GALLATIN NATIONAL FOREST
TRAVEL MANAGEMENT PLAN
Record of Decision

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I. Introduction

Over the past 4 years the United States Forest Service has developed and analyzed seven (7) alternatives for managing public access and travel within the Gallatin National Forest, Montana. After careful consideration of the impacts of the alternatives disclosed in the Final Environmental Impact Statement (FEIS), dated October 2006, I have selected Alternative 7-Modified, with certain exceptions, as the Travel Management Plan for the Forest. My decision is fully described in detail within the accompanying document titled "Detailed Description of the Decision". In summary, this alternative can be described as follows:

The total amount of public open system road would remain generally unchanged (approx. 740 miles), however there would be a shift of about 10% of this system from road currently only suitable for high clearance vehicles to road that would accommodate passenger cars. Currently about 315 miles of road are considered suitable for passenger cars, and under Alternative 7-M it would increase to 400 miles. This alternative also includes objectives to close and restore non-system and user-built roads.

ATV opportunities provided on trails would be reduced from 281 miles to 143 miles (about 50%) and motorcycle opportunities on trails would be reduced from 458 miles to 278 miles (about 40%). In general, the reduction in trail opportunity would be shifted to and managed for on administrative and backcountry roads. Currently, many trails (outside of Wilderness) are shared between motorized and non-motorized users.

The amount of area open to snowmobile use (outside of Wilderness) would decrease from about 84% of the Forest to about 55%. In contrast, the miles of marked and groomed trail would rise about 20% from the current situation.

Stock use would generally be allowed on and off-trail across the Forest although some seasonal and yearlong restrictions would be applied to specific trails. Alternative 7-M would not include the blanket spring restrictions proposed in Alternative 7 of the DEIS.

There would be some restrictions on mountain bikes on trails outside of Wilderness, primarily in the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area and on short routes leading into Wilderness. The trails in Hyalite Creek and the East Fork of Hyalite Creek would remain open to bicycles. Hiking and cross-country skiing would not be restricted.

Alternative 7-M includes Forest-wide and area-specific goals, objectives, standards and guidelines (programmatic direction) and would amend the Forest Plan to replace current direction relative to travel management. In addition to the proposed programmatic direction, travel management under Alternative 7-M would follow current direction applicable to the management of grizzly bear and lynx. At the time of this decision, the applicable direction for the grizzly bear is based on USFWS 1996 Biological Opinion (BO), Gallatin Forest Plan Amendment 19, the 2004 BO for the Forest Plan outside the recovery zone, and a Memorandum of Understanding (MOU) and Conservation Strategy (ICST 2003:12-13). The applicable direction for the lynx is based on the Canada Lynx Conservation Agreement (2005).

Appendix C of the FEIS provides a general comparison of how Alternative 7-M differs from Alternative 7 of the DEIS.

II. Background

The Gallatin National Forest's road and trail system was created over time; influenced by a number of factors including land ownership patterns, use of Forest resources, legislation, recreation demand and changes in public attitudes. Public recreation use of this system has grown significantly and the types of uses enjoyed are more varied than they were 20, 50 and 100 years ago. There was no grand plan that led to the development of roads and trails nor the types of uses we see on them today. It is a reflection of the needs and desires of our culture throughout the history of the Forest.

Much of the Forest, outside of what is currently Wilderness, was and is in a checkerboard ownership pattern with alternating sections of public and private land. These private inholdings originated as part of the construction grants that Congress made to the Northern Pacific Railway Company in the late 1800s and early 1900s. Other private inholdings exist due to patented mining claims and tracts acquired through the 1906 Forest Homestead Act.

From the mid-1880s to 1910, the prominent uses of the Forest and private inholdings were for timber harvest (railroad tie hacking), livestock grazing, and mineral extraction. Along with this came the need for road and trail access, particular in the more accessible portions of tributaries to the Gallatin and Yellowstone Rivers and in the Hebgen Lake Basin area. Automobiles were first permitted in Yellowstone National Park in 1915 and this led to additional recreation use along access routes to the Park. From about 1910 to 1930, dude ranches became common further adding to the development and use of the trail system. During the 1930s, the concepts of "wilderness" or "primitive" areas began to emerge. This led to the establishment of the Spanish Peaks, the Absaroka, and the Beartooth Primitive Areas. The post-WWII era saw increased demands for wood products and this coupled with advances in machinery led to pressure for more rapid development of road systems into undeveloped forested backcountry. Railroad land and other private inholdings were being harvested and this required road systems to be developed across the checkerboard National Forest lands. The cost-share road construction program began and continued into the 1980s. In the 1950s, grazing was declining and outfitter-guide operations for big game hunting began to expand. Horse travel in the backcountry grew accordingly. Development for timber harvest continued but public interest in the protection of other non-commodity resources and preservation of undeveloped land grew in the 1960s. This decade brought the passage of the Multiple Use-Sustained Yield Act, the Wilderness Act and the National Environmental Policy Act. Throughout the 1970s and 1980s, timber harvest on the Gallatin National Forest became more and more controversial, while recreation use of the trail system continued to grow. The Absaroka-Beartooth Wilderness was established in 1978 and the Lee Metcalf Wilderness was established in 1983, providing a permanent prohibition on mechanized use or development in these areas. Snowmobiling became popular, particularly in the West Yellowstone area, during the 1970s and use levels have grown to this day.

Up until the 1980s, public recreation use and travel on the Gallatin National Forest was not considered something that required much management control. It was not controversial and National Forest System lands and resources seemed capable of handling the variety of uses

enjoyed by the public, including off-route vehicle use. Since that time, increasing demand, new information on the potential effects to resources and diverse personal value sets have brought more attention and concern as to how the public uses the Forest. There has never been a comprehensive analysis or management plan for travel on the Gallatin National Forest. The Forest Service believes that the demand for recreation opportunities may now be reaching the point of exceeding the capability of the land to provide them. A Travel Management Plan is needed to effectively offer a variety of quality recreation opportunities consistent with achieving management goals and objectives for other resources.

III. Purpose and Need for Action

Need for a Gallatin National Forest Travel Management Plan

In general, the road and trail system and recreation use on the Gallatin National Forest has evolved incrementally over many decades based on site-specific demands and capabilities. There has never been a comprehensive evaluation on whether it is the best way to provide for these demands in conjunction with other resource uses and land stewardship needs. Due to the trends in recreation use and travel on the Forest, the acquisition of new land into public ownership, and the many resource and environmental protection issues that have emerged, it is appropriate for the Gallatin National Forest to develop a travel management plan.

Recreation and Travel Trends

Use of Gallatin Forest roads and trails has changed substantially since the Forest Plan was signed in 1987. Hiking, fishing and wildlife viewing activities have increased substantially. Use of snowmobiles and ATVs has grown in popularity. The Forest is the destination for thousands of snowmobiling visitors, particularly near Cooke City and West Yellowstone. ATVs, while rare in 1987, have become common on many Forest roads and trails. Providing opportunities for mountain bike use was not considered 15 years ago, but has evolved into a popular sport today. Trail and backcountry skiing have also increased. Past incremental management changes that the Forest has made have been insufficient to address changes in the types of use and their effects on Forest resources and recreational opportunities and experiences.

Montana/North Dakota Statewide OHV Decision

In January 2001, the Regional Forester signed a decision that bans cross-country summer motorized travel. The decision amended all Montana National Forest Plans and *"established a new standard that restricts yearlong, wheeled vehicle motorized cross country travel where it is not already restricted."* This is a major change in the way the Forest has been managed. Previously areas were open to motorized use, that is, vehicles were not restricted to roads or trails. The Regional Forester decision also directs each Forest to do site-specific planning that will result in the designation of roads and trails for their appropriate uses. The Gallatin National Forest must now enter that phase of site specific travel planning that will lead to a decision of designating the uses of all system roads and trails.

Land Acquisition

Over the last ten years, the Gallatin National Forest has acquired more than 140,000 acres of land. Much of it has been heavily harvested and includes an estimated 700 miles of roads that were constructed at a low standard. Most of these roads have been open to the public, even while in private ownership. Low standard roads and high open road density can have detrimental impacts on soils, water quality, fish and wildlife habitat. Many of the trails on these acquired lands are also in disrepair. Travel planning is needed to determine the appropriate management for these routes and to identify excess routes that should be closed and rehabilitated.

Court Order on Montana Wilderness Study Areas

In May of 2001, the U.S. District Court of Montana ruled on a lawsuit brought against the Forest Service by three environmental groups challenging the management of lands designated for further Wilderness study under the Montana Wilderness Study Act (MWSA) (CV-96-152-M-DWM). The court ruling directed the Forest Service to prepare an assessment of the current Wilderness character of these study areas in comparison to that which existed in 1977 when the Act was passed. The Gallatin National Forest contains the Hyalite Porcupine Buffalo Horn Wilderness Study Area (HPBH WSA) that is located within the Gallatin Mountain Range. The Act did not preclude a continuation of the types of recreation activities that were occurring in 1977, including motorized use of the trails, but the court found that the Forest Service could not establish that the pre-existing Wilderness character was being maintained. The types of motorized/mechanized trail vehicles have changed since that time. Travel planning is needed to determine the types and location of uses that can be managed for within the HPBH WSA that would be consistent with the Montana Wilderness Study Act.

Grizzly Bear Recovery Zone

The grizzly bear recovery zone encompasses 300,000 acres in the southern portion of the Gallatin Forest surrounding Yellowstone National Park. Current Forest Plan direction for the recovery zone is to maintain secure areas free of motorized access routes and open and total motorized access route density in the remainder of the recovery area at the 1995 level. Travel planning is needed to meet this direction and to evaluate whether changes in motorized routes are needed in grizzly bear habitat.

Cutthroat Trout Conservation Strategy and Agreements

Westslope and Yellowstone cutthroat trout have a limited distribution on the Gallatin Forest. These are “sensitive species” for which statewide conservation strategies and agreements have been written. The strategies contain guidelines that are to be followed to assure that management activities will not degrade habitat in drainages containing westslope or Yellowstone cutthroat trout populations. Roads and trails, and associated construction, maintenance and use can produce sediment that enters streams, adversely affecting fish spawning habitat; roads and trails may also directly modify stream channels thereby degrading or fragmenting aquatic habitat. Travel planning is needed to assess and correct any unacceptable effects that public travel, or roads and trails may be having in drainages that contain populations of cutthroat trout.

Lynx Amendment

The Canada lynx was listed as a threatened species under the Endangered Species Act in March 2000. Lynx have been documented, historically and currently, throughout the Rocky Mountains of Montana. The effects to lynx has been identified as an issue as it relates to the existing transportation plan and proposed Travel Plan alternatives. The LCAS (Ruediger et al. 2000) developed standards and guidelines based on identified risk factors that may affect lynx productivity, mortality, and movement and dispersal. Lynx are specially adapted physically to survive in deep soft snow regions such as the higher elevations in the northern Rocky Mountains, where they utilize snowshoe hare as their primary prey. One risk factor suggests that outside of deep snow areas, generalist predators may exclude lynx through effective competition for food resources. There is a concern that compacted snow routes allow these other predators access up into areas that are normally the exclusive winter range of the lynx. Travel planning is needed to assess and correct any unacceptable effects groomed and marked snowmobile and ski routes (as well as areas open to snowmobiles) may have on lynx and lynx habitat. Directions for evaluating federal actions relative to lynx habitat are provided in the LCAS per the Conservation Agreement between the US Forest Service and the US Fish and Wildlife Service USDI 2005.

National OHV Regulation

Since the publication of the Gallatin National Forest Travel Management Plan DEIS, the Forest Service promulgated new regulations governing OHV use throughout the National Forest System. These regulations mandate individual Forests to complete travel plan analysis within 4 years and designate the roads and trails where OHV use will be allowed [USDA Forest Service, 2005. Travel Management; Designated Routes and Areas for Motorized Use (36 CFR 212, 251, 261)].

Other Resources

Other resources such as soils, riparian areas, designated Wilderness and big game winter range can also be sensitive to human travel within the Forest. A comprehensive evaluation through travel planning is needed to determine whether the various uses may be having unacceptable adverse effects on a variety of resources and whether adjustments in management should be made.

Need For Forest Plan Amendments

There are numerous existing Gallatin Forest Plan standards and guidelines applicable to roads, trails and travel management that are proposed to be removed in lieu of direction that would be established in a Travel Management Plan. These standards and guidelines are listed in Appendix A of the FEIS and Chapter III of the document, “Detailed Description of the Alternatives.” In general, the current Forest Plan direction is outdated, does not really provide limitations on management activities, is open to misinterpretation or could be in conflict with the concept of establishing TPA and route-by-route management direction. The specific reasons for amending each of these standards is outlined in Appendix A of the FEIS.

Purpose for a Gallatin National Forest Travel Management Plan

The purpose for the proposed Gallatin National Forest Travel Management Plan is to:

1. Provide for public access and recreation travel on the Gallatin National Forest considering both the quantity and quality of opportunities provided.
2. Bring area, road and trail use into compliance with laws, regulations, and other higher-level management direction.
3. Establish objectives and/or restrictions to correct any unacceptable resource damage that is occurring due to the use of Forest roads, trails and areas open to cross-country travel.
4. Provide for public understanding of the types of use and season of use allowed for each road and trail.
5. Remove outdated, ineffective, and/or unclear existing Forest Plan standards and other direction applicable to road and trail management.
6. Identify administrative access routes to facilitate management of a variety of resources on the Gallatin National Forest.

IV. Proposed Action

The U.S. Forest Service, Gallatin National Forest, proposed to adopt a management plan for public access and travel within the Gallatin National Forest in August of 2002 with the release of what was called the "Starting Benchmark". The Starting Benchmark represented one option for managing travel. Based on early analysis of this alternative and the public comments received, six alternatives were developed as possible travel management plans. These were presented for public comment in the fall of 2003. Each alternative identified and established possible opportunities for public recreation use and access using the Forest's road and trail system. For each road and trail, they specified the types of uses that would be allowed and managed for. Specified uses included passenger car pleasure driving, high clearance and off-road vehicle use, ATV use, motorcycle use, bicycling, horseback riding, snowmobiling, hiking, skiing and snowshoeing. The areas to be open to snowmobile use were also addressed. In addition, five of the alternatives established possible goals, objectives and standards that would provide guidance for future management activities related to public access and travel and would amend the Gallatin Forest Plan to remove a number of existing standards.

The alternatives varied in terms of the amount of use restrictions (particularly motorized use) in order to achieve a reasonable range that would sharply define the issues to consider and provide a basis for comparison. At the least restrictive end of the range was Alternative 1, which would allow travel as it was on the Forest's 1999 Recreation Visitor Map. This alternative would allow off-route motorized travel where it wasn't otherwise restricted in 1999. Alternative 6 was developed to represent the more restrictive end of the range. It largely restricted wheeled motorized vehicle use to the existing road system. Alternatives 2, 3, 4 and 5 fell within this range and were incrementally more restrictive on public travel. Alternative 4 closely represented the Starting Benchmark.

Prior to completing the Draft Environmental Impact Statement (DEIS), a seventh alternative was developed, Alternative 7, which represented the Forest Service preferred alternative at the time. This alternative was included and studied in detail within the DEIS and was presented for public comment in February of 2005. Based on the comments received and additional analysis,

Alternative 7 became Alternative 7-Modified in the FEIS. Both Alternatives 7 and Alternative 7-Modified fell within the range of alternatives established by Alternatives 1 through 6.

Alternatives 3 and 7-M included an objective (Forest-wide Objective A-6) to consider proposals to authorize locations for landing/take-off of backcountry aircraft (airplanes and helicopters). Landing/take-off locations that are authorized would be constructed and maintained by site users. Proposals would be processed in accordance with regulations for occupancy and use of National Forest System lands. Use would be regulated by special use authorization Future site-specific analysis under NEPA would be required before any sites are approved, constructed or permitted for landing and take-off.

Under Alternative 7-Modified, a proposed standard (Standard A-7) was included that would facilitate enforcement of unauthorized landings of recreational aircraft outside of designated landing strips by providing direction to implement a special order closure under 36 CFR 261.58 (y). This order would allow the Forest Service to enforce current FAA regulations that prohibit the landing of recreational aircraft (except at designated sites) on National Forest Lands.

For a more detailed description of the proposed action refer to Chapter 1 of the FEIS, pages 1-3 through 1-8.

