternative does not change motorized access in the corridor of the Cub River Road. Safety concerns for ATVs and full-sized vehicles will continue.

***Map 4.5 - Alternative 4 - Snow-free Season ROS Map***



***Map 4.6 - Alternative 4 - Prescription Areas over OMRD Ceilings***



## *Alternative 5, the Preferred Alternative in DEIS*

This alternative was based on the Proposed Action with specific changes to improve non-motorized settings and motorized opportunities with loop routes.

***Table 4.5 - Alternative 5 Issue Indicators***

| SPNM acres, percent of Forest | Miles non-motorized trail | Miles motorized travel routes | Miles Motorcycle Trail | Acres open to x-country motorized | Winschell Dugway |
|---|---|---|---|---|---|
| 316,360<br>30% | 700 | 1,770 | 140 | 0 | Not managed as a system trail pending further analysis |
| **Snow Season Non-motorized Acres** | | | **Snow Season Motorized Acres** | | |
| 40,986 (**4.0 %**) | | | 1,001,214 (**96 %**) | | |

### *Non-motorized Setting, Summer or Snow-free Season*

This alternative manages 316,360 acres as non-motorized during the snow-free season. The effects for the opportunity of a non-motorized setting are similar for Alternative 1 with additional non-motorized acres in the Stump Peak drainage. This alternative offers 500 additional miles of mountain bike opportunity on non-motorized trails. Routes offered on the Westside District include retaining Gibson Jack and West Fork non-motorized trails.

### *Motorized Use and Opportunity*

This alternative offers approximately 1,770 miles of motorized routes. Counting only the miles of motorized routes within prescription areas with an OMRD limit, there are 1,376 miles out of an allowable mileage of 1,880. Effects of this alternative are similar to Alternative 2. As with Alternative 2, this alternative maintains existing motorized access to many places on the forest.

### *Full-sized vehicles*

This opportunity is similar to Alternative 2. Most popular designated roads remain open. See the Alternative 5 discussion under Chapter Four, Roads for more information on designated road access.

### *ATV travel*

Over 660 miles of ATV trail are available in most forest areas to meet some of the demand for ATV travel. This alternative offers more motorized loop opportunities than Alternatives 1, 2, 3 and 4.

### *Motorcycle Travel*

This alternative offers approximately 140 miles of designated motorcycle trails. These trails are also available to mountain bike riders who prefer a single-track trail and don't object to sharing a trail with motorcycles.

### *Cross-Country Motorized Travel*

This alternative manages motorized travel on designated routes in the Huckleberry Basin prescription area during the snow-free season. Effects are the same as Alternative 4. This change in motorized travel will require a plan amendment.

### *Hunting and Travel*
This alternative is advantageous to hunters who rely on motorized access to scout, hunt, and retrieve game; however, this alternative does not provide motorized access to all forest areas. Caribou Mountain, Toponce, and Stump Peak area provide large non-motorized areas that offer a quality hunt in a non-motorized setting.

### *Non-motorized Travel (Snow Season)*
Effects for this issue are the same as Alternatives 2 and 5, with additional areas for non-motorized travel along the Emigration Highway (Bear River Range) and the "backside" of Pebble Creek, or the Bonneville Peak prescription area. The boundary for this prescription area would change to accommodate "Strawberry Fields", a popular backcountry ski area adjacent to the existing closure area. Three additional areas in Squirrel Hollow will accommodate existing ski use. The non-motorized area boundary in Gibson Jack area, adjacent to Pocatello, has been changed to improve compliance. Changing the boundary of the Bonneville Peak non-motorized area, "backside" of Pebble, would require a plan amendment.

### *Snowmobile Travel*
Snowmobile restrictions and effects are similar to Alternative 2 with the additional non-motorized areas as shown on the Winter Map for Alternative 5. This alternative provides a variety of snowmobile opportunities including areas that are reached on designated routes through areas with a "new" winter range prescription, as determined by the RFP.

### *Maintenance Costs*
In this alternative, some designated travel routes have not been designed or maintained for motorized travel. A portion of these travel routes would require reconstruction and relocation to meet Forest Service road and trail standards. Some actions would require additional analysis and public involvement. The costs to maintain travel routes to standard would be less in the alternative than Alternatives 1 and 2 but higher than Alternatives 3 and 4. There would be one-time costs to close approximately 90 miles motorized route.

### *Plan OMRD Ceilings and Recreation Experience*
This alternative exceeds OMRD ceilings in seven prescription areas. The range of overage is 0.1 to 0.4. Four areas are on the Westside District; these areas have no new motorized routes within them. Pebble Basin prescription area is managed under a rangeland vegetation prescription; Box Canyon and First Creek are managed under a forested vegetation prescription. Slate Mountain and Indian Creek prescription areas are managed for semi-primitive recreation. The remaining two areas, Bear Creek and Home Canyon, are discussed under "effects common to all alternatives." It is expected that these overages would not change the existing recreation setting in these areas. This alternative comes closer to meeting the OMRD ceilings than Alternatives 1 and 2.

## *Specific Travel Routes of Interest*

#### *Trail #331 on Elkhorn Mountain*
This alternative manages the section of Trail #331 between Potter Creek and Rowley Canyon as a designated motorcycle trail. Effects are similar for Alternative 2. Motorized use of the route is less than if the route were opened to ATV use.

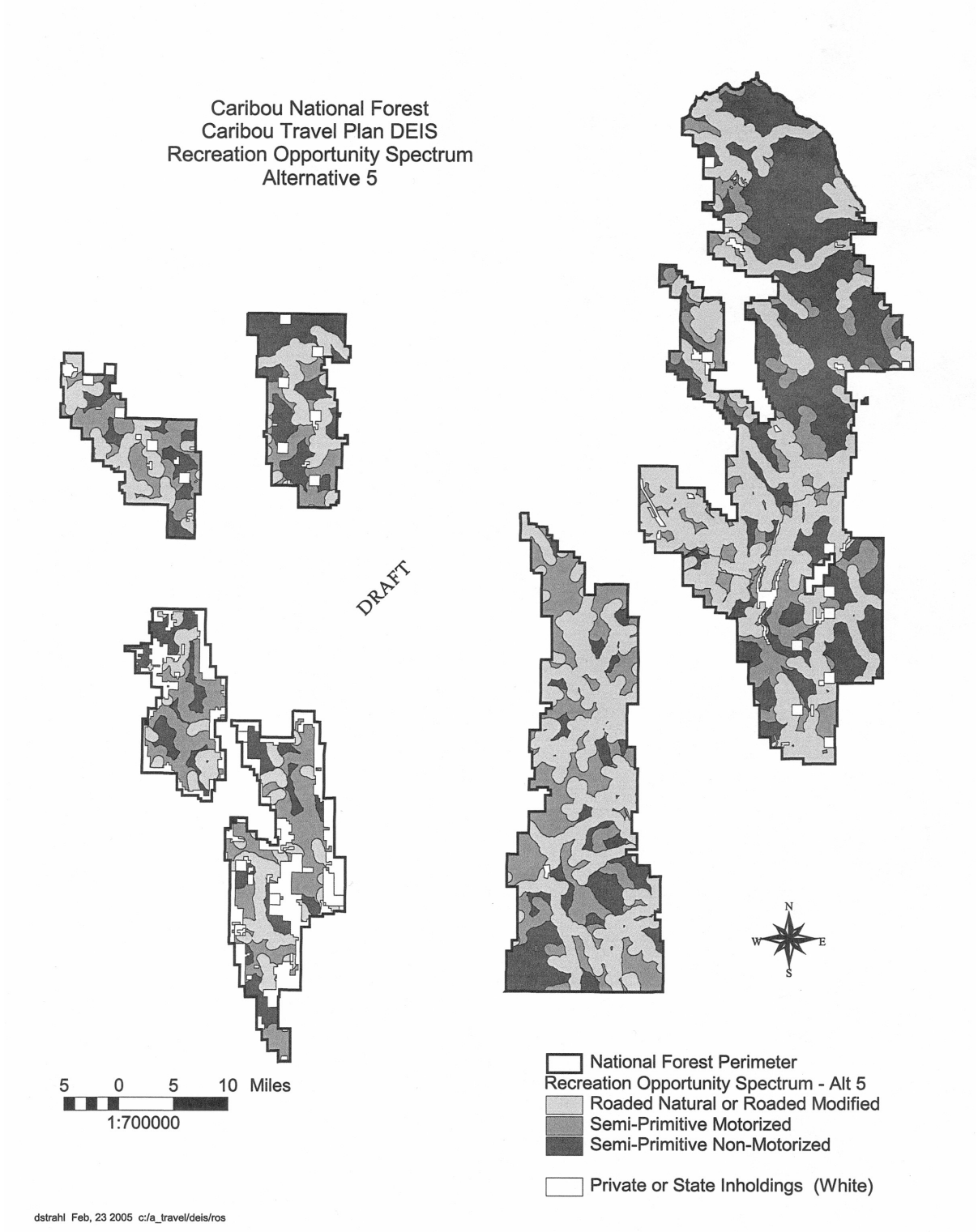
### *The Winschell Dugway*

The Winschell Dugway would remain a non-motorized trail. The existing condition of the trail makes it marginal for even foot and horse traffic. This management does not rule out future analysis to determine if a motorized trail would be feasible and would comply with the RFP.

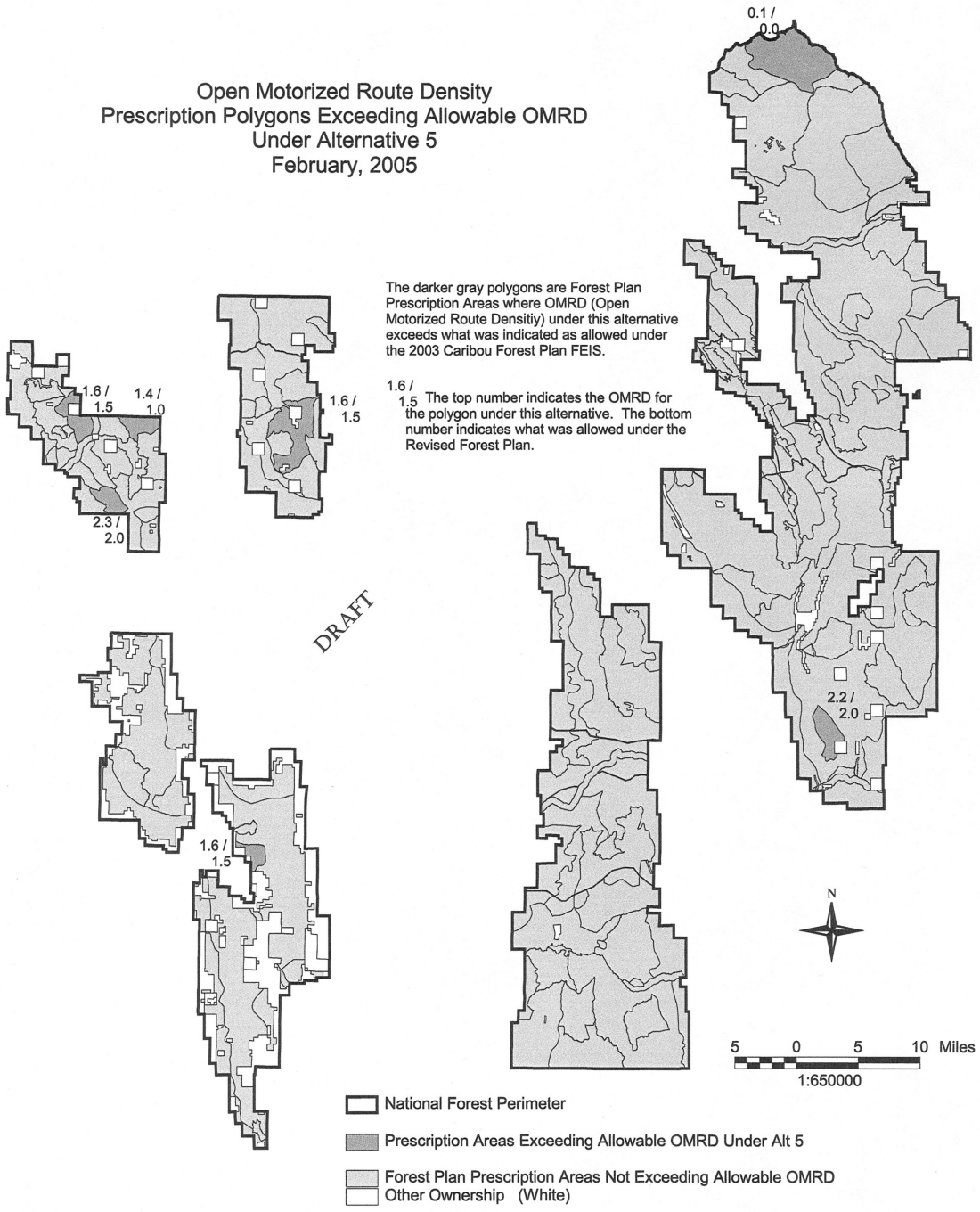
### *Cub River Road*

This alternative proposes a designated ATV trail, paralleling the road, from Albert Moser Campground to Willow Flat Campground. This trail would allow users of all kinds to reach other recreation sites without having to travel on the road. Construction and alignment of the new construction would require further analysis and public involvement.

***Map 4.7 - Alternative 5 - Snow-free Season ROS Map***



***Map 4.8 - Alternative 5 - Prescription Areas over OMRD Ceilings***



## Alternative 5R

This alternative was based on Alternative 5 with specific changes in response to public comment on mountain bike opportunity, specific trail modifications, and improving non-motorized snow-season area boundaries.

*Table 4.6 - Alternative 5R Issue Indicators*

| SPNM acres, percent of Forest | Miles non-motorized trail | Miles motorized travel routes | Miles Motorcycle Trail | Acres open to x-country motorized | Winschell Dugway |
|---|---|---|---|---|---|
| 316,360<br>30% | 650 | 1,770 | 150 | 0 | Not managed as a system trail pending further analysis |
| **Snow Season Non-motorized Acres** | | | **Snow Season Motorized Acres** | | |
| 46,535 (**4.5%**) | | | 995,665 (**95.5 %**) | | |

### Non-motorized Setting, Summer or Snow-free Season

This alternative manages 316,360 acres as non-motorized during the snow-free season. The effects for the opportunity of a non-motorized setting are similar for Alternative 1, with additional non-motorized acres in the Stump Peak drainage. This alternative offers 500 miles of mountain bike travel on non-motorized routes; 22 miles are located on the Westside District, were demand is highest. Routes offered on the Westside District include retaining Gibson Jack and West Fork non-motorized trails.

### Motorized Use and Opportunity

This alternative offers approximately 1,770 miles of motorized routes. Counting only the miles of motorized routes within prescription areas with an OMRD limit, there are 1,376 miles out of an allowable mileage of 1,880. Effects of this alternative are similar to Alternatives 2 and 5. As with Alternatives 2 and 5, this alternative provides motorized access to many places on the forest.

### Full-sized vehicles

This opportunity is similar to Alternatives 2 and 5. Most popular designated roads remain open.

### ATV travel

Over 650 miles of ATV trail are available in most forest areas to meet some of the demand for ATV travel. This alternative offers more ATV loop opportunities than other alternatives.

### Motorcycle Travel

This alternative offers approximately 150 miles of designated motorcycle trails. These trails are also available to mountain bike riders who prefer a single-track trail and don't mind sharing a trail with motorcycles. The Crestline Cycle Trail is managed as a single-track motorcycle trail, maintaining the existing setting for this trail.

### Cross-country Motorized Travel

This alternative manages motorized travel on designated routes in the Huckleberry Basin prescription area during the snow-free season. Effects are the same as Alternative 4. This change in motorized travel will require a plan amendment.

### *Hunting and Travel*
This alternative is advantageous to hunters who rely on motorized access to scout, hunt, and retrieve game; however, this alternative does not provide motorized access to all forest areas. Caribou Mountain, Toponce, and Stump Peak areas provide large non-motorized areas that offer a quality hunt in a non-motorized setting.

### *Non-motorized Travel (Snow Season)*
Effects for this issue are the same as Alternative 5. This alternative offers additional areas for non-motorized travel along the Emigration Highway (Bear River Range) and the "backside" of Pebble Creek. The additional areas in Squirrel Hollow will accommodate existing ski use. The non-motorized area-boundaries in Gibson Jack and Valve House areas, adjacent to Pocatello, have been changed to improve compliance. Changing the boundary of the Bonneville Peak non-motorized area, the "backside" of Pebble, will require a plan amendment.

### *Snowmobile Travel*
Snowmobile restrictions and effects are similar to Alternative 2 with the additional non-motorized areas as shown on the Winter Map for Alternative 5R. This alternative provides a variety of snowmobile opportunities including areas that are reached on designated routes through the "new" winter range prescription areas, as designated by the RFP.

### *Maintenance Costs*
The effects of maintenance costs are the same as Alternative 5.

### *Plan OMRD Ceilings and Recreation Experience*
This alternative does not meet OMRDs in nine prescription areas. The range of overage is 0.1 to 0.4. Seven areas are on the Westside District. These areas have no new motorized routes within them, with the exception of South Fork and Box Canyon. The proposed parallel motorized route along the South Fork road puts these two areas over the OMRD ceiling. South Fork and Pebble Basin prescription areas are managed under a rangeland vegetation prescription; Elk Meadows, Box Canyon and First Creek are managed under a forested vegetation prescription. Slate Mountain and Indian Creek prescription areas are managed for semi-primitive recreation. The remaining two areas, Bear Creek and Home Canyon, are discussed under "effects common to all alternatives." None of the overages will change the existing recreation setting in these areas. This alternative comes closer to meeting the OMRD ceilings than Alternatives 1 and 2.

## *Specific Travel Routes of Interest*

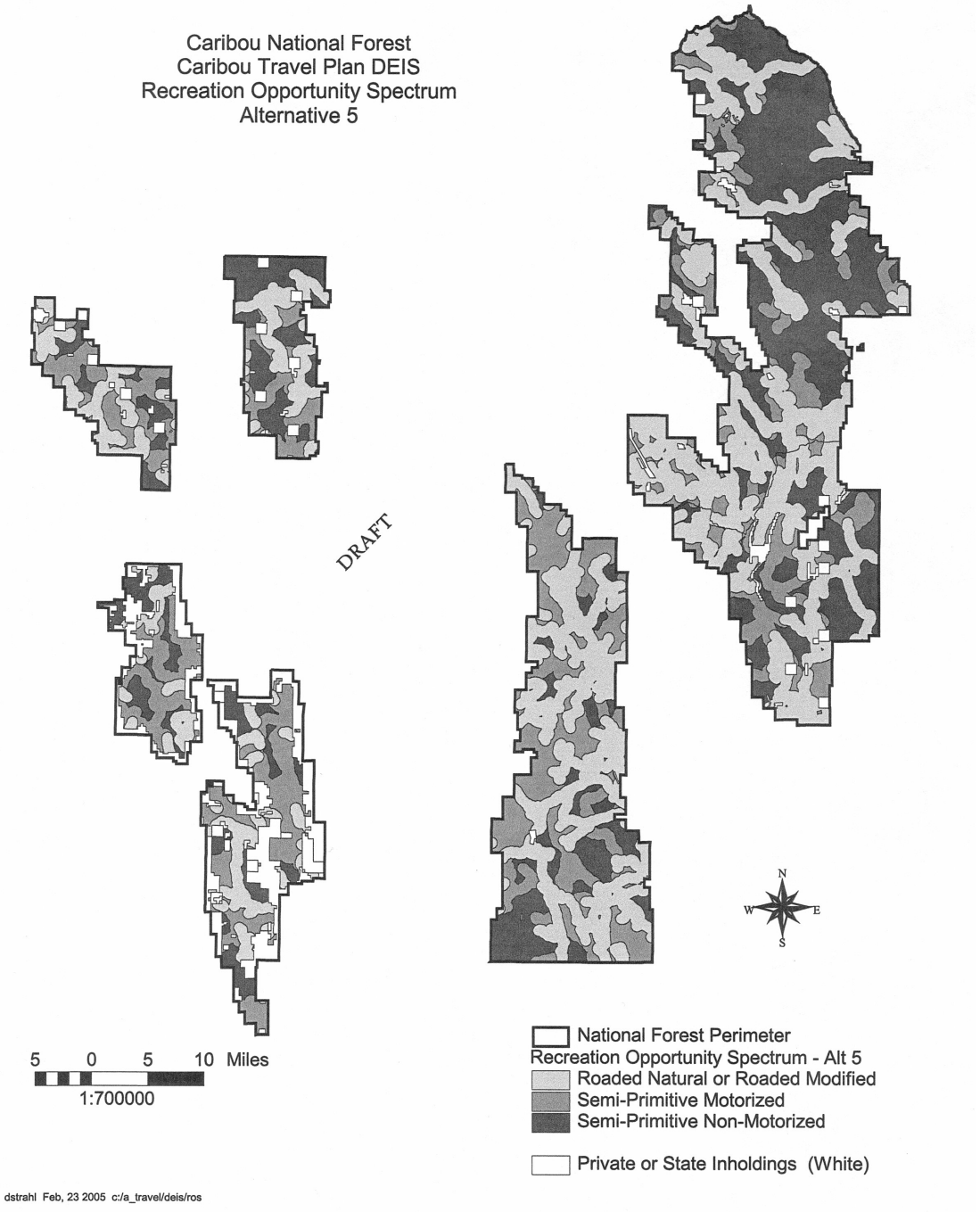
### *Trail #331 on Elkhorn Mountain*
This alternative manages the section of Trail #331 between Potter Creek and Rowley Canyon as a designated motorcycle trail. Effects are the same as for Alternative 2 and 5.

### *The Winschell Dugway*
The Winschell Dugway would remain a non-motorized trail. The existing condition of the trail makes it marginal for even foot and horse traffic. The Forest will initiate site-specific analysis of this route within one year of signing of the decision.

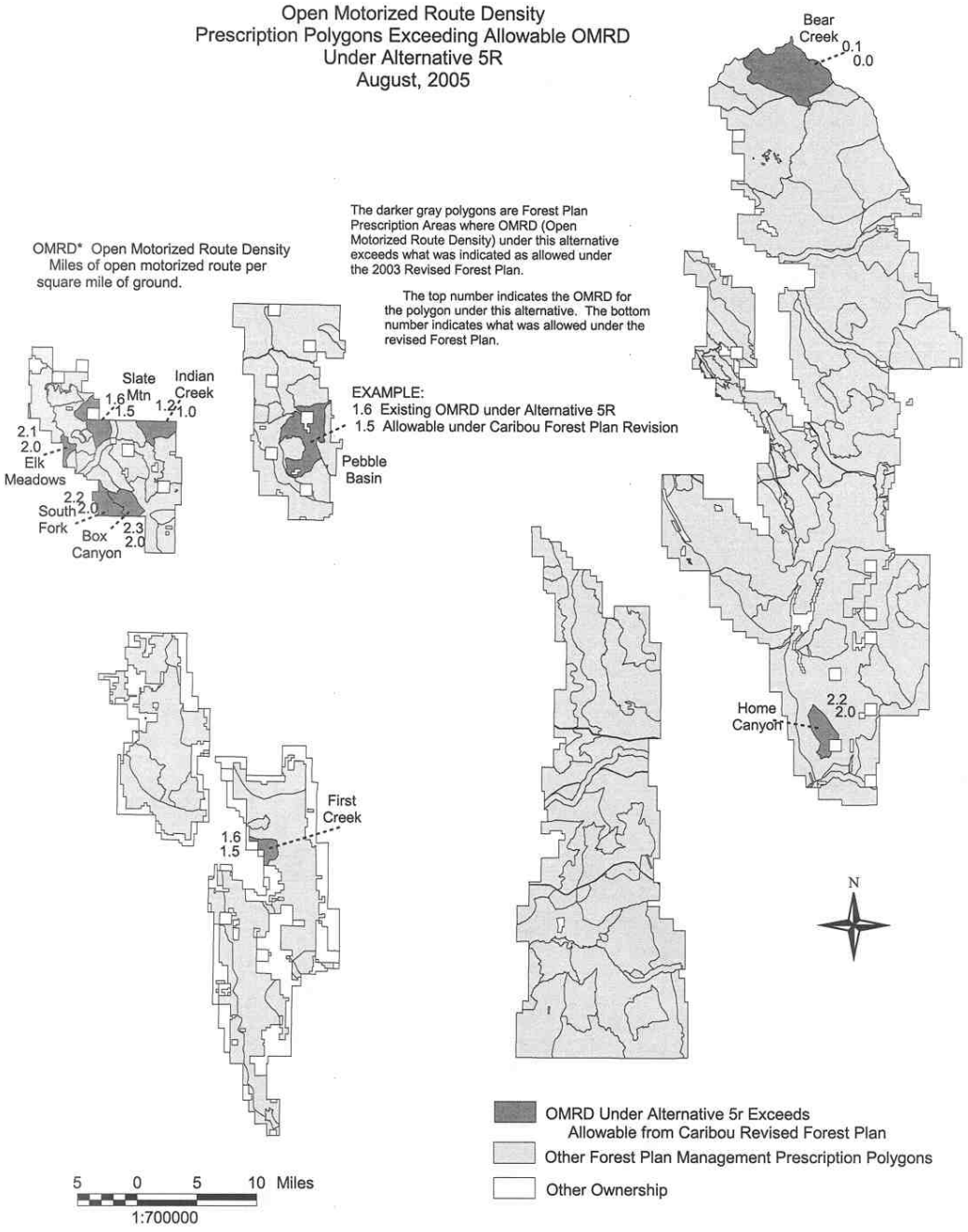
### *Cub River Road and South Fork of Mink Creek Road*

This alternative proposes a designated ATV trail, paralleling the road, from Albert Moser Campground to Willow Flat Campground. This alternative proposes a designated ATV trail, paralleling the South Fork of Mink Creek road, from the forest boundary north to Box Canyon. These trails would allow users of all kinds to reach other recreation sites and trails without having to travel on the road. Construction and alignment of the proposed new construction would require further analysis and public involvement.

***Map 4.9 - Alternative 5R - Snow-free ROS Map (same as the Alternative 5 ROS map)***



***Map 4.10 - Alternative 5R - Prescription Areas over OMRD Ceilings***



## Conclusions

### Motorized Opportunity and Non-motorized Setting (Snow-free)

All alternatives provide a variety of recreation opportunities, motorized and non-motorized. Alternatives 2, 5 and 5R would meet plan intent for ROS settings with some adjustments. Alternatives 3 and 4 would manage some areas currently managed for a semi-primitive motorized experience as semi-primitive non-motorized. All Alternatives would met or exceed Visual Quality Objectives, which are highly influenced by the prescribed ROS settings. Alternative 1 offers the most motorized routes but trails dead-end and there are redundant routes which can affect the recreation setting. Alternative 2 retains many of the existing settings and opportunities with the exception of managing a portion of Stump Creek drainage for a non-motorized during the snow-free season. Alternatives 3 and 4 offer additional non-motorized areas in the Bear River Range, Oxford Peak, Elkhorn Mountain, and additional acres adjacent to the Pocatello area where demand for non-motorized settings is high. Increasing non-motorized areas decreases motorized access and in these alternatives some forest areas are accessed on foot or stock travel. Alternatives 5 and 5R maintain most existing motorized access to the forest while providing improved site-specific opportunities, motorized and non-motorized, year-round.

All alternatives consider adjacent land uses on the Wasatch-Cache and Bridger-Teton National Forest, the Palisades District of the Caribou-Targhee NF, BLM and State travel route management. Alternatives 2, 5 and 5R connect more of these routes that Alternatives 3 and 4.

### Mountain Bikes

Alternatives 1, 2, 3, and 4 do not address existing illegal mountain bike use on the forest. Existing regulations are not understood by most riders. Alternative 5 offers more legal mountain bike opportunity adjacent to Pocatello, where use is most common. Alternative 5R offers additional mountain bike travel on non-motorized trails. In the Pocatello areas, some non-motorized trails are not designated for mountain bike use to offer trails for hikers and stock users only. In Alternative 5 and 5R, the Soda Springs and Montpelier Districts restrict mountain bike use to designated travel routes which would control cross-country bike travel but still provide opportunity for mountain bike travel on non-motorized trails.

### Disabled Access

Generally, alternatives that offer more non-motorized routes and areas (Alternative 3 and 4) would be preferred by people with disabilities who seek non-motorized settings and/or people with disabilities who cannot ride motorcycles or ATVs. Generally, alternatives that offer more motorized routes (Alternative 1, followed by 2, 5, and 5R) would be preferred by people with disabilities who rely on motorized vehicles to reach forest areas. All alternatives provide equal access opportunities and wheelchair travel is considered the same as foot travel.

### Game Retrieval

Generally, hunters who rely on motorized access to retrieve game would prefer alternatives that offer more designated motorized routes. Hunters who seek a non-motorized setting and do not rely on motorized access to retrieve game would prefer alternatives that provide more non-motorized settings. All alternatives offer designated motorized routes in some forest areas, and all alternative offer non-motorized settings for hunting.

### Motorcycle Trails

Motorcycle riders have some opportunity in all alternatives on designated motorized trails. Some motorcycle riders prefer a single-track motorized trail. Designated motorcycle trail miles are decreased in all action alternatives. Some routes are closed to motorized use and some are converted to ATV trails. All

action alternatives offer between 100 and 150 miles of single-track motorcycle trail. Alternatives 2, 3, 5, and 5R convert some motorcycle trails to ATV trails.

### *Snow Season Travel*

All alternatives offer a variety of non-motorized and motorized opportunity during the winter months. Alternatives 2, 3, 5 and 5R implement the new closure areas identified in the RFP and offer designated snowmobile routes through new areas of winter range. Alternative 4 sets more areas aside for non-motorized use including larger areas adjacent to Pocatello. This could displace some snowmobilers that use these areas. Alternative 4 does not designate snowmobile routes through areas of "new" big game winter range; this will displace some existing snowmobile use along the Bear River Range. Alternatives 5 and 5R change the "backside" boundary to allow snowmobile use on the lower reaches and expand the closure area to include high elevation acres to the north. These changes would better fit the existing use patterns of snowmobiles and back-country skiers. Under Alternatives 5 and 5r, additional non-motorized areas were added in Gibson Jack and along the Emigration Highway. These areas are popular with skiers and would not displace snowmobile users.

### *OMRD ceilings*

All alternatives would require a plan amendment to change OMRD prescription ceilings for specific areas. With the exception of Alternative 1 and 2, the overages are not excessive and would not fundamentally change these areas' setting for recreational use and travel.

## *Cumulative Effects*

The time frame considered for the cumulative effects analysis for recreation uses is 15 years which coincides with the time frame of the RFP. It would be speculative to predict outdoor recreation and leisure trends beyond this time frame. The cumulative effects analysis area is the State of Idaho and the Intermountain Region. Statistics are available at these scales and these areas represent a social boundary for the interrelationships of recreation opportunities. The Forest Service Intermountain Region includes the National Forests of southern Idaho, Utah, Nevada, portions of western Wyoming, and a small portion of California. Areas within the Region have similar climates, vegetation types, landscape character, and basin and range topography typical of the Great Basin.

Many on-going and future Forest Service actions, as listed in Chapter Five, have little long-term or cumulative effect on outdoor recreation opportunities within the State or Region. The cumulative effects of past, current, and proposed vegetation and fuel reduction treatments could be temporary displacement of trail users and a change in the visual quality of the area. These effects would be the same under all alternatives.

The cumulative effects of past, present, and future wildlife and fisheries management and watershed restoration would have a positive long-term effect on forest travelers who view wildlife, hunt, or fish in the area. However, some past restoration projects have displaced dispersed users from streamside camp sites (RFP FEIS 3-21). This displacement could occur with future projects. Restoration projects generally improve the visual quality of riparian areas within three to five years. These effects would be the same with all alternatives.

Noxious weed control could have a minor but cumulative effect on forest road and trail use in the State and Region. Noxious weed control activities include spraying from ATVs. These activities leave a noticeable track in some areas, which could encourage illegal off-route travel by members of the public. On-site signing could mitigate the situation. It is likely that these treatments will continue throughout the State of Idaho and Intermountain Region. In the long-term, successful weed control would improve landscape conditions for all forest visitors.

Livestock grazing in some areas of the State and Intermountain Region has caused conflicts with recreation use. If livestock is allowed to congregate in developed sites, trail heads, or along popular travel routes, resulting conditions can reduce the recreation experience for forest visitors. As more people visit the forest, the potential for conflict increases (RFP FEIS 4-17). Recent and future grazing management changes would reduce this conflict through improved riparian protection measures and adjusting the timing and duration of grazing in high-use recreation areas. This effect would be the same for all alternatives.

The cumulative effect of past, present, and future phosphate mining is displacement of forest visitors from areas and trails directly adjacent to or part of the mining activities. Scenic integrity is also affected by mining activities. Mining activities could have a twenty year life-span, so localized displacement can be long-term, depending on reclamation practices and the ability to re-open mined areas to public recreation use (RFP FEIS 4-19). Phosphate mining effects recreation use patterns on the Caribou. Due to the scale of acres affected, the displacement is not significant for the State or Region as a whole. These effects would be the same for all alternatives.

Travel management decisions on the Caribou, in combination with travel management decisions for other public lands in Idaho and the Region, have a potential cumulative effect on motorized and non-motorized recreation activities. These effects would be further magnified as motorized and non-motorized travel increases with population growth. The general trend in recent years has been to restrict motorized travel. In some cases, restrictions were a response to resource concerns; in other instances, restrictions were prompted by the *loss of non-motorized settings* due to OHVs becoming more popular and capable of reaching remote areas (FS Draft National OHV Policy, Montana OHV Decision).

This comparison considers recreation trails only. Recreation trail statistics are compiled by the State of Idaho. It would be difficult to determine the number of primitive recreation roads available statewide as most road statistics include all types of roads. In addition to 1,010 miles of designated roads, there are 670 miles of ATV trail, 170 miles of single-track motorcycle trail, and 580 miles of non-motorized trail on the Caribou. The State of Idaho Department of Parks and Recreation statistics indicate that there are 5,600 miles of ATV trails, 3,500 miles of motorcycle trails, and 18,700 miles of non-motorized trails within the State (State Trails Plan, IDPR). The range of action alternatives in this analysis would reduce motorized trails by 14 to 319 miles or a maximum of four percent of motorized trail miles statewide. Alternatives offer between 585 miles to 1,020 of non-motorized trail. 435 miles of non-motorized trail, the range of difference between alternatives, is under three percent of the State's total non-motorized trails. The amount of "motorized trails lost" or "non-motorized trails gained" under this analysis would not have a significant effect on motorized or non-motorized opportunity within the State of Idaho as a whole or within the Intermountain Region.

The additive effects of other National Forests' travel management changes within the State or Region on motorized opportunity and non-motorized setting cannot be predicted. Some may contribute to the loss of motorized routes and some may contribute to the loss of non-motorized trails and settings. Considering travel management on other public lands including the Bureau of Land Management, many land managers are changing motorized travel from "open to cross-country travel" to motorized travel on designated routes during the snow-free season (FS Draft National OHV Policy, USDI BLM Clarification of OHV designation Memo, 2003). This is likely to reduce motorized opportunity as routes are designated. The Caribou Travel Plan alternatives offer a different mix of motorized opportunity and non-motorized settings. The effects of the alternatives to statewide or region-wide recreation allocations of motorized and non-motorized activities would not be significant.