In conjunction with the proposed actions described above the Forest developed a monitoring plan that, over time, will:

- Facilitate the gathering of information to periodically evaluate progress toward meeting the established goals and objectives of the Travel Management Plan and whether implementation is occurring as prescribed.
- Facilitate the gathering of information to periodically assess whether the actual effects of the Travel Management Plan are consistent with those predicted in this EIS, and if not, to help determine what, if anything, should be changed in the Travel Management Plan to correct any problems.

The monitoring plan is described in Appendix B of the FEIS.

V. Decision and Reasons for the Decision

A. Decision Criteria

In making my decision for a Gallatin National Forest Travel Management Plan I focused on the following criteria:

1. **Summer Recreation Opportunities.** The degree to which the alternative provides well-distributed opportunities for both OHV's and exclusive, quiet non-motorized uses of the Gallatin National Forest trail system outside of Wilderness.

- Does the alternative provide opportunities for half-day and evening ATV and/or motorcycle trail rides within a reasonable travel distance from area communities?

- Does the alternative provide opportunities for half-day and evening hiking, horseback riding and mountain biking in a non-motorized setting within a reasonable travel distance from area communities?
- Does the alternative provide opportunities for longer full-day or overnight ATV and/or motorcycle rides on the Forest trail system?
- Does the alternative provide opportunities for ATV and/or motorcycle rides to recreational destinations such as lakes, peaks, or vistas?
- Does the alternative provide opportunities for hiking, horseback riding and mountain biking in a non-motorized setting to recreational destinations such as lakes, peaks, or vistas?
- Does the alternative provide a forest-wide mix of motorized opportunities and quiet, exclusive non-motorized opportunities?

2. **Winter Recreation Opportunities.** The degree to which the alternative provides well-distributed opportunities for both snowmobiling and exclusive, quiet non-motorized cross-country skiing and snow-shoeing on the Gallatin National Forest.

- Does the alternative provide groomed and marked snowmobile opportunities for half-day and full-day rides in a variety of settings?
- Does the alternative provide groomed and marked cross-country ski and snowshoeing opportunities that accommodate all skill levels in quiet non-motorized settings? Are opportunities provided within a 30 mile drive of each area community?
- Does the alternative continue to provide adequate snowmobile opportunities in areas that have been historically popular for that use?
- Does the alternative provide a forest-wide mix of snowmobiling opportunities and cross-country skiing opportunities in a non-motorized setting?

3. **Resource Protection.** The degree to which the alternative is consistent with achieving desired conditions for other resources, particularly wildlife populations that are affected by human use?

- Is the alternative consistent with laws, regulations, policy, the Forest Plan, and other higher level direction applicable to managing other resources?
- Is the alternative consistent with existing or anticipated conservation strategies for grizzly bear, lynx, wolverine and/or other species?
- Do the predicted effects of the alternative fall within accepted parameters or identified thresholds of maintenance and protection that are supported by research or monitoring information?

4. **Implementation Capability and Enforceability.** The degree to which the alternative is logistically and financially feasible to implement and enforce given budget and staffing expectations for the next 10 to 15 year period.

B. Decision

After careful consideration of the impacts of the alternatives disclosed in the Final Environmental Impact Statement (October 2006), I have selected Alternative 7-Modified, with certain exceptions as described below, as the Travel Management Plan for the Gallatin National Forest. My decision is fully described in detail within the accompanying document titled "Detailed Description of the Decision" and the three maps that display how travel will be managed across the Forest.[1] In summary, my decision can be described as follows:

The total amount of public open system road will remain generally unchanged from the current situation (approx. 740 miles), however there will be a shift of about 10% of this system from road currently only suitable for high clearance vehicles to road that will accommodate passenger cars. Currently about 315 miles of road are considered suitable for passenger cars, and under Alternative 7-M it will increase to 400 miles. My decision also includes objectives to close and restore non-system and user-built roads.

ATV opportunities provided on trails will be reduced from 281 miles (current situation) to 143 miles (about 50%) and motorcycle opportunities on trails will be reduced from 458 miles to 278 miles (about 40%). In general, the reduction in trail opportunity will be shifted to and managed for on administrative and backcountry roads. Currently, many trails (outside of Wilderness) are shared between motorized and non-motorized users.

The amount of area open to snowmobile use (outside of Wilderness) will decrease from about 84% of the Forest currently to about 55%. In contrast, the miles of marked and groomed trail will rise about 20% from the current situation.[2]

Stock use will generally be allowed on and off-trail across the Forest although some seasonal and yearlong restrictions will be applied to specific trails. My decision will not include the blanket spring restrictions proposed in Alternative 7 of the DEIS.

There will be some restrictions on mountain bikes on trails outside of Wilderness, primarily in the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area, the Crazy Mountains and on short routes leading into Wilderness. The trails in Hyalite Creek and the East Fork of Hyalite Creek will remain open to bicycles.

Hiking and cross-country skiing will not be restricted.

My decision includes Forest-wide and area-specific goals, objectives, standards and guidelines (programmatic direction) and will amend the Forest Plan to remove current direction relative to

[1]The Travel Plan Decision identifies the route corridors where various modes of travel are allowed or prohibited, and any seasonal restrictions that may apply. The specific location of a road or trail may not be exactly as shown on the maps. In addition, the route tables provided for each travel planning area depict whether a use would be prohibited (P), allowed (A), or emphasized (E). The distinction of whether a use is allowed or whether it would be an emphasis is not part of the decision documented in this ROD but is provided for information. In either case the use is permitted. If a use is identified as emphasized (E) on a road or trail it is an indication that the Forest Service believes that it is a good opportunity and will manage the route for that use. If the use is identified as allowed (A), the use is permitted but the Forest Service would not actively manage for it. One example would be the opportunity to ride a horse on the paved Hyalite road. The use is allowed but would not be managed for. The emphasized use for this road would be passenger car travel. Note that where wheeled motorized vehicle travel is permitted it is always identified as an emphasized use (E).

[2] Although the maps show both marked and groomed ski trails, the Travel Plan decision does not distinguish between the two.

travel management. In addition to the proposed programmatic direction, travel management under my decision will follow current direction applicable to the management of grizzly bear and lynx. At the time of this decision, the applicable direction for the grizzly bear is based on USFWS 1996 Biological Opinion (BO), Gallatin Forest Plan Amendment 19, the 2004 BO for the Forest Plan outside the recovery zone, and a Memorandum of Understanding (MOU) and Conservation Strategy (ICST 2003:12-13). The applicable direction for the lynx is based on the Canada Lynx Conservation Agreement (2005).

Tables 1 and 2 provide a summary of the opportunities that would be provided Forest-wide under my decision.

Table 1. Summary of Summer Opportunities by Miles – (all mileages are approximate).

Recreation Opportunity	Pleasure Driving	Backcountry Roads (4x4)	ATV	Motorcycle	Mountain Bike (Use Emphasized)	Mountain Bike (Use Allowed)	Pack and Saddle Stock (Use Emphasized)	Pack and Saddle Stock (Use Allowed)	Hiking (Use Emphasized)
Miles of Road	402	337	411	17	554	1,357	-	-	-
Miles of Trail	-	-	143	278	769	397	1,747	347**	2,004*
Total Miles	402	337	554	295	1,323	1,754	1,747	347**	2,004

*Use for this activity is not prohibited on any trails; use is either emphasized or allowed.
** Use for this activity is prohibited on some trails.

Table 2. Summary of Winter Opportunities in Miles – (all mileages are approximate).

Recreation Opportunity	Pleasure Driving (Plowed Road)	Snowmobiling	Cross-country Skiing
Miles of Plowed Road	169	-	-
Miles of Groomed Trail	-	346	57
Miles of Marked Trail	-	122	174
Total Miles	169	468	231

Differences in My Decision from Alternative 7-Modified

Although the FEIS for the Travel Management Plan is being distributed concurrently with this Record of Decision, the alternatives studied have been defined since about January of 2006. Since that time, I have re-evaluated the more difficult issues based on analysis and continued discussions with my staff. This re-evaluation has led me to different choices for the management of travel in certain areas from what was described for Alternative 7-M. These differences are described below.

Time Share

A number of public comments were received suggesting that we consider the concept of alternating use periods to address social problems (i.e. "user conflict) between motorized and non-motorized users, and between bikers and stock users/hikers on popular trails. For example, a trail could be managed as open to motorcycles on alternating days, alternating weeks, or even by the time of day. I've decided to apply this concept to the following trails to help meet my objective of providing more non-motorized opportunities near Bozeman:

- The Bridger Foothills Trail #534 from the "M" parking lot to the junction with Corbly Gulch Trail #544.
- The Sypes Canyon Trail #531.
- The Truman Gulch Trail #535.
- The Middle Cottonwood Trail #586.
- The Corbly Gulch Trail #544.
- The Hyalite #427 and East Fork of Hyalite #434 Trails.
- The Storm Castle Trail #185.

For the Sypes Canyon Trail and the southern end of the Bridger Foothills Trail I will look at a schedule that restricts mountain bikes to certain periods (i.e. provide opportunities for foot and horse travel in absence of bikes). For the other trails I will look at a schedule that restricts motorcycles and mountain bikes to certain periods (i.e. provide opportunities for foot and horse travel in absence of mechanized vehicles). I intend to work with various users over the next year to develop the specific schedules.

Hyalite Porcupine Buffalo Horn Wilderness Study Area

My decision differs from Alternative 7-M for travel planning areas that include portions of the Hyalite Porcupine Buffalo Horn Wilderness Study Area (WSA). To meet the requirements of the Montana Wilderness Study Act (i.e. to maintain the pre-existing Wilderness character as it was in 1977) I have limited the proliferation of snowmobile use in the WSA by geographically reconfiguring the approximate acres used by snowmobiles pre-1977 to a configuration of similar acreage that better matches areas snowmobilers told me were most desirable to them today. My decision concentrates snowmobile use in less than 12 % of the WSA while preserving a large portion of it in remote winter settings with ample opportunities for solitude and challenge.

In Alternative 7-M, I had also identified a new trail connector between Bear Lake and the West Pine Creek drainage. This trail was proposed as open to mountain bikes. In my decision this route would be restricted to foot and horse travel only, again to maintain consistency with direction for management on the Hyalite Porcupine Buffalo Horn Wilderness Study Area under the Montana Wilderness Study Act.

Bear Canyon Travel Planning Area

In Alternative 7-M an objective (Objective 4-1a) was included to "identify and implement seasonal motorized use restrictions on area roads and trails that allow for wildlife security during

key migration periods." In my decision I dropped this objective because the seasonal use restrictions have already been addressed through the decisions I made for each route within this Travel Planning Area.

Big Sky Travel Planning Area

Objective 3-1 for Alternative 7-M reads as follows in the FEIS: "Transfer road and trail easements to the Big Sky community at such time that it becomes an incorporated city." In my decision I modified this objective to remove the reference "at such time that it becomes an incorporated city." This implied a criterion to be met prior to transferring the easements to the Big Sky community. I have no such criterion. My objective is simply to transfer these easements when the opportunity arises.

Cherry Creek Travel Planning Area

In this Travel Planning Area, my decision prohibits motorcycles on the Cherry Creek Trail (#401), where such use would have been allowed under Alternative 7-M during the summer months. For the purposes of understanding the potential consequences of this change, my decision for this area parallels the route management of Alternatives 4, 5, and 6. It wasn't environmental effects however that led me to make this change. My reasons were social. Most trails in this Travel Planning Area lead into the Spanish Peaks Wilderness and therefore my decision designates them for non-mechanized uses. The Cherry Creek Trail is an exception in that it is a fairly long trail that stays out of designated Wilderness altogether. In my preferred alternative for the DEIS and again in the FEIS (Alternatives 7 and 7-M), I saw this as a motorcycle opportunity. However, after speaking with motorcyclists at open houses and in one-on-one meetings, I heard that this route had limited use. In contrast it had considerably more use with stock users and is a primary access route to additional trails that progress into the Wilderness. The trail system is also served by only one trailhead facility. By precluding motorcycle use of this trail, I create a more complete higher quality non-motorized experience for hikers and stock users in the Travel Planning Area. Managing this trail for non-motorized use is also compatible with the management of trails on the adjacent Beaverhead-Deerlodge National Forest.

Deer Creeks Travel Planning Area

The Tomato Can Gulch Trail will be open to motorcycles from Cherry Creek to the junction of Boone Peak Trail #2. This was an ATV Trail in Alt. 7 and was mistakenly dropped as a motorcycle route for Alternative 7-M when I actually only wanted to remove the ATVs because it was too short and a dead end trail. Motorcycles have other connections.

The Iron Mountain road systems including Lower Wepler, Evergreen, Iron Mountain, Desolation Pt., etc. would be dual designated for ATVs. These are feeders to the Iron Mountain Road which was dual designated in Alternative 7-M. It only makes sense and there are no safety concerns.

The upper Derby Gulch road systems will be dual designated for the same reasons as above.

The connector route between Tie Cutter Gulch and the Derby Mountain Trail (NW quarter of Sec. 30) will be added as an ATV trail. This was a map oversight and it is intended to be the connection between two ATV loop systems.

East Boulder Travel Planning Area

From Moccasin Lake southwest to the Custer National Forest Divide the Dry Fork Trail #13 would be closed to motorcycles. This was a map error in Alternative 7-M. The Custer Forest wanted to keep their side closed to motorized use.

Hebgen Basin Travel Planning Area

In my decision I've adopted the snowmobile area closure in the Cougar/Duck Creek area (as shown for Alternatives 5 and 6) to protect wintering wildlife. This area closure includes lands recently purchased in the Duck Creek Land Acquisition.

Hyalite Travel Planning Area

My decision will allow winter plowing of the Hyalite Road to the Blackmore day use area. To what extent plowing will be done will be dependent on funding. If enough funding is not raised to plow to the Blackmore area; then Plan B would be to plow to the Langohr Campground; and Plan C would be to plow to the lowest fishing access where it currently is plowed. During the winter, the Hyalite area will be managed primarily to provide for non-motorized recreation opportunities, however, after discussions with the snowmobile and ice climbing community, I have decided to designate a snowmobile trail to the Grotto Falls Trailhead and I've also included the short leg from this route to the Window Rock Cabin. Under Plan C above, both snowmobiles and non-motorized users would be allowed on the Hyalite Road to the Moser Creek Road (i.e. the point where the designated snowmobile route would begin). The main Hyalite Road would then be managed as a ski trail south of the Moser junction.

Re-analysis of the lynx analysis unit in this area allowed me to include in my decision the proposed designated cross-country ski trail connecting Moser Creek to Bozeman Creek.

Ibex Travel Planning Area

The Horse Creek Tie Trail (#269) between the Porcupine-Lowline Trail and the Cottonwood Trailhead was shown on the Alternative 7-M map as being prohibited to motorcycles and the route tables showed motorcycles as being allowed. This was a map error. Motorcycles will be allowed on this route in my decision from June 16 to September 4 annually.

Lionhead Travel Planning Area

Alternative 7-M would allow snowmobile use in a portion of the Lionhead recommended wilderness area. In my decision I have chosen to prohibit it because I believe that if we found through the Gallatin Forest Plan, that the highest and best use of this area is wilderness then we should be managing travel consistent with that determination. Using this same logic I also believe that mountain bikes should be prohibited in the recommended wilderness. However we made a mistake in the alternatives we presented for public comment in that none of them would

have precluded mountain bikes on trails within this area. While we corrected this oversight by modifying Alternative 6 in the FEIS, I still don't believe that it would be appropriate to make a decision to prohibit mountain bikes without first providing a public comment opportunity. Instead, it is my intent to propose a modification to the Travel Plan to preclude this use, allow for public comment, and then make a decision within the next year or so.

Mill Creek

The Alternative 7-M map shows that the Wicked Creek Road and Snowbank Road would be open to 4x4s. This was a map error and should only be shown as open to ATVs and motorcycles. It's corrected on the decision map.

Shields Travel Planning Area

The Bitter Creek Road has been changed from a 4x4 route to an ATV/motorcycle trail. The ATV routes in the Bitter Creek area have been reconfigured somewhat to drop the high elevation routes close to the ridge to low elevation routes as a substitute. This reconfiguration also consolidates motorized travel routes from the Smith Creek area to the Lewis and Clark National Forest. I believe that this change will help deter potential violations of use restrictions on other routes near the ridge. In addition, this reconfiguration will provide consistency with the Lewis and Clark National Forest.

My decision drops the 4x4 route on the upper E. Fork of Smith Road within the Lodgepole drainage leaving it open to ATV and motorcycle travel. This is a route that has been closed but was proposed for 4x4 travel in Alts. 3 through 7-M. I have now precluded 4x4s on this road to maintain a popular ATV/motorcycle route that connects with similar routes on the Lewis and Clark National Forest. By prohibiting 4x4s a dual use (4x4s and ATVs/motorcycles) road situation is avoided.

The two ATV connectors to the Lewis and Clark National Forest from the East Fork Smith Creek Road system were mapped incorrectly on the Alternative 7-M map and have been adjusted on my decision map.

My decision provides a parallel motorcycle route next to the Sunlight trail that allows for a separation of motorcycle travel from stock use. The facilities already exist so I saw this as an opportunity to reduce potential conflict.

My decision designates a new route for section 6 into the private land in section 5. This is a route that provides an alternative egress for private landowners in case of emergency. Opening this route is dependant on the landowners forming a Road Users Association to cooperate with the Forest Service on management of the road.

West Bridger South

My decision prohibits stock on Trails 511, 512 and 513 to the "M." I view these routes as being similar to urban park trails and therefore I believe they should be pedestrian only trails. Stock will still be able to use the Bridger Foothills Trail #534 to access the southern end of the Bridger Range.

C. Reasons for the Decision

General Rationale

In making my decision for a Gallatin National Forest Travel Management Plan there was a variety of reasons I had for making choices within specific travel planning areas and for specific routes. However, from a broad forest-wide perspective, I was guided by the following:

1. **Summer Recreation Opportunities.** In my decision, one of my objectives was to provide well-distributed opportunities for both OHV's and exclusive non-motorized uses of the Gallatin National Forest trail system outside of Wilderness. In reviewing public comments, particularly from those whom regularly recreate on the Forest, I heard that: (a) Motorized users desired half-day and evening ATV and/or motorcycle trail rides within a reasonable travel distance from area communities. (b) Non-motorized users also desired half-day and evening hiking, horseback riding and mountain biking opportunities in a non-motorized setting within a reasonable travel distance from area communities. Both user groups also desired opportunities for longer trips and for trips to recreational destinations such as lakes, peaks or vistas. Public comment has informed me that trails open to motorized use do not also provide the type of experience most non-motorized users are looking for. They also indicate that roads do not provide the experience most motorcyclists are looking for. Therefore, in my decision I attempted to provide a mix of non-motorized trail opportunities, motorized opportunities for beginner and intermediate skill levels (i.e. ATV and motorcycle opportunities on roads and some trails), and more challenging motorcycle opportunities on single track trails.

My decision does result in a reduction of motorized use opportunities over the current situation. This reduction is largely based on several studies that consistently show that participation in non-motorized activity exceeds that of motorized activity (see the FEIS, pages 3-420 through 3-428). The number of participants driving off-road by 2010 in the Rockies is projected to be 3,270,000 (FEIS, page 3-426). The number of participants biking, hiking and pursuing non-consumptive wildlife viewing activities projected for 2010 in the Rockies is 22,535,000 (id.). The number of days that recreationists are projected to spend hiking, biking or participating in non-consumptive wildlife viewing activities in the Rockies in 2010 is estimated at over 1,000,000,000 days (id.). The number of days people spend participating in non-consumptive wildlife viewing activities alone is projected to exceed 740,000,000 days by 2010 (id.). The number of days recreationists are projected to participate in off-road driving in 2010 in the Rockies is estimated at over 64,000,000 (id.). Of these activities, non-consumptive wildlife viewing activities are projected to have the fastest growth of all dispersed recreation activities studied in the Rockies; nearly 50% by 2020 (id.). These recreation use projections would indicate that the largest future demand for supply of recreation opportunities would be for activities that typically occur in non-motorized settings.

From the comments and discussions I've had throughout this process I know that many motorized users will strongly disagree with my decision. For some it's a matter of principle, but in terms of the motorized opportunity provided I believe that my decision responds well to current and projected uses. Broad forest-wide comparisons using total miles or acres available often don't give an accurate picture. My objectives to increase the amount of non-motorized setting and respond to other resource issues are largely accomplished by bringing motorized use

under greater management control rather than attempting to limit the amount of use. For example, the opportunities for pleasure driving and use of ATVs on managed routes actually increase over the current situation. Pleasure driving increases due to planned improvements of some of the existing road system. ATV opportunity increases by converting parts of the old road system to ATV trails. Significant improvements in the ATV trail system will be established in the roaded portion of the Gallatin Range, the Shields drainage in the Crazies, the South Plateau and Henrys Mountains, Cooke City, Buck Ridge, Deer Creeks, and in the Mill Creek area. The focus is on creating loops and connected routes to increase the total mileage of riding available within a given area. While my decision reduces the amount of single-track motorcycle routes by 40%, the bulk of this reduction is really a shift to routes shared with ATVs.

My decision also implements a time-share approach on several trails near Bozeman that will provide specified periods for hikers and stock users to use those trails at times where motorized use, and in some cases mountain bike use, is restricted.

Providing opportunities to reach destinations, such as lakes, peaks or vistas, was more difficult for motorized uses than it was for foot and horse use. Mostly this is because these destinations fall within designated Wilderness where mechanized use is prohibited. This is why, in my decision, I believed it was important to retain the summer motorized use opportunities in the Cooke City Travel Planning Area similar to what exists today, and to provide higher elevation motorcycle trail opportunities in the Bridger, Crazy (i.e. Rock Creek Lake) and Gallatin Mountain Ranges.

2. **Winter Recreation Opportunities.** Similar to summer uses I also had an objective to provide well-distributed opportunities for both snowmobiling and exclusive cross-country skiing and snow-shoeing in non-motorized settings. Again, public comments indicated that there was a need for both. Accessibility, terrain and snow conditions, in addition to resource issues, were greater factors in identifying winter use opportunities than was proximity to area communities.

For snowmobiling I wanted to maintain those opportunities that have been historically popular. I was sensitive to the importance of this activity by maintaining the current situation around the communities of West Yellowstone and Cooke City. I also tried to maintain opportunities for high-marking and other backcountry use in the southern Gallatin Mountain Range, the west slopes of the Crazy Mountains and the Fairy Lake Travel Planning Area. This is a shift from what I had included in my DEIS preferred alternative largely due to public comments informing me that I would be removing a unique and popular experience for the snowmobile community. The opportunity I've provided in my decision though is still more restrictive than it is currently due to other resource issues and my desire to provide opportunities for skiing and snowshoeing in non-motorized settings. Other issues influencing my decision included compliance with the Montana Wilderness Study Act, Forest Service policy on management of recommended wilderness areas, respect for the traditional values of the Crow Tribe in the Crazy Mountains, and protection of winter habitat for lynx and wolverine. Refer to Section D of this ROD for additional discussion on these issues.

For cross-country skiing it was my objective to increase the amount of opportunity provided closer to urban areas, especially around Bozeman. My decision still emphasizes family-oriented cross country skiing in the Hyalite drainage, but does provide a separate snowmobile route accessing the Grotto Falls Trailhead from the Moser Creek Road to accommodate ice climbers.

My decision will allow plowing of the main Hyalite Road to the Blackmore Day Use area and the area around the reservoir will be managed for cross country skiing. Public comments we received overwhelmingly supported the plowing of the Hyalite Road during the winter. My decision also emphasizes cross-country skiing on the east side of the Bridger Mountains from the Middle Fork of Brackett Creek south.

On the Livingston Ranger District my decision also creates some non-motorized winter opportunities on the west side of the Crazy Mountains (e.g. Sunlight Peak and South Fork Shields).

3. **Resource Protection.** A third objective I had was to bring existing and projected use levels to a point where they are consistent with achieving desired conditions for other resources. This included managing travel such that it is in compliance with laws, regulations, policy and other higher lever direction and insuring that anticipated effects fall within accepted parameters or identified thresholds of maintenance and protection that are supported by research or monitoring information. In general, this objective set the sideboards within which recreation opportunities (1 and 2 above) could be provided. In summary, travel opportunities were limited as follows:

- Within the Cabin Creek Recreation and Wildlife Management Area, ATV opportunities were limited to one designated route, the Oil Well Road, and motorcycle routes were limited to primary trails to be consistent with direction in the Lee Metcalf Wilderness Act applicable to this area.
- Within the recovery zone for the grizzly bear, summer motorized use was limited or reduced based on a Memorandum of Understanding (MOU) and a Conservation Agreement (CA) with the United States Fish and Wildlife Service (USFWS) (ICST 2003:12-13) and more specifically, the need to maintain or reduce open motorized route density and increase the amount of secure habitat to support recovery.
- Within the Lionhead recommended wilderness, motorized use was limited because I believe managing for such uses runs contrary to Forest Service Region 1 guidance to manage for uses consistent with wilderness values.
- Within the Ibex and East Crazies Travel Planning Areas, motorized use was restricted to protect the integrity of areas that are of traditional value to the Crow Tribe. The "checkerboard" land ownership pattern and the easements across private land that only allow foot and horseback travel in the East Crazies are the other reason for this restriction.
- Mechanized use was restricted on some trails leading into Wilderness to discourage encroachment into Wilderness.
- Elsewhere, summer motorized use was reduced or precluded either permanently or seasonally for facility protection; to reduce potential sedimentation of streams containing cutthroat trout; to preserve quality fall big game hunting; to maintain key wildlife movement routes; and to address private land in-holder concerns.
- Snowmobiling was configured in certain areas (e.g. the upper Bridgers and Gallatin Mountain Ranges) to protect winter habitat for mountain goat and wolverine.

As evidenced by much of the effects analysis disclosed in Chapter 3 of the FEIS, there is an inverse relationship between the level of human use of the Forest and the condition of other resources. For example, as motorized use increases, wildlife habitat security decreases.

Conversely, the more restrictions one places on recreation use of the Forest, the better it is for wildlife and other resources. In general, adverse environmental impacts were a major factor for me in not choosing Alternative 1. Impacts on biodiversity, cultural resources, grizzly bear, lynx and wolverine were also environmental factors in my decision not to choose Alternatives 2 through 4. Beyond that my decision was largely based on providing an appropriate mix of recreation opportunities and maintaining consistency with laws and other higher level direction. Refer to Section D of this ROD for additional discussion on how the issues influenced my decision.

4. **Implementation Capability and Enforceability.** The fourth objective I had was to identify an alternative that was logistically and financially feasible to implement and enforce given budget and staffing expectations for the next 10 to 15 year period. Based on analysis within the FEIS (see Chapter 3, "Transportation System Implementability") I found that, in terms of cost, my decision, as well as Alternatives 2 through 6, were reasonable to pursue. The projected costs of Alternative 1 would be dramatically higher, primarily due to the need to rebuild currently legal motorized trails to accommodate ATV travel.

For enforcement, I concluded from the analysis in Chapter 3 of the FEIS that Alternatives 4 through 7-M provided better motorized route configurations to improve the enforceability of restrictions whereas Alternatives 1 and 2 would be difficult. See the FEIS, pages 3-163 through 3-169 for a more detailed discussion.

I recognize that managing certain trails in the Bozeman area as time-share trails (see page 17) may be difficult to enforce. However it has worked elsewhere in the nation and it seems reasonable for me to try it here. I also expect users to help me in developing the schedules and in gaining compliance with them.

Rationale by Areas of Public Interest

The Hyalite Porcupine Buffalo Horn Wilderness Study Area (HPBH WSA)

My decision prohibits ATV use and reduces the area open to snowmobiles within the WSA. Motorcycles are allowed mid-July to September 5th on the more popular trails such as portions of the Gallatin Crest Trail, the Hyalite Trail, the East Fork of Hyalite Trail and the Buffalo Horn Pass Trail. Mountain biking will also be managed for, however it will be prohibited on several trails on the east side of the Gallatin Range. All routes will be available for hiking and stock use.

The principal legal direction for managing the HPBH WSA comes from the Montana Wilderness Study Act (S. 393). Section 3(a) of the Act states: *"… wilderness study areas designated by this Act shall, until Congress determines otherwise, be administered by the Secretary of Agriculture so as to maintain their presently existing wilderness character and potential for inclusion in the National Wilderness Preservation System"* (FEIS, page 3-597). For this area my primary objective was to design a travel management scenario that was consistent with the direction of this Act. The Act requires the Forest Service to maintain the area's wilderness character as it existed in 1977 and maintain the area's potential for inclusion in the Wilderness System. The amount of motorized recreation opportunity provided in my decision is designed to be consistent with this mandate. My decision precludes ATV use because these vehicles were not used in

1977 and they require more than a single track trail to operate on. While mountain biking was not known to be an activity enjoyed in this area in 1977, it did not seem reasonable to preclude them when motorcycle use was allowed and their use requires similar tread widths. Agency policy on mountain bikes states they are appropriate wherever motorcycle use occurred historically, and on non-motorized trails as long as the total amount of mountain bike and motorcycle use maintains wilderness character as it existed in 1977 (See Schlenker's 9/2006 letter). Beyond compliance with the Act, I tried to provide well-distributed opportunities for motorcycles, snowmobiles and exclusive non-motorized uses in this area. The Gallatin Crest is unique on this Forest in that it provides high peaks and lake destinations, yet is not in designated Wilderness or otherwise restricted to non-motorized uses.

My decision will maintain a mix of summer motorized and non-motorized recreation opportunities in the HPBH WSA. The configuration of open routes for motorcycles and mountain bikes was developed to provide a mix of motorcycling and mountain biking options, and to provide areas dedicated to hiking and horseback riding. Several key components of my decision include:

- The "Crest" trail will remain open to motorcycles from the north beginning in the Hyalite drainage – south to Windy Pass.
- Several other popular loops will remain open to motorcycles including Porcupine/Buffalo Horn loops, Storm Castle Creek Trail and Swan Creek Trails.
- Motorcycles will be restricted to a mid-July to early September season of use to protect facilities, and mitigate wildlife conflicts in the fall.
- Mountain bikes will be allowed on all routes open to motorcycles. Mountain bikes will also be allowed on two trails that were not open to motorcycles in 1977 (Blackmore/South Cottonwood and Big Creek). The Blackmore/South Cottonwood Trail has been very popular with mountain bikes since legal access was obtained in the South Cottonwood drainage in the early 1990's. The Big Creek Trail has become an established mountain biking route since the late 1980's. This trail provides a mountain bike route from the Paradise Valley to the mountain bike/ motorcycles routes in the upper portion of the HPBH WSA. Congress didn't expect that all uses would remain the same, nor that uses be "frozen" (Montana Wilderness Association v. United States Forest Service, CV 96-152-M-DWM, pages 12-13). Uses could be changed, moved, etc. through the normal travel planning process to accommodate social or resource concerns so long as we retained wilderness character circa 1977 (id.).
- The East Fork of Hyalite Creek Trail will remain open to motorcycles and mountain bikes however it is my intention to develop a "time-share" use scenario where these mechanized vehicles will alternate use with pedestrians during the peak summer season. I believe that time-share will provide a good means of resolving user conflict on this very popular trail. My objective is to work out the exact details of this system with the various user groups over the next year or two. In the Starting Benchmark, we had proposed to close the main Hyalite Trail (#427) and the East Fork of Hyalite Trail (#434) to mountain bikes due to concerns over the safety of other users. This raised a significant amount of concern with cyclists and heightened my awareness of the popularity of these two trails for that use.
- Mountain bikes will be prohibited on trails in the northeast corner of the study area where no historic motorcycle use occurred prior to 1977, in order to ensure that mechanized use does not expand to all trails within the HPBH WSA.

- A core of trails in the southern portion of the study area will be managed for non-motorized use only to provide discrete opportunities for hiking/horseback use and to improve grizzly secure area.
- ATVs will be prohibited on all routes within the HBPH WSA.

It was recognized in 1977 that use would grow and conditions within wilderness study areas would not remain static into the future. Use can be adjusted or modified to meet resource or recreation objectives as long as it did not diminish the integrity of the area. The Congressional record is clear that Congress did not intend for the Forest Service to exclude existing "ORV" use until they decided whether to add the study areas to the wilderness system. ORV use can however be adjusted through the normal travel planning process if it is determined to be inappropriate in a given area.

Use can be excluded, reduced, patterns of use changed, or use can be geographically limited in portions of the HPBH WSA while still maintaining an appropriate recreation opportunity. For recreation uses such as motorcycling and mountain biking I can continue to provide a high quality backcountry single track riding experience as long as it does not encourage single track riding proliferation across the entire Study Area.

Interim Directive FSM id-2320-2005-1 clearly states that ATV use is appropriate on jeep roads that were open to that sort of travel in 1977. There were no "jeep roads" or double track routes open to vehicles larger than 50" wide in the HPBH WSA in 1977, except for private roads accessing timber harvest on private land. Therefore my decision prohibits ATVs on all routes within the HPBH WSA.