Past, present, and future environmental conditions within the State and Region include drought cycles, accumulation of forest fuels, and the increasing threat of invasive species. These conditions, alone or in

combination, have the potential to change the settings and scenery of forest lands (Chief Bosworth's Four Threats Speech, 04/03).

The concern for accumulated forest fuels and invasive species are reflected in the Chief of the Forest Service's Four Threats speeches first made in April of 2003. The Four Threats to forest health, identified by Chief Dale Bosworth, are fire and fuels, invasive species, loss of open space, and unmanaged recreation. The national emphasis on reducing forest fuels has been instrumental in on-going fuel reduction projects within the State and Region. In response to the threat of invasive species to forest health, the Forest Service has a national strategy and plan to prevent, detect, and control invasive species including noxious weeds. These two initiatives will reduce the potential for large-scale landscape changes from wildfire and invasive species.

The alternatives considered in this analysis would not have an effect on the conditions of drought. It is predicted that reducing motorized routes could have an effect on the spread of noxious weeds in some areas of the forest. Alternatives 3 and 4 offer the least amount of motorized routes which could reduce the noxious weed spread to new areas of the forest. Alternatives 3 and 4 offer the least amount of motorized routes which could reduce the risk of human-caused fires. However, considering these conditions state or region-wide, the differences of effects between alternatives would not be substantial.

Past, present and future recreation trends related to regional population growth are:

- Visitors are encountering more people when they visit the forest due to population growth and a growing participation in outdoor recreation (public comment, forest RIM records, '86-'98).
- OHV travel is ranging further into traditionally "non-motorized" areas due to the growing popularity, reliability and capability of these vehicles (Draft National OHV policy and forest use records). "Unmanaged recreation" includes the growth of OHV use on National Forests.

These trends are affecting outdoor recreation in the State and the Region. They have created the feeling of "crowding" and a loss of solitude for some motorized and non-motorized travelers in popular areas. This has diminished the recreation experience for some people. People seeking a non-motorized setting are finding it more difficult to find "natural quiet" in areas managed as "semi-primitive non-motorized." Alternatives 3 and 4 offer more semi-primitive non-motorized areas which would better distribute forest visitors seeking a non-motorized experience. Alternatives 1, 2, 5, and 5R offer more motorized routes which could reduce better distribute motorized use. The cumulative effects of more users and more OHV use in remote areas would not change recreation experiences for the state and region.

Nevada, Utah, and Idaho are among the five fastest growing states in terms of population in the country (2000 Census data). A past, present, and future trend that will have long-term cumulative effects on recreation travel on the Caribou, the State of Idaho, and the Intermountain Region is the loss of open space for animals and people through rural subdivision and development. Often, the relationship between population growth and land development is disproportionate. A one percent growth in population can mean a five percent growth in developed land. Under current regional planning strategies, the loss of private land as open space would accelerate with population growth. This loss would put additional pressures on public lands for outdoor recreation purposes – further diminishing the recreation experience. The loss of private land as open space can also mean loss of wildlife habitat, which could diminish the opportunities to view, photograph, or hunt wildlife. This cumulative impact to recreation experiences would be the same under all alternatives.

A related trend to the loss of open space is the loss of public land access through private lands. As people begin to dwell in the forest's front yard, in primary or secondary homes, public access through historical rights-of-way can be lost. This is of special concern for the Caribou as existing forest access is already limited (RFP FEIS 3-24). Loss of public access across private lands is also of special concern in southeast

Idaho as public land and private lands are intermingled. Alternatives 1, 2, 5, and 5R retain the most motorized access onto the Forest which would favor future access. Alternatives 3 and 4 retain the least amount of motorized access onto the forest, further diminishing the chances to retain existing rights-of-way or easements as land ownerships change. Under all alternatives, it could become increasingly difficult to reach the forest for motorized and non-motorized travel. The localized loss of access would have some effect to outdoor recreation in southern Idaho.

Combining the effects of the increase in forest visitors, the loss of private land as open space, and the loss of access to public lands creates a general decrease in the outdoor recreation experiences statewide and regionally. This cumulative effect would be the same for all alternatives.

The technologies that made mountain bikes and ATVs popular changed recreation experiences available on public lands. The advent of new uses changed the relationships between recreational pursuits. New recreation technologies have the potential to affect outdoor recreation on a regional and national scale. New equipment, vehicles, and or technologies will offer new modes of transportation and new ways of doing traditional sports. Light-weight camp equipment is allowing backpackers to expand their range. This could increase the number of people participating in extended backpacking trips. GPS and cellular phones encourage more people to venture further into the backcountry without the risk of being lost or injured without rescue. This has increased the number of people using remote areas. The potential for new technologies to change outdoor recreation is very high; however, the nature of the changes cannot be predicted. Not all new outdoor recreation pursuits will be considered appropriate for public lands or National Forests. The effects of new technologies on outdoor recreation and public lands for the State and Region cannot be predicted. It is likely that Travel Plan alternatives would not have a cumulative effect on future recreation pursuits.

# Roadless Areas

### *Environmental Consequences*

## *Introduction*

This section discloses the environmental consequences of implementing each alternative on the wilderness potential and roadless values of the Forest's Inventoried Roadless Areas, or IRAs. Effects are measured by comparing the amount of designated travel route miles in each IRA with the area's existing wilderness potential and roadless characteristics by alternative. Effects on wilderness capabilities of each IRA are discussed and effects on the roadless values of each IRA are discussed in this section of Chapter Four.

## *Direct and Indirect Effects Common to All Alternatives on Wilderness Potential*

Most IRAs did not rate high for wilderness potential due to the presence of historic roads, evidence of past human disturbance, lack of screening from the lower valley, and their limited size. Most IRAs' wilderness potential will not be altered by changing the amount of designated roads and trails within them. These areas will still rate low due to other factors. The portions of Caribou City IRA and Mt. Naomi IRA that are managed under a Recommended Wilderness prescription have no designated motorized routes within them. All alternatives retain these areas as non-motorized during the snow-free season.

## *Alternative 1*

Implementation of this alternative would retain the existing 142 miles of road and 633 miles of motorized trail within the IRAs. Bonneville Peak, Meade Peak, Mink Creek (North of Preston), Stump Creek, and Worm Creek have "moderate" ratings for some wilderness characteristics and also contain motorized routes. Worm Creek IRA has motorized trails on its perimeter which does not affect the "core" area that

contains wilderness character. Stump Creek has eight miles of road and 112 miles of motorized trail. These routes could reduce the "apparent naturalness" of this IRA. In the remaining IRAs with "moderate" wilderness characteristics, an increase in motorized use on these routes has the potential to reduce the "apparent naturalness" of the areas.

### *Alternative 2*

Implementation of this alternative would designate 131 miles of road and 543 miles of motorized trail within the IRAs. Effects of this alternative are similar to Alternative 1, with the exception of Stump Peak IRA. This IRA has high ratings for some wilderness characteristics and reducing 82 miles of motorized trails would reduce potential impacts to these characteristics. Other IRAs with less motorized trail include Mink Creek and Red Mountain. These areas do not possess strong wilderness characteristics but reducing the amount of motorized routes within the area can enhance their "apparent naturalness."

### *Alternative 3*

Implementation of this alternative would designate 122 miles of road and 376 miles of motorized trail within the IRAs. Effects of this alternative are similar to Alternative 2, with the exception of less motorized travel routes within the following IRAs:

- Bonneville Peak IRA
- Clarkston Mountain IRA
- Elkhorn Mountain IRA
- Meade Peak IRA
- Mink Creek IRA
- Oxford Mountain IRA
- Red Mountain IRA
- West Mink IRA
- Williams Creek IRA
- Worm Creek IRA

Most of these areas do not possess strong wilderness characteristics. Of these IRAs, Bonneville, Meade, Stump, and Worm Creek have "moderate" ratings for some wilderness characteristics and this alternative would reduce potential impacts to these areas' "apparent naturalness."

### *Alternative 4*

Implementation of this alternative would designate 116 miles of road and 320 miles of motorized trail within the IRAs. Effects of this alternative are similar to Alternative 3, with additional reductions of motorized routes in Bonneville Peak, Elkhorn, Meade, Oxford, and Stump Peak. Less motorized routes within these IRAs would reduce potential impacts to the areas' "apparent naturalness."

### *Alternatives 5 and 5R*

Implementation of these alternatives would designate 134 miles of road and 533 miles of motorized trail within the IRAs. Effects of these alternatives are the same as Alternative 2. There is little difference between the alternatives concerning the miles of motorized routes within IRAs.

## *Direct and Indirect Effects Common to All Alternatives on Roadless Values*

The travel plan alternatives do not propose much change in motorized route miles within the following IRAs. Motorized route miles vary by less than 1.5 miles. All alternatives will retain existing roadless values of the IRAs listed below if existing uses do not increase to the degree that they adversely impact soil and vegetation (RFP, Roadless, Chapter Four):

- Bear Creek IRA
- Bonneville IRA
- Caribou City IRA
- Clarkston Mountain IRA
- Deep Creek IRA
- Elkhorn Mountain IRA
- Gannett Spring Creek IRA
- Gibson IRA
- Hell Hole IRA
- Meade Peak IRA
- Mount Naomi IRA
- North Pebble IRA
- Paris Peak IRA
- Pole Creek IRA
- Sage Creek IRA
- Scout Mountain IRA
- Schmid Peak IRA
- Soda Point IRA
- Station Creek IRA
- Stump Creek IRA
- Swan Creek Mountain IRA
- Telephone Draw IRA
- Toponce IRA
- West Mink Creek IRA
- Williams Creek IRA
- Worm Creek IRA

## *Alternative 1*

Implementation of this alternative would retain the existing 142 miles of road and 633 miles of motorized trail within the IRAs. Motorized trails within IRAs can be compatible with maintaining roadless area values if densities do not compromise the semi-primitive setting and forest resources are not adversely impacted. This alternative would not adversely affect the existing roadless values of these IRAs.

## *Alternative 2*

Implementation of this alternative would designate 131 miles of road and 543 miles of motorized trail within the Forest's IRAs. Effects of this alternative are similar to Alternative 1 with these exceptions:

- This alternative proposes to close 82 miles of motorized trail within Stump Creek IRA which has high values for heritage, fish habitat, and wildlife security and high for semi-primitive motorized and non-motorized opportunities.
- This alternative designates three additional miles of non-system motorized trail within Dry Ridge IRA, which rates high for fish habitat and wildlife security and moderate for semi-primitive motorized opportunities.
- This alternative designates five additional miles of non-system motorized trail within Huckleberry IRA which rates low for most values.
- This alternative designates three additional non-system miles of motorized trail within Liberty Creek IRA which rates high for fish habitat and wildlife security and high for semi-primitive motorized opportunities.

- This alternative closes six miles of motorized trail within Mink Creek IRA which rates moderate for fish habitat and wildlife habitat and high for semi-primitive motorized opportunities.
- This alternative designates three additional non-system miles of motorized trail within Oxford Mountain IRA which rates high for fish habitat and wildlife security and high for semi-primitive motorized and non-motorized opportunities.
- This alternative closes 14 miles of motorized trail within Red Mountain IRA which rates high for fish habitat.
- This alternative designates three additional non-system miles of motorized trail within Sherman Peak IRA which rates high for fish habitat and high for semi-primitive motorized opportunities and moderate for semi-primitive non-motorized opportunities.
- This alternative designates three additional non-system miles of motorized trail within Stauffer Creek IRA which rates high for fish habitat and moderate for semi-primitive motorized opportunities.

This alternative enhances the semi-primitive non-motorized value of Stump Creek, Mink Creek, and Red Mountain IRAs. An increase in motorized trails within IRAs has the potential to impact the roadless values of reference landscapes and semi-primitive non-motorized opportunities. This alternative would not adversely affect the existing roadless values of the seven IRAs with the increase of three to five miles of motorized trail in each IRA. This degree of increase would not change the recreation setting or potential for a reference landscape.

## *Alternative 3*

Implementation of this alternative would designate 122 miles of road and 376 miles of motorized trail within the IRAs. Effects of this alternative are similar to Alternative 2 with the exception of less motorized travel routes within the following IRAs:

- Bonneville Peak IRA
- Clarkston Mountain IRA
- Elkhorn Mountain IRA
- Meade Peak IRA
- Mink Creek IRA
- Oxford Mountain IRA
- Red Mountain IRA
- West Mink IRA
- Williams Creek IRA
- Worm Creek IRA

This alternative enhances the semi-primitive non-motorized value of these IRAs.

## *Alternative 4*

Implementation of this alternative would designate 116 miles of road and 320 miles of motorized trail within the IRAs. Effects of this alternative are similar to Alternative 3 with additional reductions of motorized routes in Bonneville Peak, Elkhorn, Meade, Oxford, and Stump Peak IRAs. This alternative enhances the semi-primitive non-motorized value of these IRAs.

## *Alternatives 5 and 5R*

Implementation of these alternatives would designate 134 miles of road and 533 miles of motorized trail within the Forest's IRAs. Effects of this alternative are the same as Alternative 2; there is little difference between the alternatives concerning the miles of motorized routes within IRAs.

### *Conclusion for Wilderness Potential*

All travel plan alternatives designate motorized roads and trails in Caribou IRAs. Most of the 34 IRAs on the Forest do not contain strong wilderness character due to past human activities including historic roads. Motorized trails have the potential to change the "apparent naturalness" of an area with increased use over time. But a motorized trail can be closed and in time the travel route template would diminish, depending on soils and vegetation cover. Motorized trails within the Caribou IRAs have minimal impact on the existing wilderness capabilities of the IRAs.

Motorized trails within IRAs can be compatible with maintaining roadless area values if densities do not compromise the semi-primitive setting and forest resources are not adversely impacted. All alternative would not adversely affect the existing roadless values of these IRAs. Alternatives 3 and 4 enhance the semi-primitive non-motorized value of these IRAs. Alternatives 2, 5 and 5R improve the semi-primitive non-motorized values within Stump Peak IRA.

### *Cumulative Effects*

The cumulative effects area for potential wilderness and roadless values are the 34 IRAs of the Caribou plus the portions of some IRAs that are contiguous with the adjacent forests: the Wasatch-Cache National Forest, the Targhee National Forest, and the Bridger-Teton National Forest. Demand for semi-primitive motorized and non-motorized opportunities will continue to grow with Southeast Idaho's population. The alternatives offer both motorized and non-motorized opportunities within the 34 IRAs and will contribute to meeting future demand for these recreation activities. There are no expected irretrievable or irreversible effects to wilderness potential or roadless values from the alternatives.

## Heritage

#### *Environmental Consequences*

### *Mitigation for All Alternatives*

The location of new and existing road or trail areas presents the possibility of having an effect to significant cultural resources. If additional sites are discovered during the ground layout and design of any action alternatives or other on-going survey activities, the Forest Archaeologist will consult with the State Historic Preservation Officer (SHPO), as required by law, to document and determine the significance of the discovery and the effects of the project on it. The Shoshone-Bannock Tribes and Northwest Band of Shoshone will be consulted regarding Native American sites.

Mitigation of effects to other identified cultural resource sites could be accomplished through complete avoidance or scientific removal of the resource. If cultural resources are discovered during future ground disturbing activities, such activities will be stopped until the cultural materials are properly documented and evaluated by the Forest Archaeologist in compliance with 36 CFR 800.11.

The Forest Archaeologist will monitor all significant historical and archaeological resources to determine if adverse effects are present due to road or trail activities. All proposed road and trail improvement or decommissioning projects will be reviewed prior to implementation to assess the effect of the proposed activity to significant historic and prehistoric resources. If it is determined that motorized or non-motorized activities are adversely affecting significant historic and/or archaeological resources, a variety of mitigation measures will be employed. Examples of mitigation measures which may be considered include:

- Placement of natural barriers (rocks, logs or other woody debris, or other natural materials) to deter vehicles from accessing the areas.

- Excavation and data recovery of historic and/or archaeological material. (Excavation would only be utilized in an extreme condition and as a last viable option. Excavations are not only costly but they also permanently destroy a site.)

Although these are examples of mitigation measures which may be considered, the list is not exhaustive and the Caribou-Targhee Heritage Resources staff in consultation with the Idaho SHPO, travel managers, and interested parties will consider all mitigation measures which will preserve and protect these non-renewable resources.

## *Effects Common to All Action Alternatives*

Cultural resources are located throughout the analysis area. All un-surveyed roads and trails that have proposed ground disturbance through closing, decommissioning, or construction/ reconstruction will be surveyed on a site specific basis. The site specific survey will determine if any adverse effect to archaeological and/or historical resources will occur as a direct or indirect result of these activities. User-created roads and trails proposed to be incorporated into the transportation system will also be surveyed for primary or secondary effects to cultural resources. All alternatives provide access to a variety of heritage sites, while maintaining the motorized restrictions protecting key heritage sites such as the non-motorized area of Terrace Canyon, northeast of Soda Springs.

## *Effects Common to Alternatives 1, 2, and 3*

The RFP eliminated cross-country motorized travel in most areas of the forest which reduced potential impacts on heritage resources from cross-country motorized travel; however, these alternatives leave the Huckleberry Basin area open to cross-country motorized travel during the snow-free season which has potential to adversely affect unknown archaeological and/or historical resources in this prescription area.

## *Alternative 2*

Alternative 2 proposes to open the Winschell Dugway to motorized travel, requiring reconstructing the route to ATV standard. This action would require detailed site-specific analysis. Without preliminary design criteria and specific route location, a determination of effect cannot be made. Based on antiquity, historic use, and local or regional historic importance, the trail itself may be eligible for inclusion to the National Register of Historic Places (36 CFR 800.4[c] [2]). The effect to this potentially significant historic site cannot be determined as required by the National Historic Preservation Act (36 CFR 800.5) without preliminary design and construction specifications. It would be recommended that if this alternative is chosen, a site-specific cultural resources survey and report be conducted to asses any potential adverse affects to historic resources.

## *Alternatives 4 and 5*

These alternatives manage motorized travel on designated routes during the snow-free season in the Huckleberry Basin area. While this area has numerous designated motorized routes in both alternatives, keeping motorized travel to designated routes will reduce adverse impacts to known and unknown archaeological and/or historical resources in this area.

## *Cumulative Effects*

The cumulative effects analysis area for heritage resources is Southeast Idaho; this area represents similar topography and cultural uses of the land. The potential cumulative impacts to heritage resources of Southeast Idaho from the alternatives and other ground disturbing actions could contribute to a loss of heritage resource information or a gain of heritage resource information, depending on the outcome of ground disturbing activities.

# Air Quality

### *Environmental Consequences*

## *Introduction*

Some people are concerned with motorized travel on the Forest adversely affecting air quality from motor emissions.

## *Analysis Area*

The analysis areas for direct and indirect effects to air quality are the portions of the Caribou and Cache NFs administered by the Westside, Soda Springs, and Montpelier Ranger Districts.

## *Direct and Indirect Effects for All Alternatives*

Recreational travel by motorized vehicles is a source of pollution. However, the primary source of air quality concern on the Forest is particulate matter and carbon monoxide from prescribed fire and wildfire. Particulate matter and carbon monoxide do not currently exceed, nor are they expected to exceed NAAQS in the future (RFP FEIS 3-246). All parts of the Caribou are Class II Air Quality areas. None of the alternatives are expected to have a measurable change in air quality or affect air quality classifications. The amount of emissions from vehicle use would not vary significantly between alternatives. Even with increased motorized travel, the Forest air quality would most likely meet the standards. None of the alternatives are expected to result in measurable cumulative effects.

# Soils

### *Environmental Consequences*

## *Analysis Method*

The analysis method used to determine effects on the soil resource by alternative was an evaluation of miles of motorized roads and trails that occur on sensitive soil related to soil risk. For this analysis, GIS was used to identify land types that are susceptible to surface erosion and mass movement using the four activity areas as analysis blocks. The percent of sensitive soils that occur in each sub-watershed was used as the risk factor. Values of low, moderate, and high surface erosion potential and mass movement potential were used to determine soil risk. An additional watershed risk factor within the sub-watersheds was analyzed. The road density and road density within the Aquatic Influence Zone were factored into the risk calculation. The level of road conditions associated with unimproved roads with low maintenance, level-two roads are also included in the watershed risk factor.

## *Scope of Analysis*

The geographic area of this analysis is limited to those portions of the Caribou and Cache National Forests administered by the Caribou-Targhee National Forest, Westside, Soda Springs, and the Montpelier Ranger Districts. This area is also used for the cumulative effects analysis because Forest management actions along with the transportation system may have cumulative effects on the soil resource.

### *Definitions and Assumptions*

Decommissioning of roads and trails will be evaluated as "soils returned to productive use." Reclamation of site productivity is a long-term effect since recovery of vegetation and soil conditions requires time. Short-term effects are defined as less than six years and long-term effects are defined as more than six years.

For the purpose of decommissioning, methods such as soil ripping, re-contouring, or culvert removal are considered as soil reclamation measures; however, there are no reclamation treatments that would immediately restore soil productivity to pre-disturbance conditions.

Road closures with barriers only and without physical manipulation of the road prism are not considered a soil reclamation measure. Soil impacts such as compaction and decreased infiltration capacity on road or trail prisms can persist for several decades even without continued transportation or access use. Over the long-term, soils will recover slowly as they re-vegetate. Winter snowmobile use is not analyzed in all alternatives because impacts to the soil resource would be negligible.

## *Effects Common to all Alternatives*

In the short-term, decommissioning of roads or trails can accelerate soil erosion on disturbed areas. Management actions with the greatest impacts to soils are those that remove vegetation or disturb the soil surface. These actions include construction and/or reconstruction of roads and trails. The magnitude and extent of soil impacts are generally greatest on roads when compared to trails. This is due to the cuts and fills associated with road construction that often causes soil disturbance on areas adjacent to the road tread. Soil compaction and erosion are generally less on trails designed for non-motorized uses compared with motorized trails use (Cole 1999; Weaver et al. 1978).

The building and reconstruction of roads and trails requires vegetation removal, soil disturbance, and slope re-contouring. These actions loosen soils and can lead to substantial contributions of sediment to stream systems (Megahan 1977). Roads built across soils with a high risk for mass movement are especially at risk. Meeuwig et al. (1976) found that natural ground slope and fill slope were important factors that contribute to mass failures. Road cuts undermine upper slopes, increasing the probability of soil movement and mass failure. Slopes exceeding 35 degrees need special provisions to assure stability. Following best management practices that establish effective road and trail drainage systems and stabilize cut and fill slopes would effectively reduce erosion within several years (Seyedbagheri 1996; Idaho Department of Lands 1992).

Established road and trail tread are essentially eliminated from the productive soil base. Soil erosion and sedimentation from established roads and trails occurs because they lack vegetative cover on the running surface and are compacted (Seyedbagheri 1996). Poor road drainage accelerates erosion rates by allowing runoff to accumulate on the trails often collecting water from upslope. Increased use can damage trail drainage by creating ruts that accelerate the water down-hill, creating ever-larger ruts.

Soil impacts tend to be more severe at high elevations, on steep slopes, and on wet, poorly drained soils. Weaver and Dale (1978) found greater trail widths, depths, and erosion from motorcycles when compared to horses and humans on steep areas. Erosion resulting from soil compaction and other adverse off-road vehicle impacts, such as trail widening or multiple trails, are generally greater in wetter soils especially if subjected to heavy use.

Off-road vehicles, especially if the vehicle is operated to induce wheel spinning and sliding, easily damage microbiological crusts resulting in reduced soil stability, soil fertility, soil moisture retention, and increased wind and water erosion (Belnap, *et al*, 2001). Drier climates generally have more microbiological crusts than the higher elevations that occur on the Forest. The Forest's Roads Analysis Report contains an assessment of the effects the key travel routes have on erosion and mass stability (USDA-FS, 2002). Standards and guidelines in the Revised Forest Plan provide recovery opportunities for affected soils (RFP 3-37).

Travel in the form of horseback riding, foot, and mountain bike travel also has impacts on the soil resource and can affect native surfaced road and trail conditions (Sprung 2005). The effects are variable; however, studies have found these type of travel can increase erosion-potential and cause compaction under specific circumstances (Vandeman 2004; Sprung 2005).

## *Effects from User-Created Routes*

Transportation uses can directly impact soil productivity by compaction and erosion on lands outside the roads or trail prism when travelers establish new routes, especially to avoid trail obstructions and crossing difficult terrain or wet areas. These "pioneered" routes have not been dedicated to transportation uses and are not included in the Forest's transportation system. Many of the user-created routes that are not on the Forest transportation system are historic routes that were made in the 1950s and 1960s by jeeps while those made more recently have been by ATVs (USDA FS 2004). User-created roads and trails are more likely to erode than those that have been engineered with proper grade, out-slope, and drainage design features included.

Soil impacts associated with user-establish routes can occur on all types of roads and trails whether those routes are used for motorized or non-motorized access. They reduce soil productivity by compaction and can cause accelerated erosion. Unrestricted OHV travel has a greater potential to adversely impact soil resources than travel restricted to designated routes that are designed and maintained to minimize impacts to watershed, riparian, and aquatic resources.

## *Effects of Travel Route Closures*

Closing roads and trails can have a variable effect on the soil resource related to productivity, erosion, sediment, and the level of compaction depending on the method of closure used (Luce 1997, Switalski et al. 2004). Closure methods may include signing, building earthen berms, placing rocks or debris, installing gates, and complete or partial decommissioning by obliteration. An evaluation has been completed for methods of road and trail closures in the analysis area (USDA FS 2004).

Closure methods that leave the travel surface intact usually involve closures at the beginning and intersections of routes. Decommissioning includes removal of culverts and installation of waterbars to prevent erosion. More comprehensive decommissioning could involve scarification (ripping) of the road or trail prism, complete obliteration of the travel surface by pulling fill material back onto the road surface, re-contour to slope, seeding, and/or other erosion control.

It was determined that many trails and lightly used two-track roads require little mitigation to allow vegetation to re-establish and to control erosion as long as the closures are effective. Road and trail closure will improve soil conditions over time as vegetation re-establishes and the effects of compaction are lessened by natural process such as freeze-thaw actions, root activity, and underground animal activity (Ortaz et al. 2003). Other constructed roads and trails that require obliteration to establish soil productivity and control erosion add land back to the productive base. Davidson and others (2005) found that deep surface roughening can be used to alleviate soil compaction and lessen soil erosion potential.

Using signs to close roads and trails may not deter further use and the impacts of compaction and erosion on the soil resource could continue. Earthen berms are created when dozers push soils into one or more piles at entrances and intersections in the prism of a road or trail. This action may reduce erosion by slowing runoff but a loss of production in the area stripped of topsoil may occur. These berms erode with time and impacts from OHV use may re-occur. Experience has shown that closure by earthen berms is sometimes ineffective because they are often worn down by users. Rock barriers have been effective but do not stop motorcycle use. This method of closure has minimal impact on the soil resource and when used in combinations with placing debris or drainage control can improve soil conditions over the long term.

Placing debris barriers (logs, branches, and brush) in the road and trail prism can improve soil conditions as it decays and adds organic nutrients to the soil. Gates are used when the roads are only to be closed seasonally or periodically.

## Alternative 1 - Direct and Indirect Effects

Alternative 1 is the no action alternative and represents the existing conditions. There are approximately 1,856 miles of open motorized routes (roads and trails), comprising the Forest transportation system, excluded from site productivity because they are a dedicated use (FSH 2509.18_r4_2509.18-2002-1). Presently, there are 195 miles of open motorized roads and trails that occur on sensitive soils rated high risk. This is approximately 10.5 percent of designated travel routes on the Forest.

This alternative allows cross-country motorized use in the Huckleberry Basin prescription area, consisting of approximately 29,400 acres on the Soda Springs Ranger District. Cross-country motorized travel during the snow-free season has high potential to cause adverse impacts to soils. Cross-country motorized travel has the greatest impact on soils because routes are often located without design features to protect soils from eroding. Protective vegetation is removed from the soil, causing compaction and accelerated erosion and potentially reducing site productivity. Accelerated erosion increases sediment production in streams and may adversely affect water quality. Because cross-country travel is authorized in this area under this alternative, these kinds of impacts to the soil resource are expected to continually increase in the short term.

This alternative has the highest risk to sensitive soils because it has the most miles of open motorized travel routes that occur on soil with erosion and mass movement potential.

***Table 4.7 - Alternative 1 - Miles and acres of motorized routes located on soil risk areas.***

| Analysis Block | Trails | | Roads | | Total | |
|---|---|---|---|---|---|---|
| | miles | acres | miles | acres | miles | acres |
| **Pocatello** | | | | | | |
| Low Soil Risk | 76 | 45 | 50 | 91 | 126 | 136 |
| Moderate Soil Risk | 57 | 34 | 61 | 111 | 118 | 145 |
| High Soil Risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Malad** | | | | | | |
| Low Soil Risk | 42 | 25 | 28 | 51 | 70 | 76 |
| Moderate Soil Risk | 124 | 75 | 47 | 85 | 171 | 160 |
| High Soil Risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Bear River** | | | | | | |
| Low Soil Risk | 112 | 68 | 133 | 242 | 245 | 310 |
| Moderate Soil Risk | 118 | 71 | 175 | 318 | 293 | 389 |
| High Soil Risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Caribou** | | | | | | |
| Low Soil Risk | 82 | 50 | 175 | 318 | 257 | 368 |
| Moderate Soil Risk | 155 | 94 | 231 | 420 | 386 | 514 |
| High Soil Risk | 84 | 51 | 111 | 202 | 195 | 253 |
| **Total** | **850** | **513** | **1011** | **1838** | **1861** | **2351** |

### Irreversible and Irretrievable Commitments

An irretrievable commitment to the soil resource is expected to occur on areas where user-created roads and trails are pioneered and where hill-climbing occurs, reducing potential soil productivity on these acres. Currently, there are about 222 miles of user-created routes identified on the GIS layer affecting approximately 250 acres. If erosion continues to the degree that topsoil in the road and trail prisms is completely removed, an irreversible commitment may occur by the permanent loss of soil productivity.

## *Alternative 2 - Direct and Indirect Effects*

This alternative is the Proposed Action. Under this alterative, there would be approximately 1,773 miles of open motorized routes (roads and trails) comprising the Forest transportation system, excluded from site productivity because they are a dedicated use (FSH 2509.18_r4_ 2509.18-2002-1). This alternative has **167** miles of designated open motorized roads and trails that occur on sensitive soil types that are rated high risk. This is about 9.3 percent of the proposed designated travel routes on the Forest in this alternative.

This alternative also allows cross-country motorized use in the Huckleberry Basin area. Effects are the same as Alternative 1 concerning cross-country motorized travel. Managing the Stump Peak drainage area as a non-motorized area should improve soil conditions in that area over the long-term. Designing and improving the Winschell Dugway to an ATV trail that meet RFP standards and guidelines should improve existing soil conditions where erosion is occurring.

This alternative has less risk to sensitive soils than Alternative 1 because it would have 28 miles less open motorized roads and trails on sensitive soils than the existing condition. The table below shows open motorized routes located on sensitive soils on each activity area.

***Table 4.8. - Alternative 2- Miles and acres of open motorized roads and trail located soil risk areas.***

| Block Locations | Trails | | Roads | | Total | |
|---|---|---|---|---|---|---|
| | miles | acres | miles | acres | miles | acres |
| **Pocatello** | | | | | | |
| Low soil risk | 76 | 46 | 50 | 91 | 126 | 137 |
| Moderate soil risk | 59 | 36 | 60 | 109 | 119 | 145 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Malad** | | | | | | |
| Low soil risk | 42 | 25 | 28 | 51 | 70 | 76 |
| Moderate soil risk | 127 | 77 | 46 | 84 | 173 | 161 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Bear River** | | | | | | |
| Low soil risk | 121 | 73 | 120 | 218 | 241 | 291 |
| Moderate soil risk | 116 | 70 | 166 | 302 | 282 | 372 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Caribou** | | | | | | |
| Low soil risk | 120 | 73 | 176 | 320 | 296 | 393 |
| Moderate soil risk | 116 | 70 | 207 | 376 | 323 | 446 |
| High soil risk | 55 | 33 | 112 | 204 | 167 | 237 |
| **Total** | **832** | **503** | **965** | **1755** | **1797** | **2258** |

### *Irreversible and Irretrievable Commitments*

An irretrievable commitment to the soil resource is expected to occur on areas where user-created roads and trails are pioneered and where hill-climbing occurs, reducing soil productivity on these acres. There are about 222 miles of user-created routes identified on the GIS layer in this alternative that would affect approximately 231 acres. This alternative proposes to decommission approximately five additional miles of motorized roads or trails than Alternative 1 that would add about 7.5 acres of land back into the productive land base on the Forest and reduce the irretrievable commitments to the soil resource. If erosion continues to the degree that topsoil in the road and trail prisms is completely removed, an irreversible commitment may occur by the permanent loss of soil productivity.

## Alternative 3 - Direct and Indirect Effects

Under this alterative, there would be approximately 1,532 miles of open motorized routes (roads and trails) comprising the Forest transportation system, excluded from site productivity because they are a dedicated use (FSH 2509.18_r4_2509.18-2002-1). This alternative has **163** miles of designated open motorized roads and trails that occur on sensitive soil types that are rated high risk. This is about 10.6 percent of the proposed designated travel routes on the Forest in this alternative.

This alternative allows cross-country motorized use in the Huckleberry Basin area consisting of approximately 29,400 acres on the Soda Springs Ranger District. This alternative has the same impacts as Alternatives 1 and 2 concerning cross-country motorized travel. This alternative has less risk to sensitive soils than Alternative 1 because it would have 32 miles less open motorized roads and trails on sensitive soils than the existing condition. The table below shows open motorized routes located on sensitive soils on each activity area.

***Table 4.9 - Alternative 3 - Miles and acres of motorized routes located on soil risk areas.***

| Block Locations | Trails | | Roads | | Total | |
|---|---|---|---|---|---|---|
| | miles | acres | miles | acres | miles | acres |
| **Pocatello** | | | | | | |
| Low soil risk | 55 | 33 | 49 | 89 | 104 | 122 |
| Moderate soil risk | 36 | 22 | 58 | 105 | 94 | 127 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Malad** | | | | | | |
| Low soil risk | 27 | 16 | 25 | 45 | 52 | 61 |
| Moderate soil risk | 75 | 45 | 46 | 84 | 121 | 129 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Bear River** | | | | | | |
| Low soil risk | 78 | 47 | 116 | 211 | 194 | 258 |
| Moderate soil risk | 71 | 43 | 162 | 294 | 233 | 337 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Caribou** | | | | | | |
| Low soil risk | 105 | 64 | 176 | 320 | 281 | 384 |
| Moderate soil risk | 93 | 56 | 196 | 356 | 289 | 412 |
| High soil risk | 51 | 31 | 112 | 204 | 163 | 235 |
| **Total** | **591** | **357** | **940** | **1708** | **1531** | **2065** |

### Irreversible and Irretrievable Commitments

An irretrievable commitment to the soil resource is expected to occur on areas where user-created roads and trails are pioneered and where hill-climbing occurs, reducing soil productivity on these acres. Currently, there are about 222 miles of user-created routes identified on the GIS layer affecting approximately 231 acres. This alternative proposes to decommission approximately five additional miles of motorized roads or trails than Alternative 1 that would add about 7.6 acres of land back into the productive land base on the Forest and reduce the irretrievable commitments to the soil resource. If erosion continues to the degree that topsoil in the road and trail prisms is completely removed, an irreversible commitment may occur by the permanent loss of soil productivity.

## Alternative 4 - Direct and Indirect Effects

This alternative manages motorized travel on designated routes forest-wide, which has the greatest potential to reduce adverse impacts to soils because it has the least miles of proposed open motorized travel routes on high risk sensitive soils. Under this alterative, there would be approximately 1,426 miles of open motorized routes (roads and trails) comprising the Forest transportation system, excluded from site

productivity because they are a dedicate use (FSH 2509.18_r4_2509.18-2002-1). This alternative has **135** miles of designated open motorized roads and trails that occur on sensitive soil types rated high risk. This is about 9.5 percent of the proposed designated travel routes on the Forest in this alternative.

This alternative has less risk to sensitive soils than Alternative 1 because it would have 60 miles less open motorized roads and trails on sensitive soils than the existing condition. The table below shows open motorized routes located on sensitive soils on each activity area.

***Table 4.10 - Alternative 4 - Miles and acres of motorized routes located on soil risk areas.***

| Block Locations | Trails | | Roads | | Total | |
|---|---|---|---|---|---|---|
| | miles | acres | miles | acres | miles | acres |
| **Pocatello** | | | | | | |
| Low soil risk | 46 | 28 | 43 | 78 | 89 | 106 |
| Moderate soil risk | 32 | 19 | 46 | 84 | 78 | 103 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Malad** | | | | | | |
| Low soil risk | 23 | 14 | 24 | 44 | 47 | 58 |
| Moderate soil risk | 62 | 38 | 44 | 80 | 106 | 118 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Bear River** | | | | | | |
| Low soil risk | 101 | 61 | 118 | 214 | 219 | 275 |
| Moderate soil risk | 73 | 44 | 163 | 296 | 236 | 340 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Caribou** | | | | | | |
| Low soil risk | 80 | 48 | 174 | 316 | 254 | 364 |
| Moderate soil risk | 68 | 41 | 192 | 349 | 260 | 390 |
| High soil risk | 39 | 24 | 96 | 174 | 135 | 198 |
| **Total** | **524** | **317** | **900** | **1635** | **1424** | **1952** |

Closing 29,400 acres to cross-country travel will also benefit the soil resource in the short- and long-term by protecting soils from disturbance. Soil condition on the Winschell Dugway trail will improve on portions where motorized vehicles are prohibited over the long-term. Erosion should reduce over time.

### *Irreversible and Irretrievable Commitments*

Any irretrievable commitments to the soil resource are the same as Alternative 3.

## *Alternative 5 - Direct and Indirect Effects*

This alternative manages motorized travel on designated routes forest-wide which has a high potential to reduce adverse impacts to soils similar to Alternative 4. Under this alterative, there would be approximately 1,766 miles of open motorized routes (roads and trails) comprising the Forest transportation system, excluded from site productivity because they are a dedicate use (FSH 2509.18_r4_2509.18-2002-1). This alternative has **153** miles of designated open motorized roads and trails that occur on sensitive soil types rated high risk. This is about 8.7 percent of the proposed designated travel routes on the Forest in this alternative. The proposed ATV route within the road right-of-way of the Cub River road is expected to have negligible effects on soils in this alternative.

This alternative has less risk to sensitive soils than Alternative 1 because it would have 42 miles less open motorized roads and trails on sensitive soils than the existing condition. The table below shows open motorized routes located on sensitive soils on each activity area.

*Table 4.11 - Alternative 5 - Miles and acres of motorized routes located on soil risk areas.*

| Block Locations | Trails | | Roads | | Total | |
|---|---|---|---|---|---|---|
| | miles | acres | miles | acres | miles | acres |
| **Pocatello** | | | | | | |
| Low soil risk | 73 | 44 | 50 | 91 | 123 | 135 |
| Moderate soil risk | 59 | 36 | 59 | 107 | 118 | 143 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Malad** | | | | | | |
| Low soil risk | 42 | 25 | 26 | 47 | 68 | 72 |
| Moderate soil risk | 128 | 77 | 47 | 85 | 175 | 162 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Bear River** | | | | | | |
| Low soil risk | 121 | 73 | 123 | 224 | 244 | 297 |
| Moderate soil risk | 118 | 71 | 166 | 302 | 284 | 373 |
| High soil risk | 0 | 0 | 0 | 0 | 0 | 0 |
| **Caribou** | | | | | | |
| Low soil risk | 97 | 59 | 178 | 324 | 275 | 383 |
| Moderate soil risk | 115 | 70 | 210 | 382 | 325 | 452 |
| High soil risk | 44 | 27 | 109 | 198 | 153 | 225 |
| **Total** | **795** | **482** | **967** | **1760** | **1762** | **2242** |

Closing 29,400 acres to cross-country travel will also benefit the soil resource in the short and long term by protecting soils from disturbance. Soil conditions on the Winschell Dugway trail will improve on portions that are not used over the long-term as it stabilizes and re-vegetates. Erosion should reduce over time.

### *Irreversible and Irretrievable Commitments*

An irretrievable commitment to the soil resource is expected to occur on areas where user-created roads and trails are pioneered and where hill-climbing occurs, reducing soil productivity on these acres. Currently there are about 221.8 miles of user-created routes identified on the GIS layer. This alternative proposes to decommission approximately five additional miles of motorized roads or trails than Alternative 1 that would add about 7.5 acres of land back into the productive land base on the Forest and reduce the irretrievable commitments to the soil resource. If erosion continues to the degree that topsoil in the road and trail prisms is completely removed, an irreversible commitment may occur by the permanent loss of soil productivity.

## *Alternative 5R - Direct and Indirect Effects*

This alternative is similar to Alternative 5 with few minor adjustments. Motorized travel routes increase by one mile in this alternative; however, motorized routes decrease by five miles on sensitive soils. The proposed ATV route within the road right-of-way of the Scout Mountain road is expected to have negligible effects on soils in this alternative. A full analysis would be required prior to construction. The direct and indirect effects and cumulative effects to the soil resource are expected to be very similar to Alternative 5.

## *Conclusions*

All action alternatives reduce risks to sensitive soils when compared with Alternative 1, the existing condition, because they all have fewer motorized routes on sensitive soils and five additional miles of motorized routes will be decommissioned in these alternatives. Alternatives 4, 5, and 5R reduce the risks to sensitive soils more than Alternatives 1, 2, or 3 because they have fewer miles of motorized routes that occur on sensitive soils. Alternatives 4, 5, and 5R eliminate cross-country travel on 29,400 acres which has

a high potential to reduce adverse impacts to the soil resource. Soil productivity is expected to be maintained or improved by these alternatives.

***Table 4.12 - Miles of motorized routes on sensitive soils by alternative.***

| Activity Area | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Pocatello | 0 | 0 | 0 | 0 | 0 | 0 |
| Malad | 0 | 0 | 0 | 0 | 0 | 0 |
| Bear R. | 0 | 0 | 0 | 0 | 0 | 0 |
| Caribou | 195 | 167 | 163 | 135 | 153 | 148 |

## *Cumulative Effects*

The cumulative effects area of analysis for the soil resource is the same as the project area because all Forest management actions along with the transportation system could cause cumulative impacts on the soil resource affecting the productive land base. Past and present effects are described in the *Direct and Indirect Effects* section for each of the alternatives above. A complete listing of past, present, and foreseeable future actions used in this analysis are listed in Chapter Five of this analysis.

Foreseeable future proposed management actions include open roads and trails, developed recreation areas and special use areas, and phosphate mining that will continue to remove soils from the productive base for all alternatives. Noxious weed invasion, livestock grazing, timber harvest, road construction, dispersed recreation, cross-country motorized travel, and prescribed fires will remove protective vegetation and litter and may reduce site productivity. Areas that have severely burned soil conditions, detrimental soil compaction, soil displacement, soil puddling, and/or soil erosion reduced soil productivity is expected. Natural disturbances including wildfires, windthrow, severe storm events, landslides, and extended drought cycles have and will continue to cause similar impacts to soil productivity for all alternatives. Off-forest lands used for agricultural practices such as dry-farming and irrigated crop production have experienced higher soil loss due to erosion than most Forest soils (USDA 1979). Cumulatively, soil loss and risk to soil productivity is greater off the Forest because of urban development and agricultural practices.

An analysis to determine which alternative has the greatest potential cumulative effect on soils was completed by evaluating the proposed acres open to cross-country motorized travel and proposed open miles of motorized roads and trails combined with past, present, and foreseeable future management actions in the decade.

## *Alternative 1*

During the next decade, potential soil disturbance could occur on 29,400 acres of land open to cross-country motorized travel (worst-case) although it is not expected that every acre will be affected: approximately 1,856 miles (2,351 acres) of open motorized travel routes, of which 195 miles (253 acres) occur on sensitive soils; future timber harvest activity on 1,581 acres and past timber harvest effects on 2,200 acres; future phosphate mining activity on 1,565 acres and past mining on 6,100 acres; future prescribed fire on 2,668 acres; and with continued grazing and dispersed recreation occurring of the Forest, this alternative has the highest potential of cumulative impacts to the soil resource that may affect site productivity of all alternatives. Total cumulative acres of potential soil disturbance in this alternative are 45,865 in the decade. 121 acres will be added to the productive land base due to decommissioning 81.9 miles of roads and trails. Although disturbance may occur, detrimental soil disturbance is limited by RFP standards and guidelines and Regional Soil Quality standards.

## *Alternative 2*

During the next decade, potential soil disturbance in this alternative is similar to Alternative 1 but reduced by 93 acres affected because fewer miles of open motorized travel routes are proposed on the Forest in this alternative. This alternative allows 29,400 acres of land to remain open to cross-country motorized travel potentially causing effects to the soil resource. Total cumulative acres of potential soil disturbance in this alternative are 45,772 in the decade. Although disturbance may occur, detrimental soil disturbance is limited by RFP standards and guidelines and Regional Soil Quality standards.

## *Alternative 3*

During the next decade, potential soil disturbance in this alternative is similar to Alternative 1 but reduced by 286 acres affected because fewer miles of open motorized routes are proposed on the Forest in this alternative. This alternative allows 29,400 acres of land to remain open to cross-country motorized travel potentially causing effects to the soil resource. Although disturbance is not expected on every acre open to cross-country motorized travel, these acres were assessed as potential disturbance. Total cumulative acres of potential soil disturbance in this alternative are 45,579 in the decade. Although disturbance may occur, detrimental soil disturbance is limited by RFP standards and guidelines and Regional Soil Quality standards.

## *Alternative 4*

During the next decade, potential soil disturbance in this alternative is reduced from Alternative 1 by 399 acres because fewer miles of open motorized routes are proposed on the Forest in this alternative. This alternative closes cross-country motorized travel in the Huckleberry Basin area, having a potential positive effect on the soil resource. Total cumulative acres of potential soil disturbance in this alternative are 16,066 in the decade. Although disturbances may occur, detrimental soil disturbance is limited by RFP standards and guidelines and Regional Soil Quality standards.

## *Alternatives 5 and 5R*

During the next decade, potential soil disturbance in these alternatives is reduced from Alternative 1 by 109 acres because fewer miles of open motorized routes are proposed on the Forest in these alternatives. This alternative closes cross-country motorized travel in the Huckleberry Basin area, having a potential positive effect on the soil resource. Total cumulative acres of potential soil disturbance in this alternative are 16,356 in the decade. Although disturbance may occur, detrimental soil disturbance is limited by RFP standards and guidelines and Regional Soil Quality standards.

***Table 4.13 - Ranking of Cumulative Soils Impacts by Alternative.***

| Alternative | Total Potential Acres Disturbed | Acres of Sensitive Soils Affected | Soil Risk Ranking |
|---|---|---|---|
| Alternative 1 | 45,865 | 253 | 6(highest risk) |
| Alternative 2 | 45,772 | 237 | 5 |
| Alternative 3 | 45,579 | 235 | 4 |
| Alternative 4 | 16,066 | 198 | 1 (lowest risk) |
| Alternative 5 & 5R | 16,356 | 225, 222 | 3, 2 |

Overall, soil quality on the Forest should improve over the existing condition with Alternatives 2 through 5R. Soil quality standards and guidelines (FSH 2509.18) have been established and incorporated in the RFP to help direct soil quality improvement, maintenance, and enhancement within managed portions of the Forest. Areas requiring soil improvements are identified in the Ranger District's soil and water five-year improvement action plan. These improvement plans are updated annually. Watershed assessments are also used to identify projects that could improve soil resource conditions and will continue as well.

Site-specific project implementation, when they occur, will include soil mitigation measures and project design features that ensure soil quality and productivity is maintained on the Forest.

# Riparian Areas and Aquatic Resources

### *Environmental Consequences*

## *Analysis Methods*

Protection of beneficial uses of water resources is inherent in all action alternatives. Each alternative is evaluated for the maintenance of water quality and impacts on identified beneficial uses.

## *Project Design Features common to all Alternatives*

### *Obligations Mandated by the Clean Water Act*

The forest is directed by the Clean Water Act to protect and maintain watersheds that are healthy and functioning. In order to meet the intent of the Clean Water Act, the forest must incorporate the Best Management Practices in all forest activities. These practices are designed and adapted as needed, to increase their effectiveness in achieving water quality goals. The success in applying these conservation practices for controlling non-point sources of pollution on forest and rangeland situations is well documented and demonstrated in scientific and historic literature. One category of mitigation was considered in the analysis of water impacts. These mitigation measures are common to all alternatives (required by law, regulation, policy, Forest Plan).

***Table 4.14 - Summary of Project Design Features to Minimize Riparian Impacts***

| Site | Design Feature |
|---|---|
| Stream Crossing | Keep number of stream crossings to a minimum. Reduce sediment sources by adding cross drains near stream crossings. |
| Stream Crossing | Install cross-drains or sediment filtering devices to disperse runoff into filter areas |
| Stream Crossing and vicinity | Surface and revegetate stream crossing approaches |
| Stream Crossings | Harden OHV crossings, especially soft, potential sediment source areas. |
| Stream crossing and AIZ | Reclaim, provide drainage, and revegetate unused and unneeded roads near streams and on sensitive lands. |
| Riparian Areas, Wetlands, AIZ | Avoid trail locations in riparian areas, wetlands, AIZ or filter areas |
| Stream Crossings | Install stream crossings on as straight and resilient stream reach as possible, as perpendicular to flow as feasible and provide for passage of aquatic life. |
| Impacts at crossings and AIZ | Evaluate stability of crossings, capacity of channels and gradient and sediment deposits in streambeds. |
| Crossings, AIZ, wetlands | Evaluate specific crossing conditions and design best crossing measure to fit local situations, considering (in order) bridges, bottomless culverts, hardened fords, culverts, etc. |

## *Effectiveness*

The project design features and additional direction of the R1/R4 Soil and Water Conservation Practices Handbook Amendment No. 1 (FSH 2509.22) have been developed through science-based experience and coordination with EPA and various State and Federal agencies. The success in applying these conservation

practices for controlling non-point sources of pollution from roads is well documented and demonstrated in scientific and historic literature.

## Effects Common to All Alternatives

The existing seasonal travel restrictions would continue under all alternatives. The restrictions help protect native surfaced roads during extended wet periods. During these seasonal closures there is less use at route crossings; however, some illegal off-route use by smaller vehicles could occur impacting drainages and wet areas.

### *Alternative 1 - No Action*

This alternative represents the existing condition for recreational travel on roads and trails. This alternative would have the most miles, 683, of designated motorized routes within AIZs. Under this alternative there would be 1,098 stream crossings by designated motorized routes. Compared to Alternatives 2 through 5R, this alternative has the greatest potential for risks to riparian and aquatic areas and water quality based on the number of motorized travel routes within AIZs and the number of stream crossings by motorized route.

### *Alternative 2 - Proposed Action*

This alternative has four percent less motorized travel route miles than the existing condition. This alternative has the second highest miles of designated motorized routes, 608, within AIZs. This alternative has 11 percent less motorized routes in AIZs, when compared to Alternative 1. This alternative has 812 stream crossings by motorized routes. This is 26 percent less than the existing condition. The substantially fewer number of stream crossings represents the most notable difference over the existing condition and signifies a considerable reduction in potential impacts to water resources. The 11 percent reduction in miles in AIZs also translates to a reduction in risk to streams. This alternative would provide more protection of riparian and aquatic areas and water quality than the existing condition.

### *Alternative 3*

This alternative would manage 18 percent fewer miles of designated roads and trails on the Forest than Alternatives 1. This alternative would have 523 miles of designated motorized route within AIZs, or 23 percent less than Alternative 1. There would be 40 percent fewer crossings of streams by designated motorized routes than under Alternative 1. This alternative ranks second only to Alternative 4 in reducing risk to aquatic areas and water quality.

### *Alternative 4*

This alternative would have the least miles of designated motorized route with 1,424 miles; or 23 percent less than Alternative 1. This alternative would have 493 miles within AIZs, or 28 percent less than Alternative 1. There would be 513 stream crossings by motorized routes, or 53 percent less than Alternative 1. This alternative would have the lowest risk of impacts to water resources of any of the alternatives.

### *Alternative 5*

This alternative would manage 1,765 miles of designated motorized routes on the Forest, ranking third (middle) overall, or 5 percent less than Alternative 1. This alternative would have 595 miles of designated motorized route within AIZs, or 13 percent less than Alternative 1. There would be 789 stream crossings by motorized routes, or 28 percent less than Alternative 1. This alternative ranks in the middle of the range of six alternatives, but is closer in potential effects to Alternative 2.

### *Alternative 5R*

This alternative would manage 1,769 miles of designated roads and trails on the Forest, or 5 percent less than Alternative 1. This alternative has 595 miles of designated motorized routes within AIZs, or 13 percent less than Alternative 1. There are 772 stream crossings by motorized routes, or 30 percent less than Alternative 1. This alternative ranks in the middle of the range of six alternatives, but is closer in potential effects to Alternative 2.

## Comparison of Alternatives

*Table 4.15 - Designated Motorized Route Mileage in AIZs*

| District | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Malad | 89.7 | 88.6 | 65.6 | 59.2 | 86.7 | 86.3 |
| Montpelier | 288.2 | 264.7 | 228.8 | 228.3 | 259.2 | 261.6 |
| Pocatello | 87.3 | 85.8 | 67.1 | 61.5 | 85.7 | 86.3 |
| Soda Springs | 218.1 | 168.4 | 161.4 | 144.4 | 163.2 | 161.1 |
| Total | 683.3 | 607.5 | 522.9 | 493.4 | 594.8 | 595.3 |

*Table 4.16 - Designated Motorized Route Mileage in AIZs of 303(d) Streams*

| District | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Malad | 7.6 | 7.6 | 7.3 | 7.4 | 7.6 | 7.6 |
| Montpelier | 33.1 | 30.7 | 30.6 | 30.1 | 30.8 | 30.7 |
| Pocatello | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Soda Springs | 2.0 | 1.7 | 1.7 | 1.7 | 1.9 | 1.9 |
| Total | 43.6 | 40.9 | 40.5 | 40.1 | 41.2 | 41.1 |

*Table 4.17 - Designated Motorized Route Stream Crossings*

| District | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Malad | 155 | 151 | 86 | 78 | 134 | 131 |
| Montpelier | 385 | 318 | 265 | 163 | 315 | 317 |
| Pocatello | 122 | 119 | 97 | 94 | 120 | 120 |
| Soda Springs | 436 | 224 | 209 | 178 | 220 | 204 |
| Total | 1098 | 812 | 657 | 513 | 789 | 772 |

*Table 4.18 - Designated Motorized Route Stream Crossings of 303(d) Streams*

| District | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Malad | 14 | 14 | 13 | 12 | 14 | 14 |
| Montpelier | 59 | 52 | 52 | 51 | 52 | 52 |
| Pocatello | 2 | 2 | 2 | 2 | 2 | 2 |
| Soda Springs | 40 | 37 | 37 | 35 | 36 | 36 |
| Total | 115 | 105 | 104 | 100 | 104 | 104 |

To summarize, Alternative 1 has the most stream crossings and the most miles of designated motorized routes within the Forest. Alternatives 1, 2 and 3 include cross-country motorized travel during the snow-free season in the Huckleberry Basin prescription area. This management has the potential for negative impacts to water resources. Under Alternatives 2 through 5R, the miles of routes on the Forest and the number of crossings are less than the existing situation. These alternatives address the overall impact to the water resources in varying degrees. Alternatives 3 and 4 would have the least risk of impact respectively. Alternative 5 and 5R improve over the existing condition, but do not reduce risks to riparian and water resources as much as Alternative 3 and 4.

# Cumulative Effects

The cumulative effects analysis includes all of the past and present and future actions listed in Chapter Five of this document. The cumulative effects area for hydrologic impacts is the same as the project area; the rationale for this determination is referenced at the beginning of Chapter 3, Riparian Areas. Cumulative impacts would result from illegal motorized travel on non-system routes and increasing volume of use on these routes. The known user-created routes are not considered in the current condition assessment and are analyzed as cumulative effects. Effects of user-created routes are similar to those of system routes, but the additional mileage is assessed as additive to the effects of the current condition. Cross-country motorized travel during the snow-free season was legal on 40 percent of the Forest until closed by Special Order in 2003. The number of motorized vehicles traveling on the forest has increased over the last 40 years. This trend is expected to continue in the future. Available GIS data was used to calculate a total area disturbed for 1) system routes and 2) all known user-created routes and 3) the combination of the two. The total sum of disturbed area for all user-created routes, motorized and non-motorized, is 221 acres. A breakdown of the categories is given in the table below.

***Table 4.19 - Forest-wide Disturbed Areas from Non-system Routes.***

| Class of Route | Miles | Width | Acres |
|---|---|---|---|
| User-created foot/horse trail | 44.1 | 4 | 21.4 |
| User-created motorized trail | 107 | 5 | 64.4 |
| User-created road | 71 | 15 | 129.8 |
| Total | 221 | | 215.6 |

The 221 acres in the project area affected by known user-created routes represents about 0.02 percent of the approximately 1 million acre project area. Even if the number of actual routes and affected area were five times as great, the contribution to hydrologically disturbed area would still be much less than one percent, and less than one percent of the maximum hydrologically disturbed area guideline of 30 percent that is given in the Forest Plan (RFP 3-16). It would be less than one percent of the threshold of 2.5% above which roads can affect streams (Furniss, 1991). For these reasons, the cumulative effects of these user-created routes at present are not expected to substantially affect watershed conditions. Where user-created routes may be locally concentrated, such as around camping areas and other high-use recreational areas, impacts could be greater and have the potential to affect watershed conditions locally. The same is true when these routes cross streams, where they can cause substantial site-specific impacts that can affect a local reach of stream. A small amount of additional miles of routes are proposed to be constructed under some alternatives to form loops. This is expected to increase use on these routes, which would increase the cumulative impact; however, this is also expected to reduce the temptation for riders to drive cross-country.

# Existing Adverse Effects

Existing travel routes and their use is causing impacts to hydrologic and riparian resources. On-the-ground analysis indicates that most of the impacts result from user-created trails and crossings that are poorly located and lack design features to reduce impacts. Experience and monitoring data from previous projects indicate that implementation of the watershed conservation practices on roads and trails would reduce impacts to water quality. Adverse effects from planned new construction, route closures and decommissioning activities would be minimized and beneficial uses would not be impacted. Site-specific impacts are likely to occur, but adaptive management would be used where practical as directed in the RFP. Impacts may be lessened as improved practices to protect these resources are developed.

# Irreversible and Irretrievable Effects

Even with the appropriate use of watershed conservation practices, managing designated road and trails represents a commitment to accept continuing ground disturbance. Designated travel routes effectively remove these areas from vegetative cover. These are activities with irretrievable effects. With the appropriate use of watershed conservation practices, no irreversible impacts are anticipated. Roads can be obliterated and hydrologically restored where they are found to not be meeting Forest Plan requirements. Adaptive management would be used to modify practices to minimize all irreversible effects where future research, experience and monitoring makes possible.

# Fisheries and Aquatic Resources

### *Environmental Consequences*

## *Introduction*

This section of the analysis discusses the direct and indirect and cumulative effects of each alternative on fish habitat and aquatic resources. Indicators, such as the number of motorized road and trail miles per square mile in Aquatic Influence Zones, will help compare and contrast the differences between alternatives. The Yellowstone and Bonneville Cutthroat Trout Biological Evaluation is available in the project file.

## *Analysis Approach*

Of all modes of road and trail transportation within AIZs, motorized road and trail use has the most potential to affect aquatic habitat due to potential erosion and resulting sedimentation. To analyze the effects of each alternative upon aquatic biota and habitat, the motorized road and trail density in Aquatic Influence Zones (AIZs) within each subsection and Forest-wide for each alternative was considered. In addition, the road density within perennial stream AIZs for each Yellowstone and Bonneville cutthroat trout sub-watershed strongholds (Sixth Code HUC) was calculated. Key assumptions of the analysis include:

- Motorized roads and trails in AIZs were considered together.
- The proximity of the road or trail to the stream was not considered.
- It was assumed most perennial streams were fish-bearing. No intermittent streams were included in the analysis.

Road crossings at streams are direct avenues for road surface sediment delivery to streams and could also affect stream hydrology. The number of road crossings of perennial streams was also used as an indicator to compare alternatives. Travel route stream crossings were also considered for Yellowstone and Bonneville stronghold sub-watersheds. The type of crossing was not considered. GIS data is not complete for all types of road and trail crossings such as bridges, culverts, bottomless structures, and fords.

## *Alternative 1*

Alternative 1 is the existing condition. Under this alternative, there is a designated motorized route density of 3.73 miles per square mile in perennial stream AIZs for the Caribou. There are 4.46, 4.64, 4.26, 4.66, and 2.89 miles per square mile of designated motorized route in Bear, Malad, Pocatello, Preuss, and Soda subsections, respectively. This alternative has the highest motorized route density in perennial stream AIZs forest-wide. In addition, this alternative has the highest motorized road and trail density in perennial stream AIZs within each forest subsection.

Giraffe, Skinner, Stauffer, Emigration, Logan, and Maple sub-watersheds have streams that are considered Bonneville cutthroat trout strongholds. Alternative 1 maintains the highest density of motorized routes

within AIZs in all but two of these stronghold sub-watersheds. In the Emigration sub-watershed, motorized road and trail density in AIZs is higher in Alternatives 2 and 5. In the Logan sub-watershed, motorized road and trail density within AIZs is higher in Alternatives 2 and 3.

Several sub-watersheds located on Soda Springs and Westside Ranger Districts are considered Yellowstone cutthroat trout strongholds. Alternative 1 maintains the highest total density of motorized roads and trails within these AIZs.

Alternative 1 maintains 1,098 riparian road and trail stream crossings across the Forest. All alternatives generally maintain a similar number of riparian road and trial stream crossings in Bonneville cutthroat trout strongholds. Alternative 1 maintains 408 perennial stream crossings in Yellowstone cutthroat trout strongholds. This is the highest of all alternatives.

## *Alternative 2*

Alternative 2 is the Proposed Action. Under this alternative, there is a designated motorized travel route density of 3.07 miles per square mile in perennial stream AIZs forest-wide. This is the second highest of the alternatives. There are 4.06, 4.55, 4.16, 3.97, and 1.92 miles of motorized routes per square mile within AIZs of Bear, Malad, Pocatello, Preuss, and Soda subsections respectively.

Alternative 2 did not significantly change riparian motorized road and trail lengths in Bonneville cutthroat trout strongholds; however, motorized riparian road and trail miles per square mile, within AIZs of Stauffer and Maple Creek, decreased by 0.59 and 0.96 miles respectively.

Alternative 2 maintains the second highest total density of motorized roads and trails in AIZs in Yellowstone cutthroat trout strongholds.

Alternative 2 maintains 812 riparian road and trail stream crossings across the Forest. This is the second highest of all alternatives. Alternative 2 maintains 268 perennial stream crossings in Yellowstone cutthroat trout strongholds. This is the second highest of all alternatives.

## *Alternative 3*

Under this alternative, there is a motorized road and trail density of 2.72 miles of trail per square mile of perennial stream AIZ Forest-wide. There are 3.50, 3.33, 3.47, 3.71, and 1.85 miles of motorized travel route per square mile within AIZs of Bear, Malad, Pocatello, Preuss, and Soda Subsections respectively.

Alternative 3 did not significantly change riparian motorized road and trail densities in Bonneville cutthroat trout strongholds; however, motorized riparian road and trail miles per square mile within AIZs of Skinner, Stauffer, and Maple sub-watersheds decreased by 0.21, 1.15, and 0.96 miles respectively.

Alternative 3 maintains the second lowest total density of motorized roads and trails in Yellowstone cutthroat trout stronghold sub-watersheds. Alternative 3 maintains 657 riparian road and trail stream crossings across the Forest. This is the second lowest of all alternatives. All alternatives generally maintain a similar number of riparian road and trial stream crossings in Bonneville cutthroat trout stronghold sub-watersheds. Alternative 3 maintains 240 perennial stream crossings in Yellowstone cutthroat trout stronghold sub-watershed. This is the second lowest of all alternatives (tied with Alternative 5R).

## *Alternative 4*

Under this alternative, there is a motorized road and trail density of 2.53 miles per square mile of perennial stream AIZ Forest-wide. This is the lowest of all the alternatives. There are 3.87, 3.19, 3.25, 3.02, and

1.61 miles of motorized road and trail use per square mile within AIZs of Bear, Malad, Pocatello, Preuss, and Soda Subsections respectively.

Alternative 4 did not significantly change riparian motorized road and trail lengths in Bonneville cutthroat trout stronghold sub-watersheds. Motorized route miles per square mile, within AIZs of Skinner, Stauffer, and Maple Creek; decreased by 0.21, 0.63, and 0.96 miles respectively.

Alternative 4 maintains the lowest total density of motorized roads and trails in Yellowstone cutthroat trout stronghold sub-watersheds with 77.87 total miles per square.

Alternative 4 maintains 613 riparian road and trail stream crossings across the Forest. This is the lowest of all alternatives. All alternatives generally maintain a similar number of riparian road and trial stream crossings in Bonneville cutthroat trout stronghold sub-watersheds as existing condition. Alternative 4 maintains 203 perennial stream crossings in Yellowstone cutthroat trout stronghold sub-watersheds. This is the lowest of all alternatives.

## *Alternative 5*

Under this alternative, there is a motorized road and trail density of 2.97 miles per square mile of perennial stream AIZ Forest-wide. This is generally in the median of the range of road and trail densities proposed under all alternatives. There are 4.14, 4.36, 4.18, 3.55, and 1.85 miles of motorized road and trail use per square mile within AIZs of Bear, Malad, Pocatello, Preuss, and Soda Subsections respectively.

Alternative 5 did not significantly change riparian motorized road and trail lengths per square mile of AIZ in Bonneville cutthroat trout strongholds; however, motorized riparian road and trail miles per square mile within AIZs of Stauffer, Logan, and Maple Creek decreased by 0.59, 0.75, and 0.96 miles respectively.

Alternative 5 maintains a median (middle between alternatives) total density of motorized roads and trail length per square mile within AIZs in Yellowstone cutthroat trout stronghold sub-watersheds.

Alternative 5 maintains 789 riparian road and trail stream crossings across the Forest. Between all alternatives, this alternative is generally in the middle of the alternatives. All alternatives maintain a similar number of riparian road and trial stream crossings in Bonneville cutthroat trout sub-watersheds as existing condition. Alternative 5 maintains 252 perennial stream crossings in Yellowstone cutthroat trout sub-watersheds. This is generally the middle of the range of alternatives.

## *Alternative 5R*

Alternative 5R is similar to Alternative 5. It was formed to incorporate site-specific route changes specified by the public. Under this alternative, there is a motorized road and trail density of 2.95 miles per square mile of perennial stream AIZ Forest-wide. This is generally in the median of the range of road and trail densities proposed under all the alternatives and .02 mile per square mile less than Alternative 5. There are 4.17, 4.37, 4.23, 3.57, and 1.78 miles of motorized road and trail use per square mile of AIZ in Bear, Malad, Pocatello, Preuss, and Soda Subsections respectively.

Alternative 5R did not significantly change riparian motorized road and trail lengths per square mile of AIZ in Bonneville cutthroat trout stronghold sub-watersheds; however, motorized riparian road and trail miles per square mile of AIZ in Stauffer, Logan, and Maple decreased by 0.59, 0.75, and 0.96 miles respectively. In Emigration, motorized riparian road and trail miles per square mile of AIZ would increase by 0.61 miles.

Alternative 5R has the lowest total density of motorized roads and trail length per square mile within AIZs in Yellowstone cutthroat trout strongholds.

Alternative 5R maintains 774 riparian road and trail stream crossings across the Forest. Between all alternatives, this alternative is generally in the middle of the alternatives (15 less than Alternative 5 and 324 less than the existing condition). All alternatives generally maintain a similar number of riparian road and trial stream crossings in Bonneville cutthroat trout sub-watersheds as existing condition. Alternative 5R maintains 240 perennial stream crossings in Yellowstone cutthroat trout stronghold sub-watersheds. This is generally the middle of the range of alternatives and the same as Alternative 3.

## Conclusions

It is expected that Alternatives 1 and 2 would have the most impact upon aquatic biota and their habitat and Alternatives 3 and 4 would generally have the least. Alternatives 5 and 5R, when considered in the range of alternatives, generally have a median amount of impact upon aquatic biota and their habitat.