All routes to be managed for motorcycles in my decision were open to motorcycles in 1977 (FEIS, page 3-566). The seasonal restrictions I've included are designed to protect wilderness character and trail facilities in this high elevation area, as well as to minimize motorized traffic in critical grizzly bear habitat during critical pre-den feeding periods in the fall.

The southern portion of the Gallatin Crest Trail will be managed for foot and stock travel only. This configuration along with foot and stock only on several other routes allows us to significantly improve grizzly bear secure area in the Gallatin 3 bear management sub-unit that has been identified in the Grizzly Bear Conservation Strategy as 'in need of improvement' in terms of reducing open motorized route density. Additionally, the southern portion of this trail would have to be reconstructed to be passable to motorcycles – which would be in conflict with 2329 1(c.) in the interim directive.

In my decision approximately 88% of the area will be closed to snowmobiling. The open snowmobile areas include the historic Big Sky Trail – which will be managed as a designated route through a closed area. The open area where cross country snowmobiling is allowed runs from Windy Pass across the Crest through Rock Creek. This allows high quality "challenge" snowmobile opportunities but limits the acreage available to remain consistent with the acreage used in 1977. I also considered a designated route from Hyalite through a closed area, to a small open area in the East Fork of Hyalite (Heather/Emerald) but concluded that opening both this area and the Windy Pass/Rock Creek area would not maintain wilderness character as it existed in 1977. Cross country snowmobiling will also be prohibited in the historic use area of Buffalo Horn. This area closure in Buffalo Horn facilitates management of the State Gallatin Wildlife

Management Area sections, and reduces conflicts with wintering big game, thus improving natural integrity.

Inventoried Roadless Areas

Approximately 520,000 acres of the Gallatin National Forest (outside of designated Wilderness, Wilderness Study Area, and recommended wilderness) are inventoried as "roadless." These and other inventoried roadless lands across the nation have been the subject of recent debate and interim and proposed roadless rules. The proposed rules have focused on the question of whether it is appropriate to manage these lands for timber harvest and road construction. These are activities not proposed by the Travel Plan alternatives. In addition, the Gallatin Forest Plan (9/87) considered and did not recommend that these areas be designated as Wilderness. Therefore, the fact that an area is within the roadless inventory, did not in itself, influence my decision. Refer to Section D of this ROD for more discussion on this issue.

Recommended Wilderness

There are two areas on the Gallatin National Forest that were recommended for wilderness designation in the Gallatin Forest Plan (9/87); the Lionhead recommended wilderness west of Hebgen Lake and the Republic recommended wilderness south of Cooke City. My decision will restrict travel to non-motorized uses because through the Forest Plan, we have recognized that wilderness is the highest and best use for these areas. Refer to Section D of this ROD for more discussion on this issue.

Rationale for Other Components of the Travel Management Plan

Adoption of Forest-wide and Travel Management Area Direction

In a Travel Management Plan it is important, not only to identify the opportunities and restrictions that are appropriate on different routes and areas of the Forest, but to also establish direction for future management action. This is done through the adoption of goals and objectives which will drive future programs and activities; and through adoption of standards and guidelines within which future site-specific actions must take place. The goals, objectives, standards and guidelines (i.e. programmatic direction) that are adopted as part of my decision are displayed in the document "Detailed Description of the Decision." Fundamentally, my rationale for adopting this direction is that it is a means of identifying the priority resource values of the Gallatin National Forest and ensuring that future management action is consistent with maintaining and/or improving these resources. While the heart of the Travel Management Plan is the designations of use, the programmatic direction provides the strategic plan for action over the next 15 years or so. It establishes priority needs that leads to a proposed program of work and puts us in a better position to compete for funding to carry out that work. Programmatic direction, by itself, has no environmental effect since it does not mandate that ground-disturbing actions occur. Future proposals designed to achieve this direction would be subject to environmental analysis in accordance with NEPA.

In the Travel Plan, goals, objectives, standards and guidelines (i.e. programmatic direction) have been established at two scales; the Forest-wide scale which includes management direction that

would generally apply to the Forest as a whole, and the Travel Planning Area scale which includes direction unique to that area. See Figure 1 for an index of the 39 travel planning areas.

1. FOREST-WIDE DIRECTION

The Forest-wide direction I've adopted as part of the Travel Plan can be found in Chapter I of the "Detailed Description of the Decision". The following is my rationale for adopting the various goals, objectives, standards and guidelines.

Goal A simply states the overarching purpose for providing a variety of opportunities to recreate on the Gallatin National Forest (i.e. travel). Objective A-1 articulates how the Forest Service intends to meet that goal. The objective consists of 2 tables that show the targeted miles of opportunity to be provided for each mode of travel Forest-wide. These tables are an aggregate of the decisions I made on appropriate uses of each road and trail on the Forest. I included it because the Travel Plan is designed to be in place over a 15 year time-frame. It is meaningful from a monitoring perspective because, over the planning period, Forest managers may: (a) Feel compelled to consider modifying the Travel Plan due to new or unexpected effects. (b) Miss the mark on objectives to construct/reconstruct roads and trails for their designated uses due to budget, workload, etc. Objective A-1 with the mileage tables is a benchmark to monitor against to see how well we are doing in providing the targeted mix of opportunities. In other words it's a checkpoint to keep ourselves, or our successors, from making future site-specific decisions (or failing to do so) that inadvertently creep us away from the level of use we intended to provide.

Objective A-2 gives us direction for future management action to harden the designated 4x4 roads to prevent resource damage. This is similar to other programmatic direction that I've adopted. It is based on the principle that once the decisions were made on the appropriate uses to manage for on our road and trail system, we would then bring those facilities to a condition to adequately accommodate those uses in a manner that prevents resource damage.

Objectives A-3 and A-4 are designed to guide the maintenance of trails within designated Wilderness in a manner consistent with wilderness philosophy. Pristine zones are to be kept in a trail-less condition. Primitive zones are to include low development trails, and transition zones will contain trails that are more developed to accommodate higher volume of use. I found these objectives to be useful so as to maintain the different types of wilderness experiences in the future.

Objective A-6 and Standard A-7 were adopted to address potential future proposals for backcountry airstrips. The Gallatin National Forest currently has no aircraft landing sites nor have we had a program allowing for such use. The Montana Pilots Association met with us and submitted a letter early in the travel planning process asking us to consider opportunities for their members. As a result we had included a proposed objective with a list of potential landing sites in Alternative 3 of the DEIS. I did not adopt the objective in my preferred alternative (Alternative 7) at the time, but have decided to adopt a modified objective and standard in my decision. The objective (Objective A-6) does not identify potential sites and precludes consideration of such proposals in designated wilderness, the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area, recommended wilderness areas and within the Grizzly Bear Recovery Zone. The standard (Standard A-7) will prohibit public recreational aircraft landing/take-off except at designated and authorized sites. I chose to adopt this direction mainly because the

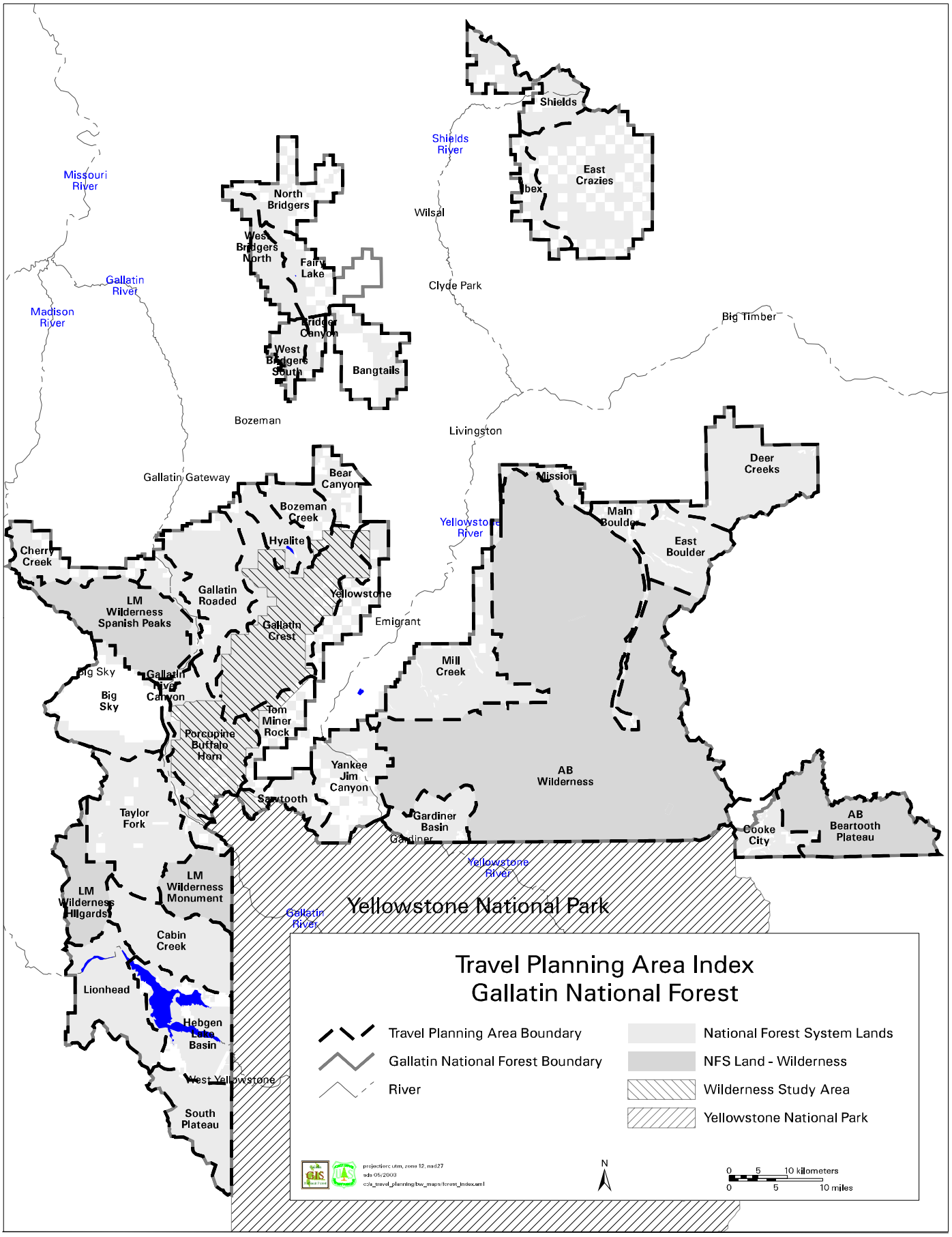


Figure 1. Gallatin National Forest Travel Planning Areas

analysis did not show me that there was good reason to preclude it throughout the entire 1.8 million acres of the Gallatin National Forest. In other words, this is a desired recreational pursuit and there may be places on the Forest that can provide opportunities without unacceptable impacts. My decision is not a final agency action to authorize backcountry landings or airstrip construction. It just means that we would be willing to entertain such proposals in the future subject to analysis in accordance with NEPA. Any authorized sites would be constructed and maintained by site users and the use would be regulated by special use permit.

Standard A-8 precludes wheeled motorized vehicle travel off of designated routes with certain exceptions. The off-route restriction is in keeping with the Montana/Dakota OHV decision (USDA, January 2001) and with the National OHV Regulations (USDA, 2005). This Montana/Dakota OHV Decision (page i) indicates that between 1990 and 1998 the number of registered ATVs and motorcycles increased 92% in the three-state area. The increased use has resulted in environmental effects on public resources in numerous areas, including roads and trails that have developed as the result of repeated use. Precluding off-route wheeled motorized travel is a necessity to effectively implement my Travel Plan decision. The exceptions were needed in this standard to clearly articulate that it is not the intent to prohibit off-route motorized travel for emergency operations or for the administration of a federal lease or permit. The standard also includes an exception that allows travel up to 300 feet off of a designated road or trail to access a dispersed campsite unless specifically restricted or unless such use would result in damage or unreasonable disturbance to land, wildlife or vegetative resources. Basically this allowance is needed to provide for access to the numerous dispersed camping sites that exist throughout the Forest. Once the district rangers have completed the site-specific designation, the 300 foot allowance will not apply to high use areas such as the west shoreline of Hebgen Lake, along the Gallatin River, the Taylor Fork Road, the Beaver Creek Road, the Hyalite Road, the Main Boulder Road, the Mill Creek Road, the Beartooth Highway (#212) and in Bear Canyon. In these areas dispersed campsites will be designated.

Standard A-9 defines the types of trail vehicles that are permitted on designated routes. This standard is needed to describe exactly what is meant by the terms ATV, motorcycle and snowmobile. This prevents a potential misinterpretation that larger or different types of vehicles can be used on these routes.

Standards A-10 and A-11 preclude wheeled vehicles on marked and groomed winter routes and snowmobiles from traveling on groomed cross-country ski trails. These standards ensure that winter trails are maintained in the condition for which they are intended.

Guideline A-12 allows the Forest Service to keep designated motorized routes closed to such use until the facilities (roads or trails) are brought up to applicable engineering design standards. This prevents a misunderstanding that all designated motorized routes are open to those uses as of the date of this decision. Route reconstruction will be necessary on a number of roads and trails before they are suitable for certain types of motorized travel.

Goal B, Objectives B-1 through B-3, and Guidelines B-4 through B-9 address my intent to provide and maintain reasonable, legal access to Gallatin National Forest lands to provide for human use and enjoyment and to protect and manage Forest resources and values. Objective B-3 includes a table identifying the locations where I don't believe that reasonable access exists. I've also reiterated the need for access through adopted objectives within each travel planning area.

While the Forest Service would have these objectives regardless of whether they're stated in the Travel Management Plan, including them as programmatic direction has the following benefits:

- It alerts the public, private landowners, and future managers where access is desired.
- It provides the foundation for pursuing access when the opportunity arises.
- It provides the background and analytical foundation for site-specific proposals to acquire access.

It also gives us direction to protect existing access rights and to cooperate with landowners to meet mutual transportation needs. It should be noted that adoption of this direction is not a final agency decision to pursue access in specific locations. Historically, we have obtained needed access in cooperation with the private landowners as opportunities arise.

Goal C and Objective C-1 allows for the construction of roads and trails to facilitate access for carrying out a variety of administrative and project activities subject to future decisions made on such proposals in accordance with NEPA. I've adopted this direction to make it clear that nothing in the Travel Plan is intended to preclude the construction, re-construction or opening of roads and trails when needed for such activities as law enforcement, timber harvest, reforestation, cultural treatments, prescribed fire, mineral development, wildlife and fish habitat improvement projects, livestock grazing, or private land access. It will be necessary however to effectively close these routes to public motorized use after completion of the activity unless they are otherwise designated for such use through the Travel Plan.

Goal D, Objectives D-1 through D-3, Standards D-4 through D-6, and Guideline D-7 give us direction to manage the road and trail system in a manner that protects and maintains water quality, wildlife habitat, fish habitat, and other resources. As indicated for a number of issues addressed in the FEIS, higher motorized route densities have increased adverse environmental effects. In addition, there are a number of acquired or user-built routes on the Forest that were not constructed to adequate design standards or have deteriorated to a point where adverse impacts are being incurred. Goal D and its associated direction provides the strategic direction for the planning period to close and rehabilitate excess roads and trails and to keep undesignated routes closed to motorized use. As I stated at the beginning of this section this type of direction establishes priority needs that leads to a proposed program of work and puts us in a better position to compete for funding to carry out that work. The ultimate goal is to eliminate unacceptable effects from the Forest's transportation system.

Goal E, Objectives E-1 through E-3, Standards E-4 through E-6, and Guideline E-7 provide management direction to attain a road and trail system that fully supports the protection of water quality, and habitat for fish, riparian dependent species and other aquatic organisms. In other words fully protect the beneficial uses of streams and lakes in compliance with the Clean Water Act. The intent is to have all streams supporting westslope and Yellowstone cutthroat trout or blue ribbon fisheries at 90% or greater and all other streams at 75% or greater of their inherent habitat capability or reference condition. Similar to Goal D and its associated direction, Goal E and associated objectives, standards and guidelines also provides strategic direction that supports future efforts to close and rehabilitate excess roads and trails. The standards and guidelines also place sideboards on any future proposals for road and trail construction, reconstruction or

maintenance to prevent unacceptable sedimentation and stream impairment, and to protect floodplains and wetlands.

Goal F and Objective F-1 gives us some general direction to provide for wildlife movement and genetic interaction between and within mountain ranges and connecting wildlands. The objective is not very specific in terms of how this is to be accomplished beyond the decisions I made in the Travel Plan for management of individual roads, trails and areas. However, I still thought that it was important to include this direction because it highlights a desired condition to be maintained and could influence future decisions for projects and activities proposed for these areas. The direction may also lead us to play a more cooperative role in facilitating wildlife movement on non-National Forest lands linking the various mountain ranges.

Goal G provides direction to manage human use of the Forest road and trail system in a way that allows for the recovery of threatened and endangered species and maintains species of special management designation and their habitats. To achieve this I've adopted one objective (Objective G-1) and two guidelines (Guidelines G-2 and G-3). There are currently three grizzly bear subunits on the Forest that have been identified as in need of improvement. Objective G-1 essentially prioritizes future proposals for road/trail closure and rehabilitation to these three subunits, thereby improving habitat security for the bear. Guideline G-2 directs us to avoid or mitigate for known occupied habitat for species of special management designation (e.g. sensitive species) in any future proposal for a motorized route. Protection of known nesting, denning, roosting or key foraging areas is the goal of this direction. Guideline G-3 simply reminds us that we can consider imposing temporary localized restrictions on travel to prevent conflicts with threatened and endangered species. For example, the Travel Plan does not preclude the Forest Service from restricting designated use(s) on a temporary basis to prevent conflicts between grizzly bears and humans.

In my preferred alternative for the DEIS, I had included several additional objectives, standards and guidelines for management of the grizzly bear and lynx. I did not adopt them in my decision. This is because management direction for these species is currently being addressed through separate planning processes covering areas much larger than just the Gallatin National Forest. Therefore I concluded that it was inappropriate to try to second-guess what that direction would be and include it as part of the Travel Plan. Until a decision is made on delisting the grizzly bear in the Yellowstone area, applicable direction for management of the bear is based on Forest Plan Amendment 19 and on a Memorandum of Understanding (MOU) and Conservation Agreement (CA) with the United States Fish and Wildlife Service (USFWS). See MOU, Conservation Strategy (ICST 2003:12-13). For lynx, the Gallatin Forest is obligated to meet current direction, whether in the LCAS or revised LCAS, until such time that the proposed Northern Rockies Lynx Amendment supercedes it. A Conservation Agreement between the Forest Service and the US Fish and Wildlife Service (Agreement #00-MU-11015600-013) committed the Forest Service to use the LCAS when considering the effects of actions on lynx until the Forest Plans are amended (USDI 2005).

In addition to adopting programmatic direction for threatened and endangered species and other species of special management designation, I felt it was important to highlight other wildlife habitat goals within the scope of the Travel Plan decision. Goals H and I, along with their associated objectives and guidelines are designed to achieve that purpose. I've included an objective (Objective H-1) to relocate, reconstruct or take other appropriate action on system

roads and trails that are having adverse impacts on key habitats. The guidelines I've included emphasize providing high quality security habitat in areas important to wildlife reproduction and wintering areas. I've also adopted a guideline (Guideline I-2) directing us to be cognizant of Montana Fish Wildlife and Parks goals for achieving optimal ungulate survival rates on big game winter range. These guidelines don't yet target any specific actions but I've included them as considerations for opportunities that may be identified and activities that are proposed over the course of the next 15 years or so.

The last Forest-wide goal, standard and guidelines I've adopted (Goal J, Standard J-1 and Guidelines J-2 and J-3) are designed to help maintain the natural integrity of the Lee Metcalf and Absaroka-Beartooth Wilderness Areas. I've included this guidance to ensure that trail development and management is carried out within the identified limits of acceptable change (LAC). In other words, no system trails will be constructed within LAC pristine zones; trails within LAC primitive zones will be managed within trail classes 1 through 3; and within LAC transition zones system trails will managed to trail class 2 or 3, with the exception of managing to trail class 4 for short sections where necessary to safely accommodate use.

In summary, I've adopted this Forest-wide programmatic direction because it is a means of identifying the priority resource values of the Gallatin National Forest and ensuring that future management action is consistent with maintaining and/or improving these resources. I identified no issues or concerns with this direction. Because I've combined this decision with decisions for the management of every road, trail and area open to snowmobiles, the programmatic direction will not lead to unknown consequences on travel opportunities.

2. TRAVEL PLANNING AREA DIRECTION

As stated in the introduction to this section, programmatic direction is provided at two scales, Forestwide and for each individual travel planning area (TPA). The delineation of travel planning areas, in part, is a means of organizing programmatic direction that is unique to specific areas of the Forest. I've discussed most of this direction in the following section, "Rationale by Travel Planning Area," however so as not to be redundant, I've addressed direction that applies to multiple TPAs below.

Each travel planning area includes 2 broad goal statements, one for summer and one for winter (Goals 1 and 2) that define the opportunities to be provided for within that area. Many areas provide opportunities for all types of use, but the intent of the goal statement is to highlight the emphasized uses. For some areas the emphasis may be on motorized use and other areas emphasize non-motorized uses. There are a few TPAs (such as on the west side of the Bridger Mountains) where there are no winter recreation goals. This is generally because they have insufficient snow to provide a good opportunity for snowmobiling or skiing. The goal statements each contain a companion objective such as the one below for summer recreation use:

> **"OBJ. 1-1:** Achieve the summer recreation opportunities identified in GOAL 1 through the route-by-route management decisions made through this Travel Plan. Any future proposals to change the uses specified should be done in consideration of the targeted recreation setting to be provided [see the "Recreation Opportunity Spectrum" (ROS) map for summer uses (October 2006)] which is hereby incorporated by reference."

The objectives serve two purposes: (a) They remove the debate over the amount of opportunity needed to achieve the overriding goal. (b) They provide a checkpoint to keep ourselves, or our successors, from making future site-specific decisions (or failing to do so) that inadvertently move us away from the targeted recreation setting.

In Alternatives 2 through 6, and in Alternative 7 of the DEIS (my preferred alternative at the time), I had included "miles of opportunity" tables similar to Forest-wide Objective A-1, as TPA Objective 1-1. My thought was that mileage tables are less open to interpretation. However, upon further consideration and discussion with my staff I decided not to include the tables because TPAs are simply too small of a geographic scale in which to get so specific.

Another goal I've included in several travel planning areas is one that targets a road and trail system that results in contributed sediment levels that maintains Yellowstone, or westslope cutthroat trout habitat at 90% of its potential habitat capability. In some cases this goal includes some companion objectives but in other areas the application of Forest-wide fisheries standards were considered sufficient. The purpose of including this Goal at the Travel Planning Area scale was to highlight those parts of the Forest where there are streams containing cutthroat trout, both of which are identified in Region 1 of the Forest Service as a "sensitive species."

The last common goal I've included in several travel planning areas is one that targets a road and trail system that accommodates traffic consistent with protecting soil and watershed condition. Similar to the fisheries goal above, my intent is to draw attention to areas that contain sensitive or erosive soils. This goal is accompanied by a set of objectives, standards, or guidelines for roads and trails to emphasize the need for a good repair and maintenance program as well as informational signing asking motorized users seeking camp spots to avoid wet, muddy and shrubby areas.

During the period between the DEIS and the FEIS I made several adjustments to the final wording or the programmatic direction and considered additional objectives, standards, and guidelines that ultimately did not end up in the final Travel Management Plan. The adjustments to wording were done to improve clarity and make the direction less open to interpretation. The primary reasons I had for not adopting additional suggested direction was that it did not meet the definitions of an objective, standard or guideline or I thought it may have unintended consequences, such as committing us to actions that we may not be able to achieve. There were two principle differences between the direction I had proposed in Alternatives 2 through 7 of the DEIS and the direction I have included in my decision. The first is that my decision does not amend this direction into the Gallatin Forest Plan as was proposed in the DEIS. The reason I chose not to amend was because Agency thinking has evolved to the point that Forest Plans are strategic documents and they do not make final agency action decisions. This thinking culminated in the revision of the regulations for implementing the National Forest Management Act (NFMA) at 36 CFR 219 in January of 2005. The proposed Travel Management Plan does make final agency decisions (e.g. appropriate uses of roads and trails) and therefore would not be consistent with the principles of a revised Forest Plan. Therefore the Travel Management Plan is a stand-alone document. The second difference is that I reformatted the Forest-wide direction in my decision (and Alternative 7-M) from what was displayed for Alternatives 2 through 6, and Alternative 7 of the DEIS. Originally, the Forest-wide programmatic direction was separated into three categories; "Recreation and Public Use," "Administrative Uses," and "Road and Trail

Construction, Reconstruction and Maintenance." The thought was that this would make the Travel Plan easier to use in implementation but in actuality it created confusion with my staff. In some cases the categories created a need for redundancy in establishing specific direction that applies similarly to more than one category. I also did not adopt some of the proposed direction applicable to grizzly bear and lynx because management direction for these species are addressed in other regulatory documents and memoranda and revised direction is being considered through proposed grizzly bear and lynx conservation strategy amendments.

Amendment of the Forest Plan to Remove Certain Standards Applicable to Travel Management

Although I am not amending the programmatic direction of the Travel Plan into the Gallatin Forest Plan, one of my purposes was to remove outdated, ineffective, and problematic direction related to travel management from the current Forest Plan. The purpose and need sections of Chapter 1 of the Travel Plan EIS, and Appendix A describe the reasons for removing 119 existing standards. I found no adverse consequences to removing this direction and therefore it remains a part of my decision. Also see my conclusions about Issue #8 and my Finding of Non-significant Forest Plan Amendment later in this ROD.

Seasonal Restrictions

Seasonal restrictions are a means to resolve resource issues without prohibiting specific types of travel altogether. It is also a way to temporally separate motorized and non-motorized uses on routes popular for both, thus improving the potential quality of recreation experiences for each. The general rationale for the seasonal restrictions I've included in my decision is displayed in the following tables.

Seasonal restrictions are a means to resolve resource issues without prohibiting specific types of travel altogether. It is also a way to temporally separate conflicting uses on popular routes, thus improving the potential quality of recreation experiences for various user groups. The general rationale for the seasonal restrictions I've included in my decision is displayed in the following tables.

The route tables included with each travel planning area section also identify any seasonal restrictions that may apply to various uses. The following tables provide the reasons for the variety of restricted periods for certain activities.

Table 3. Seasonal restrictions to protect facilities (roads and trails) from damage during spring break up.

Date Restricted	Activity Restricted *	Rationale
April 1– April 30	Wheeled vehicles, mountain bikes and stock on designated routes	Facility protection, erosion control (generally low elevation and/or south slopes)
April 1 – May 15	Wheeled vehicles, mountain bikes and stock on designated routes	Facility protection, erosion control (generally low elevation and/or south slopes)
April 1 – May 31	Wheeled vehicles, mountain bikes and stock on designated routes	Facility protection, erosion control (generally low elevation and/or south slopes)
April 1 - June 15	Wheeled vehicles, mountain bikes and stock on designated routes	Facility protection, erosion control (generally mid- elevation)
April 1 - June 30	Wheeled vehicles, mountain bikes and stock on designated routes	Facility protection, erosion control (generally mid- elevation)
April 1 – July 15	Wheeled vehicles, mountain bikes and stock on designated routes	Facility protection, erosion control (generally high elevation and/or north slopes)

*Note – these restrictions apply to all routes for motorized use. The spring restrictions for stock and mountain bikes would be confined to a dozen specific routes.

Table 4. Seasonal and Yearlong Restrictions for Winter Routes and Areas

Date Restricted	Activity Restricted	Rationale
December 2 – March 31	Wheeled vehicles, vehicles wider than 50 inches including snow coaches and snow cats on groomed or marked snowmobile or ski trails.	Trail surface protection, user safety.
January 1 – March 31	Wheeled vehicles, vehicles wider than 50 inches including snow coaches and snow cats on groomed or marked snowmobile or ski trails	Trail surface protection, user safety.
October 15 – December 1	Snowmobiles in open areas	Wildlife security, moose habitat, erosion control and recreation conflict.
Yearlong	Snowmobiles	Wildlife security, big game winter range, and to provide skiing and snowshoeing opportunities in a non-motorized setting.

Table 5. Seasonal Restrictions for Summer Motorized Routes

Date Restricted	Activity Restricted	Rationale
September 5 – spring open date	Motorized wheeled vehicles on designated routes (roads or trails)	Grizzly bear foraging in WBP habitat, elk security, user conflicts during hunting seasons.
September 15 – spring open date	Motorized wheeled vehicles on designated routes (roads or trails)	Grizzly bear foraging in WBP habitat, elk security, user conflicts during hunting seasons.
October 15 – spring open dates	Motorized wheeled vehicles on designated routes (roads or trails)	Big game security, user conflicts during hunting seasons.
December 2 – spring open date	Motorized wheeled vehicles on designated routes (roads or trails)	Wildlife security, conversion to winter trails for XC ski or snowmobile.
January 1 – spring open date	Motorized wheeled vehicles on designated routes (roads or trails)	Wildlife security, conversion to winter trails for XC ski or snowmobile.
May 15, June 15 or July 15 – spring open date	Motorized wheeled vehicles on open roads or trails	Ungulate reproduction period.

Table 6. Seasonal or Yearlong Restrictions for Summer Non-Motorized Trails

Date Restricted	Activity Restricted	Rationale
Timing to be determined (time share routes)	Mountain Bikes	User safety/congestion.
December 2 – September 15	Pack and Saddle Stock	Resource protection/erosion and user safety/congestion.
Yearlong	Pack and Saddle Stock	Resource protection/erosion and user safety/congestion.
Yearlong	Mountain Bikes	User safety/congestion, Wilderness Study Area constraints, lack of easements that allows bikes.
December 2 – August 1	Pack and Saddle Stock – Area Restriction	Resource protection/erosion.
Yearlong	Overnight Camping with Pack Stock – Area Restriction	Resource protection/erosion.

Time Shared Trails

A number of public comments were received suggesting that we consider the concept of alternating use periods to address social problems (i.e. "user conflict) between motorized and non-motorized users, and between bikers and stock users/hikers on popular trails. For example, a trail could be managed as open to motorcycles on alternating days, alternating weeks, or even by

the time of day. I've decided to apply this concept to the following trails to help meet my objective of providing more non-motorized opportunities near Bozeman:

- The Bridger Foothills Trail #534 from the "M" parking lot to the junction with Corbly Gulch Trail #544.
- The Sypes Canyon Trail #531.
- The Truman Gulch Trail #535.
- The Middle Cottonwood Trail #586.
- The Corbly Gulch Trail #544.
- The Hyalite #427 and East Fork of Hyalite #434 Trails.
- The Storm Castle Trail #185.

For the Sypes Canyon Trail and the southern end of the Bridger Foothills Trail I will look at a schedule that restricts mountain bikes to certain periods (i.e. provide opportunities for foot and horse travel in absence of bikes). For the other trails I will look at a schedule that restricts motorcycles and mountain bikes to certain periods (i.e. provide opportunities for foot and horse travel in absence of mechanized vehicles). I intend to work with various users over the next year or so to develop the specific schedules.

Spring Restrictions on Stock and Mountain Bike Use

My decision does not include blanket spring restrictions on stock use as proposed in other alternatives, including Alternative 7 of the DEIS. The reason for this proposal was to better protect trail facilities, reduce erosion and lower maintenance costs (DEIS Forest-wide Guideline A-11). In public comments stock users expressed opposition to blanket spring closures arguing that spring opportunities are very important to them and that many trails are either dry in the spring or they are so durable that spring use is not a problem. My staff and I have discussed this issue and I have concluded that blanket spring restrictions across the Forest was going too far in attempting to correct a problem that could otherwise be addressed through restrictions on specific routes or information and education. I also agree with stock users and mountain bikers in that wet muddy conditions provide a natural deterrent to those uses where they may not for motorcycles and ATVs. My decision includes spring stock use restrictions on approximately a dozen specific trails across the Forest (See Chapter 2 of the "Detailed Description of the Decision").