***Table 4.20 - Tabulated Summary of Effects for Fisheries***

| Measure of Impact | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Most road and trail density in perennial stream AIZs | 1 | 2 | 5 | 6 | 3 | 4 |
| Most road and trail density in Bonneville cutthroat trout stronghold stream AIZs | 1 | 2 | 6 | 4 | 5 | 3 |
| Most road and trail density in Yellowstone cutthroat trout stronghold stream AIZs | 1 | 2 | 4 | 6 | 3 | 5 |
| Most road and trail perennial stream crossings | 1 | 2 | 5 | 6 | 3 | 4 |
| Most road and trail perennial stream crossings within Bonneville cutthroat trout strongholds | 1 | 2 | 5 | 4 | 3 | 3 |
| Most road and trail perennial stream crossings within Yellowstone cutthroat trout strongholds | 1 | 2 | 4 | 5 | 3 | 4 |

***Table 4.21 - Miles of motorized route per square mile of fish-bearing stream AIZ***

| Subsection | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Bear | 4.46 | 4.06 | 3.50 | 3.87 | 4.14 | 4.17 |
| Malad | 4.64 | 4.55 | 3.33 | 3.19 | 4.36 | 4.37 |
| Pocatello | 4.26 | 4.16 | 3.47 | 3.25 | 4.18 | 4.23 |
| Preuss | 4.66 | 3.97 | 3.71 | 3.02 | 3.55 | 3.57 |
| Soda | 2.89 | 1.92 | 1.85 | 1.61 | 1.85 | 1.78 |
| Forest-wide | 3.73 | 3.07 | 2.72 | 2.53 | 2.97 | 2.95 |

***Table 4.22 - Miles of motorized route per square mile of fish-bearing stream AIZ in Bonneville cutthroat trout strongholds (Sixth Code HUC)***

| Stronghold | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Giraffe (20601) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Skinner (10301) | 2.51 | 2.49 | 2.30 | 2.30 | 2.49 | 2.53 |
| Stauffer (10302) | 1.39 | 0.80 | 0.24 | 0.76 | 0.80 | 0.80 |
| Emigration (10603) | 6.91 | 6.93 | 6.83 | 6.83 | 6.93 | 7.52 |
| Logan (30304) | 3.44 | 3.46 | 3.46 | 3.36 | 2.69 | 2.69 |
| Maple (20303) | 1.63 | 0.67 | 0.67 | 0.67 | 0.67 | 0.67 |
| **Total** | **15.88** | **14.35** | **13.5** | **13.92** | **13.58** | **14.21** |

***Table 4.23 - Miles of motorized route per square mile of fish-bearing stream AIZ in Yellowstone cutthroat trout strongholds (Sixth Code HUC)***

| Stronghold | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Spring (50704) | 3.27 | 3.27 | 3.27 | 3.20 | 3.16 | 3.16 |
| Crow (50706) | 4.44 | 4.22 | 4.22 | 1.67 | 4.22 | 4.22 |
| Crow (50705) | 4.80 | 4.12 | 2.11 | 1.94 | 4.12 | 4.17 |
| Crow (50703) | 5.22 | 4.94 | 4.94 | 4.93 | 4.24 | 4.24 |
| Crow (50707) | 2.73 | 7.78 | 7.78 | 2.22 | 2.48 | 2.48 |
| Sage (50708) | 1.31 | 1.56 | 1.56 | 1.56 | 1.56 | 1.83 |
| Diamond (71203) | 6.34 | 5.78 | 5.78 | 5.53 | 5.60 | 5.60 |
| Diamond (71202) | 5.64 | 5.38 | 5.38 | 5.38 | 5.02 | 5.02 |
| Diamond (71201) | 4.19 | 3.56 | 3.56 | 3.56 | 4.86 | 4.86 |
| Bacon (71104) | 6.59 | 1.91 | 1.91 | 0.50 | 1.51 | 0.59 |
| Browns (71105) | 6.61 | 1.83 | 1.83 | 1.83 | 1.51 | 1.51 |
| Toms (50301) | 0.00 | 0.56 | 0.56 | 0.56 | 1.25 | 1.59 |
| Tincup (50903) | 6.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Tincup (50901) | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| Tincup (50902) | 2.09 | 2.23 | 2.23 | 2.23 | 2.23 | 2.23 |
| Tincup (50901) | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| Tincup (50905) | 0.14 | 0.47 | 0.11 | 0.03 | 0.14 | 0.14 |
| Jacknife (51001) | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 |
| Jacknife (51002) | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 |
| McCoy (41101) | 2.27 | 2.27 | 2.27 | 2.27 | 2.27 | 2.23 |
| McCoy (41102) | 1.30 | 0.55 | 0.55 | 0.55 | 0.55 | 0.55 |
| McCoy (41103) | 0.53 | 0.78 | 0.53 | 0.53 | 0.53 | 0.53 |
| McCoy (41104) | 0.17 | 0.17 | 0.17 | 0.17 | 0.16 | 0.16 |
| McCoy (41105) | 0.96 | 1.27 | 1.27 | 1.27 | 0.67 | 0.67 |
| McCoy (41106) | 4.01 | 4.01 | 4.01 | 3.91 | 4.01 | 4.01 |
| Willow (50701) | 1.32 | 1.32 | 1.32 | 0.33 | 1.32 | 1.32 |
| Eagle (50702) | 2.29 | 2.29 | 2.29 | 2.27 | 2.29 | 2.29 |
| Bridge (50703) | 3.23 | 3.53 | 3.53 | 3.08 | 3.53 | 3.53 |
| Robbers Roost (80402) | 2.75 | 2.75 | 0.75 | 0.75 | 2.86 | 2.86 |
| Inman (80307) | 9.45 | 9.45 | 5.78 | 5.78 | 9.45 | 9.45 |
| Walker (80405) | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 | 3.37 |
| Bell Marsh (80404) | 5.37 | 5.37 | 4.59 | 5.37 | 5.37 | 5.37 |
| Goodenough (80403) | 1.22 | 1.22 | 1.22 | 1.22 | 1.22 | 1.22 |
| Mink (80203) | 6.13 | 6.13 | 5.89 | 5.89 | 6.13 | 6.21 |
| Gibson Jack (80204) | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |
| **TOTAL** | **125.05** | **106.02** | **96.62** | **77.87** | **99.5** | **95.65** |

*Table 4.24 - Motorized Route Crossings at Perennial Streams*

| Subsection | Alt 1 | Alt 2 | Alt 3 | Alt 4 | Alt 5 | Alt 5R |
|---|---|---|---|---|---|---|
| Bear | 211 | 183 | 142 | 163 | 195 | 195 |
| Malad | 155 | 151 | 86 | 78 | 134 | 131 |
| Pocatello | 122 | 119 | 97 | 94 | 120 | 120 |
| Preuss | 174 | 135 | 123 | 100 | 120 | 122 |
| Soda | 436 | 224 | 209 | 178 | 220 | 206 |
| **Forest-wide** | **1098** | **812** | **657** | **613** | **789** | **774** |
| ***Bonneville cutthroat trout strongholds (Sixth Code HUC)*** | | | | | | |
| **Stronghold** | **Alt 1** | **Alt 2** | **Alt 3** | **Alt 4** | **Alt 5** | **Alt 5R** |
| Giraffe (20601) | 0 | 0 | 0 | 0 | 0 | 0 |
| Skinner (10301) | 4 | 4 | 3 | 3 | 4 | 4 |
| Stauffer (10302) | 4 | 3 | 1 | 3 | 3 | 3 |
| Emigration (10603) | 16 | 16 | 15 | 15 | 16 | 16 |
| Logan (30304) | 5 | 5 | 5 | 4 | 4 | 4 |
| Maple (20303) | 1 | 1 | 1 | 1 | 1 | 1 |
| **TOTAL** | **30** | **29** | **25** | **26** | **28** | **28** |
| ***Yellowstone cutthroat trout strongholds (Sixth Code HUC)*** | | | | | | |
| **Stronghold** | **Alt 1** | **Alt 2** | **Alt 3** | **Alt 4** | **Alt 5** | **Alt 5R** |
| Spring (50704) | 8 | 8 | 8 | 7 | 6 | 6 |
| Crow (50706) | 7 | 7 | 7 | 3 | 7 | 7 |
| Crow (50705) | 21 | 20 | 10 | 8 | 20 | 21 |
| Crow (50703) | 11 | 11 | 11 | 11 | 9 | 9 |
| Crow (50707) | 5 | 13 | 13 | 3 | 4 | 4 |
| Sage (50708) | 11 | 12 | 12 | 12 | 12 | 12 |
| Diamond (71203) | 15 | 11 | 11 | 11 | 11 | 11 |
| Diamond (71202) | 24 | 19 | 19 | 19 | 18 | 18 |
| Diamond (71201) | 3 | 1 | 1 | 1 | 3 | 3 |
| Bacon (71104) | 39 | 9 | 9 | 3 | 13 | 5 |
| Browns (71105) | 11 | 1 | 1 | 1 | 1 | 1 |
| Sheep (71103) | 10 | 10 | 10 | 0 | 10 | 4 |
| Stump (50803) | 49 | 4 | 4 | 4 | 4 | 4 |
| Stump (50804) | 4 | 1 | 1 | 0 | 2 | 2 |
| Stump (50805) | 31 | 1 | 1 | 1 | 1 | 1 |
| Toms (50301) | 0 | 1 | 1 | 1 | 1 | 1 |
| Tincup (50903) | 18 | 0 | 0 | 0 | 0 | 0 |
| Tincup (50901) | 0 | 0 | 0 | 0 | 0 | 0 |
| Tincup (50902) | 5 | 5 | 5 | 5 | 5 | 6 |
| Tincup (50901) | 0 | 0 | 0 | 0 | 0 | 0 |
| Tincup (50905) | 2 | 3 | 1 | 1 | 2 | 2 |
| Jacknife (51001) | 14 | 14 | 14 | 14 | 14 | 14 |
| Jacknife (51002) | 0 | 1 | 0 | 0 | 0 | 0 |
| McCoy (41101) | 0 | 0 | 0 | 0 | 0 | 0 |
| **Stronghold** | **Alt 1** | **Alt 2** | **Alt 3** | **Alt 4** | **Alt 5** | **Alt 5R** |
| McCoy (41102) | 14 | 5 | 5 | 5 | 5 | 5 |
| McCoy (41103) | 8 | 11 | 8 | 8 | 8 | 8 |
| McCoy (41104) | 3 | 3 | 3 | 3 | 3 | 3 |
| McCoy (41105) | 12 | 14 | 14 | 14 | 9 | 9 |
| McCoy (41106) | 10 | 10 | 10 | 9 | 10 | 10 |
| Willow (50701) | 1 | 1 | 1 | 0 | 1 | 1 |
| Eagle (50702) | 12 | 12 | 12 | 12 | 12 | 12 |
| Bridge (50703) | 9 | 9 | 9 | 8 | 9 | 9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Robbers Roost (80402) | 5 | 5 | 2 | 2 | 6 | 6 |
| Inman (80307) | 12 | 12 | 5 | 5 | 12 | 12 |
| Walker (80405) | 10 | 10 | 10 | 10 | 10 | 10 |
| Bell Marsh (80404) | 5 | 5 | 5 | 5 | 5 | 5 |
| Goodenough (80403) | 2 | 2 | 2 | 2 | 2 | 2 |
| Mink (80203) | 13 | 13 | 11 | 11 | 13 | 13 |
| Gibson Jack (80204) | 4 | 4 | 4 | 4 | 4 | 4 |
| **TOTAL** | **408** | **268** | **240** | **203** | **252** | **240** |

## Cumulative Effects

The cumulative effects analysis for fisheries will concentrate upon effects to Yellowstone and Bonneville cutthroat trout and their habitat. The analysis area for discussion of fisheries cumulative effects include watersheds located on the Forest. The cumulative effects analysis area extends downstream from the Forest where migratory life history forms of cutthroat trout spend part of their life in larger water bodies off Forest.

All project alternatives, including the No Action Alternative, are expected to result in slight sediment delivery to streams in the project area due to road and trail use.

When you consider past, present, and future land management activities, most either directly or indirectly contribute sediment to aquatic habitat. Some past activities that contributed sediment to streams include firewood collection, road and trail use, grazing, timber sales, post and pole cutting, cross country motorized access, aspen cutting, prescribed burns, trail construction, and trail maintenance. Wildfires have also increased sediment delivery to streams. Present land management activities in the analysis area that likely contribute sediment to streams include firewood collection, grazing, timber harvest, road and trail use, illegal cross-country motorized travel, and trail maintenance. Wildfires continue to contribute sediment to streams. Likely future activities in the project area that directly or indirectly contribute sediment to streams include firewood collection, grazing, timber sales, road and trail use, harvest of posts and poles, manipulation of aspen stands, illegal cross country motorized vehicle use, prescribed fires, trail maintenance, road maintenance, and road reconstruction. While most of these actions do not individually contribute overwhelming amounts of sediment to streams, they collectively maintain a baseline of sediment delivery to streams within the project area that is greater than pre-management baselines. An increase in travel route use, which is likely under all alternatives, has the potential to add to the current baseline.

The duration of the increase in sediment delivery to streams as a result of road and trail use is primarily through the life of the plan. The duration of effects may continue for a couple of years after the total duration of plan implementation as sediment is flushed from the stream system. The amount of sediment actually delivered to streams is dependent upon the proximity of the access roads and trails to streams, road surface material, and the weather conditions during use. The closer the road or trail is to streams and the less maintenance and surfacing of the road or trail, the more sediment delivery (Furniss et al. 1991). Generally, the wetter the weather during road or trail use, the more sediment delivered to streams from erosion during motorized use. Generally, the wider the tracks left by motorized vehicle use on roads and trails near streams, the more sediment delivered to streams from erosion during motorized use. The amount of sediment delivery associated with this analysis is generally low but widespread across the analysis area, resulting in cumulative effects from any alternative. Alternatives 1 and 2 would likely have the most cumulative effects associated with them because they have the most direct and indirect effects. Alternatives 3 and 4 generally have the least cumulative effects associated with them because they have the least direct and indirect effects. Alternatives 5 and 5R have a median amount of cumulative effects

associated with them because it has a median amount of direct and indirect effects when considered in the range of all alternatives.

# Threatened, Endangered, and Sensitive Plants

### *Environmental Consequences*

The travel plan alternatives do not propose any designated travel routes within habitat and known population areas of the three sensitive plants species noted in Chapter Three.

# Wildlife

### *Environmental Consequences*

## *Introduction*

This section of the analysis discusses the direct and indirect and cumulative effects of each alternative wildlife and wildlife habitat. The indicators of Open Motorized Route Densities and non-motorized areas over 1,000 acres are discussed and compared between alternatives. The Biological Evaluation is available in the project file.

## *Analysis Area*

The analysis area for direct, indirect, is the southern portion of the Caribou National Forest and the northern portion of the Cache National Forest administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee National Forest. Cumulative Impacts Area (CEA) is dependant on the migration distance of each species. Species that migrate off the forest usually move to the valley bottom (lower elevation) or are migrating through between adjacent forest habitats. In general, livestock grazing, timber harvest, mining, and recreation have the biggest impacts to vegetation and human disturbance. The CEA will be given for each species.

## *Analysis Approach*

**Assumptions and Uncertainties:** Motorized roads and trails are considered a detriment to wildlife because of associated factors. The RFP FEIS (USDA 2003a Appendix D-26) identifies effects of roads on wildlife, based on available literature and research. These are described below. The effects are also listed by species in the following table. Road-associated factors also apply to motorized trails but may be limited due to the size of the vehicle. Motorized roads and trails are incorporated into the Open Motorized Route Density for the RFP analysis (RFP Appendix D-29).

## *Effects Analysis*

### *Analysis Methods*

This section discusses direct and indirect and cumulative effects to individual wildlife species by alternative. Threatened and Endangered Species are discussed first, followed by Sensitive Species, MIS species, migratory birds and big game. The tables in this section also display effects by alternative. Actions associated with the alternatives and analyzed for effects include:

- travel route closures; including the installation of berms, signs, gates and rock barriers,
- designating additional snowmobile routes through "new" winter range, these areas were formerly open to cross-country motorized winter travel,
- constructing short connector trails under ½ mile,
- designating motorized and mechanized travel routes,

- changing the Bonneville Peak prescription area boundary,
- changing non-motorized winter travel area boundaries,
- changing cross-country motorized travel in Huckleberry Basin prescription area to motorized travel on designated routes (snow-free season), and
- increasing OMRD ceilings in some prescription areas.

## *Assumptions and Uncertainties*

Motorized roads and trails are considered a detriment to wildlife due to a variety of factors. The RFP FEIS identifies effects of roads on wildlife, based on available literature and research. Road-associated actions and impacts addressed in the RFP FEIS are described below, (RFP FEIS Appendix D). Effects to species by alternative are described below, and are also listed in the table at the end of this section. Road-associated actions and impacts also apply to motorized trails but may be less due to the size of the vehicle and travel route. Designated motorized roads and *trails* were incorporated into the open motorized route density ceilings, OMRDs of the RFP.

**Road-associated actions and impacts addressed in the RFP FEIS, Appendix D:**

1) **Snag and Downed Log Reduction** – Firewood gathering can contribute to a loss of snags and downed logs. Woodcutters often take larger-diameter snags, which are the most beneficial to many wildlife species (the larger the snag, the more species can use it; larger species need larger snags).
2) **Habitat Loss and Fragmentation** – Road construction and associated road maintenance can convert large areas of habitat to non-habitat (Wisdom, et al, 2000). Because roads affect more area than the actual road surface, they can reduce available habitat well beyond the road itself.
3) **Over-hunting, over-trapping, poaching, collection and recreational shooting** – roads and trails facilitate human activities that reduce wildlife populations.
4) **Harassment or Human Disturbances, Displacement or avoidance, Chronic negative interactions with humans** – Roads facilitate human activities that disturb habitats and displace animals or cause them to avoid habitats that would otherwise be suitable. Disturbance may cause behavioral and/or physiological responses to wildlife.
    a. Behavioral responses are influenced by the type of activity, distance away, direction of movement, speed, predictability, and location. The most detrimental disturbances are those that are unanticipated. In circumstances where motorized use in predictable and localized (confined to routes), wildlife response to people afoot or skiing may be more pronounced than it is to motorized vehicles. Behavioral responses range from avoidance, habituation and attraction. These responses may be of short duration (temporary displacement) or long-term, such as abandonment of preferred foraging areas.
        i. Harlequin ducks avoid nesting along streams with human disturbance.
        ii. Thomas (2000) found the greatest concentration of elk in the area least accessible to motorized vehicles.
        iii. Rowland, et al, (2000) found that elk consistently selected areas away from open roads in both spring and summer, confirming that roads have an influence on summer habitat selection. They concluded that elk were able to use areas with relatively high road densities if there were still areas available that were away from roads.
        iv. Elk response to roads varies, by season and according to the size and location of the road, traffic volume and cover availability. Some of these responses are summarized in Frederick, 1991 and Joslin and Youmans, 1999. Elk may become habituated to some level of traffic; they may be less disturbed by fast-moving vehicles on a paved highway than by slow moving, infrequent traffic on lower-standard roads. Elk appear to associate a stopping vehicle with human harassment, particularly hunting, and are most disturbed by people in out-of-vehicle activity. In a number of studies, avoidance of roads by elk varied between seasons in response to hunting access and pressure. Un-hunted animals may show greater tolerance to human activity. Elk can use areas in close proximity to large amounts of human activity, if it is a non-harassing type of activity.
5) **Collisions** – High-speed highways and surfaced roads have the greatest potential for collisions with wildlife. Birds foraging along right-of-ways fly up and are killed. Many studies have documented the large number of amphibians and reptiles that may be killed on roadways, but only a few studies have determined the impact of this mortality at the population level (Maxell and Hokit, 1999). The degree of impacts is related to proximity of the road to breeding or other seasonal habitats and migration movements.

6) **Travel or Movement Barriers –** Habitat loss can result from the travel barriers caused by roads. For example, some researchers have found that some rodent species are reluctant to cross even the narrowest gravel roads (in USFS, 2000). This behavior can result in substantial habitat amounts of suitable habitat being unavailable to these species. In addition, habitat loss can fragment populations into smaller subpopulations through the loss of habitat connectivity, causing demography fluctuations, inbreeding, loss of genetic variability, and local population extinctions.
7) **Increase erosion and sedimentation of adjacent streams** – see aquatic sections.
8) **Travel Facilitation** – The construction of roads introduces new edge habitat, and consequently, invasive species of plants, birds and animals can be introduced into environments where they previously did not occur. Ground disturbance associated with roads and with other activities enabled by roads provides additional opportunity for establishment or expansion of non-native invasive plant populations.
9) Conversely, a reduction in motorized roads and trails, decreasing the ease of access into areas is expected to reduce the effects listed above, resulting in the following impacts:
    a. a decrease in loss of snag and downed logs used as firewood,
    b. lost habitat would slowly restore on the road and trail bed and reduced fragmentation,
    c. decreased over-hunting, trapping, poaching, collection and recreational shooting,
    d. a decrease in human harassment or disturbance, reduced animal displacement or avoidance, and reduced chronic negative interactions with humans,
    e. reduced vehicle collisions,
    f. a reduction in movement barriers,
    g. decreased erosion and sedimentation of adjacent streams, and
    h. a reduction of movement corridors for weeds.

### *Direct and Indirect Effects*

Direct, indirect and cumulative effects are discussed below for each species by alternative. The analysis area and methods are discussed in more detail in Chapter Three. A table found there displays the list of wildlife species analyzed; potential habitat or species occurrence in the area; a summary of how motorized roads and trails impact wildlife; and the effects of Alternatives 1 thru 5R to each species.

### *Cumulative Effects Analysis Area for Each Species*

The geographic area for cumulative effects is dependant on the migration distance of each species. Species that migrate off the forest usually move to the valley bottom (lower elevation) or are migrating through and between adjacent forest habitats. In general, livestock grazing, timber harvest, mining, and recreation have the biggest impacts to vegetation and human disturbance. The analysis area will be given for each species.

## Threatened and Endangered Species

### *Gray Wolf*

It is possible for wolves to travel through the Forest and they can be impacted by human activities; however, because there are no known locations of wolves on the Forest these impacts cannot be measured. Because population goals have been met under the existing road and trail density, there would be no direct, indirect or cumulative impacts from any alternative. All conditions required in the final rules (USFWS 1994a and 1994b) for the non-essential experimental population of gray wolves are being met, and no travel route closures are required to meet the final rule. Actions proposed under all alternatives are not expected to have an adverse impact on gray wolves.

### *Canada Lynx*

It is possible for lynx to travel through the Forest and be impacted by human activities; however, because there are no known locations of lynx on the Forest, these impacts can not be measured. Unpaved roads do not deter migration movement of lynx. Alternatives 2 thru 5R decrease motorized roads and trails, and there are no proposed paving upgrades of dirt or gravel roads in any alternative. There would be no direct, indirect or cumulative impacts from any alternative. Actions proposed under all alternatives are not expected to have an adverse impact on lynx or linkage habitat.

### *Bald Eagle*

Most actions proposed by the alternatives would be located outside nesting and winter territories and adverse impacts are not expected on nesting or winter habitat. Travel route densities were not used to measure impacts to bald eagles in the Plan FEIS (CNF RFP FEIS, 4-209). Designating snowmobile routes through some Big Game Winter Range prescriptions, designating roads and trails and closing travel routes within nesting territories or winter use area could impact bald eagles.

- **Nest Areas:** There is a small segment of road located on the outside edge of the ½ mile "Use Area" of an active nest. This road is a designated motorized route under all alternatives. The nest was established with the road in use. The road is located out of view from the nest and receives low use. No effects are expected from this designated road with any alternative. The RFP standards and guidelines to limit disturbance or minimize human activities within the 1/2 mile zone would be met. There are 20.6 miles of motorized routes in Alternative 1 within the 2.5 mile "Home Range Area" of all known bald eagles on the Forest. A small portion of the Forest, along with a short segment of motorized route, is on the outside edge of the documented nest in the vicinity of Freedom, WY. The 20 miles of routes do not occur between the nest and the bodies of water that provide foraging habitat. All four nests were productive in 2003 and these routes do not appear to impact the bald eagle. Human activity levels would not exceed "moderate" and RFP standards and guidelines will be met. (GYBEWG 1996, 25)

- **Winter Areas – Alternatives 1 and 4** Under these alternatives there would be no designation of snowmobile routes through "new" big game winter range. This would eliminate snowmobile travel along Crow Creek and Blackfoot River. Because there would be no disturbance from snowmobiles, there would be no direct, indirect or cumulative impacts to bald eagles.

- **Winter Areas – Alternatives 2, 3, 5 and 5R** Designating snowmobile use on routes in new winter range areas may have a slight impact to wintering bald eagles. Snowmobiling through winter range, especially Crow Creek and the Blackfoot Narrows could displace bald eagles off of perch sites. Winter survey results do not indicate a declining trend in use of Crow Creek by wintering bald eagles (CNF WWP 2005, bald eagles). These alternatives would meet Plan guidelines that state, "activities … should be designed to minimize conflicts with bald eagle wintering and migration habitat."

- **Cumulative Effects for all Alternatives** The cumulative effects area is the bald eagle foraging zones, activities within this area have the potential to affect the eagle. The Alexander Reservoir nest is in view of a power plant, human activities, a road maintenance facility, US Highway 30 and a railroad line. Various land developments are slowly increasing on private land. The Grays Lake nest is in view of Highway 34 and development on private land. The Thayne nest is on private land near US Highway 89, and the community of Thayne, WY. The Freedom nest is also on private land near US Highway 34 and the small community of Freedom, WY. Foraging sources for the bald eagle include fish and waterfowl from the reservoirs, lakes and rivers, and any carrion or road-kill in the area. Ranch operations would continue in Star Valley, but could decline with the increase in housing developments on these agricultural lands. Due to the large amount of human activities adjacent to the documented nests, it is expected that existing motorized travel on the Forest would not disturb the birds. The alternatives would not have a measurable cumulative impact to bald eagles under all alternatives.

- **Cumulative Effects for Winter Habitat** The cumulative effects analysis area is the new winter range areas and surrounding areas, because activities within this zone could affect the bald eagle.

Additional snowmobiling along designated routes may increase in the future. Phosphate mining may cause winter disturbance. Human activities are occurring, and may increase, on private land adjoining the winter range areas. Agricultural lands may be developed. Because adults are found in the same general locations during yearly mid-winter surveys and populations goals have been met with past snowmobiling, this disturbance "*may affect,*" but is "*not likely to adversely affect*" wintering bald eagles. The alternatives would not have a measurable cumulative impact to Bald eagles under all alternatives.

### *Yellow-billed cuckoo*

This cuckoo is not expected to occur in the project area because of the lack of suitable habitat. Activities associated with all alternatives are not expected to have an adverse impact on the yellow-billed cuckoo. There would be no direct, indirect or cumulative impacts from any alternative.

## *Sensitive Species*

### *Spotted bat*

Spotted bats are found in cliff habitat. There would be no disturbance, alteration, or new travel routes in cliff habitat with any alternative. Activities associated with the alternatives would not have an adverse impact on the spotted bat because they would not affect foraging or snag habitat. Designating roads and trails for motorized use and constructing connector trails can impact the amount of snags removed and habitat for prey. All alternatives would not exceed bat or snag standards and guidelines of the RFP. Closing motorized routes has the potential to create a small net increase in habitat for bat prey species (insects).

### *Townsend's (Western) big-eared bat*

Big-eared bat habitat includes caves or underground mines. There would be no disturbance or alteration to caves or underground mines with any alternative. Most actions associated with the alternatives would not change foraging or snag habitat; however, designating motorized routes and constructing connector trails can impact the amount of snags removed and habitat for prey. All alternatives would not exceed bat or snag standards and guidelines for the RFP and closing motorized routes has the potential to create a small net increase in habitat for bat prey species (insects).

### *Pygmy Rabbit*

Most activities associated with the alternatives would not impact suitable habitat for the Pygmy rabbit. Designating snowmobile routes through new Big Game Winter Range prescription areas and designating motorized routes can impact individuals and suitable habitat.

- **Effects for all Alternatives** There are currently 3.2 miles of motorized route within the 50 acre territory of the only recorded sighting on the Forest. The sighting was over 55 years ago. Existing suitable habitat in the area near the historical sighting on the forest would not be affected under all alternatives. Sagebrush habitat would be protected from compaction through restricting snowmobile travel to designating snowmobile routes through winter range in the sighting area. Designating motorized routes can lead to vehicle collisions and increased poaching of resident rabbits. This potential impact would be limited to the travel route corridor. Sagebrush habitat near the historical sighting would not be impacted under any alternative.
- **Cumulative Effects** The cumulative effects analysis area is one mile from the historical sighting. One mile is the known migration distance of pygmy rabbits. A past, present and future cumulative effect to the rabbit is the risk of vehicle collisions. The RFP reduced cross-country motorized travel and has improved livestock grazing utilization levels in big game winter range. These actions have potential to improve sagebrush habitat. Development and agricultural uses have

decreased suitable habitat. Road hazards, on and off forest, are expected to increase over time with increased travel. The alternatives will not have cumulative impact on the rabbit.

### *North American Wolverine*

In all alternatives the wolverine standards and guidelines of the RFP to, "restrict intrusive human disturbance within one mile around known active den sites, March 1 to May 15", would be met. There are no known active den sites. Because wolverines can be influenced by human disturbances, all forest activities could impact wolverine but are not expected to have an adverse impact. Human activities, such as noise or movement from road and trail maintenance, or travel route closure activities may displace wildlife from the immediate area. These activities usually have a short duration; a few hours to several days. Because these activities are usually in small, localized areas wildlife are able to circumvent the disturbance. Disturbance usually occurs during daylight hours, mid -summer to early fall, the least critical time period for wildlife. The initial activities to close travel routes occur once, but they are followed by recurring maintenance e.g. repairing gates, berms or signs yearly. There are no known reports of wildlife impacts from previous road or trail maintenance or travel route closures. The risk assessment factors used during the RFP analysis for wolverine include: 1) off-route travel; 2) OMRD changes; 3) large remote areas; 4) connectivity; and 5) denning habitat components. These same factors will be used in this evaluation.

- **Alternative 1** Under this alternative, there would be no impacts to winter habitat. Snowmobile travel would continue to be prohibited in all new winter range areas. There would be no snowmobile disturbance in Mink Creek, Gibson Jack, or the Bonneville Peak areas. However cross country skiing could cause disturbance to wolverine in these areas. Disturbance from associated summer uses would occur on 1,856 miles of motorized routes. Cross-country motorized travel in the Huckleberry prescription area would continue. OMRDs would exceed plan standard in 15 prescription areas. Semi-Primitive/Non-motorized areas over 1,000 would be found on 24 percent of the Forest. Plan standards and guidelines would be met under this alternative.
- **Cumulative Effects for Alternative 1** The cumulative effects analysis area is the Caribou and the Bridger-Teton National Forest. Wolverines are known to occur in this area. There would be no change from the existing condition with Alternative 1. There would no increase in winter disturbance but disturbances at high elevations would continue and possibility increase. There would be no change in summer disturbance or refugia, (semi-primitive non-motorized areas over 1,000 acres). Human disturbance on roads and trails would continue from current and future activities. A reduced road density decreases the risk of trapping mortality (IGBC-PLWLT 2004, 11). However, trapping is not permitted in Idaho (IDFG 2004 Furbearer Regulations). Two-lane paved roads that occur south of the Teton Range have not deterred long-distant movement of wolverines (R. Inman 2005 per. comm.) (Inman et. al. 2004). Impacts to migration patterns due to travel on forest roads are probably un-measurable and would have no cumulative impact to wolverines.

- **Alternative 2** Snowmobile travel would be allowed on designated routes in all new winter range areas. This is a net decrease in disturbance in these new areas. Disturbance to wolverine would be low. Increased winter disturbance would be on the designated routes and may cause a minor displacement but would not hinder migration. Disturbance from associated uses would occur on 1,798 miles of motorized routes; or 4 percent less than Alternative 1. Cross-country travel in the Huckleberry prescription area would not change; motorized disturbance would continue. OMRDs are exceeded in 11 prescription areas. 29 percent of the Forest is managed as semi-primitive/non-motorized areas over 1,000 acres. There would be a small net increase in habitat, benefiting wolverines. There would be a slight increase in refugia for wolverine; improving habitat potential.
- **Cumulative Effects for Alternative 2** Cumulative effects are the same as Alternative 1.

- **Alternative 3** Snowmobile travel would be allowed on designated routes in all new winter range areas. Disturbance from associated summer uses would occur on 1,532 miles of motorized routes; 17 percent less than Alternative 1. Cross-country travel in the Huckleberry prescription area would not change; motorized disturbance would continue. OMRDs would exceed plan standards in six prescription areas. Semi-primitive/non-motorized areas over 1,000 would be found on 37 percent of the Forest. There would be a small net increase in habitat, benefiting wolverines.
- **Cumulative Effects of Alternative 3** Impacts would be similar to Alternative 1.

- **Alternative 4** Snowmobile travel would be prohibited in all new winter range areas. The boundary of the Bonneville Peak areas would change decreasing snowmobile travel but disturbances from cross country skiing would continue. Summer disturbance from associated uses would occur on 1,426 miles of motorized routes; 23 percent less than Alternative 1. Cross- country travel during the summer in the Huckleberry prescription area would be restricted; limiting motorized disturbance to designated routes. OMRDs would exceed plan standards in four prescription areas. Semi-Primitive/Non-motorized areas over 1,000 would be found on 38 percent of the Forest. There would be a small net increase in habitat, benefiting wolverines.
- **Cumulative Effects of Alternative 4** There would be a small decrease in snowmobile disturbance but winter disturbance from cross country skiing would increase in area of use. There would be a small net decrease in human disturbance in the summer. Cumulative effects would be the similar to Alternative 1.

- **Alternative 5** Snowmobile travel is allowed on designated routes in all new winter range areas. Snowmobile travel would be prohibited in a larger area in Gibson Jack areas and three areas in Emigration Canyon, but cross country skiing disturbance would continue. The boundary of the Bonneville Peak prescription area would change, decreasing snowmobile travel in the "Strawberry Fields" area but disturbances from cross country skiing would continue. Summer disturbance from associated uses would occur on 1,766 miles of motorized routes; 5 percent less than Alternative 1. Cross-country travel in the Huckleberry prescription area would be restricted; limiting motorized disturbance to designated routes. Three new ½ mile connector trails would be built. OMRDs would exceed plan standards in seven prescription areas. Semi-primitive/non-motorized areas over 1,000 would be found on 29 percent of the Forest. Like Alternative 2, there would be a small net increase in habitat, benefiting wolverines.
- **Cumulative Effects for Alternative 5** Cumulative effects are the same as Alternatives 1 and 2.

- **Alternative 5R** Snowmobile travel would be allowed on designated routes in some new winter range areas. Snowmobile travel would be prohibited in a larger area in Gibson Jack and Mink Creek areas and three areas in Emigration Canyon, but cross country skiing disturbance would continue. The boundary of the Bonneville Peak prescription area would change and snowmobile travel in some areas would decrease. Disturbance from cross country skiing would continue. Summer disturbance from associated uses would occur on 1,767 miles of motorized routes; 5 percent less than Alternative 1. Three new ½ mile connector trails would be built. Cross-country travel in the Huckleberry prescription area would be restricted; limiting motorized disturbance to designated routes. OMRDs would exceed plan standards in nine prescription areas. Semi-primitive/non-motorized areas over 1,000 would be found on 29 percent of the Forest. Like Alternative 2, there would be a small net increase in habitat, benefiting wolverines.
- **Cumulative Effects for Alternative 5R** Effects are the same as Alternative 1.

### *Trumpeter swan*

There is no suitable winter or nesting habitat on the Forest. The alternatives would not impact trumpeter swans or suitable winter or nesting habitat. There would be no direct, indirect or cumulative impacts from any alternative.

### *Harlequin duck*

Most activities associated with the alternatives are not expected to have an adverse impact on the harlequin duck because they do not occur in McCoy Creek. Designating motorized routes and travel route closure activities within 300' of McCoy Creek could cause disturbance in potential harlequin duck habitat.

- **Direct and Indirect Effects for all Alternatives** All alternatives have some motorized routes within the McCoy Creek AIZ that could cause disturbance to harlequin ducks. Limited stream bank cover and loafing areas, and possibility stream gradient, appear to be important factors that are lacking in undisturbed stretches of McCoy Creek to provide suitable nesting habitat (CNF WWP 2005). The "high recreation use" of the area is the probable reason McCoy Creek does not provide suitable breeding habitat. Disturbances from travel route closure activities within the AIZ would be similar to recreational disturbance. These activities are meeting Plan standards and guidelines. There would be no new travel routes proposed for construction within the AIZ. There has been no documented harlequin duck breeding activity. No adverse impacts would occur under all alternatives.
- **Cumulative Effects for All Alternatives** The cumulative effects analysis area is the McCoy Creek Drainage, on the Soda Springs Ranger District. In the McCoy Creek drainage there has been constant disturbances associated with McCoy Creek Road, these will continue into the future. These disturbances are one of the factors limiting suitable breeding habitat. Livestock use was evaluated in the North End Sheep EIS (BE) and determined to be a very short term impact. Grazing practices outlined in the Plan are being implemented in the watershed.