Rationale by Travel Planning Area

Absaroka-Beartooth Plateau Travel Planning Area

This is a designated Wilderness Area and therefore there is no debate over whether trails should be managed for mechanized uses. It's prohibited by law. The primary goal for these areas is to maintain their primitive character. My decision does not include a yearlong area closure to stock use in the high plateau as proposed in Alternative 7 of the DEIS. The purpose of this closure was to prevent a proliferation of user-built trails and campsites that were impacting fragile alpine vegetation. In public comments stock users expressed opposition to this closure and I concluded that I should first try other means to mitigate impacts. In my decision the area closure to horses was modified to apply to overnight stock use. This will provide a natural limitation on the

distance stock users can travel into the areas of fragile vegetation. In addition, cross-country day use of stock would only be permitted from August 1st to December 2nd, thus precluding stock use during the time of year when fragile vegetation is most vulnerable (i.e. after snow melt). The Zimmer Trail #574, and the Lower Aero Trail #31 would be restricted to stock use. The trail facilities into these areas are not adequate to accommodate stock, and in the case of the Zimmer Trail, the facility simply disappears into a high elevation basin. Reconstructing these facilities to accommodate stock use would be expensive, and in my view, not in keeping with the wilderness opportunity I believe that this area should provide. I believe that the emphasis for this portion of the Wilderness should be on hiking and backpacking. A small area closure would be employed between Summerville and Castle Lakes to lesson impacts to alpine vegetation that were being accelerated by stock on a user-created trail. My decision will provide an opportunity for stock use in a way that will inhibit trail proliferation thus meeting my resource protections objectives for this area without resorting to an overall area closure.

Absaroka-Beartooth Wilderness Travel Planning Area

This is also a designated Wilderness Area and again mechanized uses are prohibited by law. There was little difference between alternatives. In general, foot and horse travel are unrestricted.

My decision will prohibit horses on the Pine Creek Trail during the summer months to address concerns about user congestion, user conflicts, and user safety. The trail is very popular with the public and used by hiking groups. In some locations the trail is narrow making it difficult for hikers to move off the trail to allow stock to pass. My decision is different from what I proposed in Alternative 7 of the DEIS in that this trail would be opened to day use stock travel after September 15th. The public safety issue (i.e. conflicts between people and horses) is not as much a concern after Labor Day. Also, part of my rationale for restricting stock use is that the upper basins accessed by this trail have limited capability to handle stock overnight without undue resource damage. My decision precludes overnight stock camping in the Pine Creek area, but still provides opportunities to use the trail during the hunting season.

I've chosen to restrict spring stock use on the Thompson Lake Trail from April 1st to June 15th annually to address concerns about trail facilities. The trail holds snow longer in the spring and the turnpikes are susceptible to damage. The spring restriction allows additional time for the trail to harden before stock use occurs.

Bangtails Travel Planning Area

The Bangtails area has an extensive old road system. This is an area conducive to summer OHV use, some backcountry road use and winter snowmobiling near Bozeman. In reviewing the analysis of potential effects to other resources, from a forest-wide perspective, I did not find convincing reasoning to change motorized opportunities in this area. I wanted to utilize portions of the existing road system with connectors to create loop opportunities for ATVs, motorcycles and mountain bikes in the summer. I believe that loop systems will alleviate some of the problems with off-route travel that can be created when motorized roads and trails come to dead ends. The concerns I had in the DEIS about road sedimentation and effects to Yellowstone cutthroat trout habitat in Willow Creek and Bangtail Creek have been addressed through a project that accomplished restoration and stabilization of approximately 25 miles of existing

excess road. Therefore I've dropped the standard I had included in DEIS preferred alternative that would have conditioned the construction of new motorcycle, ATV and mountain bike routes on first decommissioning 12 miles of old existing roads. I also did not adopt the objective to further restore and stabilize up to 30 miles of road since this will have been accomplished.

I've chosen not to open the Bishop Park road (#1760) to backcountry road use due to concerns over impacts to the potential Bangtail Botanical and Paleontological Special Interest Area (Bangtail SIA). The Bangtail SIA serves the primary functions of research on mountain meadow/subalpine ecosystems and research and excavation of important paleontological resources from the Tertiary period of North America. Vehicle use could lead to soil compaction and outright damage to native vegetation. That would threaten some of the studies that are decades old. Also the paleo sites need to be protected from damage from motorized use.

In response to public comments I have dropped the marked ski route and associated snowmobile area closure that was included in Alternative 7 of the DEIS, from the Skunk Creek Road (#974) to the Stone Creek Divide. This essentially takes the marked ski route off of the Bangtail Divide. Public comments indicated that this was not a good skiing opportunity and therefore it made little sense to keep it.

In addition to the programmatic direction addressed earlier in this ROD my decision includes an objective for this Travel Planning Area (Objective 2-2) to provide a parking facility to accommodate winter recreation somewhere along the first two or three miles of the Jackson Creek Road (#977). Increases in use of this area have led to a need for a better parking facility.

Bear Canyon Travel Planning Area

In this area my decision emphasizes opportunities for ATV, motorcycle, snowmobile and mountain bike use. This was a difficult choice involving a great deal of discussion between me and my staff. Those that know this area are aware of the erosive soils and significant trail damage that has been caused by past 4 x 4 and OHV use. There is also concern from Bear Canyon residents about vehicle traffic to and from the trailhead as well as the noise created by motorized users at the trailhead/parking area. On the other hand this area has been popular for motorized recreation and is easily accessed from the Bozeman area. I also had to consider that my decision for the Bozeman Creek, West Bridger South, Bridger Canyon and the South Cottonwood portion of the Gallatin Crest Travel Planning Areas is to manage with more of an emphasis on non-motorized uses. This led me to want to continue providing for motorized recreation here and search for other means to resolve the resource concerns.

Correcting the soils and sedimentation problems in this area is complicated by the fact that the first approximately two miles of the Bear Loop Trail #440 is located on a Gallatin County road right-of-way through State Trust land and Gallatin National Forest land. This trail/road has many structural issues and is contributing to a Montana Department of Environmental Quality 303d violation. A solution to this problem requires cooperation between the Montana Department of Natural Resources and Conservation, Gallatin County and the Forest Service. There are also private landowner concerns over noise from motorized trail vehicles departing from the Bear Canyon Trailhead. Although not tied to the Travel Plan, there is an effort underway to find a mutually satisfactory solution to these problems. The Bear Canyon Task Force was formed which is comprised of recreation user groups, local residents, and the

responsible agencies. The immediate solution is a proposal to relocate this portion of the trail out of the road right-of-way to the east side of Bear Creek, thus avoiding existing landslide areas and the stream itself. For the long-term, the Task Force is still working on solutions to address problems on the existing road right-of-way. The Gallatin Forest Travel Plan helps facilitate the trail relocation work by determining the uses to be accommodated on the trail system.

My decision also includes several measures to resolve the soils and trail damage problems. First, I've included Standard 3-2 which states that the Bear Loop Trail (#440) and the Bear Lakes Trail (#53 and #508) within the Bear Canyon Creek drainage will not be opened to summer motorized, mountain bike, and horse use until the trail is brought up to a condition that accommodates those uses and alleviates sedimentation/water quality concerns.

Additionally, all trails within the Bear Canyon drainage are not to be opened for the summer season until the trail system is of a condition that prevents unacceptable erosion and watershed damage (Standard 3-3). To accomplish this, designated trails will be restricted to these uses until after July 15th annually when trails should be more durable. Lastly, due to sensitive soils in this area, Standard 3-4 prohibits wheeled motorized vehicle travel off of designated routes within this travel planning area (i.e. the 300 foot off-route allowance to access a campsite provided in Forest-wide Standard A-8 shall not apply).

Regarding the concerns of Bear Canyon residents about traffic and noise on the way to and at the trailhead I want to improve user behavior through information and education rather than closing it to summer motorized uses. My decision does however restrict snowmobiling on the first two miles of the Bear Loop Trail (#440) in favor of a marked cross-country ski trail. Public comments indicated to me that there was a higher demand for skiing than for snowmobiling from this trailhead. In my decision, snowmobilers will access this TPA from the Goose Creek Road.

My decision restricts snowmobiles on the Trail Creek Trail (#437) to provide a ski opportunity to the cabin and adds two new connector routes for non-motorized use to provide loop opportunities off of Chestnut Mountain and into West Pine Creek.

Different from my preferred alternative in the DEIS, I've connected the marked ski/snowmobile trail from Bear Lakes to the Trail Creek cabin to complete a loop. I've also corrected an oversight in my DEIS preferred alternative to show the trail along Bear/Goose divide inside the 440 loop as a route managed for public non-motorized travel.

Another goal I have for this area is to provide for wildlife movement between the Gallatin Mountain Range and the Bridger-Bangtail Mountain Ranges. To accomplish this my decision prohibits motorized use on the Chestnut Mountain Trail (#458) and I've adopted an objective (Objective 4-2) to move this trail and a portion of the Bear Loop Trail (#440) off of the ridge.

I've adopted two objectives (Objectives 1-2 and 1-3) for new routes. The first objective is to provide foot and horse routes connecting the Bear Canyon area to the North Fork of Trail Creek connecting Chestnut Mountain to Trail Creek. Making these connections allows for longer hikes and rides and creates loop opportunities returning to separate trailheads from where travel begins.

Big Sky Travel Planning Area

In this Travel Planning Area my decision will, for the most part, continue current management. One of the major differences is that I've added an ATV/motorcycle connector route between the Yellowmule Trails along the Forest boundary in Secs. 28, 29, and 30, T7S, R3E. This will provide loop opportunities with the Buck Ridge Trail thus encouraging users to stay on the designated routes. This travel planning area does have sedimentation problems however it is mostly coming from private land and cannot be corrected through the Travel Plan. There is also concern about wildlife movement, particularly in the fall. In response, my decision restricts OHV use from September 15th to June 15th annually on the Yellowmule Trails and loop connectors. In general, I believe that providing continued summer motorized recreation opportunities here is important since my decision is more restrictive on these uses to the south due to grizzly bear habitat concerns. Muddy Basin and the Inspiration Divide Trail (#8) will be closed to motorized use due to past experience with resource damage.

My decision will allow snowmobile use from December to June annually. I had considered closing the area from the 3rd Yellowmule Trail into McAtee Basin due to the potential for Wilderness trespass. However, I've determined that this has not been a significant problem in the past and therefore closure was not warranted.

In addition to the programmatic direction discussed earlier in this ROD I've adopted a goal and objective (Goal 3 and Objective 3-1) to transfer road and trail easements to the Big Sky community. This is an objective I have because these trails pass through private land in an urban setting are not conducive to management consistent with Forest Service philosophy.

Bozeman Creek Travel Planning Area

In this Travel Planning Area my decision will emphasize non-motorized uses, both summer and winter. Managing for non-motorized uses here is consistent with one of my overall objectives to provide day-hiking, biking and skiing opportunities in a non-motorized setting close to Forest communities (i.e. Bozeman). The area is currently popular for non-motorized uses and I wanted to increase the quality of experiences and maintain public safety. My decision includes an objective (Objective 1-2) to provide non-motorized trail links into the Hyalite drainage and to the Bozeman urban trail system for foot and mountain bike use. There is also an objective to provide a mountain bike connector route (Objective 1-3) across City of Bozeman land in Sec. 5, T4S, R7E. For winter my decision includes objectives (Objectives 2-2 and 2-3) to provide loop trails for day-use skiing and connector routes into the Hyalite drainage.

Bridger Canyon Travel Planning Area

In this Travel Planning Area my decision will emphasize summer mountain biking on old roads and winter cross-country skiing on the South Fork of Brackett Creek Road (#631). My decision includes an objective (Objective 1-2) to acquire public access at the southern end of the Travel Planning Area for a trailhead and trail to facilitate a bicycle loop route connecting with the Stone Creek Trail. This area has not historically been managed for motorized uses due to difficult access and concerns about conflicts with the Bridger Bowl Ski Area. I saw no reason to change this in the Travel Plan. Even if we are successful in acquiring public access my objective is still to provide for non-motorized recreation experiences in this area.

Part of my rationale for including a snowmobile area closure is that it is needed as mitigation for the Bridger Bowl Ski Area expansion, which I approved in January 2005 (Bridger Bowl Ski Area Master Plan Record of Decision, January 2005). To maintain winter habitat for lynx and wolverine there is a need to limit the amount of over-snow compaction in this area (FEIS, pages 3-393 and 3-618 through 3-629).

Cabin Creek Travel Planning Area

This Travel Planning Area includes a large portion of the Cabin Creek Recreation and Wildlife Management Area (CCRWMA) which was established through the Lee Metcalf Wilderness Act (P.L. 98-140). The area also provides some of the best habitat on the Forest for the threatened grizzly bear and other wildlife. My assessment of Lee Metcalf Wilderness Act direction is that, while it recognizes historical motor bike and snowmobile use, ATVs are not recognized. Therefore ATVs will only be permissible from the end of the Tepee Creek Road to the Cabin Creek Divide which is outside the CCRWMA , on the Red Cub Trail (#205) Seg. 1, from the trailhead in Beaver Creek to CCRWMA boundary and on the Oil Well Road to Pika Point where historic jeep use is documented. Also, in order to improve secure habitat for the grizzly bear I've reduced the amount of motorcycle opportunities to several select trails. These trails are somewhat different than what I had identified in my DEIS preferred alternative (Alternative 7) due to discussions we had with motorcyclists indicating that they preferred a different configuration than what I had proposed. Of principal importance to them was to retain a north-south motorcycle route from the Hebgen Basin (i.e. Highway 287) to at least one trailhead on national forest lands south of Bozeman. Since providing high quality secure habitat for grizzly bears was a criterion for my decision, accommodating motorcyclists' preferences required me to disallow motorcycle use on some of the routes I had included in Alternative 7. In addition, I wanted to provide opportunities in this area for stock use, mountain biking and hiking in a non-motorized setting. Therefore the Minnie Wapiti Trail #203 (from Potamogeton Trailhead to its junction with Trail #206) and the Red Cub Trail #205 (from Trail 210 to the Cabin Creek Recreation Wildlife Management Area boundary) were dropped from my decision as motorcycle routes. In exchange the Red Canyon Trail (i.e. Red Cub Trail #205; Seg. 3) and the Kirkwood Trail #210 were added. I've added the Kirkwood Trail because in dropping the Minnie Wapiti Trail a motorcycle loop opportunity was lost. The Kirkwood Trail creates an alternative opportunity for a shorter loop ride. The overall re-configuration of motorcycle routes will result in about a 4% increase in secure habitat over existing conditions.

One change from Alternative 7, my preferred alternative in the DEIS, is that I've extended the fall use period for ATVs from October 15th to December 2nd to facilitate access during the general hunting season. I've also adjusted the fall use period for all designated motorcycle routes to October 15th in order to have consistent closure dates and to provide a longer season of use. The more restrictive dates that I had included in Alternative 7 were in error. There were no unacceptable resource impacts that necessitated the earlier closure dates on motorized use. I have also changed the spring/summer date in which designated routes would be open to motorized use to July 15th, again to provide consistency among all trails within this Travel Planning Area. I chose July 15th rather than June 15th to ensure that facilities were dry and hardened such that trail rutting and erosion would be kept to a minimum. In addition, I wanted to protect early summer elk and grizzly bear habitat.

In the winter my decision will leave the area open to snowmobiles including the marked Big Sky Snowmobile Trail. Snowmobiling is a historic use here and is also specifically allowed for under the Lee Metcalf Wilderness Act, as noted above. This is not an area conducive to emphasizing cross-country skiing opportunities and I don't believe that the amount of snowmobile use the area receives is causing an unacceptable level of disturbance to wildlife.

Cherry Creek Travel Planning Area

The majority of trails in this Travel Planning Area provide access into the Lee Metcalf Wilderness. I've prohibited motorized use in favor of emphasizing opportunities for stock travel. In my DEIS preferred alternative (Alternative 7), and Alternative 7-M of the FEIS, I had retained a motorcycle opportunity on the Cherry Creek Trail (#401) from June 15th to September 15th since this route was longer and does not lead directly into the Wilderness. After further consideration and discussion with my staff, I decided to prohibit motorcycle use on this route. First, motorcyclists indicated to me that this was not a highly desirable opportunity. Second, access to this travel planning area is limited to one trailhead. Most other trails begin off of the main Cherry Creek route. By prohibiting motorcycle use on this Trail I've provided a complete non-motorized opportunity for stock users. Managing this trail for non-motorized use is also compatible with the management of trails on the adjacent Beaverhead-Deerlodge National Forest and BLM lands.

In my decision, mountain bikes are allowed on the Cherry Creek Trail (#401) and Placer Creek-Sweden Creek Loop Trail (#405 and 406) but are prohibited on other routes, again to prevent Wilderness trespass. The area is also restricted to snowmobiles to protect big game winter range and prevent trespass onto private land and into the Wilderness. My decision does include a marked cross-country ski trail along the Spanish Creek Road (#982) and the South Fork of Spanish Creek Trail (#407) to the Wilderness boundary (Objective 2-1 and Travel Plan Map – Winter). This road and trail provides a good ski opportunity accessible from a plowed county road.