### *Peregrine falcon*

Winter travel associated with the alternatives will not impact peregrine falcon because the falcon migrates south. Most activities associated with the alternatives are outside known nest areas. OMRDs are not a factor for peregrine falcon habitat and would not have an adverse impact on known peregrine falcon nesting or foraging habitats. Designating motorized routes and travel route closure activities would occur within the two-mile zone around known active nests.

- **Alternative 1** There are 3.6 miles of motorized routes in the two-mile zone around known nests. The existing nests were established with the existing levels of human activities, including these travel routes.
- **Alternative 2, 3, and 4** Under these alternatives, motorized travel routes within the two-mile nest zones would decrease by 0.5 miles. This would be a slight un-measurable reduction of disturbance. Habitat alterations are not expected to adversely affect prey availability because the nests and the adjacent large water bodies that serve as the source of prey, are outside of the Forest. The existing nests were established with the existing levels of human activities. Noise levels from closure activities or motorized travel on designated routes within the nest zone are not expected to exceed existing disturbances. Activities or habitat alterations would not adversely affect prey availability. Due to the influence of large amounts of available prey, any changes to prey habitat would be un-measurable to the peregrine falcon. Plan Standards and guidelines would be met.
- **Alternative 5 & 5R** The two-mile zone would have 3.9 miles of motorized routes; an increase of 0.3 miles. This increase is due to non-system routes being converted to ATV trails. This would be a small un-measurable increase in disturbance from roads but not at levels to disturb nesting birds, because the roads are not between the nests and the large water bodies. Activities or habitat

alterations would not adversely affect prey availability. Plan standards and guidelines would be met. Effects are similar as Alternatives 2, 3 and 4.

- **Cumulative Effects for All Alternatives** The cumulative effects analysis area is the foraging zone and adjacent large water bodies. Impacts from all alternatives are expected to be un-measurable because "success rates remained similar to the previous year with annual production reaching an all-time high. Two additional territories were potentially discovered in the Southeast Region, including one near Grace, Idaho." (Sallabanks 2004, 11)

### *Northern goshawk*

Most winter activities associated with the alternatives do not impact goshawk productivity. Cross-country motorized travel during the snow-free season usually occurs in open, non-forested habitat and was not a factor in the FEIS for goshawk. Designating motorized routes and closing travel routes within goshawk territories and exceeding OMRD ceilings will be discussed as potential impacts on goshawks.

- **Alternative 1** There are 50.9 miles of motorized roads and trails within the known goshawk territories. OMRD ceilings are exceeded in 15 prescriptions areas. Seven of these prescription areas on the Westside RD which has four of the twenty-nine known territories. Goshawk occupancy and productivity is occurring on the Forest with the existing levels of motorized routes within their territories. Three new territories were found in 2004 and new sightings have been discovered in 2005. The impacts of motorized routes are difficult to determine and fluctuations of occupancy and breeding rates appear to be normal. Plan standards and guidelines would be met.
- **Cumulative Effects for Alternative 1** The cumulative effects analysis area is the goshawk territories. This alternative proposes no change from the existing condition and would not change the existing human disturbances already present in the areas.

- **Alternative 2** Under this alternative there is an increase of 3.3 miles of designated motorized routes in known goshawk territories. Impacts from this change would be difficult to measure. Closure activities would meet Plan standards and guidelines. OMRDs are exceeded in 11 prescription areas. Impacts are the same as Alternative 1.
- **Cumulative Effects of Alternative 2** Logging, prescribed burning, and mining would continue throughout the Forest. Existing OMRDs and associated human activities do not appear to be adversely impacting the birds. Under this alternative, the additional motorized travel routes within known territories could have a small additive impact to the existing on-going human disturbances, but this additive impact would not be measurable, and is not expected to change the population or habitat. Effects to individuals cannot be measured.

- **Alternative 3** Under this alternative there is a decrease of 5 miles of designated motorized route within known goshawk territories. Impacts from these changes would be difficult to measure. Closure methods would be within Plan Standards and Guidelines. OMRD ceilings would be exceeded in six prescription areas; half are on the Westside District. There would be no change to habitat conditions, no new system roads, and Plan Standards and Guidelines would be met.
- **Cumulative impacts of Alternative 3** Impacts are the same as Alternative 2, except there would be a decrease of motorized disturbance.

- **Alternative 4** Under this alternative there is a decrease of 0.2 miles of designated motorized route within known goshawk territories. Closure methods would be within Plan Standards and Guidelines. OMRD ceilings would be exceeded in four prescription areas; one is on the Westside District. There would be no change to habitat conditions, no new system roads, and Plan Standards and Guidelines would be met.
- **Cumulative impacts of Alternative 4** Impacts are the same as Alternative 2, except there would be a decrease of motorized disturbance.

- **Alternative 5** Under this alternative there is an increase of 1.9 miles of designated motorized route within known goshawk territories. This is due to changes of designation of existing routes. Impacts from these changes would be difficult to measure. OMRD ceilings would be exceeded in seven prescription areas; five are on the Westside District. There would be no change to habitat conditions, no new system roads, and Plan Standards and Guidelines would be met.
- **Cumulative Impacts for Alternative 5** Impacts are the same as Alternative 2, except there would be a very small increase of motorized disturbance.

- **Alternative 5R** Impacts are the same as Alternative 1, except there would be an increase of 2.6 miles of motorized routes in all known goshawk territories due to changes of uses of the existing routes. Impacts from these changes would be difficult to measure. New trails are not in goshawk habitat. Closure methods would be within Plan Standards and Guidelines. OMRDs would be exceeded in nine areas; seven are on the Westside RD. There would be no change to habitat conditions, no new system roads, and S&G would be met.
- **Cumulative Impacts for Alternative 5R** Under this alternative there is an increase of 2.6 miles of designated motorized route within known goshawk territories. This is due to changes of designation of existing routes. Impacts from these changes would be difficult to measure. OMRD ceilings would be exceeded in nine prescription areas; seven are on the Westside District. There would be no change to habitat conditions, no new system roads, and Plan Standards and Guidelines would be met.

### *Columbian sharp-tailed grouse*

**Effects Common to all Alternatives** Designating snowmobile routes through winter range, restricting snowmobile use in new big game winter range areas, changing a prescription area boundary, or increasing OMRDs is not expected to have an adverse impact on sharp-tailed grouse. There would be no disturbance in the May to June period and there would be no change in vegetation. Restricting cross-country travel during the snow-free season would decrease potential disturbance. Because the 2-mile sharp-tailed zones are not in the Huckleberry area, these impacts will not be described in this section. See sage-grouse and migratory bird section. Disturbance from closure methods would not impact birds because there would be no activities scheduled in the spring and early summer. New construction of ATV trails would not be located in the two- mile zone. Construction or motorized use would not disturb sharp-tails. Designating roads and trails open or closed could change disturbance levels around leks or available vegetation. Winter vegetation would be available under all alternatives. Plan Standards and Guidelines for Sharp-tailed grouse would be met to support viable populations. It is expected that sharp-tail occupancy and production within the project area would continue under all alternatives.

- **Alternative 1** Existing traffic levels on 1.6 miles of motorized routes within the 0.5 mile zone from known leks could continue to cause disturbance. Brush habitat has been removed by the existence of 50.7 miles of designated routes within the two- mile zone. There would be no change in available winter vegetation.
- **Cumulative Impacts of Alternative 1** The area used for cumulative impacts is the two- mile zone and winter foraging area on the Forest. Cumulative impacts of disturbance would include traffic noise and other noise associated with human activities. There would be no change with this alternative; therefore no cumulative impacts. Future brush treatments would continue throughout the Forest. IDFG (2004b) completed the 2004 lek survey, meeting the Revised Forest Plan monitoring requirement (USDA 2003b 5-15). Sharp-tails are currently hunted and the season and bag limit have not changed. Birds have been seen in new areas. Populations appear to be stable or increasing with existing road and trail use. Stable or increasing populations may be due to the availability of CRP lands; which can provide critical habitat, winter range and forage. CRP lands are private lands which are not cultivated to help provide wildlife habitat to a variety of species.

The available CRP lands are critical to current population levels. There have been no major disturbances that have reduced chokecherry, serviceberry, and aspen; which are important to this species.

- **Alternative 2** Impacts would be similar to Alternative 1, with the exception that there would be 1.7 additional miles of motorized route within the 0.5 mile zone. Within the two-mile zone, motorized routes would increase by 2.7 miles. This change represents less than five acres in loss of groundcover due to a change in use of an existing route. The increases are not a result new construction. These small impacts are not expected to be measurable because of the narrow, linear amount of bare ground.
- **Cumulative Impacts of Alternative 2** Impacts would be similar to Alternative 1. The available CRP lands are critical to current population levels.

- **Alternative 3** Impacts would be similar to Alternative 1; there would be 1.6 miles of motorized route within the 0.5 mile zone, no change from Alternative 1. Within the two- mile zone, motorized routes would decrease by 12.1 miles. This change represents an increase of 22 acres in groundcover. There would be a small net increase in available vegetation, but impacts may not be measurable.
- **Cumulative Impacts for Alternative 3** Impacts would be similar to Alternative 2; however, but there would be a small decrease in noise associated with motorized travel.

- **Alternative 4** The impacts are similar to Alternative 1. There would be 1.3 miles of motorized route within the 0.5 mile zone; a decrease of 0.3 miles. Within the two-mile zone, motorized routes would decrease to 13.5 miles. This change represents an increase of 24.5 acres in groundcover and a decrease in potential traffic noise. There would be a small net increase in available vegetation; impacts from these changes may not be measurable.
- **Cumulative Impacts of Alternative 4** Impacts are similar to Alternative 2; however, there would be a decrease in noise associated with motorized travel.

- **Alternative 5** The alternative has 1.7 miles of designated motorized route within the 0.5 mile zone. An increase of 0.1 miles is the result of a non-system route being designated for motorized travel. It is expected that noise levels within the area would not change. Within the two-mile zone, motorized routes would increase to 4.0 miles. This change represents less than 7.3 acres in groundcover due to a change in use of an existing route; it is not a result of new construction. There would be a small net increase in available vegetation; impacts from these changes may not be measurable.
- **Cumulative impacts for Alternative 5** Impacts are similar to Alternative 2; however, there would be a small increase in noise associated with motorized travel.

- **Alternative 5R** The impacts are similar to Alternative 1. There would be 1.7 miles of motorized route within the 0.5 mile zone. It is expected that this increase would not change existing noise levels. Within the two-mile zone, motorized routes would increase by 4.3 miles. This change represents less than eight acres in ground cover not available due to a change in use of an existing route; it is not a result new construction. There would be a small net decrease in available vegetation; impacts from these changes may not be measurable.
- **Cumulative Impacts for Alternative 5R** Impacts are the similar to Alternative 2. There would be a very small increase (0.1 miles) of motorized disturbance and small loss of vegetation.

### *Greater Sage-Grouse*

**Effects Common to All Alternatives** Activities and management changes proposed under all alternatives are not expected to have adverse impacts on sage-grouse. Plan standards and guidelines for sage-grouse would be met when closing routes to minimize noise disturbance. Snowmobile disturbance to sage-grouse on big game winter range would be restricted to designated routes. Most routes are on roads usually located in the drainage bottom. Because grouse winter on exposed ridgelines and hillsides in upland habitat where the snowmobiles are restricted, winter impacts are expected to be very low. OMRDs are not a management indicator for sage-grouse. Locations of new trail construction are not near known leks, or within sage-grouse winter or brood rearing habitats. Proposed connector trails are located along ridgelines, and would not affect sage grouse. The South Fork Mink Creek and Cub River ATV Trails are adjacent to high-use roads. These areas do not provide suitable winter or brood raring habitat. Designating roads and trails for motorized or non-motorized travel, and restricting cross-country motorized travel have potential to impact sage-grouse or suitable habitat.

IDFG (2004a) completed the 2004 lek survey, meeting the Revised Forest Plan monitoring requirement (USDA 2003b 5-15). Although Idaho's sage-grouse populations are below 1960s levels, they have been generally stable for the last decade (IDFG 2005a). There would be no change in habitat conditions under all alternatives. Plan standards and guidelines for sage-grouse would be met to support viable populations. Any proposed reduction of motorized road and trail density has the potential to decrease human disturbance. It is expected that sage grouse occupancy and production within the project area would continue under all alternatives.

- **Alternative 1** Cross-country motorized travel during the snow-free season would continue to impact sage-grouse brood rearing habitat in the Huckleberry prescription area. Noise along 0.8 miles of roads and motorized trails can cause disturbance to sage-grouse within 0.5 km (0.3 miles or 1,640') from leks (Connelly et. al 2000, 978). Three of the four leks in this zone were productive in 2000. The 4$^{th}$ is a historical nest near Angus Creek and located on private property; birds have not been recorded there in the last 40 years. Sage-grouse are seen on leks nearby. Within 10 mile of leks (CNF RFP 3-32), 576 miles of motorized routes through sagebrush habitat, have impacted migratory nesting habitat due to a lack of vegetation, collisions, and hunting access. Birds have been productive with these routes in place and any reductions in populations, due to these roads, is not known. See Migratory Bird – sagebrush section for changes in acres.
- **Cumulative Impacts for Alternative 1** The cumulative impact area for sage-grouse is the 10 mile zone around known leks on or adjacent to the Forest. Existing road and trail impacts are but a small portion of the total impacts to sage grouse. Hunting is an ongoing impact on sage-grouse; bag limits were recently lowered. Ongoing livestock grazing and future vegetation treatments cause impacts, but are within Plan Standards and Guidelines. Development on private lands near known leks, is expected to increase. Snowmobiling in winter habitat on private lands at lower elevations would continue.

- **Alternative 2** Cross-country motorized travel during the snow-free season would continue to impact sage-grouse brood rearing habitat in the Huckleberry Rx Area. Noise along roads and motorized trails would occur on 0.4 miles; a reduction of 0.4 miles. Motorized Routes are reduced to 560 miles; 42 miles less than Alternative 1, the existing condition.
- **Cumulative impacts of Alternative 2** Under this alternative there would be a very small increase in snowmobile disturbance and a small reduction in potential noise disturbance to leks. These impacts are a small portion of the total impacts to sage grouse.

- **Alternative 3** Impacts from snow-free season cross-country motorized travel would be the same as Alternative 2. 482 miles of designated motorized route would impact migratory nesting habitat; or 193 miles less than Alternative 1, the existing condition.
- **Cumulative impacts of Alternative 3** Under this alternative there would be a reduction in noise disturbance to leks from motorized route travel. Like Alternative 1, these impacts are a small portion of the total impacts to sage grouse.

- **Alternative 4** Under this alternative snow-free cross-country motorized travel would be restricted, reducing impacts to sage-grouse brood rearing habitat in the Huckleberry prescription area. 463 miles of motorized routes would impact migratory nesting habitat; or 238 miles less than Alternative 1, the existing condition.
- **Cumulative impacts of Alternative 4** There would be a reduction of noise and disturbance associated with motorized travel during the snow-free season. Like Alternative 1, these impacts are a small portion of the total impacts to sage grouse.

- **Alternative 5** Under this alternative, cross-country motorized travel would be restricted, reducing impacts to sage-grouse brood rearing habitat in the Huckleberry prescription area. Noise levels from motorized travel would be similar to Alternative 2. 554 miles of motorized routes would impact migratory nesting habitat, or 45 miles less than Alternative 1.
- **Cumulative impacts of Alternative 5** Under this alternative, cumulative impacts would be the same as Alternative 2.

- **Alternative 5R** Under this alternative, 552 miles of motorized routes would impact migratory nesting habitat, or 44 miles less than Alternative 1. Under this alternative, impacts would be similar to Alternative 2.
- **Cumulative impacts of Alternative 5R** Under this alternative, cumulative impacts would be the same as Alternative 2.

### *Great gray owl, Flammulated owl, and Boreal owl*

**Effects Common to All Alternatives** Route closures, designating snowmobile routes, changing boundaries for non-motorized winter areas, cross-country motorized travel are not expected to have an adverse impact on owls. Designating roads and trails and constructing new motorized trails can impact the amount of snags removed and the amount of habitat for prey. *See snag and prey habitat discussion in the woodpecker section.* It is expected that all alternatives would not exceed Plan Standards and Guidelines for snags. Under alternatives that would close routes, there would be a small net increase in habitat for owl prey species (insects, birds and small mammals).

### *Three-toed woodpecker (bats and owls)*

Route closures, designating snowmobile routes, changing boundaries for non-motorized winter areas, cross-country motorized travel, or increasing OMRDs are not expected to have an adverse impact on woodpeckers. Building new motorized trail may remove a few existing or future snags and designating roads and trails for motorized use can influence firewood cutting opportunities. Snags provide suitable foraging and nesting habitat. Snags can be removed for trail building or firewood, this can impact woodpeckers, bats, and owls; including the northern pygmy-owl.

- **Alternative 1** Under this alternative, snags would continue to be removed along 1,012 miles of open motorized routes within a maximum area of 73,565 acres; or 12.9 percent of the Forest. These acres would be less. Only half of the Forest is forested and many roads are not within 300' of forested habitat. Many snags within 300' of open roads are not easily gathered as firewood. A more detailed discussion is found in the Migratory Bird section. The RFP FEIS (Appendix D-33) considered 2,033 miles of designated motorized route as "low risk". This alternative would not

exceed the miles analyzed in the RFP FEIS. It is expected that there would be no change to woodpeckers, bats, or owls under this alternative.

- **Cumulative Impacts for Alternative 1** The cumulative effects analysis area is the Caribou planning unit. This is the management area that allows firewood cutting by the public. Snags would be lost from future timber sales, vegetation treatments, and prescribed burning of mature trees within Plan standards and guidelines for snags and down woody debris. Snags would also be created due to mortality from insect, disease, weather, and fire (both wildfire and prescribed burning).

- **Alternative 2** Under this alternative, snags would be removed within a maximum of 12.3 percent of the Forest. Route closures could allow vegetation to grow on an additional 211 acres, increasing available grass, forbs, brush and forest vegetation for wildlife. There would be small increase in snags available for woodpeckers, bats, and owls.
- **Cumulative Impacts of Alternative 2** There would be fewer cumulative impacts from firewood cutting and loss of available vegetation than described for Alternative 1.

- **Alternative 3** Under this alternative, snags would be removed within a maximum of 12.0 percent of the Forest. Route closures could allow vegetation to grow on an additional 1,173 acres. There would be small increase in snags available for woodpeckers, bats, and owls.
- **Cumulative Impacts for Alternative 3** There would be fewer cumulative impacts from firewood cutting and loss of available vegetation than described for Alternative 1 and 2.

- **Alternative 4** Under this alternative, snags would be removed within a maximum of 11.5 percent of the Forest. Route closures could allow vegetation to grow on an additional 1,558 acres. There would be small increase in snags available for woodpeckers, bats, and owls.
- **Cumulative Impacts for Alternative 4** There would be fewer cumulative impacts from firewood cutting and loss of available vegetation than described for Alternative 1 and 2.

- **Alternative 5** Under this alternative, snags would be removed within a maximum of 12.4 percent of the Forest. New trail construction could remove trees and other vegetation from 3.3 acres. The net increase from route closures would allow vegetation to grow on an additional 320 acres. There would be small increased in snags available for woodpeckers, bats, and owls.
- **Cumulative Impacts for Alternative 5** Cumulative impacts are the same as Alternative 2.

- **Alternative 5R** Under this alternative, snags would be removed within a maximum of 12.4 percent of the Forest. New trail construction could remove trees and other vegetation from 4.5 acres. The net increase from route closures would allow vegetation to grow on an additional 317 acres. There would be small increased in snags available for woodpeckers, bats, and owls.
- **Cumulative Impacts for Alternative 5R** Cumulative impacts are the same as Alternative 2 and 5.

### *Columbia Spotted frog*

**Effects Common to All Alternatives** The spotted frog has not been found on the Caribou (CNF RFP FEIS 3-223 and NatureServe 2005). There would be no direct, indirect or cumulative impacts from the alternatives.

## *Migratory Land Birds*

This section will describe road and motorized trail impacts to riparian, sagebrush, and forests used by birds (including winter forage for sharp-tailed grouse), small ground dwelling animals (including Uinta ground squirrel, amphibians [northern leopard frog] and reptiles), and insects. This is an analysis of prey species to goshawk, owls, and bats. Miles of motorized roads and trails by vegetation type was converted into acres using a 30 foot width typical disturbance area or 3.634 acres per mile. Acres in AIZs will represent potential impacts to riparian and non-riverine wetland species. Acres in grass/shrub, mountain mahogany, mountain brush and juniper vegetation types will represent potential impacts to sagebrush species; including sage-grouse and pygmy rabbit Acres in aspen, aspen/conifer, aspen/maple, Douglas-fir, maple, lodgepole pine, and mixed conifer will represent forest dwelling species. Closing motorized routes, designating snowmobile routes and restricting snowmobile use in new areas is not expected to have an adverse impact to these wildlife species. Building new motorized trails, designating motorized routes, and restricting cross-country travel could have impacts on migratory birds and other wildlife species. All numbers are an estimate but comparable between alternatives.

- **Alternative 1** Under this alternative, designated motorized routes are impacting a total of 0.65 percent of the vegetation on the Forest. This represents a relatively small amount of vegetation loss. Vehicle collisions would continue to impact some individuals. Amphibians and other slow moving animals would be impacted the most. There are too many variables to determine or measure impacts. No specific location has been identified that has an excessive mortality levels.
- **Cumulative Impacts of Alternative 1** The cumulative effects analysis area is the Caribou planning unit. This was the area that was analyzed in the CNF RFP FEIS. Because this alternative does not change existing conditions there would be no additional cumulative impacts. Projects in the past two years, current activities, and future projects have contributed to the cumulative impacts to these species. There are several new livestock water troughs and ponds creating additional watering sites; timber sales and prescribed burning have increased the amount of early seral vegetation; mining exploration and small recreation projects have caused short-term, localized ground and human disturbance. These cumulative impacts to migratory birds were analyzed in the RFP FEIS. Other factors which are causing harm or impacts to birds and small animals include weather, disease, predators, and hunting. Increased traffic levels on existing motorized roads and trails would increase the risk of collisions.

- **Alternative 2** Motorized routes would impact 0.63 percent of the vegetation on the Forest. This represents a relatively small amount of vegetation loss. The net decrease of motorized routes is expected to improve habitats of riparian, non-riverine wetland, sagebrush and forested vegetation and reduce vehicle collisions. Impacts may be un-measurable but would benefit birds and prey species in small localized areas.
- **Cumulative Impacts for Alternative 2** There would be fewer cumulative impacts from motorized travel than described Alternative 1.

- **Alternative 3** Under this alternative, motorized routes would impact 0.53 percent of the vegetation on the Forest. The net decrease of motorized routes would be expected to improve riparian, non-riverine wetland, sagebrush, and forested habitats, and reduce vehicle collisions. Impacts may be un-measurable but would benefit birds and prey species in more localized areas than Alternatives 1 and 2.
- **Cumulative Impacts for Alternative 3** Under this alternative, there would be fewer cumulative impacts than described Alternative 1 and 2.

- **Alternative 4** Under this alternative, cross-country motorized travel during the snow-free season would be restricted in the Huckleberry prescription area, reducing disturbance and damage to vegetation. Motorized routes would impact 0.50 percent of the vegetation on the Forest. The effects of the net decrease of motorized routes would be the same as Alternative 3.
- **Cumulative Impacts for Alternative 4** Under this alternative, there would be fewer cumulative impacts than described Alternative 1 and 2.

- **Alternative 5 and 5R** Under these alternatives, cross-country motorized travel would be restricted in the Huckleberry prescription area. Impacts would be the same as Alternative 4. Under Alternative 5, motorized routes would impact 0.61 percent of the vegetation on the Forest. Under Alternative 5R, motorized routes would impact 0.62 percent of the vegetation on the Forest. The net decrease of motorized routes would be expected to improve riparian, non-riverine wetland, sagebrush, and forested habitats, and reduce vehicle collisions. Impacts may be un-measurable but would benefit birds and prey species in more localized areas than Alternatives 1.
- **Cumulative Impacts of Alternative 5 and 5R** Under this alternative, there would be fewer cumulative impacts from motorized travel than described Alternative 1.

## *Other Species of Interest*

### *Wild Turkey*

Motorized traffic on roads and trails may impact wild turkeys. The most likely impacts are from disturbance during nesting season or vehicle collisions along the roads. Designating motorized routes may have a very small impact to individual birds. Because populations have increased and expanded their range with the existing road and trail system, any impacts to wild turkeys between alternatives would be un-measurable. Cumulative effects under all alternatives would include impacts from vehicles along high speed state or county roads, predators, and hunting. Turkey hunting is allowed in the Forest during the spring and fall season. During 2004, 379 turkeys were harvested in the southeast Idaho region (IDFG 2005, Turkey Regulations).

### *Boreal Toad*

Most activities associated with the alternatives are not expected to have an adverse impact on boreal toads. Alternatives 4, 5 and 5R manage motorized travel on designated routes during the snow-free season within the Huckleberry prescription area, this would reduce motorized travel impacts to wetlands. *See discussion in Migratory Bird section for forest wide impacts.*

- **Cumulative Impacts for All Alternatives** The cumulative impact area is the four km. boreal toad zones. Traffic on motorized routes is expected to increase from recreation uses, timber sales, mining, and administrative use. This could add to the risk of collisions. Disease and predations is also impacting boreal toads. Traffic on State Highway 34 would continue to cause collisions with any toads crossing this two-lane paved road during migrations. Other impacts to amphibians are well documented by Maxell and Hokit (1999).

### *Northern leopard frog*

The frog population near Toponce has been impacted by traffic on the existing open road. The risk of traffic impacts will continue under all alternatives. The road is narrow and does not create a movement barrier to this frog. The habitat in the Toponce area would be maintained under all alternatives; meeting CNF RFP guideline for northern leopard frogs. Cumulative impacts would continue to be a small part of the many threats, which "… include habitat loss, commercial overexploitation, and, in some areas, probably competition/predation by bullfrogs or other introduced species, bacterial infection" (NatureServe 2005).

### *Uinta chipmunk*

Under all alternatives, there would be no ground disturbing activities near Bloomington Lake. The species appears to be secure with the existing road and trail system. Motorized routes in the Bloomington Lake area are not expected to adversely impact this species. There could be an un-measurable risk to individuals from vehicle collisions from traffic into the lake. There has been a small increase of vegetation around the lake due to recreation restrictions.

### *Big Game*

Many of the activities associated with the alternatives are not expected to have an adverse impact on big game. Designating snowmobile routes through areas of "new" winter range and designating snow-free motorized routes, and the disturbance associated with closuring routes and constructing new motorized trails could have an adverse impact on big game throughout the year. The affects of increasing OMRD ceilings in some prescription areas is also discussed.

### *Big Game (Hiding Cover / Security)*

Designating motorized routes, closing routes and constructing new trails can influence big game hiding cover and security. It is assumed that "refugia" would increase by the amount of motorized roads and trails closed in large contiguous areas. Closing roads in one prescription area can increase the use of an adjacent prescription area by wildlife (Wisdom et al. 2000). In this analysis "refugia" areas are defined as non-motorized areas over 1,000 acres, buffered ½-mile from a motorized route. However, the CNF RFP definition of security is an area of cover (vegetative or topographic) over ½-mile from an open motorized route and over 250 acres.

- **Alternative 1** The RFP FEIS (Appendix D-33) considered 2,033 miles of designated motorized route as "low risk". There are currently 1,856 miles of designated motorized route; less than evaluated in the RFP FEIS. Under this alternative, no travel routes would be closed. The RFP OMRD ceilings would not be met in 15 prescription areas. The areas exceed OMRD ceilings by 0.8 to 0.1 miles per square mile. "During the Forest Planning process, IDFG identified four areas of special concern for mule deer and elk. For mule deer these include the Malad and Portneuf Ranges, the south end of the Bear River Range. For elk, the Diamond Creek area is of concern." (CNF RFP FEIS 4-233). Connectivity would be met in the Diamond Area. The OMRD is over the ceiling by 0.1 in one prescription area each in the Bear, Malad, and Portneuf areas. Refugia areas are found on 24 percent of the Forest. Available hiding cover and security to big game would not change. It is expected that there would be no change in the current trend of big game populations or hunting opportunities.
- **Cumulative Impacts for Alternative 1** The cumulative effects analysis area is the Caribou planning unit and adjacent lands that provide big game habitat. Recreation throughout the forest is expected to increase. Mining is the only foreseeable future activity that would increase road and human disturbance in the long term. Future timber sales would build roads causing short term increases in road density and human disturbance until the roads are closed. Road and trails off-forest are expected to increase in amount and use. Development on private land outside the Forest is expected increase. Other trends include an increase in elk populations and a decline in mule deer populations. IDFG began their Mule Deer Initiative in 2004. The decline in mule deer populations is similar to that of other western states. Mule deer populations are affected by various factors including loss of habitat, predators, competition with other big game animals including elk, and weather. The Mule Deer Initiative will focus on all of the problems mule deer face, many of which revolve around habitat. Mule deer habitat has been degraded, fragmented and lost because of fire management practices, invasive weeds, and development. (IDFG 2005c).

- **Alternative 2** Under this alternative there are 1,798 miles of motorized roads or trails; or three percent less than Alternative 1. The RFP OMRDs would not be met in eleven prescription areas.

The areas are over by 0.5 to 0.1 miles per square mile. Connectivity would be maintained in the Diamond Creek Area. The OMRD is over by 0.1 miles per square mile in one prescription area each in the Bear, Malad, and Portneuf areas. Refugia areas are found on 29 percent of the CNF. Available hiding cover and security to big game would increase on five percent of the Forest. This is expected to improve (to some degree) the current trend of big game populations or hunting opportunities by limiting "motor vehicle access where it might be detrimental to mule deer and hunters . . . and providing "mule deer security areas" that reduce motorized routes to protect mule deer from over-hunting as well as disturbance at other times of the year such as fawning season and when deer are on winter ranges" (IDFG 2005d, 6-6-05 news release).

- **Cumulative Impacts for Alternative 2** There would be a small decrease in cumulative impacts to big game associated with motorized travel as described in Alternative 1. This is in addition to "predator control and improving areas of chronic road kill, to reduce mortality (of mule deer) in those areas" (IDFG 2005d).

- **Alternative 3** Under this alternative, there are 1,532 miles of motorized roads and trails; or 17 percent less than Alternative 1. The RFP OMRDs would not be met in six prescription areas. The prescription areas are over by 0.4 to 0.1 miles per square mile. Connectivity would be met in the Diamond, Bear, Malad, and Portneuf areas. Refugia areas are found on 37 percent of the Forest. Available hiding cover and security to big game would increase 13 percent. This is expected to improve the current trend of big game populations or hunting opportunities.
- **Cumulative Impacts for Alternative 3** There would a small decrease in cumulative impacts to big game as described in Alternative 1 and 2.

- **Alternative 4** Under this alternative there are 1,426 miles of motorized roads or trails; or 23 percent less than Alternative 1. The RFP OMRDs would not be met in four prescription areas. The areas are over by 0.2 to 0.1 miles per square mile. Connectivity would be met in all but the south end of the Bear River Range. Refugia areas are found on 38 percent of the Forest. Available hiding cover and security to big game would increase 16 percent. This is expected to improve the current trend of big game populations or hunting opportunities.
- **Cumulative Impacts for Alternative 4** There would a small decrease in cumulative impacts from motorized travel to big game as described in Alternative 1 and 2.

- **Alternative 5 and 5R** Under Alternative 5 there are 1,766 miles of motorized roads or trails; or 5 percent less than Alternative 1. OMRD ceilings would not be met in seven prescription areas. The areas are over by 0.4 to 0.1 miles per square mile. Under Alternative 5R there are 1,767 miles of motorized roads or trails; or 5% less than Alternative 1. The RFP OMRDs would not be met in nine prescription areas. The areas are over by 0.4 to 0.1 miles per square mile. Under both alternatives, connectivity would be met in all but the Malad Range and refugia areas are found on 29 percent of the Forest. Available hiding cover and security to big game would increase 5 percent. This is expected to improve (to some degree) the current trend of big game populations or hunting opportunities.
- **Cumulative Impacts for Alternative 5 and 5R** There would a small decrease in cumulative impacts to big game as described in Alternative 1 and 2.

### *Big Game*

**(Winter Range – Snowmobile Travel Restricted to Designating Routes)** Designating snowmobile routes through areas of "new" winter range can influence big game.

- **Alternatives 1 and 4** Snowmobile routes would not be designated through the new big game winter range areas identified in the CNF RFP. Big game wintering in these new areas would not be disturbed. Elk and deer energy expenditure would not change, maintaining their chance of survival.
- **Cumulative Impacts for Alternatives 1 and 4** The cumulative effects analysis area is the herd migration area. There would be no additional cumulative impacts because there is no change from the existing condition. Non-motorized human access and associated disturbance and wildlife mortality would continue in the areas prescribed as big game winter range. This would continue to maintain or increase herd populations without reducing future hunting opportunities.

- **Alternative 2, 3, 5, and 5R** Snowmobile routes would be designated through new big game winter range areas identified in the CNF RFP. Big game wintering in these new areas would be disturbed. This human disturbance displaces elk and deer, increasing their energy expenditure and decreasing their chance of survival.
- **Cumulative Impacts of Alternatives 2, 3, 5 and 5R** Snowmobile disturbance will decrease in these areas, many along the lower hills of the Bear River Range, as the designated snowmobile routes are enforced and riders learn to stay on the designated routes. When compared to Alternatives 1 and 4, these alternatives would have an additive cumulative impact to the on-going disturbances to big game during the winter, within these areas. In areas where cross country skiing is an ongoing activity within winter range (especially south of Pocatello), this human disturbance would continue to cause higher energy expenditures. Plan standards and guidelines for livestock forage utilization are designed to improve available big game forage. Because there would be cumulatively less human disturbance than in the past, elk and deer energy expenditure it is expected to be reduced, increasing their chance of survival. This would maintain or increase herd populations without reducing future hunting opportunities.

## *Conclusion*

Because the RFP FEIS (Appendix D-33) considered 2,033 miles of designated motorized route as "low risk", all action alternatives propose fewer designated motorized route miles. When all the prescription areas are added together the OMRD for the forest would be 1.2 miles per square mile.

Although open motorized route densities affect many species, big game security was one of many reasons to implement route density ceilings [in the Revised Forest Plan] (Appendix D-33). In many areas of the Forest, elk numbers are at or above state population objectives. The RFP used a 1.0 mile per square mile OMRD ceiling in areas where elk habitat was to be maintained, and a 2.0 mile per square mile ceiling for areas that are managed to benefit elk. Because the available literature on open road densities is largely based on elk, these numbers were used roughly to also address the needs of other species that avoid areas of human activity or are affected by roads.

The Plan OMRD standards included reductions in specific areas due to wildlife concerns. The largest reductions are in the south end of the Bear River range, where there were concerns for mule deer and connectivity to the Wasatch-Cache National Forest to the south (Appendix D-33). Alternatives 3, 5 and 5R meet this concern.

Alternatives 3 and 4 reduce risks to wildlife from motorized disturbance better than the other alternatives. Alternative 4, followed by 3, 5R and 5, and 2, contains the most acres of areas over 1,000 acres. This

provides the most "refugia" to wildlife from motorized vehicle disturbance. Human disturbance, and their associated activities, on non-motorized trails and non-motorized cross-country travel will continue throughout the forest under all alternatives.

The action alternatives would close some existing motorized routes and therefore may impact individuals or habitat. The alternatives are not likely to contribute to a trend towards federal listing or cause a loss of viability to the population or species discussed. As the RFP FEIS (Appendix D-162) "Overall Viability Assessment" stated: "Based on the risk assessments presented in this section, we have determined that the Forest Plan, will maintain habitat able to support viable populations of existing native and desired non-native vertebrate species in the planning area. We have determined that the Plan is sufficient to provide well distributed habitat for reproductive individuals."

### *Irretrievable and Irreversible Effects for Wildlife*

Vulnerability and disturbance from humans can impact wildlife; however, impacts are irretrievable but not irreversible because motorized routes could be closed reducing the impacts.

## Economic Environment

#### *Environmental Consequences*

### *Introduction*

Some public comments included concerns that changes or lack of changes in travel management will adversely affect local economies.

### *Analysis Area*

The analysis area for direct and indirect effects is the Caribou NF Zone of Influence, as defined in the RFP. This zone includes eight counties in Idaho; Bannock, Bear Lake, Bingham, Bonneville, Caribou, Franklin, Oneida and Power, and Lincoln County, Wyoming.

### *Analysis Method*

Effects to the economy of local communities are difficult to evaluate. The question of how the alternatives would affect recreation use levels, and ultimately economic benefits, is difficult to predict. This analysis cannot determine how people would react to different travel plan alternatives, and if the changes in recreation patterns would affect local economies. These findings are based on Forest Service research on estimating the economic impacts of recreation response to resource management decisions, (GTR SE-91, Southern Research Station, English et al.). Effects to some businesses can be predicted in general terms, but cannot be quantified.

### *Direct and Indirect Effects*

#### *Effects Common to All Alternatives*

Local businesses benefit from recreation opportunities of surrounding areas, and in Idaho much of the opportunities are on public lands, including the Caribou. There are numerous recreational travel outcomes that could result from changes in the forest travel plan. If specific travel routes were managed as motorized or specific routes and areas are managed as non-motorized, some people might not visit the Caribou. If people decide not to travel on the Caribou Forest as a result of the revised travel plan decision, they could choose to visit another area close to the same communities. In this case, their recreation spending would continue to contribute to the local economies.

### *Effects of Alternative 1*
This is the no action alternative. Recreation use patterns on the Caribou planning unit would not change, and it is expected that current spending patterns of Forest visitors would not change under this alternative.

### *Effects Common to Alternatives 2, 5 and 5R*
It is expected that these alternatives would also maintain most existing recreation use patterns, as these alternatives retain many existing motorized routes and non-motorized areas.

### *Effects Common to Alternatives 3 and 4*
There could be some benefits to non-motorized dependent businesses with Alternatives 3 and 4, which manage more areas for a non-motorized setting and experience.

## *Conclusions*
All alternatives offer a variety of motorized and non-motorized activities, and businesses that rely on these activities will still experience benefits from the Caribou's recreation opportunities. The range of difference between the alternatives varies from 1,430 miles to 1,850 miles of motorized route and 26% to 30% of acres that are managed as non-motorized. It is expected that degree of differences in recreation opportunities between the alternatives would not have a meaningful economic difference to local economies and businesses.

# Roads

### *Environmental Consequences*

## *Introduction*
The Caribou Travel Plan alternatives can affect future access for forest and public activities. This section analyzes the effects of each alternative to road access and the forest road system.

## *Analysis Method*
The analysis compares the existing designated road systems with findings from the Forest-wide Roads Analysis and the Travel Plan Revision Roads Analysis. The differences in designated road miles between the alternatives provide different levels of road access to forest areas. The differences are discussed below in more detail. The miles of closed roads identified in each alternative include user-created roads, temporary roads, obliterated roads, and old alignments of roads that have been realigned. For a list of individual roads and their management by alternative, reference the road and trail tables in Appendix B or refer to the alternative maps.

## *Analysis Area*
The analysis areas are portions of the Caribou and Cache National Forest administered by the Westside, Soda Springs, and Montpelier Districts of the Caribou-Targhee National Forest.

## *Direct and Indirect Effects*

### *Effects Common to All Alternatives*
Under all alternatives, the "key roads" discussed in the 2002 Forest wide Roads Analysis would remain open as recommended. These roads provide important access for forest management activities and form the backbone of the forest transportation system. The remaining roads of the transportation system also provide important access to local areas of the Forest. Designated roads that receive public use provide

easier and timelier access for various management activities than system roads that are managed as closed to the public.

Additional temporary increases in public road access would occur as necessary to manage forest resources, such as firewood gathering after a timber sale, but would be closed to the public after these activities were completed.

### *Road Operation and Maintenance*

It is not anticipated that road operation and maintenance activities would change much between the alternatives. Currently, only 21 percent of the road system receives annual maintenance. Generally, the roads that are receiving this limited annual maintenance would remain open and would continue to receive annual maintenance as funding allows. Many of these roads are the "key road" noted above. The lower standard less-used roads receive maintenance to reduce environmental affects and to provide for safety. For roads that are identified to be closed and/or obliterated, there will be one-time costs to accomplish those activities. Operation and maintenance savings from closing these roads would be minimal since most of these roads receive little if any maintenance. Reducing designated road miles would reduce the estimated road maintenance backlog.

### *Road Access onto the Forest*

The existing public access to and through the Forest provided by county and state roads would remain the same for all alternatives. The Forest would continue to work with adjacent counties and private landowners to maintain and improve public access to the Forest as opportunity allows and would not be dependent on which alternative is selected.

## *Alternative 1 – No Action*

This alternative incorporated the interim travel plan direction of the RFP with the existing 2002 Travel Plan. This is the "no action" alternative and represents existing condition. Based on the updated GIS travel layer depicting the RFP travel direction, the total miles of open roads would be 1,011.9 miles. There are 522.9 miles of existing system roads that are managed as closed. This alternative would provide the designated road access necessary to manage forest resources, including timber, range, and minerals and provide road access for public recreation. Because the interim travel direction designated any road or trail shown on the 2002 Travel Map there are instances were roads exist on the ground, but by default are legally closed. Conversely, there are roads that are being managed as closed but are depicted as a designated route on the travel map.

## *Alternative 2*

This alternative is the Proposed Action. This alternative designates motorized travel routes, both road and trail, to meet open motorized route density ceilings as defined in RFP direction. Under this alternative, the total miles of designated roads would be 967.5 miles. This alternative would reduce the amount of designated road miles by 44.4 miles, or 4.4% of existing designated road miles.

On the Westside Ranger District, the miles of designated road would be reduced from 187.1 miles to 185.3. Motorized travel on this district has been restricted to designated routes for many years. The decrease of 1.8 miles of open road is a combination of closing 3.0 miles of road and adding 1.2 miles of open road. This alternative closes several short spur roads in the Toponce Creek, Pebble Creek and South Fork of Mink Creek drainages. The East Monson Road 21233 would also be closed. This alternative designates additional road miles in the Toponce Creek and Trail Creek drainages.

On the Soda Springs Ranger District, the miles of designated road would be increased from 335.0 miles to 337.2 miles. The 2.2 miles of increase is a combination of closing 34.9 miles of roads, including managing 20.1 of these miles as motorized trail, and adding 37.1 miles of designated road. These changes correct

transportation problems with the interim Travel Plan. Most of these changes were in areas formally open to cross country travel.

Some of the roads or sections of road that would be closed include several spur roads in the Diamond Creek area, several spurs in Dry Valley, Roads 21256 (Mosquito South), 20218 (Clark Valley Boundary), 20142 (Limekiln), 20190A (Ed's Canyon Spur A) and 20306 (Swab Creek). Roads or portions of roads that would be managed as motorized trail include Roads 20104 (Bear Canyon), 20156 (Deer Creek), 20184 (Messenger Canyon), 20269 (Old Man Ridge), 20309 (Mill Springs), 20382 (Reservoir Canyon), 20625 (Stewart Flat), and 21257 (Mosquito Creek Ridge).

Some of the roads or sections of roads that would become designated roads include Roads 20252 (Corailsen Creek), 20058 (Iowa Creek Camp), 20086D (Brockman Spur D), 20100 (South Dry Valley Well), 20103 (Campbell Canyon), 20106 (Upper Bacon Creek), 20127 (Swan Lake Gulch), 20171 (Harrison Creek), 20224 (Coyote Creek), 20876 (Daniels Draw), 21238 (Harrington Peak), and 21309 (Lower Wilde Canyon).

On the Montpelier Ranger District the miles of designated road would be reduced from 489.6 miles to 445.0 miles. The 44.6 miles of designated road reductions are a combination of closing 63.9 miles of roads, including managing 23.7 of these miles as motorized trail, and adding 19.4 miles of designated road. These changes would correct design and use issues with the interim Travel Plan, especially in the areas formally open to cross country travel.

In the Bear River Range of the Montpelier District, some of the roads or sections of road that would be closed include Roads 20401J (South Ant Spur J), 20467 (Squirrel Hollow), and 21183 (King Canyon). Roads that would be managed as non-motorized trails include Roads 20464 (Worm Creek), 20475 (North Wilson Creek), 20913 (Strawberry-Williams Creek), 21127 (Blue Lake) and 21152 (Limekiln Fork Roads). Some of the roads or sections of roads that would be managed as motorized trails include Roads 20426 (Middle Fork Bloomington), 20452 (Worm Creek), 20496 (South Ant), 20499 (Dry Basin), 20813 (Willow Patch Spring), 20976 (Tie Hack), 21166 (Big Creek Lake), 21197 (Bailey Creek Loop), and 21152 (Limekiln Fork). Some of the roads or sections of roads that would become designated roads include Roads 20499 (Dry Basin), 20941 (Right Miles Canyon), 21089 (Grandy Hollow), 21118 (Franklin Face), 20437 (North Pearl Creek), 20454 (Maple Canyon), 20814 (Copenhagen Basin-Liberty), and 20950 (Rocky Knoll Cutoff).

In the Pruess section of the Montpelier District, some of the roads or sections of road that would be closed include several spur roads along the Crow Creek area, several spur roads in the Home Canyon area, several spur roads in the Georgetown Canyon area, and several spur roads in the Bear Hollow area. Some of the roads that would be managed as non-motorized trails include Roads 20113 (Halfway), 20239 (Big Dog), 20793 (Bennington Ridge), and 20794 (Fox Ridge). Some of the roads or sections of road that would be managed as motorized trails include Roads 20227 (Fox Flat), 20310 (Upper Diamond Creek), 20680 (Hawks Roost), 20686 (Georgetown Mine), and 20904 (Goodhart Spring). Some of the roads or sections of road that would become designated roads include Forest Roads 20516 (White Ridge) and 21238A (Harrington Spur A).

Overall, this alternative would provide the designated road access necessary to manage forest resources, including timber, range, minerals and recreation. The changes from Alternative 1 would correct many of the road and trail issues associated with the interim Travel Plan.

## *Alternative 3*

Under this alternative, the total miles of designated roads would be 942.1 miles. This alternative would reduce the amount of designated road miles by 69.8 miles, or 7.4 percent of existing designated road miles.

On the Westside Ranger District the miles of designated road would change from 187.1 miles to 179.1. The 8.0 miles of designated road reduction would be a combination of closing 8.6 miles of road and adding 0.5 miles of open road. These changes would include many of the small adjustments noted in Alternative 2. In addition, there are several existing designated roads that would be closed to motorized travel. These include Roads 20024 (Big Canyon), 20513 (Corral Creek), 20230 (Gooseberry), 20238 (Jenkins Hollow) and portions of 21096 (Sheep Dip Hollow).

On the Soda Springs Ranger District the miles of designated road would be increased from 335.0 miles to 337.2 miles. The increase in 2.2 miles of designated road is a combination of closing 34.9 miles of road, including managing 18.3 of these miles as motorized trail, and adding 37.1 miles of designated road. These changes are similar to the changes in Alternative 2.

On the Montpelier Ranger District the miles of designated road would be reduced from 489.6 miles to 425.9 miles, or 63.7 miles. The 63.7 miles of designated road reductions is a combination of closing 79.7 miles of road, including managing 18.6 of these miles as motorized trail, and adding 15.9 miles of designated road. Many of these changes would be the same as in Alternative 2. Exceptions are discussed below.

In the Bear River Range of the Montpelier District, Road 20976 (Tie Hack) would be closed. Roads to be closed and managed as non-motorized trails include Roads 20401J (South Ant Spur J), 20445 (Gully), 20813 (Willow Patch Spring), 21000 (Bartlett Lake) and 21183 (King Canyon).

In the Pruess section of the Montpelier District, additional roads or sections of roads that would be managed as non-motorized trails include Roads 20097 (Rattlesnake), 20664 (Jones Canyon), and 21025 (South Elbow Driveway).

This alternative would restrict existing motorized access on designated roads to some areas of the forest. This could affect the ease of access for forest activities such as timber, range, minerals and recreation management. Existing access for full size vehicles >50" would be reduced; affecting motorized access for some recreational activities such as hunting, firewood gathering, or berry picking.

## *Alternative 4*

Under this alternative, the total miles of designated roads would be 901.8 miles. This alternative would reduce the amount of designated road miles by 110.1 miles, or 10.9% of existing designated roads.

On the Westside Ranger District, the miles of designated road would change from 187.1 miles to 158.3. The 28.8 miles of designated road reduction would be a combination of closing 29.3 miles of road, including managing 0.4 of these miles as motorized trail, and adding 0.4 miles of designated road. These changes include many of the road adjustments proposed under Alternatives 2 and 3.

Several existing designated roads would be closed, these include Roads 20336 (Middle Fork of Toponce), 20276 (Microwave Delight), 20281 (Trail Creek), 20282 (Outlaw Spring), 20280 (Trail Ridge), 20010 (Cusick Creek), 20289 (City Creek), 20294 (Johnny Creek), 20277 (Michaud), 20287 (Horse Creek), 20292 (Kinney Creek), 20656 (Birch Creek), and 20043 (Farmers Canyon). Many of these roads are in the Trail Creek area west of Pocatello. These changes would reduce motorized access on both roads and trails in this area.

On the Soda Springs Ranger District the miles of designated road would be reduced from 335.0 miles to 315.4 miles. The 19.6 miles of reductions would include closing 55.0 miles of road, including managing

11.8 of these miles as motorized trails, and adding 35.3 miles of designated roads. Many of the road changes proposed in Alternative 2 and 3 are also proposed in Alternative 4.

An additional 20.0 miles of designated road would be closed and managed as non-motorized trails. 6.0 miles of roads would be closed and managed as non-motorized trail. The additional roads or portions of roads to be closed include Roads 20107 (Lander Trail), 20118 (Willow Creek), 20156 (Deer Creek), 20169 (Upper Bridge Creek), 20184 (Messenger Canyon), 20188 (Barnes Creek), 20258 (Bear Creek), 20269 (Old Man Ridge), 20284 (Little Elk Mountain), 20365 (Beaver Pond), and 21257 (Mosquito).

On the Montpelier Ranger District miles of designated road would be reduced from 489.6 miles to 428.0 miles. The 61.6 miles of designated road reductions would be a combination of closing 79.7 miles of road, including managing 17.8 of these miles as motorized trail, and adding 18.1 miles of designated road. Many of these changes would be the same as proposed under Alternative 2. Exceptions are discussed below.

In the Bear River Range of the Montpelier District additional roads or sections of roads that would be closed include Roads 20499 (Dry Basin), and 21208 (Bloomington Base). Additional roads that would be closed and managed as non-motorized trail include 20401J (South Ant Spur J), 20499 (Dry Basin), 20813 (Willow Patch Spring), 20967 (BK-3), and 21000 (Bartlett Lake). In the Bear River Range there would be some sections of the Highline Trail that would become non-motorized travel routes.

In the Pruess portion of the Montpelier District additional roads that would be closed and managed as non-motorized trails include Roads 20148 (Dry Creek), 20220 (Snowdrift), 20664 (Jones), 20696 (Camel Hollow), and 20834 (Boulevard). In the Pruess area, the closure of the Boulevard Road to motorized travel would reduce motorized opportunities in a large portion of the Forest.

This alternative would reduce designated road access. It would restrict some motorized access necessary to manage forest resources; including timber, range, and minerals. Existing recreational access for full size vehicles >50” would be reduced and would affect motorized access for recreational activities such as hunting, firewood gathering, or berry picking.

## *Alternative 5*

Under this alternative, the total miles of designated roads would be 968.8 miles. This alternative would reduce the amount of designated road miles by 43.1 miles, or 4.3 percent of existing designated road miles.

On the Westside Ranger District, the miles of designated road would change from 187.1 miles to 181.7 miles. The 5.4 miles of reductions would be a combination of closing 6.9 miles of roads, including managing 0.8 of these miles as motorized trail, and adding 1.5 miles of designated road. In addition to the adjustments noted in Alternative 2; the 5.4 miles of designated road reduction would include closing additional short spur roads in the Toponce and Pebble Creek drainages as well as closing Roads 20522 (Bull Canyon) and 20232 (Grease Hollow).

On the Soda Springs Ranger District, the miles of designated road would be reduced from 335.0 miles to 332.3 miles. The 2.7 miles of designated road reductions would be a combination of closing 37.4 miles of designated road, including managing 19.9 of these miles as motorized trail, and adding 34.7 miles of designated road. These changes are similar in scope to the designated road reductions in Alternative 2.

Some roads that were shown as closed but managed as motorized trail under Alternative 2 are proposed as closed. These include Roads 20618 (BZ2) and 20625 (Stewart Flat). Additional road closures that would be managed as motorized trails include portions of Roads 20128 (Fossil Canyon), 20201 (Aspen Ridge) and 20218 (Clark Valley Boundary). Under this alternative, some roads would be managed as designated roads, these include Roads 20659 (Exclosure), 20123A and 20121 (Rasmussen Valley).

On the Montpelier Ranger District, the miles of designated road would be reduced from 489.6 miles to 454.9 miles. The 34.7 miles of designated road reductions would be a combination of closing 58.0 miles of road, including managing 18.9 of these miles as motorized trail, and adding 23.1 miles of designated road. Many of these changes would be the same as in Alternative 2. Exceptions are discussed below.

On the Bear River Range of the Montpelier District, additional road closures would include Roads 20421E & F (Old Paris Alignments), and 20976 (Tie Hack). Additional road closures that would be managed as non-motorized trails include Roads 21113 (White Canyon). Additional roads that would be managed as motorized trails include Roads 20423 (Horseshoe Basin), 20814 (Copenhagen Basin-Liberty), 20929 (Upper Mill Creek), 21183 (King Canyon), and 20475 (North Wilson). Additional roads that would be managed as designated roads include Roads 21109 (Foster Creek), 20969 BH-3, 21082 (Crib Springs), 20940 (Danish Flat), and 20950 (Rocky Knoll).

In the Pruess area of the Montpelier District there would be several additional road closures in the Bear Hollow area. Road 20696 (Camel Hollow) would be managed as a motorized trail. Roads that would be managed as designated roads include Roads 20113C (Halfway Spur C), 21013B & E (Willow Springs Spurs B & E) in the Bear Hollow area, and 20586 (Sage Valley).

This alternative would reduce designated road access into some forest areas. This alternative would maintain much of the existing road access necessary to manage forest resources; including timber, range, minerals and recreation. This alternative was informed by the forest-wide Travel Plan roads analysis. This alternative should provide needed road access for forest management activities.

## *Alternative 5R*

Under this alternative, the total miles of designated roads would be 971.1 miles. This alternative would reduce the amount of designated road miles by 40.8 miles, or 4 percent of existing designated road miles.

On the Westside Ranger District, the miles of designated road would change from 187.1 miles to 181.3 miles. The 5.8 miles of reductions would be a combination of closing 7.0 miles of roads, including managing 1.2 of these miles as motorized trail, and adding 1.2 miles of designated road. These changes are similar to the road adjustments noted in Alternative 5.

On the Soda Springs Ranger District, the miles of designated road would be reduced from 335.0 miles to 332.2 miles. The 2.8 miles of open road reductions would be a combination of closing 38.7 miles of open road, including managing 20.9 of these miles as motorized trail, and adding 35.9 miles of designated road. In addition to the changes in Alternative 5, additional designated roads would include portions of Roads 20306 (Swab Creek) and 20106 (Upper Bacon Creek). Also, portions of 20365 (Beaver Pond) would managed as a motorized trail.

On the Montpelier Ranger District, the miles of designated road would be reduced from 489.6 miles to 457.6 miles. The 32.0 miles of designated road reductions would be a combination of closing 58.3 miles of road, including managing 20.7 of these miles as motorized trail, and adding 26.2 miles of designated road. Many of these changes are similar to Alternative 5. Exceptions are discussed below.

On the Bear River Range of the Montpelier District, additional roads or sections of roads that would designated roads include Roads 20402C (Cheatbeck Spur C), 20442 (Copenhagen Canyon), 20942 (Danish Hollow), 20943 (Little Valley Reservoir), 20980 (Skinner Springs), and St. Rte. 36A & AB power line access roads. Road 20408B, a power line access road off of Paris Canyon Road, would be managed as closed to motorized travel.

This alternative would provide the designated road access necessary to manage forest resources; including timber, range, minerals and recreation. Road access in this alternative was informed by the forest-wide Travel Plan roads analysis. It is expected that this alternative would provide needed road access for forest management activities.

### *Conclusions*

All alternatives maintain "key" road access to major sites and facilities. Alternatives 1, 2, 5 and 5R maintain much of the existing designated road access to forest areas. Alternative 3 limits designated road access to specific forest areas. Alternative 4 closes some designated roads that many forest visitors rely on to access large sections of forest area.

### *Cumulative Effects*

All action alternatives reduce designated roads, which reduce motorized access to some areas of the Forest. All alternatives provide primary road access to most areas of the forest. There are no cumulative, irretrievable or irreversible effects to transportation from any alternative.

## Noxious Weeds

#### *Environmental Consequences*

### *Introduction*

Use of travel routes has the potential to spread noxious weeds during the snow free season. The indicators to measure this concern will be acres open to cross country motorized travel and miles of route designated for motorized and non-motorized travel during the snow- free season.

### *Analysis Area*

The analysis area is the portions of the Caribou and Cache National Forests administered by the Westside, Soda Springs and Montpelier Ranger Districts of the Caribou-Targhee National Forest.

### *Analysis Methods*

The risk of noxious weed spread can be compared between alternatives by comparing miles of motorized designed routes and area managed as open to cross-country motorized travel.

### *Direct and indirect Effects*

#### *Effects Common to All Alternatives*

Designated motorized travel routes, especially high-use roads, are monitored and treated for noxious weed infestations. All alternatives will maintain these activities. Continuing use of designated travel routes, motorized and non-motorized, has the potential to spread noxious weeds and other invasive species. Routes that are to be closed, which varies by alternative, are expected to return naturally to vegetative production, unless there is a localized need to vegetate some areas to prevent erosion or noxious weed invasion. Routes proposed for decommissioning will be surveyed to determine whether any noxious weed infestations exist.

### *Alternative 1*

Alternative 1 has 1,850 miles of designated motorized routes and manages 29,400 acres as open to cross-country motorized travel. Managing the Huckleberry prescription area as open to cross- country motorized travel increases the risk of the spread of noxious weeds into adjacent areas and increases the risk of noxious weeds being continually spread within the areas already infested. Under this alternative, the spread of noxious weeds to areas physically accessible to rubber tired vehicles would be accelerated. The use of motorized vehicles in areas never before accessed by tired vehicles can import weed seed which may eventually establish noxious weed populations in other areas of the

Forest. This alternative has the highest number of designated motorized routes and maintains cross-country travel in some forest areas. This alternative has the highest risk to increase the spread of noxious weeds forest wide.

## *Alternative 2*

Alternative 2 has 1,800 miles of designated motorized routes and manages 29,400 acres as open to cross-country motorized travel. Managing the Huckleberry area as open to cross country motorized travel has the same effects as described in Alternative 1. This alternative does not have as many miles of designated motorized routes as Alternative 1. A reduction in the miles of designated motorized routes has the potential to: 1) reduce the risk of noxious weeds being introduced or transported into un-infested areas and/or 2) reduce the risk of noxious weeds being continually spread within the area already infested.

## *Alternative 3*

Alternative 3 has 1,530 miles of designated routes and manages 29,400 acres as open to cross-country motorized travel. Managing the Huckleberry area as open to cross country motorized travel has the same effects as described in Alternative 1 and 2. This alternative does not have as many miles of designated motorized routes as Alternative 1 and 2. A reduction in the miles of designated motorized routes has the potential to: 1) reduce the risk of noxious weeds being introduced or transported into un-infested areas and/or 2) reduce the risk of noxious weeds being continually spread within the area already infested.

## *Alternative 4*

Alternative 4 has about 1,430 miles of designated routes and manages motorized travel on designated routes forest-wide during the snow-free season. Compared to the existing condition, Alternative 4 reduces the miles of open motorized routes by 420 miles (approximately 23%). A reduction in the miles of designated motorized routes has the potential to: 1) reduce the risk of noxious weeds being introduced or transported into un-infested areas and/or 2) reduce the risk of noxious weeds being continually spread within the area already infested. Under this alternative, the spread of noxious weeds would be lessened, because no cross-country motorized travel would be allowed. This alternative has the lowest risk of travel and travel routes spreading noxious weeds.

## *Alternative 5*

Alternative 5 has 1,770 miles of designated routes and manages motorized travel on designated routes forest-wide during the snow-free season. Compared to existing condition, Alternative 5 reduces the miles of open motorized routes by 80 miles (approximately 10%). A reduction in the miles of open motorized routes has the potential to: 1) reduce the risk of noxious weeds being introduced into un-infested areas and/or 2) reduce the risk of noxious weeds being continually spread within an area already infested. Under this alternative, the spread of noxious weeds from cross-country motorized travel would be lessened, because no cross-country motorized travel would be allowed.

## *Alternative 5R*

Alternative 5R has 1,770 miles of designated routes and manages motorized travel on designated routes forest-wide during the snow-free season. Compared to existing condition, Alternative 5R reduces the miles of open motorized routes by 80 miles (approximately 10%). A reduction in the miles of open motorized routes has the potential to: 1) reduce the risk of noxious weeds being introduced into un-infested areas and/or 2) reduce the risk of noxious weeds being continually spread within an area already infested. Under this alternative, the spread of noxious weeds from cross-country motorized travel would be lessened, because no cross-country motorized travel would be allowed.

## *Conclusions*

Under Alternatives 1, 2 and 3 user-created routes would continue to be made in areas open to cross-country motorized travel (29,400 acres of Rx. 5.2c) on the Soda Springs Ranger District. Localized areas experiencing some degree of noxious weed spread and/or detrimental impacts to upland non-forested vegetation would be further impacted.

Alternative 1 has the highest potential to impact other resources from noxious weeds, because it has the largest amount of miles designated for motorized travel. It is likely that this alternative would continue to have the risks to other resources and/or uses such as soil and water values and overall watershed health and function; because it has the

highest potential for noxious weed expansion from motorized travel. Overall; Alternatives 3 and 4 would have the least risk of spreading noxious weeds, followed by Alternative 5 and 5R, then Alternative 2.

### *Cumulative Effects*

The cumulative effects analysis area is southeast Idaho because noxious weeds are a regional issue and weed infestations occur on adjacent lands. Increases in noxious weed invasion and spread can occur as a result of increase roads, ground disturbance, or fire. It is anticipated that new weeds will continue to invade public lands and other lands from various sources. Existing infestations will continue to be treated aggressively until they are controlled, contained, and eradicated. None of the alternatives would appreciable accelerate the spread of noxious weeds over the existing trend.

### *Irreversible and Irretrievable Commitment of Resources*

Areas of the forest that contain infestations of noxious weeds would be irretrievably lost to other uses until noxious weed abatement is successful. In some cases, these infestations, if left uncontrolled, could reduce biodiversity. No irretrievable effects have been identified for noxious weeds.

## Forested Vegetation and Access _____

### *Introduction*

The effects indicators for forested vegetation are the change in: 1) opportunity for management of forested vegetation on suited lands and 2) public opportunity to collect firewood and other forest products.

#### *Effects Common to All Alternatives*

In most areas of the Caribou NF, the suitable timber base has existing arterial and collector road access to the general forest area. Reconstruction of these roads or construction of temporary roads is often then needed to provide adequate access to the immediate area needing silvicultural or other treatment. Management actions can often be readily and cost effectively implemented from a well-designed transportation system. As management opportunities arise, additional temporary roads may be needed to facilitate vegetation management activities. Road access adds value to any timber that might be harvested in the future, i.e. accessible timber has more value than timber without access.

To assess the condition and health of forested vegetation, ongoing monitoring must be conducted across the Forest. Existing motorized travel routes contribute to access for monitoring and management of forest stands. Without road access, many of these activities would be much more expensive or impossible to accomplish.
Public travel route restrictions vary among action alternatives. In all cases, opportunities to access portions of the Forest, including the suitable timber base, would continue. The effect of each alternative is dependent on the amount of road access that is eliminated through road decommissioning. Some travel routes are closed and managed as non-motorized, but they have been retained as system roads for administrative and project work.

### *Alternative 1*

All acres determined suitable for timber harvest are accessible through the existing transportation system, although the need for temporary road construction or existing system road reconstruction continues for most future commercial timber sale projects and forest product gathering. Approximately 56 miles of existing system roads, within suitable lands, prohibit motorized public access yearlong, using a combination of gates and signs. These roads remain available for long-term management of suitable lands.

No miles of existing system roads will be obliterated with road prisms returned to contour. Forest-wide, the remaining 1,010 miles of existing system roads permit motorized access to accommodate commercial timber operations and allow for forest product gathering within 300 feet of the road, provided resource damage can be avoided.

### *Alternative 2*

All acres determined suitable for timber harvest are accessible through this transportation system, although the need for temporary road construction or existing system road reconstruction continues for most future commercial timber

sale projects and forest product gathering. Approximately 147 miles of existing system roads, within suitable lands, prohibit motorized access yearlong, using a combination of gates, signs, rocks and berms. These roads would not be drivable; however, they would remain available for long-term management of suitable timberlands. Prisms would remain in place on these roads; however, re-establishing a drivable prism may require some work with road maintenance equipment. Vehicle access to gather forest products, and to monitor and evaluate timber stands would be reduced. This would increase costs of monitoring and evaluating forested vegetation on suitable lands. Forest-wide, the remaining 970 miles of existing system roads permit motorized access to accommodate commercial timber operations and allow for forest product gathering within 300 feet of the road, provided resource damage can be avoided.

## *Alternative 3*

All acres determined suitable for timber harvest are accessible through this transportation system, although the need for temporary road construction or existing system road reconstruction continues for most future commercial timber sale projects and forest product gathering. Approximately 70 miles of existing system roads, within suitable lands, prohibit motorized access yearlong, using a combination of gates, signs, rocks and berms. These roads would not be drivable; however, they would remain available for long-term management of suitable timberlands. Prisms would remain in place on these roads; however, re-establishing a drivable prism may require some work with road maintenance equipment. Vehicle access to gather forest products and to monitor and evaluate timber stands would be reduced more with this alternative than any other. This would increase costs monitoring and evaluating forested vegetation on suitable lands.

Unless otherwise posted, the remaining 940 miles of existing system roads permit motorized access to accommodate commercial timber operations and allow for forest product gathering within 300 feet of the road, provided resource damage can be avoided.

## *Alternative 4*

All acres determined suitable for timber harvest are accessible through this transportation system, although the need for temporary road construction or existing system road reconstruction continues for most future commercial timber sale projects and forest product gathering. Approximately 110 miles of existing system roads, within suitable lands, prohibit motorized access yearlong, using a combination of gates, signs, rocks and beams. These roads would not be drivable; however, they would remain available for long-term management of suitable timberlands. Prisms would remain in place on these roads; however, re-establishing a drivable prism may require some work with road maintenance equipment. Vehicle access to gather forest products and to monitor and evaluate timber stands would be reduced. This would increase costs monitoring and evaluating forested vegetation on suitable lands. Forest-wide, the remaining 900 miles of existing system roads permit motorized access to accommodate commercial timber operations and allow for forest product gathering within 300 feet of the road, provided resource damage can be avoided.

## *Alternative 5 and 5R*

All acres determined suitable for timber harvest are accessible through this transportation system, although the need for temporary road construction or existing system road reconstruction continues for most future commercial timber sale projects and forest product gathering. Approximately 60 miles of existing system roads, within suitable lands, prohibit motorized access yearlong, using a combination of gates, signs, rocks and berms. These roads would not be drivable; however, they would remain available for long-term management of suitable timberlands. Prisms would remain in place on these roads; however, re-establishing a drivable prism may require some work with road maintenance equipment. Vehicle access to gather forest products and to monitor and evaluate timber stands would be reduced. This would increase costs monitoring and evaluating forested vegetation on suitable lands.

Unless otherwise posted, the remaining 950 miles of existing system roads permit motorized access to accommodate commercial timber operations and allow for forest product gathering within 300 feet of the road, provided resource damage can be avoided.

## *Conclusions*

All alternatives will provide some access to administer and monitor the forest vegetation program and resource. Alternative 1 provides the most roads left “open” for these purposes. Alternative 2, 5 and 5R also provide open public

roads to most forest areas. Alternatives 3 and 4 provide the least amount of open public roads to forest areas, closed roads under these alternatives might have to be administratively opened for future forested vegetation management. There are no cumulative, irretrievable or irreversible effects to forested vegetation or forested vegetation management from any alternatives for the travel plan.

# Non-Forested Vegetation

### *Environmental Consequences*

## *Introduction*

Recreational travel has the potential to affect the condition of non-forested vegetation by the inadvertent introduction of exotic species and by crushing and trampling of vegetation.

## *Analysis Area and Methods*

The affected areas for direct, indirect, and cumulative effects to upland non-forested vegetation are the portions of the Caribou and Cache NFs administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee National Forest. This section analyzes the effects to upland non-forested vegetation by alternative.

## *Direct and Indirect Effects*

### *Effects Common to All Alternatives*

Impacts from motorized travel to vegetation, on designated routes; would likely occur in the area directly adjacent to the road/trail.

Generally, non-motorized cross country travel has fewer impacts to resources than motorized use because there is less weight associated with it and less erosion potential; however, pedestrians, livestock, and bicycles can also cause problems to vegetation when conditions are not satisfactory to surface impacts (i.e. wet soils, steep slopes, lack of ground cover, etc). The impacts from non-motorized cross country travel are dependent on site specific conditions which can vary considerably within short distances.

Impacts from non-motorized travel to vegetation, on designated routes; would likely occur in the area directly adjacent to the road/trail.

### *Effects Common to Alternatives 1, 2, and 3*

Cross-country motorized travel can cause damage to non-forested vegetation by crushing existing vegetation, causing rutting in wet soils, and causing erosion on slopes through vegetation displacement or rilling. Rill erosion is defined as an erosion process in which numerous small channels are formed. The effects are dependent on a variety of conditions including the type of vegetation and its rooting strength (shrubs, grass or herbaceous), the season of use (winter vs. summer), soil texture (fine-grained clay or sand or rocky), the amount of moisture in the soil, the slope of the land (flat or steep), the number of vehicle passes and the weight and pressure applied to the vegetation by the vehicle.