In the rationale I had included with my preferred alternative of the DEIS (Alternative 7), I had indicated that horse use had been causing damage to some trails in the Cherry Creek Travel Planning Area. Since that time we have relocated the trails out of problem areas and therefore I no longer believe that a spring restriction on stock is needed.

A large part of public land in the western portion of this Travel Planning Area is difficult and time-consuming to access from the Spanish Creek Trailhead. Therefore I've adopted an objective in my decision (Objective 1-2) to acquire additional public access to Cowboys Heaven and the western portion of this Travel Planning Area.

Cooke City Travel Planning Area

My decision for the Cooke City area emphasizes regulated motorized/mountain bike use north of Highway 212 and non-motorized use to the south. My decision here was difficult. The area provides an opportunity to accommodate motorized use where the surrounding areas (designated Wilderness and Yellowstone National Park) cannot. Evidence of historic mining activity is evident. More recently, summer and winter motorized use has become popular and is very important to the residents and economy of Cooke City. On the other hand, the area provides

outstanding habitat for the grizzly bear (a threatened species) and is receiving a high-level of use by bears, particularly during the fall. There are also stream sedimentation concerns which, in conjunction with the importance of the bear habitat could support further restrictions on motorized use.

Since the release of the DEIS, public comment, particularly from the residents of Cooke City, indicated to me that they were not in favor of the summer motorized loops, rather they preferred to retain motorized access to popular destinations. Therefore, my decision more closely parallels the motorized travel opportunities that are being provided today. More specifically, in comparison to my preferred alternative in the DEIS (Alternative 7), my decision:

- Leaves the Goose Lake (#3230) and Lake Abundance Roads (#3219) open to all motorized travel to the Wilderness Boundary.
- Drops the proposed Huckleberry and Tredanic loop connectors for ATVs.
- Drops the proposed seasonal restrictions (fall) on Goose Lake Road #3230, Sheep Mountain Road, and Scotch Bonnet Road #3229. This does not preclude me from implementing a temporary fall seasonal closure in years of high bear activity.

For winter uses my decision will continue emphasizing snowmobile use north of the highway. Opportunities for snowmobiling to the north are highly desirable and it is also important to the Cooke City economy during the winter. I found no compelling resource reasons to modify current use. South of the highway I've included a small snowmobile area restriction in the Republic Mountain area to maintain the primitive character of the recommended wilderness. This area restriction differs from what I had included in Alternative 7 (my DEIS preferred alternative), in that snowmobiles would no longer be restricted east of the Irma Mine. Again, comments indicated that there was little need for this restriction simply to provide for a non-motorized skiing opportunity. A restriction west of the Irma Mine is sufficient to protect the primitive character of the recommended wilderness.

While there are resource concerns in this area, I concluded that the social and economic values associated with the current recreation opportunities were of greater importance. From a motorized recreation perspective, the Cooke City Travel Planning Area is an island surrounded by designated Wilderness and Yellowstone National Park; areas where mechanized use is prohibited. The public has become accustomed to the summer motorized and snowmobile opportunities that this area provides. The community has come to depend on it for their economic well-being. In addition, the Cooke City Travel Planning Area is one of those few areas on the Gallatin National Forest where we can provide for destination rides. This area is at high elevation with open hillsides and ridges that provide spectacular mountain views.

To mitigate for other resource impacts other old, non-designated routes will be closed and stabilized to eliminate erosion, sedimentation and keep motorized travel from going off-route. Part of my rationale for continuing to manage for wheeled motorized travel on routes north of the highway is the improvements being made to existing roads through the New World Mine reclamation effort. These will reduce the sedimentation that has been occurring off of these facilities. In addition, the elimination of off-route travel will result in an improvement to grizzly bear habitat security over the current situation. In my decision I've adopted a goal (Goal 3) to provide habitat for Yellowstone cutthroat trout in Soda Butte Creek and Goose Creek, and provide for beneficial uses in all other stream courses. In addition I've adopted two objectives

(Objectives 3-1 and 3-2) to effectively close and stabilize all non-designated motorized routes and to implement a maintenance program on the Goose Lake Road, Sheep Mountain Road and Kersey Lake Road to eliminate erosion and sedimentation.

Lastly, as discussed on page 28 of this ROD, the 300 foot off-route allowance to access a campsite provided in Forest-wide Standard A-8 shall not apply to Gallatin National Forest lands along the Beartooth Highway (#212).

Deer Creeks Travel Planning Area

Most of the routes within the Deer Creeks TPA were burned over during the Derby Fire of 2006. This changed the conditions of this area from what the analysis of effects disclosed in the Final Travel Plan EIS were based and therefore the information available to me in making my decision for travel management in this area. The Forest Service Handbook for implementing NEPA at FSH 1909.15(18) provides guidance for the review and consideration of new information or changed circumstances after decisions have been made. It is too soon after the fire to assess how the impacts from this fire may necessitate changes in how travel is managed within this area. Early indications are that there should be little need for change in the designated uses I've established for the Deer Creeks TPA, however there likely will be needs for road and trail restoration work. The recommendations of the Burned Area Emergency Response Team has already led to the obliteration of several small spur roads.

Considering that forest ecosystems are dynamic, where natural events can change conditions at any time, and given the commitments I've made to the public to reach a Travel Plan decision this fall, I determined that the best approach is for me to sign this Record of Decision as planned and then follow up with a review of the changed conditions in accordance with section 18 of the Forest Service Handbook for implementing NEPA (id.).

Recognizing that the impacts from the Derby Fire could lead to changes in travel management, my current decision for this Travel Planning Area emphasizes providing a variety of both motorized and non-motorized recreation opportunities in the summer. From a Forest-wide perspective I found this area to have good capability for ATV and motorcycle use. It is also about the only Travel Planning Area near Big Timber where these uses are not precluded for other reasons. From public comments I also heard that it was important to provide single track trail for motorcycle use and non-motorized trail for stock and hiking. I believe that my decision provides a good balance of opportunities and enhances the overall quality of experiences for a variety of users.

From a resource perspective Lower Deer Creek does provide habitat for Yellowstone cutthroat trout and there are concerns about sedimentation from trails. Therefore my decision includes a standard (Standard 3-1) that will restrict summer motorized use on the Deer Creeks and Placer Gulch Trails until the facilities are brought to a standard that does not degrade trout habitat.

The Deer Creeks Travel Planning Area does not have the snow conditions that are conducive to winter recreation activities. My decision does not restrict use but there is also no goal to manage for it.

In addition, I have restricted motorized use on the southern end of the Lower Deer Creek trail (above Deer Creek Cabin) as a result of concerns raised in the fisheries analysis about the impacts of that use to the numerous tributaries in this stretch of trail. In addition, I heard through numerous public comments that it was important that some portions of the Deer Creeks be non-motorized since they are a unique ecosystem on the Gallatin. As such, I have restricted motorized use on the adjacent section of the Lodgepole Trail, and the very upper end of the Derby Mountain Trail (which field reviews showed had no historic motorized use) to provide this area for non-motorized users. In addition, the Custer National Forest is proposing to manage the adjacent Meyers Creek area as non-motorized, and asked us to ensure that routes adjacent to the Custer were managed consistently across forests (Avey 8/02/06).

Lastly, I've identified the Cherry Creek drainage as one that currently does not have adequate perfected public access to the National Forest. Therefore, I have adopted an objective (Objective 1-2) to acquire additional public access into this drainage.

East Boulder Travel Planning Area

Most of this Travel Planning Area is remote and requires a significant amount of travel time just to get into the heart of it. My decision uses the road network to the south to provide backcountry, ATV and motorcycle opportunities accessed from the Custer National Forest. The trail system is to be managed for motorcycle, mountain bike and stock use in the summer. There will be opportunities for long loop rides into the Deer Creeks Travel Planning Area and into the Custer National Forest. Some primitive mining exploration roads will be managed as system trails for ATV and motorcycle use. In the winter the goal will be to provide for dispersed snowmobile use. In Alternative 7 (my DEIS preferred alternative) I had included a snowmobile area restriction to the south of Picket Pin Road #140 to provide a more definable boundary and reduce the potential for Wilderness trespass. I have dropped this restriction in my decision because a snowmobile closure would be hard to enforce in this remote location and Wilderness intrusion is not currently a serious problem.

My rationale for managing this area for mixed uses with minor investment is that: (a) Generally motorized users indicated interest in opportunities within this area where non-motorized users did not. (b) Because it is remote it is not likely to receive heavy use. (c) I did not identify any significant resource concerns that would necessitate further restrictions.

My decision differs from Alternative 7 of the DEIS as follows:

- The Graham Creek Trail #117 to is open to motorcycles. This trail connects Main Boulder to the end of Pickett Pin Road #140.
- The Dry Fork Road is open to 4x4s. This route heads east from the East Boulder Road to the Dry Fork Trail #13.
- The Dry Fork Trail #13 to Moccasin Lake is open to ATVs.
- The Dry Fork route for snowmobiles should be displayed in the matrix as an A, not and E.
- The snowmobile area restriction is dropped (between Pickett Pin road and the Wilderness boundary). This was initially proposed when the Big Timber District was considering building a snowmobile trail up from Lewis Gulch.

With the exception of the Dry Fork Road, these changes were made in response to public comments, field reviews and a review of the analysis. I found I was able to accommodate those requests with no additional impacts. The Dry Fork Road was never intended to be restricted to 4x4s, but showed that way in Alternative 7 due to a mapping error.

East Crazies Travel Planning Area

My decision for the East Crazies Travel Planning Area was based on attempting to provide for a variety of uses and experiences within the mountain range as a whole. The area is in checkerboard ownership and easements across private land on the east side limit opportunities to foot and horse travel only. On the west side there are more options but there are still private land issues and the high peaks area of the Crazies holds significant cultural value to the Crow Tribe that must be respected. On the other hand, from a Forest-wide perspective, I believe there is a shortage of destination opportunities for motorized users (such as peaks, ridges or lakes) and the Crazy Mountain Range has these characteristics. On balance, I decided to provide a trail opportunity for motorcycles and mountain bikes on the Rock Creek North Trail #270 and an ATV/motorcycle/mountain bike opportunity on the Cottonwood Lake Trail (#197). The remainder of the Travel Planning Area will emphasize summer non-motorized uses.

My decision is different than what I had proposed in my DEIS preferred alternative (Alternative 7). I have chosen to close the Smeller Lake Trail #220 to motorcycles, close the Trespass Trail #268 to motorized use, and stop motorcycle/ATV traffic at the end of the Cottonwood Road (Also see the discussion for the Ibex Travel Planning Area). I removed the motorcycle opportunity to Smeller Lake in response to Montana Fish Wildlife and Parks recommendations. Smeller Lake is an important mountain goat hunting area and they've received feedback from the public that they want a high quality non-motorized hunting experience.

For snowmobiling, I attempted to provide some suitable terrain where easements allow and where the cultural integrity of the high peaks area will not be threatened.

I've identified needs for access to public land on the east side of the Crazy Mountains and therefore my decision includes an objective (Objective 1-2) to acquire public roaded access to National Forest land in Sweetgrass Creek and Swamp Creek and acquire public trail access in other portions of the Travel Planning Area.

Fairy Lake Travel Planning Area

My decision for this Travel Planning Area emphasizes providing a variety of uses during the summer and a combination of groomed snowmobile trails to the north of the Middle Fork of Brackett Creek and marked cross-country ski trails on the South Fork of Brackett Creek Road. Fairy Lake itself is accessible by road open to passenger cars and attracts a large number of families. For the summer, my choice was largely based on historic use and the opportunity that old logging roads provide to create a long ATV/motorcycle opportunity extending from the North Fork of Brackett Creek Road (#6607) to the South Fork of Flathead Creek Road (#6981). Public comments also made me aware of the need for single-track, challenging motorcycle opportunities. My decision provides a motorcycle opportunity on the Ross Peak Trail (#525) and Honeymoon Trail (#551) with a connector route to the Fairy Lake Trail (#500). The Ross Peak Trail then connects in with a series of trails on the west side of the Bridger Mountains that are

also to be managed as single track routes open to motorcycles. The combination provides for a variety of short and long loop opportunities accessible from Fairy Lake Campground and a number of other trailheads. Mountain bike use is also an emphasis on the ATV and motorcycle route system. Non-motorized hiking opportunities will be provided on the Bridger Foothills Trail (#534) and the Shafthouse Trail (#540). These trails are also accessible from the Fairy Lake Campground.

For the winter my decision was influenced by the identified need to provide both snowmobile and ski opportunities, but to separate the two uses. Public comments indicated that the South Fork and Middle Fork of Brackett Creek had superior terrain and snow conditions for skiing so my decision provides a marked ski trail and prohibits snowmobiles in this area. Groomed snowmobile routes are provided from the North Fork of Brackett Creek Road to the South Fork of Flathead Creek Road. In my DEIS preferred alternative (Alternative 7) I had included a snowmobile restriction in the higher elevations to the west of these trails due to the potential effects to wolverine and mountain goat winter range. In my decision I have reconfigured it to allow for some high-marking opportunities and transport of skiers to popular areas while providing for wolverine and mountain goats. From a Forest-wide perspective, I found that there would be a shortage of these opportunities under Alternative 7 and this area was identified in comments as very popular.

My route-by-route decisions for this area include a few new ATV/motorcycle and snowmobile opportunities. Since there are currently no roads or trails to accommodate these uses I've adopted an objective (Objective 1-2) to provide a system of 1 to 3 designated ATV and/or motorcycle routes and an objective (Objective 2-2) to provide a system of 2 to 4 snowmobile loop trails and a connector route to the Flathead Pass area.

Gallatin Crest Travel Planning Area

My decision for this Travel Planning Area was largely influenced by the fact that it falls within the Hyalite Porcupine Buffalo Horn Wilderness Study Area and management must maintain the pre-existing wilderness character as it was in 1977 (see the discussion on page 24 of this ROD). Therefore my decision will preclude ATV use but provides for motorcycle use on some trails including the Gallatin Crest Trail (#96) north of Windy Pass. In addition to remaining consistent with the Montana Wilderness Study Act, I tried to provide well-distributed opportunities for motorcycles, and exclusive non-motorized uses in this area. The Gallatin Crest is unique on this Forest in that it provides high peaks and lake destinations, yet is not in designated Wilderness or otherwise restricted to non-motorized uses. My selected configuration of the motorcycle routes was also designed to provide and maintain good secure habitat for the grizzly bear.

While mountain biking was not known to be an activity enjoyed in this area in 1977, it did not seem reasonable to preclude them when motorcycle use was allowed and their use requires similar tread widths. Agency policy on mountain bikes states they are appropriate wherever motorcycle use occurred historically, and on non-motorized trails as long as the total amount of mountain bike and motorcycle use maintains wilderness character as it existed in 1977 (See Schlenker's 9/2006 letter).

My decision includes seasonal restrictions on motorcycles from September 5th to July 15th annually. The fall restriction is designed to provide secure habitat for the grizzly bear at a time

when they are foraging in white-bark pine habitat. The spring restriction, to July 15th, is needed because there is still snow covering portions of many of these trails until that time. An earlier opening date could lead to motorcyclists leaving the designated trail to avoid snow banks, thus causing damage to surrounding vegetation.

The Starting Benchmark proposed prohibiting mountain bikes on the Hyalite #427 and East Fork of Hyalite #434 Trails. These trails receive a high level of use and there has been concern about public safety, user conflict and congestion. In response to the Benchmark release in 2002 we received a large number of comments indicating the importance of these routes to the biking community and that an outright prohibition was excessive. In my decision I decided to look to information and education and time share (e.g. alternating days) to resolve the safety concerns. Please refer to my discussion of time-shared trails on page 17 of this ROD.

My decision does include mountain bike restrictions on Big Creek area side trails to the South Fork of Eight Mile Creek, including trails #146, #159, #181, #190, #196, #225, #240 and #241. I included these restrictions primarily in response to the need to maintain the pre-existing wilderness character of the Study Area similar to what it was in 1977. I accomplished this by concentrating mountain bike use to well-established motorcycle routes, while providing large areas where mountain bike is prohibited. Mountain bikes are allowed on the Big Creek Trail (#180) to provide a route from the Paradise Valley to the mountain bike routes in the upper Rock Creek and Gallatin Crest areas.