Alternatives 1, 2 and 3 allow cross-country motorized travel on 29,400 acres of the Huckleberry Basin prescription area. Creating new travel routes could lead to bared soil, increased erosion and openings in the native vegetation for invading plants to take hold and become established. These effects can also occur with non-motorized travel but because there is less weight and plant damage associated with it, there is less likelihood for the bare soil to become exposed. Impacts, either motorized or non-motorized, will be directly related to the conditions at the time of use and the frequency and density of use.

### *Effects Common to Alternatives 4, 5, and 5R*

These alternatives manage motorized travel on designated routes within the Huckleberry Basin prescription area. Cross-country non-motorized travel could still occur throughout the forest and would continue to be a risk for limited erosion and introducing unwanted vegetation.

### *Conclusions*
Alternatives 4 and 5 reduce the risks to non-forested vegetation by managing motorized travel on designated routes within the Huckleberry Basin prescription area during the snow-free season. Alternatives 1, 2 and 3 allow cross-country motorized travel within Huckleberry Basin, which could lead to vegetation loss and erosion.

### *Cumulative Effects*

Alternatives 1, 2 and 3 have a higher risk to adverse impacts to upland vegetation on 29,400 acres. While this management could be detrimental to upland vegetation locally, it is expected that these alternatives would not have an effect on the rate of non-forested vegetation succession on the Forest. None of the alternatives would contribute to adverse cumulative effects on non-forested vegetation.

## Livestock Access

#### *Environmental Consequences*

### *Introduction*
The Caribou Travel Plan could affect access to and on National Forest lands for livestock permittees. This section presents the effects to grazing access from travel plan alternatives.

### *Analysis Area and Methods*
The areas for direct, indirect, and cumulative effects to livestock grazing are the portions of the Caribou and Cache NFs administered by the Westside, Soda Springs, and Montpelier Ranger Districts of the Caribou-Targhee NF.

### *Direct and Indirect Effects for All Alternatives*
Livestock grazing activities would not be impacted by any of the alternatives. Local District Rangers can permit motorized access to livestock permittees, and permittees holding special use permits, for administrative activities associated with their annual operating plan. Generally, motorized access is easier on designated public travel routes. Alternatives 1, 2, 5 and 5R maintain most existing public motorized access to many forest areas.

### *Cumulative Effects*

There would be no cumulative effects to grazing access or special use access under any alternative.

## Fire Management and Access

#### *Environmental Consequences*

### *Direct, Indirect and Cumulative Effects for All Alternatives*
All existing travel routes, designated and non-designated, are available for fire suppression and for approved fire management projects. Travel routes closed with berms may not be readily available for fire management or suppression access, these vary by alternative. Alternatives 1, 2, 5, and 5R close less travel routes. Alternatives 3 and 4 close more travel routes, which could delay emergency motorized access, but not prevent motorized access. Designated and non-designated travel routes, under all alternatives would allow access for fire suppression activities and approved fire management projects. Less designated routes could mean less human-caused fires; however, humans are not the primary cause of fire on the Caribou-Targhee NF. None of the alternatives are expected to result in measurable cumulative, irreversible and/or irretrievable effects.

# CHAPTER 5. CONSULTATION AND COORDINATION

## Short-term Uses and Long-term Productivity

NEPA requires consideration of "the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (40 CFR 1502.16). As declared by the Congress, this includes using all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans (NEPA Section 101).

The Revised Caribou Travel Plan will manage public travel on the Caribou portion of the Caribou-Targhee National Forest for the next ten to fifteen years. The FEIS discloses the analysis of effects for a range of alternatives including No Action. Effects to the significant issues and other resources of concern were considered for this time frame.

Human use of the Caribou is also a major consideration in the Revised Caribou Travel Plan. The decision maintains most existing recreation opportunities and settings, motorized and non-motorized. The decision manages some areas as non-motorized that were "de-facto" non-motorized before the advent of today's OHV capabilities. Long and short-term effects are detailed further in the FEIS, Appendices, and the Planning Record.

## Unavoidable Adverse Effects

Effects on the environment that might result from implementation of the travel plan alternatives are analyzed in the FEIS. These include some unavoidable adverse environmental effects. Despite efforts to mitigate adverse impacts to resources, some adverse impacts on soil, vegetation, water quality and fish habitat cannot be avoided in localized areas. Adverse effects on the biological and physical environment are anticipated to be less than the existing condition, since the decision reduces the miles of designated motorized routes forest-wide. The adverse effects from implementing the Selected Alternative are:

- localized, adverse effects to water quality and fisheries from designated travel routes in aquatic influence zones;
- temporary disturbance to wildlife from continued or increased human activity on designated travel routes;
- localized decreases in air quality due to dust from designated travel routes;
- designated travel route use contributing to soil compaction, erosion, vegetation degradation, and stream sedimentation.

These effects are discussed under various resource headings in the FEIS Chapter 4.

## Irreversible and Irretrievable Commitments of Resources

Irreversible commitments of resources are those that cannot be regained, such as the extinction of a species or the removal of mined ore. Irretrievable commitments are those that are lost for a period of time such as the temporary loss of timber productivity in forested areas that are kept clear for use as a power line rights-of-way or road.

Even with the appropriate use of watershed conservation practices, adoption of additional travel routes represents a commitment to accept continuing disturbance on the ground. These are activities with irretrievable effects. With the appropriate use of watershed conservation practices, no irreversible impacts are anticipated. Roads and trails can be obliterated and hydrologically restored. Adaptive management will be used to modify practices to minimize all irreversible effects where future research, experience and monitoring makes possible.

An irretrievable commitment to the soil resource is expected to occur on areas where user-created roads and trails are pioneered and where hill-climbing occurs, reducing soil productivity on these acres. If erosion continues to the degree that topsoil in the road and trail prisms is completely removed, an irreversible commitment may occur by the permanent loss of soil productivity.

Developed roads and trails would commit those corridors to hardened travel routes and vegetation would be irretrievable but not irreversible. Roads or trails could be closed or decommissioned, and uplands and riparian vegetation would become re-established over time. Vulnerability and disturbance from humans can impact wildlife; however, impacts are irretrievable but not irreversible because motorized routes could be closed reducing the impacts.

# Cumulative Effects

Cumulative effects are defined as "the impact on the environment which 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). Cumulative effects must be evaluated along with direct and indirect effects of each alternative. Generally, cumulative effects are considered on a larger scale than the direct and indirect effects. They describe a larger picture across a longer time frame. See the cumulative effects section by resource area in Chapter Four.

## *Cumulative Effects Analysis*

When analyzing cumulative effects, different temporal and geographic scales are used than for direct and indirect effects. These scales of analysis extend only to where effects can actually be measured (EPA 1997). Determining the cumulative environmental consequences of an action requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystems and human communities of concern. These would include not only the present project, but all past and foreseeable future activities.

Activities and processes that have been on going in the Forest and will continue to exert an impact in the project area:

### Past actions

- Elk have increased in the analysis area.
- Severe rain events have caused flash flooding and down scouring of stream channels and riparian areas.
- Blowdown has occurred in forested stands.
- Natural fires have occurred over time within the analysis area.
- Vegetation succession and wildfire suppression have shaped plant communities.
- Insect and disease activity has persisted in forested stands throughout recorded time.
- Drought cycles, most notably in the 1930s and early 1990s have occurred.
- Timber has been harvested on about 22,000 acres in the past
- Drought cycles have influenced vegetation communities.
- Wildfires have occurred.
- Major arterial roads have been constructed over much of the Forest.
- Hunting and fishing has occurred in the area.
- Recreation use has increased; use patterns and motorized technology has changed.
- Prescribed fire and chemical treatment have affected vegetation.
- Subdivisions have been developed adjacent to the Forest, some in big game winter range.
- Noxious weed invasion, carried by wind, humans, machinery, and animals has occurred.
- Most of the area has been grazed by domestic livestock.
- Wildfires have been suppressed over the past ninety years.
- Management actions have removed, eroded, and compacted soils, and in localized areas have reduced soil productivity, both short- and long-term.
- Paleontological investigations and research have occurred.

## Present Activities

- Insect and disease activity persists in forested stands. Outbreaks are increasing throughout the west.
- Severe rain events continue to cause flash flooding and down scouring of stream channels and riparian areas.
- Drought cycles continue to influence vegetation communities.
- Wildfire occurs.
- Noxious weed invasions continue. Cooperative Weed Management Groups have been established.
- Coordination with the Shoshone-Bannock Tribe is continuing to insure land management decisions and activities do not affect treaty rights.
- Timber harvest is continuing on the Forest but at a reduced level when compared with the last 15 years.
- Road construction in association with timber harvest continues on the Forest, but like harvest, it is occurring at reduced levels.
- Livestock grazing continues to occur. A total of 258,913 head months currently are permitted for sheep and cattle combined.
- Mining is occurring on portions of the Forest. Phosphate mining accounts for the majority of the mining activity.
- Recreation, including ATVs, snowmobiles, hunting, camping, and wildlife viewing, is available and will continue to increase as the population grows (Idaho Dept. of Parks and Recreation).
- Hunting and fishing continues to occur in the area.
- Access is being restricted to the National Forest by some private landowners.
- The Snake River adjudication is ongoing and could restrict future diversions or affect in-stream flow needs**.**
- All wildfires are being suppressed because of the risk to resource values, private property, and human safety.
- Several important archeological sites have been discovered, and archeologists and other interested individuals, locally, regionally and nationally, are participating in the Passport-In-Time program to document and protect these sites.
- Water developments and water diversions are in place.
- Declining populations of some species of fish and wildlife in the West continue to receive increased Federal and state agency conservation efforts.
- Subdivision development continues adjacent to the Forest, particularly in the Portneuf and Bear River Range areas.
- Prescribed fire is being used as a vegetation management tool on the Forest.
- Small land exchanges are occurring to consolidate land bases and facilitate management.
- A shift in management emphasis and implementation of Best Management Practices has reduced soil impacts from timber harvest, mining, road construction and livestock grazing. Impacts to soils have increased from recreational activities and noxious weed spread. Short- and long-term soil productivity loss continues to occur in localized areas.

## Reasonably Foreseeable Future Actions

- Rural communities will continue to grow as the population along the Wasatch front expands north. Many adjacent counties are beginning to deal with increased growth in county development plans and other planning and zoning efforts.
- Use of prescribed fire and wildland fire is expected to increase.
- More water developments will be installed for livestock management.
- Recreation use will continue to increase into the future and use patterns will change with changes in the population and technology.
- An increase in the use of developed recreation sites and campgrounds is likely as the population increases.
- OHV use is likely to continue to increase due to changes in the population and technological advances.
- Access to the National Forest is likely to be increasingly restricted by private landowners.
- Subdivision development will continue adjacent to the Forest, particularly along the Bear River Range and outside of the Pocatello area (Caribou Adjacency Analysis).

***Table 5.1 - Foreseeable Projects listed in Quarterly Schedule of Proposed Actions – March-December 2005.***

| Disturbance Activity | Timber | Mining | Prescribed Fire | Roads/Trails Recreation | Grazing |
|---|---|---|---|---|---|
| Past | 22000 ac. | 6,100 ac. | To be determined | 1862 miles | 258,913 head months sheep & cattle |
| **Foreseeable Future**<br>Aspen Range<br>Henry Cutoff Aspen Restor.<br>Luthi Rx Burn<br>Slug Ck. Aspen Restore<br>Smokey Canyon F&G<br>McCoy Gravel Source<br>Three Basin<br>Williams/Bear<br>Cherry Creek/Dry Canyon<br>Williams/Aspen /Maple<br>Willow Ck. Aspen Restor. | <br>881 ac.<br><br>110 ac<br>590 ac.<br>200 ac. | <br><br><br><br><br>To be determined | <br>1,350 ac.<br>543 ac.<br>650 ac.<br>783 ac.<br>118 ac.<br><br><br>250 ac.<br><br><br>611 ac. | Cub River ATV Trail<br><br><br><br><br><br><br>Rehab. CGs | Noxious Weed Control EA |
| Curlew & Buist AMP; Alleman, Deer Ck, Manning Ck AMP<br>South Fork Mink Creek<br>Spring Hills<br>South Soda Sheep AMP | | | <br><br>600 ac.<br>600 ac. | | To be determined<br><br>To be determined |

# Other Required Disclosures

NEPA at 40 CFR 1502.25(a) directs "to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with …other environmental review laws and executive orders."

## *Findings and Disclosures*

*Several of the laws and executive orders listed in Appendix A require project-specific findings or other disclosures. These are included here. They apply to all alternatives considered in detail in this FEIS.*

### *National Forest Management Act*

All action alternatives comply with the 2003 Revised Caribou Forest Plan. This project incorporates applicable Forest Plan standards and guidelines and management area prescriptions.

Three plan amendments are considered within the alternatives.

### *Transportation Rule and Policy*

On January 12, 2001, The Chief of the Forest Service signed the ***Administration of the Forest Development Transportation System; Prohibitions; Use of Motor Vehicles Off Forest Service Roads* (Transportation Rule), and *Forest Service Transportation, Final Administrative Policy* (Transportation Policy).** The Transportation Rule and Policy provide guidance for transportation analysis – they do not dictate or adopt land management decisions.

The Transportation Rule requires the Forest Service to identify a minimum road system, determining which roads are needed (classified) and which roads are unneeded (unclassified). Decisions are to be accomplished through area/project planning and documented through the NEPA process, including full public participation.

Beginning on January 12, 2002, the Transportation Policy requires a roads analysis (watershed or project-area scale) be prepared before most road management decisions. This roads analysis is not a formal decision-making process. Road management decisions are made through the NEPA process with full public participation and involvement. The 2005 Caribou Travel Plan Roads Analysis Report and the 2003 Forest-wide Roads Analysis Report for the Caribou planning unit were both considered in the decision.

### *Environmental Justice (E. O. 12898)*

As required by Executive Order, all Federal actions will consider potentially disproportionate effects on minority or low-income communities. Potential impacts or changes to low-income or minority communities within the planning area due to the proposed action must be considered. Where possible, measures should be taken to avoid negative impacts to these communities or mitigate adverse affects. As identified in the Revised Forest Plan FEIS, few minorities reside within the study area, and no communities are considered low-income. While there are individual households that are either minority or low-income, the communities as a whole are not.

Shoshone-Bannock Tribal members live adjacent to the planning area. Throughout the planning process, consultation between the Tribe and the Caribou NF has occurred. I have determined from the analysis disclosed in the FEIS that the Revised Caribou Travel Plan is in compliance with Executive Order 12898.

### *Endangered Species Act (ESA)*

The Endangered Species Act (ESA) creates an affirmative obligation "…that all Federal departments and agencies shall seek to conserve endangered and threatened [and proposed] species" of fish, wildlife, and plants. There are four species listed as endangered or threatened that may inhabit the Caribou National Forest. A biological assessment (BA) was prepared and submitted to the U.S. Fish and Wildlife Service with two updates on June 17 of 2005. According to the BA, the Revised Caribou Travel Plan "may affect but is not likely to adversely affect" the bald eagle; and will have "no effect" on the Canada lynx, gray wolf and yellow-billed cuckoo. (FEIS, Chapters 3 and 4; Biological Assessment prepared June 17, 2005 and two updates; Concurrence Letter from USFWS dated June 30, 2005). Based upon consultation with the U.S. Fish and Wildlife Service, I have determined that the Revised Caribou Travel Plan is in compliance with the ESA.

The Revised Caribou Travel Plan does not authorize activities that would contribute to a decline in habitat for migratory bird species. I have determined that decision is in compliance with the Migratory Bird Treaty Act and Executive Order #13186 of January 12, 2001.

### *Clean Air Act*

According to analysis disclosed in the FEIS, projected activities under all Alternatives are expected to meet air quality standards. The decision will result in no adverse long-term effects. (FEIS, Chapter 4, Air Quality) I have determined that the Revised Caribou Travel Plan will comply with the provisions of the Clean Air Act.

### *National Historic Preservation Act*

Any actions undertaken in response to the direction in this decision will fully comply with the laws and regulations that insure protection of heritage resources, (FEIS, Chapter 4, Heritage Resources).

Several other laws apply to preservation of heritage resources on Federal lands. The Forest will consult with the Idaho, Utah and Wyoming State Preservation Offices (SHPO) under the National Historic Preservation Act prior to any ground-disturbing activities. The Shoshone-Bannock Tribe was consulted during the analysis for this decision.

It is my determination that the decision complies with the National Historical Preservation Act and other Statutes that pertain to the protection of heritage resources.

### *Clean Water Act*

The objective of the Clean Water Act is to "…restore and maintain the chemical, physical, and biological integrity of the nation's waters." One of the Act's goals is to "…provide for the protection and propagation of fish, shellfish, and wildlife" and provide for "…recreation in and on the water" (33 U.S.C. 466 et seq., Title I, Section 101). Based on the analysis disclosed in the FEIS, I have concluded the decision satisfies the Clean Water Act.

### *Energy Requirement and Conservation Potential*

This decision affects public travel on the roads and trails located on the Caribou portion of the Caribou-Targhee National Forest. The scope of the proposed action and decision is limited by geographic area and the specific nature of recreational travel. The decision will have little or no effect on the total amount of energy used locally and offers little opportunity for measurable energy conservation.

### *Invasive Species (Executive order 13112)*

Executive Order 13112 on Invasive Species directs that Federal agencies should not authorize any activities that would increase the spread of invasive species. The RFP includes mitigation designed to limit the spread of invasive species from designated travel routes and forest travel. The decision reduces cross-country motorized travel by the public and reduces the miles of designated motorized travel routes. These actions have the potential to reduce the spread of invasive species by motorized travel, (Caribou Travel Plan FEIS, Chapter 3 and 4, Noxious Weeds). The decision will follow RFP direction that requires integrated pest management methods be used to contain and control the spread of invasive species following the latest Caribou-Targhee Noxious Weed Strategy (RFP, Chapter 3, Biological Elements, Noxious Weeds and Invasive Plant Species, Standard 4). Therefore, I have determined the Caribou Revised Plan is in compliance with E. O. 13112.

### *Wetlands and Floodplains*

The decision includes the reduction of designated motorized routes. This has the potential to improve riparian area conditions, (Caribou Travel Plan FEIS, Chapter 3 and 4, Riparian Areas). Implementation of the decision will result in no net loss of wetlands.

### *Other policies*

The existing body of national direction for managing National Forests is cited in Appendix A of the FEIS and is incorporated by reference into this decision.

# Preparers and Contributors

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

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# Distribution of the Environmental Impact Statement

This environmental impact statement has been distributed to individuals who specifically requested a copy of the document. In addition, copies have been sent to the following Federal agencies, federally recognized tribes, State and local governments, and organizations representing a wide range of views regarding the Caribou NF Travel Plan.

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# Glossary of Terms

**Access Management.** Management of the ingress and egress of people on National Forest System lands. Generally used to describe motorized use allowed.

**Access Rights.** A privilege or right of a person or entity to pass over or use another person's or entity's travel way. (36 CFR 212.1, FSM 5460.5 – Rights of Way Acquisition, FSM 7700 – Transportation System)

**Adaptive Management.** A type of natural resource management that implies making decisions as part of an on-going process. Monitoring the results of actions will provide flow of information that may indicate the need to change a course of action. Scientific findings and the needs of society may also indicate the need to adapt resource management to new information.

**Administrative Use.** Authorized vehicle use of otherwise closed roads and/or areas to carry out forest management activities. Including but not limited to access for prescribed burning, fish and wildlife habitat improvement, timber sales, personal use firewood. Also includes use by permittees to conduct authorized activities.

**Affected Environment.** The natural environment that exists at the present time in an area being analyzed.

**Air Shed.** A geographical area that, because of topography, meteorology, and climate, shares the same air.

**Allotment (Range Allotment).** The area designated for use by a prescribed number of livestock for a prescribed period of time. Though an entire Ranger District may be divided into allotments, all land will not be grazed, because other uses, such as recreation or tree plantings, may be more important at a given time.

**Alternative.** One of several policies, plans, or projects proposed for decision-making.

**Analysis Area.** See "Regional Analysis Area."

**Animal Unit Month (AUM).** The amount of forage required by one calf and her cow or 1 horse or 5 sheep for one month.

**Annual Maintenance.** Work performed to maintain serviceability, or repair failures during the year in which they occur. Includes preventive and/or cyclic maintenance performed in the year in which it is scheduled to occur. Unscheduled or catastrophic failures of components or assets may need to be repaired as a part of annual maintenance. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Aquatic Ecosystem.** The stream channel, lake or estuary bed, water, biotic communities and the habitat features that occur therein.

**Aquatic Habitat Types.** The classification of instream habitat based on location within channel, patterns of water flow, and nature of flow controlling structures. Riffles are divided into three habitat types: low gradient riffles, rapids, and cascades. Pools are divided into seven types: secondary channel pools, backward pools, trench pools, plunge pools, lateral scour pools, dammed pools, and beaver ponds. Glides possess attributes of both riffles and pools and are characterized by moderately shallow water with an even flow that lacks pronounced turbulence.

**Aquatic Influence Zone.** Used in the context of a land management prescription, the area encompassing aquatic and riparian ecosystems and adjacent lands which directly affect the hydrologic, geomorphic, and ecological processes, controlling aquatic and riparian ecosystem health and function.

**Arterial Road.** A forest road that provides service to large land areas and usually connects with other arterial roads or public highways. (FSH 7709.54 - Forest Transportation Terminology Handbook, no longer in print)

**Assessment.** The Renewable Resource Assessment required by the Resources Planning act (RPA).

**Authority.** A code to denote who is the managing authority for codes and linear events. Currently this can be set to WO (Washington Office), REGION (Regional Office) or FOREST (individual national forest).

**Big Game.** Those species of large mammals normally managed for sport hunting.

**Bio-accumulation.** The process whereby living plants or animals incorporate a substance into their tissues, thus introducing the substance into the food chain. Often refers to hazardous substances.

**Biological Control.** The use of natural means to control unwanted pests. Examples include introduced or naturally occurring predators such as wasps, or hormones that inhibit the reproduction of pests. Biological controls can sometimes be alternatives to mechanical or chemical means.

**Biological Diversity.** The number and abundance of species found within a common environment. This includes the variety of genes, species, ecosystems and ecological processes that connect everything in a common environment.

**Biological Growth-Potential**. The average net growth attainable in a fully stocked natural forest stand.

**Biological Potential.** The maximum possible resource output limited only by inherent physical and biological characteristics.

**Biota.** The plant and animal life of a particular region.

**BMP (Best Management Practices).** Practices designed to prevent or reduce water pollution. Also referred to as Soil and Water Conservation Practices (SWCPs).

**Borrow Source.** An area from which sand, gravel, or stone is taken for use in another area.

**Buffer.** A land area that is designated to block or absorb unwanted impacts to the area beyond the buffer. Buffer strips along a trail could block views that may be undesirable. Buffers may be set aside next to wildlife habitat to reduce abrupt change to habitat.

**Capability.** The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fire, insects and disease.

**Capital Improvement.** The construction, installation, or assembly of a new fixed asset, or the significant alteration, expansion, or extension of an existing fixed asset to accommodate a change of purpose. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Capture (input).** One of the ways functions are described; resources (organisms, materials, and energy) brought into the system (i.e., photosynthesis, migration, onto summer range, pollution brought in by wind or water.)

**Channel Depth.** The average depth of channel from mean high water mark to mean high water mark used to define stream type, instream flow calculations and riparian management.

**Channel Gradient.** The slope of the stream channel expressed on a percent of rise per unit length. A measure of the drop in water surface elevation per unit length of channel. The difference in water surface or streambed elevation of two study sites on a stream divided by the distance between the study sites.

**Channel Roughness.** A measurement used to determine energy losses and velocities of natural stream channels by using water energy slope (channel slope), velocity and hydraulic radius.

**Channel Stability Rating.** A rating of stream channels resistance capacity to the detachment of bed and bank materials.

**Chemical Control.** The use of pesticides and herbicides to control pests and undesirable plant species.

**Classified Road**. Road wholly or partially within or adjacent to National Forest System lands that are determined to be needed for long-term motor vehicle access, including State roads, county roads, privately owned roads, National Forest System roads, and other roads authorized by the Forest Service. (36 CFR 212.1, FSM 7705 – Transportation System)

**Clean Air Act.** (42 U.S.C. 7609) Section 309 provides authority for the Environmental Protection Agency to review other agency environmental impact statements.

**Collector Road.** A forest road that serves smaller land areas than an arterial road. Usually connects forest arterial roads to local forest roads or terminal. (FSH 7709.54 – Forest Transportation Terminology Handbook, no longer in print)

**Concern.** (Also management concern.) An issue, problem or condition which constrains the range of management practices identified by the Forest Service in the planning process.

**Connectivity (of habitats).** The linkage of similar but separated vegetation stands by patches, corridors or "stepping stones" of like vegetation. This term can also refer to the degree to which similar habitats are linked.

**Consistency.** All resource plans and permits, contracts and other instruments for the use and occupancy of National Forest System land must be consistent with the Forest Plan.

**Construction (new).** The erection, construction, installation, or assembly of a new fixed asset. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Corridor.** Elements of the landscape that connect similar areas. Streamside vegetation may create a corridor of willows and hardwoods between meadows where wildlife feed.

**Cost-efficiency.** The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specified levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and rates-of return may be appropriate.

**Council of Environmental Quality (CEQ).** The Council issues regulations binding on all federal agencies, to implement the procedural provisions of the National Environmental Quality Act. The regulations address the administration of the NEPA process, including preparation of Environmental Impact Statements (EIS) for major federal actions which significantly affect the quality of the human environment.

**Cover.** Any feature that conceals wildlife or fish. Cover may be dead or live vegetation, boulders, or undercut streambanks. Animals use cover to escape from predators, rest or feed.

**Critical Habitat.** Areas designated for the survival and recovery of federally listed threatened or endangered species.

**Critical Need.** A requirement that addresses a serious threat to public health or safety, a natural resource, or the ability to carry out the mission of the organization. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Cross-country Travel.** Travel over terrain not on designated roads and/or trails.

**Cultural Resource.** The remains of sites, structures, or objects used by humans in the past -- historical or archaeological.

**Cultural Sensitivity.** Refers to the likelihood of encountering significant cultural volumes (quantity and/or quality) that may affect and may be affected by ground-disturbing activities.

**Cumulative Actions.** Actions which when viewed with other proposed actions have cumulatively significant impacts.

**Cumulative Effects or Impacts.** The impact on the environment that results from the incremental impact of an action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes such other action. Cumulative effects or impacts can result from individually minor but collectively significant actions taking place over a period of time.

**Decommissioning.** Various levels of treatment leading to stabilization and restoration of transportation facilities that are no longer needed.

**Decommission.** Demolition, dismantling, removal, obliteration and/or disposal of a deteriorated or otherwise unneeded asset or component, including necessary cleanup work. This action eliminates the deferred maintenance needs for the fixed asset. Portions of an asset or component may remain if they do not cause problems nor require maintenance. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Deferred Maintenance**. Maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period. When allowed to accumulate without limits or consideration of useful life, deferred maintenance leads to deterioration of performance, increased costs to repair, and decrease in asset value. Deferred maintenance needs may be categorized as critical or noncritical at any point in time. Continued deferral of noncritical maintenance will normally result in an increase in critical deferred maintenance. Code compliance (e.g. life safety, ADA, OSHA, environmental, etc.), Forest Plan Direction, Best Management Practices, Biological Evaluations other regulatory or Executive Order compliance requirements, or applicable standards not met on schedule are considered deferred maintenance. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**DEIS (Draft Environmental Impact Statement).** The draft version of the Environmental Impact Statement that is released to the public and other agencies for review and comment.

**Desired Future Condition (DFC).** Land or resource conditions that are expected to result if goals and objectives are fully achieved. The DFC provides the framework to select appropriate standards and guidelines.

**Detrimental Soil Disturbance**. The condition where established threshold values for soil properties are exceeded and result in significant change.

**Developed Recreation**. Recreation that requires facilities that, in turn, result in concentrated use of the area. For example, skiing requires ski lifts, parking lots, buildings and roads. Campgrounds require roads, picnic tables and toilet facilities.

**Dispersed Recreation**. Recreation that does not occur in a developed recreation site, such as hunting, backpacking and scenic driving.

**Disturbance**. Any event, such as a forest fire or insect infestation that alters the structure, composition, or function of an ecosystem.

**Diversity**. The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan. See also "Edge," "Horizontal Diversity," and "Vertical Diversity."

**Ecological Type (Habitat Type).** A category of land having a unique combination of potential natural community; soil, landscape, features, climate and differing from other ecological types in its ability to produce vegetation and respond to management. Used to define land capability.

**Ecology**. The interrelationships of living things to one another and to their environment, or the study of these interrelationships.

**Ecosystem.** An arrangement of living and non-living things and the forces that move among them. Living things include plants and animals. Non-living parts of ecosystems may be rocks and minerals. Weather and wildfire are two of the forces that act within ecosystems.

**Ecosystem Management**. The use of an ecological approach to achieve productive resource management by blending social, physical, economic and biological needs and values to provide healthy ecosystems.

**Effects.** Environmental consequences as a result of a proposed action. Included are direct effects, which are caused by the action and occur at the same time and place, and indirect effects, which are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water and other natural systems, including ecosystems.

**Effects and impacts** as used in this statement are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures and functioning of affected ecosystems), aesthetic quality, historic, cultural, economic, social or health whether direct, indirect or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects; even if on balance the agency believes that the effects will be beneficial (40 CFR 1508.8).

**Emergency Need**. An urgent maintenance need that may result in injury, illness, or loss of life, natural resource, or property; and must be satisfied immediately. Emergency needs generally require a declaration of emergency or disaster, or a finding by a line officer that an emergency exists. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Endangered Species**. Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior and endangered in accordance with the 1973 Endangered Species Act.

**Endangered Species Act.** The Act which requires consultation with U.S. Fish and Wildlife Service if practices on National Forest System lands may impact a threatened or endangered species (plant or animal).

**Environmental Analysis**. An analysis of alternative actions and their predictable long and short-term environmental effects. Environmental Analyses include physical, biological, social and economic factors.

**Environmental Assessment**. A brief version of an Environmental Impact Statement.

**Environmental Impact Statement (EIS).** A statement of the environmental effects of a proposed action and alternatives to it. It is required for major Federal actions under Section 102 of the National Environmental Policy Act (NEPA) and released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) guidelines, and directives of the agency responsible for the project proposal.

**Ephemeral Streams.** Streams that flow only as the direct result of rainfall or snowmelt. They have no permanent flow.

**Ephemeral Streams**. Streams that flow only as the direct result of rainfall or snowmelt. They flow for less than 30 days at any one time per year.

**Erosion.** The wearing away of the land surface by wind or water.

**Escape Cover**. Vegetation of sufficient size and density to hide an animal, or an area used by animals to escape from predators.

**Evaluation Criteria.** Standards developed for appraising alternatives. (See decision

**Facilities.** Transportation planning, road management and operation, fleet equipment, and engineering services (for example, administrative buildings, water and sanitation systems, sanitary landfills, dams, bridges and communication systems.

**Fauna.** The animal life of an area.

**Fire Management.** All activities required for the protection of resources from fire and the use of fire to meet land management goals and objectives.

**Fisheries Classification**. Water bodies and streams classed as either having a cold water or warm water fishery. Designation is dependent upon the dominate species of fish occupying the water.

**Fisheries Habitat.** Streams, lakes, and reservoirs that support fish, or have the potential to support fish.

**Flood Plain**. A lowland adjoining a watercourse. At a minimum, the area is subject to a 1% or greater chance of flooding in a given year.

**Flora**. The plant life of an area.

**Forage.** All browse and non-woody plants that are eaten by wildlife or livestock.

**Forb.** A broadleaf plant that has little or no woody material in it.
Glossary--15

**Forest Highway**. A forest road under the jurisdiction of, and maintained by, a public authority and open to public travel. (USC: Title 23, Section 101(a)).

**Forest Road**. As defined in Title 23, Section 101 of the United States Code (23 U.S.C. 101), any road wholly or partly within, or adjacent to, and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. (FSM 7705 – Transportation System)

**Forest Roads and Trails**. A legal term for Forest roads or trails that are under the jurisdiction of the Forest Service.

**Forest Supervisor**. The official responsible for administering National Forest lands on an administrative unit, usually one or more National Forests. The Forest Supervisor reports to the Regional Forester.

**Forest Transportation Atlas**. An inventory, description, display, and other associated information for those roads, trails, and airfields that are important to the management and use of National Forest System lands or to the development and use of resources upon which communities within or adjacent to the National Forests depend. (36 CFR 212.1)

**Forest Transportation Facility.** A classified road, designated trail, or designated airfield, including bridges, culverts, parking lots, log transfer facilities, safety devices and other transportation network appurtenances under Forest Service jurisdiction that is wholly or partially within or adjacent to National Forest System lands. (36 CFR 212.1, FSM 7705 – Transportation System)

**Forest Transportation System Management**. The planning, inventory, analysis, classification, record keeping, scheduling, construction, reconstruction, maintenance, decommissioning, and other operations undertaken to achieve environmentally sound, safe, cost-effective, access for use, protection, administration, and management of National Forest System lands. (FSM 7705 – Transportation System)

**Forage Utilization**. The proportion of current year's forage production that is consumed or destroyed by grazing animals. Forage is all browse and herbage that is available and acceptable to grazing animals.

**Fragmentation**. The splitting or isolating of patches of similar habitat, typically forest cover, but including other types of habitat. Habitat can be fragmented naturally or from forest management activities, such as clearcut logging.

**Fuels**. Plants and woody vegetation, both living and dead, that are capable of burning.

**Fuel Management**. The treatment of fuels that would otherwise interfere with effective fire management or control. Fore instance, prescribed fire can reduce the amount of fuels that accumulate on the forest floor before the fuels become so heavy that a natural wildfire in the area would be explosive and impossible to control.

**Fuel Treatment.** Manipulation or removal of fuels to reduce the likelihood of ignition and/or lessen potential damage and resistance to control (e.g. lopping, chipping, crushing, piling, and burning).

**Fuelwood.** Wood cut into short lengths for burning.

**Function.** All the processes within an ecosystem through which the elements interact, such as succession, the food chain, fire, weather, and the hydrologic cycle.

**Functional Class.** The way a road services land and resource management needs, and the character of service it provides. (FSH 7709.54, Forest Transportation Terminology Handbook, no longer in print)

**Game Species.** Any species of wildlife or fish that is harvested according to prescribed limits and seasons.

**GIS** (geographic information systems). GIS is both a database designed to handle geographic data as well as a set of computer operations that can be used to analyze the data. In a sense, GIS can be thought of as a higher order map.

**Goal.** A concise statement that articulates a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statement form the principal basis from which objectives are developed.

**Grazing Period.** The period of time livestock use a specific pasture or unit within a grazing allotment.

**Guidelines**. An indication or outline (as by a government) of policy or conduct.

**Habitat**. The area where a plant or animal lives and grows under natural conditions.

**Habitat Capability**. The ability of a land area or plant community to support a given species of wildlife.

**Habitat Diversity**. A number of different types of wildlife habitat within a given area.

**Habitat Diversity Index**. A measure of improvement in habitat diversity.

**Habitat Type**. A way to classify land area. A habitat can support certain climax vegetation, both trees and undergrowth species. Habitat typing can indicate the biological potential of a site.

**Hard Snag.** See Snag.

**Health and Safety Need.** A requirement that addresses a threat to human safety and health (e.g. violations of National Fire Protection Association 101 Life Safety Code or appropriate Health Code) that requires immediate interim abatement and/or long-term permanent abatement. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Heritage Resources.** The remains of sites, structures, or objects used by humans in the past: historical or archaeological.

**Hiding Cover**. The vegetation that will hide ninety percent of an elk from the view of a human at a distance of 200 feet or less. The distance which the animal is essentially hidden is called a sight distance.

**Horton Overland Flow.** Precipitation or snowmelt that flows on the surface of the ground after the surface layer itself becomes fully saturated.

**Hydric Soils.** Soils indicative of wetland areas, usually characterized by high organic contents that decay slowly due to lack of oxygen. They frequently contain zones of marked discoloration of varying types due to altered or changing oxygenation conditions.

**Hydrologically Disturbed.** Changes in natural canopy cover (vegetation removal) or a change in surface soil characteristics (such as compaction) that may alter natural streamflow quantities and character. Acres of vegetation within a watershed that are in a non-stocked, seedling, sapling, or first entry category; acres in roads; acres from other types of mechanical treatments and burned acres are included in the calculation of hydrologically disturbed area.

**Hydrology**. The science dealing with the study of water on the surface of the land, in the soil and underlying rocks and in the atmosphere.

**Hydrophytic (wetland) Vegetation.** Plants that are adapted to wet conditions. Willows, sedges and rushes are common hydrophytic plants. Lists of plant species that occur in wetlands are at: http://www.nwi.fws.gov/plants.html

**Indicator Species**. A plant or animal species related to a particular kind of environment. Its presence indicates that specific habitat conditions are also present.

**Indigenous (species)**. Any species of wildlife native to a given land or water area by natural occurrence.

**Initial Attack**. The wildfire control efforts taken by resources that are first to arrive at a wildfire.

**Instream Flow**. The quantity of water necessary to meet seasonal stream flow requirements to accomplish the purposes of the National Forests, including, but not limited to fisheries, visual quality, and recreational opportunities.

**Integrated Pest Management**. A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studies and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated pest population on various resource values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest/host system and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable.

**Interdisciplinary Team.** A team of individuals with skills from different disciplines that focuses on the same task or project.

**Intermittent Stream.** A stream that flows only at certain times of the year when it receives water from streams or from some surface source, such as melting snow.

**Intermittent Stream.** A stream that goes dry at some point each year but flows continuously at least 30 days a year when it receives water, usually from a seasonal groundwater, but may also include some surface source more persistent than a rainstorm, such as melting snow.

**Intermountain Region.** The portion of the USDA Forest Service, also referred to as Region Four, that includes National Forests in Utah, Nevada, southern Idaho and southwestern Wyoming.

**Inventoried Roadless Area.** (West of the 100th meridian) An area which meets the statutory definition of wilderness, does not contain improved roads maintained for travel by standard passenger-type vehicles, and meets one or more of the following criteria:
1. Contains 5,000 acres or more.
2. Contains less than 5,000 acres, but:
- Due to physiography or vegetation, is manageable in a natural condition.
- Is a self-contained ecosystem such as an island.
- Is contiguous to existing wilderness, primitive area, Administration-endorsed wilderness, or roadless area in other Federal ownership, regardless of size.

**Invasive Species.** A plant species moving into areas outside of its former range.

**Irretrievable.** Applies to losses of production, harvest or commitment of renewable natural resources. For example, some or all of the timber production from an area is irretrievably lost during the time an area is

used as a winter sports site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible.

**Irreversible**. Applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors that are renewable only over long time spans, such as soil productivity. Irreversible also includes loss of future options.

**Issue.** A point, matter or question of public discussion or interest to be addressed or decided through the planning process. *Preliminary issue* is an issue identified early in the scoping phase and is sometimes referred to as a tentative issue. *Significant issue* is an issue within the scope of the proposed action which is used to formulate alternatives in an Environmental Analysis (EA) or Environmental Impact Statement (EIS).

**Jurisdiction.** The legal right to control or regulate use of a transportation facility. Jurisdiction requires authority, but not necessarily ownership. The authority to construct or maintain a road may be derived from fee title, an easement, or some other similar method. (FSM 7705 – Transportation System)

**Legal Notice.** A notice of a decision which can be appealed that is published in the Federal Register or in the legal notice section of a newspaper of general circulation.

**Lek.** An area used habitually by grouse species where the males display for the females each spring. Number of males are counted on the lek each spring to establish general population trends.

**Leasable Minerals.** Minerals, including phosphate, coal, oil and gas, that are administered under the 1920 Mineral Leasing Act. The Bureau of Land Management is the leasing agency; the Forest Service can provide input for leasing actions.

**Lentic.** Wetlands that do not contain nor are affected by energy of flowing water, such as isolated ponds and wet meadows.

**Local Road.** A forest road that connects terminal facilities with forest collector, forest arterial or public highways. Usually forest local roads are single purpose transportation facilities. (FSH 7709.54 – Forest Transportation Terminology Handbook, no longer in print)

**Locatable Minerals.** These are generally precious metals, such as gold, silver, and copper, that are administered under the 1872 Mining laws.
Glossary—23

**Maintenance.** The preservation of the entire highway, including surface, shoulders, roadsides, structures and such traffic-control devices as are necessary for its safe and efficient utilization. (USC: Title 23, Section 101(a)).

**Maintenance.** The upkeep of the entire forest development transportation facility including surface and shoulders, parking and side areas, structures, and such traffic-control devices as are necessary for its safe and efficient utilization. (36 CFR 212.2(i)).

**Maintenance.** The act of keeping fixed assets in acceptable condition. It includes preventive maintenance normal repairs; replacement of parts and structural components, and other activities needed to preserve a fixed asset so that it continues to provide acceptable service and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from, or significantly greater than those originally intended. Maintenance includes work needed to meet laws, regulations, codes, and other legal direction as long as the original intent or purpose of the fixed asset is not changed. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Maintenance Level.** Defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria. (FSH 7709.58, Sec 12.3 – Transportation System Maintenance Handbook)

> **Maintenance Level 1:** Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period must exceed 1 year. Basic custodial maintenance is performed to keep damage to adjacent resource to an acceptable level and to perpetuate the road to facilitate future management activities. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate". Roads receiving level 1 maintenance may be of any type, class or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic, but may be open and suitable for non-motorized uses.
>
> **Maintenance Level 2:** Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either (1) discourage or prohibit passenger cars or (2) accept or discourage high clearance vehicles.
>
> **Maintenance Level 3:** Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.
>
> **Maintenance Level 4:** Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.
>
> **Maintenance Level 5:** Assigned to roads that provide a high degree of user comfort and convenience. Normally, roads are double-lane, paved facilities. Some may be aggregate surfaced and dust abated. The appropriate traffic management strategy is "encourage."

**Management Concern**. An issue, problem or a condition which constrains the range of management practices identified by the Forest Service in the planning process.

**Management Direction**. A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.

**Management Prescription**. Management practices and intensity selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives.

**Mass Movement/Wasting**. The down-slope movement of large masses of earth material by the force of gravity. Also called a landslide.

**Mass Stability**. The existing condition of the soil mantel related to the potential for land mass failure such as landslides, mud flows and debris slides.

**Matrix**. The least fragmented, most continuous pattern element of a landscape; the vegetation type that is most continuous over a landscape.

**Mineral Soil**. Soil that consists mainly of inorganic material, such as weathered rock, rather than organic matter.

**MIS (management indicator species).** A wildlife species whose population indicate the health of the ecosystem in which it lives and, consequently, the effects of forest management activities to that ecosystem. MIS are selected by land management agencies. (See indicator species.)

**Mission Need.** A requirement that addresses a threat or risk to carrying out the mission of the organization. Needs related to administration and providing services (transportation, recreation, grazing, etc.). Needs not covered by health and safety or natural resource protection. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Mitigate/mitigation.** To lessen the severity. Actions taken to avoid, minimize or rectify the impact of a land management practice.

**Monitoring.** The determination of how well project or plan objectives have been met and how closely management practices should be adjusted. (See adaptive management.)

**Mountain Brush.** Vegetation characterized by woody species usually found between sagebrush/grasslands and coniferous forests at upper elevations. Prominent species include mountain mahogany, mountain maple, chokecherry, serviceberry, etc.

**Multiple-Use.** The management of all the various renewable surface resources of the National Forest System lands for a variety of purposes such as recreation, range, timber, wildlife and fish habitat, and watershed.

**Municipal Watershed.** A watershed that serves a public water system as defined in Public Law 93- 523 (Safe Drinking Water Act); or as defined in State safe drinking water regulations. The definition does not include communities served by a well or confined ground water unaffected by Forest Service activities.

**National Environmental Policy Act (NEPA).** This is the basic national charter for protection of the environment. It establishes policy, sets goals and provides means for carrying out the policy.

**National Forest Management Act (NFMA).** These are rules that require an integration of planning for National Forests and Grasslands, including the planning for timber, range, fish and wildlife, water, wilderness, recreation resources, together with resource protection activities, such as fire management, and the use of other resources, such as minerals.

**National Forest System (NFS) Land.** Federal lands that have been designated by Executive Order or statute as National Forests, National Grasslands, Purchase Units, and other lands under the administration of the Forest Service, including Experimental Areas and Bankhead-Jones Title III lands.

**National Forest System Road.** A classified forest road under the jurisdiction of the Forest Service. The term "National Forest System roads" is synonymous with the term "forest development roads" as used in 23 U.S.C. 205. (FSM 7705 – Transportation System)

**Native Species.** A species of flora or fauna occurring naturally in the United States and that not introduced by humans.

**Natural Resource.** A feature of the natural environment that is of value in serving human needs.

**Nest Survey.** A way to estimate the size of a bird population by counting the number of nests in a given area.

**New Road Construction.** Activity that results in the addition of forest classified or temporary road miles. (36 CFR 212.1, FSM 7705 – Transportation System)

**No Action Alternative.** The most likely condition expected to exist in the future if management practices continue unchanged.

**Noncritical Need.** A requirement that addresses potential risk to public or employee safety or health, compliance with codes, standards, regulations etc., or needs that address potential adverse consequences to natural resources or mission accomplishment. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Nongame.** Species of animals not managed for sport hunting.

**Nonnative Species.** A species introduced into an ecosystem through human activities.

**Nonpoint Source Pollution.** Pollution whose source is not specific in location. The sources of discharge are dispersed, not well-defined, or constant. Rain storms and snow melt often make this type of pollution worse. Examples include sediments from logging activities, and runoff from agricultural chemicals.

**Non-renewable Resource.** A resource whose total quantity does not increase measurably over time, so that each use of the resource diminishes the supply.

**Notice of Intent.** A notice printed in the Federal Register announcing that an Environmental Impact Statement (EIS) will be prepared.

**Noxious Weeds.** A plant recognized by law as being especially undesirable, troublesome, and difficult to control.

**NWI.** National Wetlands Inventory, maintained by the US Fish and Wildlife Service and currently on the WWW at: http://www.nwi.fws.gov

**Objective.** A clear and quantifiable statement of planned results to be achieved within a stated time period. Something aimed at or striven for within a predetermined time period. An objective must be achievable, be measurable, have a stated time period for completion, be quantifiable, be clear and its results must be described.

**Objective Maintenance Level.** The maintenance level to be assigned at a future date considering future road management objectives, traffic needs, budget constraints, and environmental concerns. The objective maintenance level may be the same as, or higher or lower than, the operational maintenance level. (FSH 7709.58, Sec 12.3 – Transportation System Maintenance Handbook)

**Off-Road Vehicles (ORV's).** Vehicles such as motorcycles, all-terrain vehicles, four-wheel drive vehicles and snowmobiles.

**Open for Public Travel.** The road section is available and passable by four-wheeled standard passenger cars, and open to the general public for use without restrictive gates, prohibitive signs, or regulation other than restrictions based on size, weight or class of registration, except during scheduled periods, extreme weather or emergency conditions. (23 CFR 460.2(c)).

**Open Motorized Route Density (OMRD).** Includes all open roads and open motorized trails. Density may be displayed in miles per square mile for a specified analysis area.

**Operational Maintenance Level.** The maintenance level currently assigned to a road considering today's needs, road condition, budget constraints, and environmental concerns. It defines the level to which the road is currently being maintained. (FSH 7709.58, Sec 12.3 – Transportation System Maintenance Handbook)

**Opportunities.** Ways to address or resolve public issues or management concerns in the land and resource management planning process.

**Other System.** Additional network(s) of travel ways serving a common need or purpose, managed by an entity with the authority to finance, build, operate and maintain the routes. (U.S.C. 101 23 CFR 660, FSM 7740.5 – Federal Lands Highway Programs)

**Output.** One of the ways functions are described; resources which leave a system, i.e., animals migrating out of an area, mass erosion, removal of commercial timber from an area.
**Palustrine.** Palustrine systems include wetlands which lack flowing water. See **Lentic**.

**Perennial Stream.** A stream that flows throughout the year and from source to mouth.

**Perlite.** A volcanic glass containing water that expands or "pops" when heated to form a lightweight aggregate.

**Permitted Grazing.** Grazing on a National Forest range allotment under the terms of a grazing permit.

**Permittee.** A person or persons who utilize the National Forest System lands under a permit, usually a Special Use Permit or livestock grazing permit.

**Personal Use.** Normally used to describe the type of permit issued for removal of wood products (firewood, posts, poles, and Christmas trees) from National Forest land when the product is for home use and not to be resold for profit.

**Plant Community.** A group of one or more populations of plants in a common spatial arrangement.

**Plant Species.** The major subdivision of a genus or subgenus of a plant being described or measured.

**Potential Natural Vegetation.** The vegetation that would exist today if man were removed from the scene and if the plant succession after his removal were telescoped into a single moment. The time compression eliminates the effects of future climatic fluctuations, while the effects of man's earlier activities are permitted to stand.

**Prescription.** Management practices selected to accomplish specific land and resource management objectives.

**Primary Maintainer.** The agency or party having primary (largest share) financial responsibility for maintenance. (FSH 7709.58, Chapter 13 – Transportation System Maintenance Handbook)

**Primitive ROS (Recreation Opportunity Spectrum).** A classification of wilderness and recreation opportunity. It is characterized by an essentially unmodified environment, where trails mail be present but structures are rare, and where it is highly probable to be isolated from the sights and sounds of people. (See ROS.)

**Private Road.** A road under private ownership authorized by easement to a private party, or a road which provides access pursuant to a reserved or private right. (FS-643, Roads Analysis; Informing Decisions About Managing the National Forest Transportation System, August 1999.)

**Programmatic Direction.** Sideboards for management which are usually general in nature and designed to be applied over a large area. In the Forest Service, generally referring to Forest Plan direction.

**Properly Functioning Condition (PFC).** The condition of a resource or ecosystem at any temporal or spatial scale when they are dynamic and resilient to disturbances to structure, composition and processes of their biological or physical components.

**Proposal.** Exists at the stage in the development of an action when an agency is actively preparing to make a decision on one or more alternative means of accomplishing a goal and the effects can be meaningfully evaluated.

**Proposed Action.** A proposal by the Forest Service to authorize, recommend or implement an action.

**Protocol.** A specific way of conducting monitoring or analysis.

**Public Access.** An indication if the property is posted or restricted from public use.

**Public Authority.** A Federal, State, county, town or township, Indian tribe, municipal or other local government or instrumentality thereof, with authority to finance, build, operate or maintain toll or toll-free highway facilities. (23 CFR 460.2(b))

**Public Forest Service Road.** A designated public road under Forest Service jurisdiction that meets the definition of 23 U.S.C. Section 101.

**Public Issue.** A subject or questions of widespread public interest relating to management of the National Forest System.

**Public Land.** Land for which title and control rests with a government - federal, state, regional, county or municipal.

**Public Participation.** Meeting, conferences, seminars, workshops, tours, written comments, responses to survey questionnaires, and similar activities designed and held to obtain comments from the public about Forest Service planning and decision making.

**Public Road.** Any road or street under the jurisdiction of and maintained by a public authority and open to public travel. (23 U.S.C. 101(a), 23 CFR 460.2(a), FSM 7705 – Transportation System)

**Pumice.** A light-colored, lightweight volcanic rock consisting mostly of volcanic glass.

**Purpose and Need.** A statement which briefly specifies the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.

**Quickflow.** Quickflow is overland flow plus interflow that together forms storm flow. Comprises storm runoff to streams from both flow over the surface (Horton overland flow), and water that finds preferential pathways such as “pipes” and bedding planes in the shallow subsurface (interflow). Quickflow does not include infiltrating water that percolates further down to the water table and then travels to streams.

**Range (Rangeland).** Land on which the principle natural plant cover is composed of native grasses, forbs, and shrubs that area available as forage for big game and livestock.

**Range Development.** An activity or structure used to improve livestock distribution, rangeland conditions, or otherwise improve range management. Can be structural (fence, water development, etc.) or nonstructural (seeding, vegetation manipulation, etc.).

**Range Management.** The art and science of planning and directing range use intended to yield the sustained maximum animal production and perpetuation of the natural resources.

**Ranger District.** The administrative sub-unit of a National Forest that is supervised by a District Ranger who reports directly to the Forest Supervisor.

**Raptor.** A bird of prey, such as an eagle or hawk.

**RARE II.** *Roadless Area Review and Evaluation*. The national inventory of roadless and undeveloped areas within the National Forests and Grasslands.

**Reclamation.** The process of restoring disturbed areas, usually consisting of reshaping, replacing topsoil, and seeding the area.

**Recreation Capacity.** The number of people that can take advantage of any supply of recreation opportunity at any one time without substantially diminishing the quality of the experience.

**Recreation Opportunity Class.** An assessment of the general potential of the site for outdoor recreation. The following minimum number of classes are recognized:

Primitive - Area is characterized by essentially unmodified natural environment with a high probability of experiencing isolation from the sights and sounds of man.

Semi-primitive - Area is characterized by a predominantly natural or natural-appearing environment with a moderate probability of experiencing isolation from the sights and sounds of man. Semi-primitive can be motorized or non-motorized.

Roaded Natural - Area is characterized by a predominantly natural or natural-appearing environment with a low probability of experiencing isolation from the sights and sounds of man.

Rural - Area is characterized by a substantially modified natural environment with a low probability of experiencing isolation from the sights and sounds of man. Urban - Area is characterized by a substantially urbanized environment, although the background may have natural-appearing elements, i.e. ski resorts.

**Recreation Types:**
*Developed Recreation*. The type of recreation that occurs where modifications (improvements) enhance recreation opportunities and accommodate intensive recreation activities in a defined area.

*Dispersed Recreation*. That type of recreation use that requires few, if any, improvements and may occur over a wide area. This type of recreation involves activities related to roads and trails. The activities do not necessarily take place on or adjacent to a road or trail, only in conjunction with it. Activities tend to be day-use oriented and include hunting, fishing, berry picking, off-road
vehicle use, hiking, horseback riding, picnicking, camping, viewing scenery, snowmobiling, and many others.

**Regional Forester.** The official of the USDA Forest Service responsible for administering an entire region of the Forest Service.

**Regulations.** Generally refers to the Code of Federal Regulations, Title 36, Chapter II, which covers management of the Forest Service.

**Research Natural Area (RNA).** Designated areas of land, usually more than 300 acres in size having characteristics concerning ecological processes that are of scientific or educational interest. These areas are valuable for conducting observation and research activities on plant and animal succession, habitat

requirements of species, insect and fungus depredations, soil microbiology, phenology, and other related subjects.

**Resource Protection Need.** A requirement that addresses a threat or risk of damage, obstruction, or negative impact to a natural resource. (Financial Health – Common Definitions for Maintenance and Construction Terms, July 22, 1998)

**Responsible Official.** The Forest Service employee who has been delegated the authority to carry out a specific planning action.

**RHCA.** Resource Habitat Conservation Area. Term used to describe riparian areas developed by the agency for INFISH and PACFISH. RHCA width definitions are mostly the same as the "default buffer widths" in the Revised Forest Plan.

**Riffle.** A shallow rapids where the water flows swiftly over completely or partially submerged obstructions to produce surface agitation, but standing waves are absent.

**Right-of-Way.** An accurately located strip of land with defined width, point of beginning, and point of ending. It is the area within which the user has authority to conduct operations approved or granted by the landowner in an authorizing document, such as a permit, easement, lease, license, or Memorandum of Understanding (MOU).

**Riparian Area.** They are along a watercourse or around a lake or pond.

**Riparian Ecosystem.** The ecosystems around or next to water areas that support unique vegetation and animal communities as a result of the influence of water.

**Risk (Fire).** The probability that potential harm or undesirable consequences will be realized.

**Road.** A motor vehicle travel way over 50 inches wide, unless designated and managed as a trail. A road may be classified, unclassified, or temporary. (36 CFR 212.1, FSM 7705 – Transportation System)

**Road Decommissioning.** Activities that result in the stabilization and restoration of unneeded roads to a more natural state. (36 CFR 212.1, FSM 7705 – Transportation System)

**Road Density.** The miles of road per square mile.

**Road Improvement.** Activity that results in an increase of an existing road's traffic service level, expands its capacity, or changes its original design function. (FSM 7705 – Transportation System)

**Road Maintenance.** The ongoing upkeep of a road necessary to retain or restore the road to the approved road management objective. (FSM 7705 – Transportation System)

**Road Management Objectives (RMO).** Defines the intended purpose of an individual road based on management area direction and access management objectives. Road management objectives contain design criteria, operation criteria, and maintenance criteria. (FSH 7709.55, Sec 33 – Transportation Planning Handbook)

**Road Realignment.** Activity that results in a new location of an existing road or portions of an existing road and treatment of the old roadway. (FSM 7705 – Transportation System)

**Road Reconstruction.** Activity that results in a Road Improvement or Road Realignment of an existing classified road. (FSM 7700 – Transportation System)

**Road System.** An alpha code indicating primary systems designation where primary indicates the system under which principle funding and management criteria for operation and maintenance of a road is derived.

**ROD.** Record of Decision. An official document in which a deciding official states the alternative that will be implemented from a prepared EIS.

**ROS.** Recreation Opportunity Spectrum. The land classification system that categorizes land by its setting and the probable recreation experiences and activities it affords. (See Recreation Opportunity Class.)
**Route.** A road or trail that is signed and managed as a unique entity. Management can change along its length but it is singularly identified. This term is also used in GIS to denote a linear feature composed of one or more arcs or parts of arcs.

**Route System.** A GIS term for a collection of routes, representing a logical collection of linear features.

**RPA.** The Forest and Rangeland Renewable Resources Planning Act of 1974. Also refers to the National Assessment and Recommended Program developed to fulfill the requirements of this Act.

**RS 2477.** Revised Statute 2477; legislation that allows counties to assert that they have access rights on roads and/or trails that existed prior to the establishment of the Forest.

**Run-off.** The portion of precipitation that flows over the land surface or in open channels.

**Scale.** In ecosystem management, scale refers to the degree of resolution at which ecosystems are observed and measured.

**Scoping.** The on-going process to determine public opinion, receive comments and suggestions, and determine issues during the environmental analysis process. It may involve public meetings, telephone conversations or letters.

**Sediment.** Solid material, both mineral and organic, transported from its site of origin by air, water, gravity, or ice.

**Sensitive Species.** Plant or animal species which are susceptible to habitat changes or impacts from activities. The official designation is made by the USDA Forest Service at the Region level and is not part of the designation of Threatened or Endangered Species made by the U.S. Fish & Wildlife Service.

**Service Life.** The length of time that a facility is expected to provide a specified service. (FSH 7709.56b, Sec 05 – Transportation Structures Handbook)

**Similar Actions.** Actions, which when viewed with other reasonable foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as timing or geography.

**Slash.** The residue left on the ground after timber cutting and/or accumulating there as a result of storm, fire, or other damage. It includes unused logs, uprooted stumps, broken or uprooted stems, branches, twigs, leaves, bark and chips.

**Slump.** A landslide where the underlying rock masses tilt back as they slide from a cliff or escarpment.

**Small Game.** Birds and small mammals typically hunted or trapped.

**Smoke Management.** Application of fire intensities and meteorological processes to minimize degradation of air quality during prescribed fires.

**Snag.** A standing dead tree important as habitat for a variety of wildlife species and their prey.

**Soil Compaction.** A physical change in soil properties that results in a decrease in porosity and increase in soil bulk density and soil strength.

**Soil Cover.** The type of cover on the soil surface, i.e. live vegetation, litter, rock, pavement, exposed.

**Soil Displacement.** The movement of the forest floor (litter, duff, and humus layers) and surface soil from one place to another by mechanical forests such as a blade used in piling or windrowing. Mining of surface soil layers by chopping, or bedding operation are not considered displacement.

**Soil Erosion Type.** A classification system that further defines erosion by running water, wind or gravitational creep that is used to determine watershed condition.

**Soil Quality.** Long term soil productivity and soil hydrologic function.

**Soil Map Unit.** A named portion of a landscape shown by a closed delineation and symbol on a soil map. Generally used to assess or monitor watershed condition, site productivity, and site capability.

**Soil Puddling.** A physical change in soil properties due to shearing forces that alters soil structure and porosity. Puddling occurs when the soil is at or near liquid limit.

**Soil Structure.** Structure is described by grade, class and type. Terms are used to describe the natural aggregates in the soil called peds in contrast to clods caused by disturbance, fragments by rupture of peds, and concentrations by local concentrations of compounds that irreversibly cement the soil grains together. The six structures, each with its own distinctive shape and arrangement, are: granular, platy, prismatic, columnar, angular blocky, subangular blocky, and structureless.

**Soil Texture.** Texture refers to the relative proportions of clay, silt and sand (less than 2mm in diameter). Clay particles are the smallest, silt particles are intermediate and sand particles are the largest. Loams contain various mixtures of the three basic particle sizes.

**Soil and Water Conservation Practices (SWCPs).** See BMP.

**Soil Compaction.** The reduction of soil volume. For instance, the weight of heavy equipment on soils can compact the soil and thereby change it in some ways, such as its ability to absorb water.

**Soil Productivity.** The capacity of a soil to produce a specific crop. Productivity depends on adequate moisture and soil nutrients, as well as favorable climate.

**Special Forest Products.** Nontimber renewable plant products such as mushrooms, berries, flowers, etc.

**Special Use Permit.** A permit issued to an individual or group by the USDA Forest Service for use of National Forest land for a special purpose. Examples might be a Boy Scout Jamboree or a mountain bike race.

**Species at Risk.** Species which demonstrate a potential for loss of resilience or sustainability if disturbed.

**Standards and Guidelines.** Requirements found in a Forest Plan which impose limits on natural resource management activities, generally for environmental protection.

**State Air Quality Regulations.** The legal base for control of air pollution sources in that State. Prescribed burning is generally covered under these regulations.

**State Implementation Plan.** A State plan that covers implementation, maintenance, and enforcement of primary and secondary standards in each air quality control Region, pursuant to section 110 of the Clean Air Act.

**Stewardship.** Caring for land and associated resources and passing healthy ecosystems to future generations.

**Stream Channel.** The defined bed and bank of a watercourse down which water travels.

**Stream Order.** A numbering scheme used to characterize the relative position of stream channels within a drainage. First-order streams are those which have no tributaries. Second-order streams are those which have as tributaries only first-order channels. Third-order streams are formed when two second-order channels come together. Stream order is used to analyze hydrologic response and fisheries.

**Stream Type.** Alpha-numeric identification given to reoccurring stream channel types based on measurable morphological features such as channel gradient, width/depth ratio, dominant particle size of bed and bank materials, entrenchment of channel and confinement of channel in valley, and landform features, soil erodibility, and stability.

**Stream Width.** The width of streams or rivers. Generally used to determine stream type, flood hazard, instream flows, and riparian management.

**Streamflow.** A measure of the volume of water passing a given point in a stream channel at a given point in time.

**Subject to the Highway Safety Act.** National Forest System roads that are open to use by the public for standard passenger cars. This includes roads with access restricted on a seasonal basis and roads closed during extreme weather conditions or for emergencies, but which are otherwise open for general public use. (FSM 7705 – Transportation System)

**Subwatershed.** A drainage delineated for one of the streams within a National Forest System (NFS) watershed, often to analyze the effects of a proposed action. The subwatershed chosen for analysis may depend on the size and anticipated effects of a proposal.

**Succession.** The natural replacement, in time, of one plant community with another. Conditions of the prior plant community (or successional stage) create conditions that are favorable for the establishment of the next stage.

**Successional Stage.** A stage of development of a plant community as it moves from bare ground to climax. The grass-forb stage of succession precedes the woody shrub stage and so on.

**Surface Resources.** Renewable resources that are on the surface of the earth, such as timber and forage, in contrast to ground water and minerals which are located beneath the surface.

**Suspended Sediment.** Sediment which remains in suspension in the water for a considerable period of time without contact with the bottom of the water source and is generally recorded in parts per million or milligrams per liter.

**Sustainability.** The ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time.

**Sustainable.** The yield that a renewable resource can produce continuously at a given intensity of management is said to be sustainable.

**Tall Forb Community.** A vegetation community made up of tall broad-leaved plants, rated as "at risk" in the Intermountain Region due to conifer encroachment and historic overgrazing. Common plants include anise, mountain bluebell, and coneflower.

**Target.** A National Forest's annual goal for accomplishment for natural resource programs. Targets represent the commitment of the Forest Service has with Congress to accomplish the work Congress has funded, and are often used as a measure of the agency's performance.

**Temporary Road.** Road authorized by contract, permit, lease, other written authorization, or emergency operation not intended to be a part of the forest transportation system and not necessary for long-term resource management. (36 CFR 212.1, FSM 7705 – Transportation System)

**Terrestrial.** Pertaining to the land.

**Thermal Cover.** Cover used by animals to ameliorate effects of weather; for elk, a stand of coniferous trees 40 feet or more tall with an average crown closure of 70 percent or more.

**Threatened and Endangered Species Habitat.** Those areas currently or potentially occupied or utilized by threatened and endangered species. T&E Species habitat generally falls into one of several categories: critical habitat, proposed critical habitat, occupied habitat, or potential habitat.

**Threatened Species.** Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future as designated by the U.S. Fish & Wildlife Service under the Endangered Species Act of 1973.

**Total Maximum Daily Load (TMDL).** From the Clean Water Act, an amount of a given pollutant that is allowed in a Water Quality Limited Stream.

**Traffic Service Level.** Describes the significant characteristics and operating conditions of a road. (FSH 7709.56, Ch 4 – Road Preconstruction Handbook, FSM 7705 – Transportation System)

**Transportation Facility Jurisdiction.** The legal right to control or regulate use of a transportation facility derived from fee title, an easement, an agreement, or other similar method. While jurisdiction requires authority, it does not necessarily reflect ownership. (FSM 7705 – Transportation System)

**Transportation System.** All existing and proposed roads, trails, airfields, and other transportation facilities wholly or partly within or adjacent to and serving the National Forests and other areas administered by the Forest Service or intermingled private lands.

**Traveled Way.** The portion of the roadway used for the movement of vehicles; not including turnouts, exclusive of shoulders and auxiliary lanes. (EM 7720-100LL, Section 102.)
**Treatment Area.** The site-specific location of a resource improvement activity.

**Trend.** The direction of change in ecological status of a plant community usually expressed as moving "toward", "away from", or "not apparent".

**Turbidity.** A measure of the optical property that causes light to be scattered and absorbed rather than transmitted in straight lines.

**Unclassified Roads.** Roads on National Forest System lands that are not managed as part of the forest transportation system, such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail; and those roads that were once under permit or other authorization and were not decommissioned upon the termination of the authorization (36 CFR 212.1, FSM

7705 – Transportation System). Unclassified roads are categorized into two types and recorded in the SYSTEM linear event. The two types are:

UND – UNDETERMINED – Roads where long term purpose and need has yet to be determined

NOT – NOT NEEDED – Roads not needed for long term management of national forest resources as determined through an appropriate planning document.

**Upland Habitat.** Habitat located outside of riparian areas or wetlands. Soils are not saturated throughout the growing season.

**Utility and Transportation Corridors.** A strip of land, up to approximately 600 feet in width, designated for the transportation of energy, commodities, and communications by railroad, State highway, electrical power transmission (66 KV and above), oil and gas and coal slurry pipelines 10 inches in diameter or larger, and telecommunication cable and electronic sites for interstate use. Transportation of minor amounts of power for short distances, such as short feeder lines from small power projects including geothermal or wind, or to serve customer service substations along the line, are not to be treated within the Forest Plan effort.

**Vegetation Management or Manipulation.** Activities designed primarily to promote the health of forest vegetation for multiple-use purposes.

**Vegetation Type.** A plant community with distinguishable characteristics.

**Vertebrate.** Species having a backbone or spinal column.

**Viable Population.** A number of individuals of a species sufficient to ensure the long-term existence of the species in natural, self-sustaining populations adequately distributed throughout their region.

**Viability.** The ability of a population or species to exist over the long-term in natural, self-sustaining populations distributed throughout their region.

**Water Quality Limited Segment (WQLS).** A stream or segment of a stream which has been listed by the State as water quality limited for one or more parameters such as temperature, sediment, contaminants, etc. Required by section 303(d) of the Clean Water Act.

**Water Quality Limited Stream (WQLS).** Water bodies (or segments of water bodies) listed by EPA as not meeting State water quality standards. They are to be monitored to determine if water quality standards are, or are not, being met. On those not meeting standards, TMDLs may be assigned.

**Water Table.** The upper surface of groundwater. Below it, the soil is saturated with water.

**Water Uses.** The status of water uses subject to State water laws that is used to determine the water uses and legal status of waters on the National Forests.

**Water Yield.** The run-off from a watershed, including groundwater outflow.

**Watershed.** The entire region drained by a waterway (or into a lake or reservoir). More specifically, a watershed is an area of land above a given point on a stream that contributes water to the stream flow at that point.

**Wet Areas.** Often referred to as "moist sites," they are very important components of elk summer range. These sites, often occurring at the heads of drainages, may be wet sedge meadows, bogs, or seeps.

**Wetland.** Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (USACE, 1987). Wetlands are mapped based on hydrologic indicators, hydric soils, and hydrophytic vegetation that are characteristic and indicative of frequently wetted areas.

**Wetlands.** Areas that are permanently wet or are intermittently covered with water.

**Wilderness (Wilderness Area).** Undeveloped federal land retaining its primeval character, without permanent human habitation or improvements; It is protected and managed to preserve its natural condition. Wilderness Areas are designated by Congress.

**Wildland Fire.** Any non-structure fire, other than agency- ignited Prescribed Fire, which occurs in the wildland. This includes Wildland Fire Use and Unwanted Wildland Fire.

**Wildland Fire Use.** The management of naturally ignited wildland fires to accomplish specific, prestated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

**Wildland/Urban Interface.** The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. The area where humans and their development meet or intermingle with undeveloped wildland or vegetative fuels.

**Wildlife and Fish User Days (WFUD).** A 12-hour day in which a person participates in a wildlife or fish-related recreation activity that used to determine the annual use of wildlife and fish resources by recreationists on the National Forests.

**Wildlife Habitat Diversity.** The distribution and abundance of different plant and animal communities and species within a specific area.

**Windthrow.** Trees that have been uprooted by the wind.

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