One key change from my DEIS preferred alternative is that I've provided an opportunity for cross-country snowmobiling. The open area where snowmobiling is allowed runs from Windy Pass across the Crest through Rock Creek. This allows high quality "challenge" snowmobile opportunities but limits the acreage available to remain consistent with the Montana Wilderness Study Act. As I indicated in my discussion for the HPBH WSA earlier in this ROD I considered a designated route from Hyalite through a closed area, to a small open area in the East Fork of Hyalite (Heather/Emerald) but concluded that opening both this area and the Windy Pass/Rock Creek area would not maintain wilderness character as it existed in 1977. I also limited the amount of acreage open to snowmobiling to maintain secure wolverine winter range and reproductive denning habitat.

There is currently limited access to public lands within the Gallatin Mountain Range from the Yellowstone Valley. Therefore, I've included an objective (Objective 1-2) to highlight the need for up to 4 additional routes of access to this Travel Planning Area.

In addition, since this is a Wilderness Study Area, I believed it was important to include a goal and objective (Goal 4 and Objective 4-1) to manage the Hyalite Porcupine Buffalo Horn Wilderness Study Area to sustain the recreation setting and existing Wilderness characteristics as they were in 1977 and to preserve the area for future consideration as Wilderness. While I've concluded that my travel management decision is consistent with Montana Wilderness Study Act, I believe that it is important to ensure that evolving use patterns don't negatively affect the natural integrity of this area.

For additional discussion, please refer to my rationale for the Hyalite Porcupine Buffalo Horn Wilderness Study Area on page 24 and my conclusions on the issue of the Wilderness Study Area beginning on page 108 of this ROD.

Gallatin River Canyon Travel Planning Area

This Travel Planning Area consists of the Highway 191 corridor through the Gallatin National Forest. Forest roads and trails that begin in this area are addressed in adjacent travel planning areas. There was no real difference between alternatives and there was no reason that I saw to change current management. In addition to the programmatic direction I discussed earlier in this ROD, I have adopted a guideline in this Travel Planning Area to designate the go-down access routes to the Gallatin River and cliff areas and improve the condition of facilities to prevent the pioneering of user-built parking areas and discourage increased access into peregrine falcon nesting habitat. Lastly, as discussed on page 28 of this ROD, the 300 foot off-route allowance to access a campsite provided in Forest-wide Standard A-8 shall not apply to Gallatin National Forest lands along Highway #191.

Gallatin Roaded Travel Planning Area

My decision for this Travel Planning Area emphasizes motorized uses. This area has been heavily harvested for timber production on both public and private land and there is an extensive network of logging roads that can be used for motorized opportunities. Managing for motorized use in this area helps meet one of my decision criterion to provide for half-day and evening ATV and/or motorcycle trail rides within a reasonable travel distance of Bozeman. The Gallatin Roaded area does not contain special habitats or other unique resource concerns that lead me to believe that heavy restrictions are warranted. For these fundamental reasons my decision is to emphasize motorized use in this area.

As discussed earlier in this ROD, I've included the goals and associated programmatic direction to provide habitat for cutthroat trout and to protect soil and watershed conditions in this Travel Planning Area. Somewhat different from other travel planning areas where I've adopted this direction, this area is in need of improvement. Therefore, the four objectives I have adopted (Objective 3-1, 3-2, 3-3 and 4-1) are tailored to improving westslope cutthroat trout in the West Fork of Wilson Creek and to eliminate erosion and measurable sediment from roads in Wilson Creek, West Fork of Wilson Creek, Shenango Creek and Line Creek. I've also adopted a standard (Standard 3-4) that prohibits the construction or reconstruction of new roads and trails in the West Fork of Wilson Creek drainage until Objective 3-1 is achieved. Lastly, I've adopted an objective (Objective 4-2), as I did in the Bangtails Travel Planning Area, to provide interpretive/educational signing along motorized routes and in affected areas, asking motorized users seeking camp spots to stay out of wet, muddy and shrubby areas, and to keep vehicles (and campsites) a minimum distance (e.g. 50 feet) from lakes, ponds, rivers and streams.

Gardiner Basin Travel Planning Area

This area receives a moderate level of recreation use, primarily by locals, and is popular for big game hunting, driving for pleasure, dispersed camping, firewood gathering, day hiking, cross country skiing, and snowmobiling. The area has been roaded to accommodate past mining and timber harvest activity. My decision changes little from the existing situation. I found no compelling reason to change existing travel patterns in this area. Passenger car and 4x4 travel is allowed on the existing open road system. Motorized use is precluded from area trails to prevent wilderness trespass and maintain habitat for the threatened grizzly bear. One minor difference is that I have changed the seasonal road closures on the lower Eagle Creek and Bear Creek roads to

January 2nd through May 15th to provide an opportunity for Chistmas tree cutting and early season cross country ski opportunities.

Hebgen Basin Travel Planning Area

This travel planning area lies adjacent to Yellowstone National Park and surrounds Hebgen Lake and the community of West Yellowstone. West Yellowstone is dependent on tourism and this area is used heavily by summer and winter visitors. The area was extensively roaded for past timber harvest but much of this road system has been closed and restored over the past decade. There is no summer single-track trail system. My decision for this area will continue to provide for high levels of summer and winter recreation use emphasizing pleasure driving, ATV and snowmobile use. My rationale for this choice is based on the high level of human use this area currently receives, its existing developed character, the flat terrain/stable soils, and the importance of summer and winter motorized recreation to the economy of West Yellowstone.

The area is within the recovery zone for the threatened grizzly bear and the high open road density is not optimal for bear habitat security. Invasive weed spread along motorized routes is also of concern. While these problems could be improved through increased restrictions on summer motorized use I do not find that to be an acceptable option at this time. To balance motorized use opportunities with grizzly bear habitat needs, restrictions in summer motorized use have been included in adjacent travel planning areas of higher-quality bear habitat rather than in this area. I also believe that the Forest Service must accept that ongoing treatment of weeds will be necessary in areas of high human use. One change that I made, from what was in my DEIS preferred alternative (Alternative 7), for the summer is a prohibition on motorized use on Road 2530, which is located on the Horse Butte peninsula. This route does not provide access to Hebgen Lake and closing it will result in some improvement to grizzly bear secure habitat. The remaining open road system provides more than adequate access to the public lands on the Horse Butte Peninsula.

My decision will not allow motorized travel 300 feet off designated routes for camping around the west shore of Hebgen Lake. Instead, the District Ranger will specifically identify the go-down access routes to the lake and rivers that will remain open. The term “go-down” defines the designated route where travel is allowed to reach a dispersed recreation site.

In the winter there is concern that snowmobiling on Horse Butte could disrupt nesting bald eagles. There is currently a small snowmobile area closure which I am retaining in my decision. I did not increase the size of this closure, as discussed for Alternatives 5 and 6 in the FEIS effects analysis for bald eagles, due to the high level of use this area receives and increasing current bald eagle population trends. Additional snowmobile closures were included on the Madison River and Madison Arm of Hebgen Lake to protect winter habitat for elk, moose, trumpeter swans, and bald eagles. I’ve adjusted the snowmobile restriction boundary on the north side of the Madison Arm from the road to the bluffs such that snowmobilers can look out over the Arm. I also extended the restricted area around the Arm from Highway 191 to the Yellowstone National Park boundary. This was always my intent, it was just mapped incorrectly for the DEIS. In my decision I also retained the existing North Hebgen Winter Range snowmobile closure. These actions will help protect some of the most important wintering areas for wildlife in this travel planning area while maintaining abundant opportunities for snowmobile use. In my decision I have added a marked/groomed cross-country ski trail that runs from the Highway 191 trucker

pull-out just north of the Hebgen Lake Ranger Station to the Baker's Hole Campground between Highway 191 and Yellowstone National Park. I included this trail based on public comment suggesting this opportunity and I found no resource reasons not to provide it. Similar to my decision for the Rendezvous Ski Trails, I've included a small snowmobile area closure here, between Highway 191 and the Yellowstone National Park boundary, to provide a non-motorized setting around this ski trail.

One change from Alternative 7, my preferred alternative in the DEIS, is that I've adopted the snowmobile area closure in the Cougar/Duck Creek area (as shown for Alternatives 5 and 6) to protect wintering wildlife. This area closure includes lands recently purchased in the Duck Creek Land Acquisition.

Lastly, I've adopted a goal (Goal 3) to provide secure bald eagle nesting habitat around Hebgen Lake. While we have identified no specific needs for change to meet this goal, I believe that it is important to highlight the importance of this area for bald eagles.

Hyalite Travel Planning Area

This Travel Planning Area is very popular for a variety of recreation users in the summer. In my decision I wanted to continue to provide for both motorized and non-motorized uses and improve the quality of experiences for both. I want to maintain high standard roads for passenger car travel and access but I also want to maintain some low standard roads to provide opportunities for 4 x 4 travel. Overall, I tried to maximize the amount of open road to help minimize the propagation of illegal road/trail pioneering. The demand in this planning area exists for a variety of road standards. If this demand isn't met, history shows us that people will pioneer new routes. My decision includes 2 ATV/motorcycle loops within this Travel Planning Area and single track motorcycle opportunities can be accessed from the Hyalite and East Fork of Hyalite Trailheads. Mountain biking is also emphasized on the existing road network with connections to the adjacent Bozeman Creek Travel Planning Area. Exclusive non-motorized opportunities are provided on the Blackmore Trail (#423), History Rock Trail (#424), Cresent Lake Trail (#213), Westshore Trail (#431), and Bozeman Divide Trail (#171).

As I discussed earlier in this ROD I've decided to manage the Hyalite Trail #427 and the East Fork of Hyalite Trail #434 in the summer as "time shared" trails to address social problems (i.e. "user conflict") between motorized and non-motorized users, and between bikers and stock users/hikers. I intend to work with various users over the next year or so to develop the specific schedules.

For the winter my decision emphasizes providing front country, cross-country skiing. There is a growing demand for these opportunities on the Gallatin National Forest, especially in close proximity to Bozeman. Snowmobiling will mostly be prohibited in favor of maintaining non-motorized experiences although I have provided a means to access ice climbing areas in the upper end of the Hyalite drainage via a designated snowmobile route beginning at Moser Creek. Public comments have made me aware of the fact that this is a world class ice climbing opportunity and it is much too far to ski in. Some of the ski trails will be groomed on an occasional basis.

Beginning with the Benchmark we have proposed to plow the Hyalite Road to provide better, safer access for winter recreation. My decision allows for the road to be plowed, but only to the Blackmore Picnic Area. My preferred alternative in the DEIS was to plow all the way to Chisholm Campground. I chose not to do this due to high cost, deep snow, and limited parking at the Campground. While I believe that plowing to Blackmore is feasible there is the possibility that funds won't be sufficient to carry it out. Therefore, Plan B will be to plow to the Langohr/Moser area. A parking area will be provided at the Moser junction providing access to the designated snowmobile trail and open area. Another parking area will be provided at Langohr Campground for access to designated ski routes. Plan C will be to plow to the lower fishing access where both skiers and snowmobilers will park. Under Plan C, both snowmobiles and non-motorized users would be allowed on the Hyalite Road to the Moser Creek Road (i.e. the point where the designated snowmobile route would begin). The main Hyalite Road would then be managed as a ski trail south of the Moser junction. In addition, since Hyalite Creek is part of the municipal water supply for Bozeman, I've adopted a standard (Standard 2-5) that prohibits the use of sand or salt (NaCl) on the Hyalite Road.

Other features of my decision include:

(1) I've elected not to pursue a parallel trail opposite Hyalite Creek from the main Hyalite road. Analysis showed me that establishing such a route could result in unacceptable impacts to water quality and riparian habitat. I do however want to continue to look at the option of widening the road to create an extra lane to provide for safer maintain bike travel through the lower part of the Canyon. I've adopted an objective (Objective 1-3) to pursue this idea.

(2) I've chosen not to manage the Langohr backcountry road along the Langohr/Cottonwood divide (between Langohr Road and the Langohr Toole Road) for 4x4 travel in order to maintain the ridge-line corridor for wildlife movement.

(3) My decision will close the Hyalite road to motorized use in the spring (from March 30 – May 15). Since the road is to be plowed, closure in the spring will provide an opportunity for biking and roller-blading on a paved road without motorized traffic. Closure is also needed since plowing makes it more susceptible to damage during the spring break-up period.

I've adopted several other objectives to carry out the features of my decision for the Hyalite Travel Planning Area (Objectives 1-2, 2-2, and 2-3). These objectives provide the impetus to connect trails to provide mountain bike and cross-country ski loops, and to link Hyalite trails to those in the Bozeman Creek and South Cottonwood Creek drainages.

Lastly, as discussed on page 28 of this ROD, the 300 foot off-route allowance to access a campsite provided in Forest-wide Standard A-8 shall not apply to Gallatin National Forest lands along the Hyalite Road.

Ibex Travel Planning Area

My decision for the Ibex Travel Planning Area was largely based on attempting to provide for a variety of uses and experiences within the mountain range as a whole. A large part of the Crazy Mountains is in checkerboard ownership and easements across private land on the east side limit opportunities to foot and horse travel only. My decision is different from what I had proposed in

my DEIS preferred alternative (Alternative 7). In that alternative I would have provided an opportunity for ATV/motorcycles on the Trespass Trail (#268) to the south end of private land in section 25, and on the Ibex Trail (#271). I've closed the Trespass Trail #268 to summer motorized use and terminated ATV/motorcycle traffic at the end of the Road on Cottonwood Trail (#197) out of respect for traditional Crow Tribal practices. Through consultation with the Crow Tribe it was indicated that some areas are more important than others and that the high elevation areas within this Travel Planning Area are the most sacred. Motorized use may adversely affect traditional practices in the summer. My decision does designate the Shields-Lowline route for motorcycles. To accommodate this use however, we must first negotiate an easement for portions of this trail that pass through private land. We will also be looking for ways to re-route this trail to get more of it on national forest land. My objective is to provide a north-south motorcycle route on the west side of the Crazy Mountains. A seasonal motorized use restriction will be implemented on this trail from September 5th through June 15th.

In the winter my decision maintains current use patterns except that I've chosen to establish a snowmobile area closure north of Ibex Cabin, around Porcupine Cabin to the Deep Creek area. This is to provide a high elevation non-motorized opportunity on the west side of the Crazy Mountains, and because it will be difficult if not impossible to keep snowmobiles on a designated route through checkerboarded private lands given the open terrain in the Lowline Trail area. In addition, snow quality on the Porcupine-Lowline Trail is marginal. The snowmobile closure immediately adjacent to the Ibex Cabin was dropped to allow snowmobilers to access the Cottonwood-Trespass snowmobile trails from the cabin. This change provides for a more enforceable snowmobile area configuration. In addition, plowed road access to the Porcupine Cabin will be continued.

To provide the motorcycle opportunity on the Porcupine-Lowline Trail and also to gain better access to National Forest lands in this Travel Planning area my decision includes two objectives. Objective 1-2 targets securing easements through private land on roads and trails designated for public use. Objective 1-3 targets acquiring additional public access to National Forest land between Porcupine cabin and the Middle Fork Rock Creek.

Lee Metcalf Monument Travel Planning Area

This is a designated Wilderness Area and therefore there is no debate over whether trails should be managed for mechanized uses. It's prohibited by law and therefore the trail system is managed for foot and horse use. This area does not provide good cross-country ski or snowshoe opportunities and therefore there are no winter recreation goals.

There are concerns here over non-system user-built stock trails that have become established. Many of these are not designed to standard and are becoming wide, braided, and/or erosive. Therefore I have included objectives in my decision (Objectives 1-2 and 3-1) to attain trail conditions that are non-erosive and visually acceptable. Objective 1-2 targets a readily identifiable system of trails that the public will not confuse with non-system trails. Objective 1-3 targets closure or restoration of non-system trails to non-erosive single path trails.

Public and administrative access into the Monument Mountain area of this travel planning area is currently provided from trails in Sage, Tepee and Bacon Rind drainages. As a result, I have

decided not to pursue a proposal to acquire an easement across private land and Yellowstone National Park at this time and therefore my decision will abandon Monument Trail (#52).

Lee Metcalf Spanish Peaks Travel Planning Area

This is also designated Wilderness and therefore there was little difference between alternatives. My decision continues the current foot and stock opportunities that exist today. This area provides limited cross-country ski and snowshoe opportunities and therefore there are no goals to manage this area for winter recreation.

Trails will be open to stock use with the exception of the Lava Lake Trail (#77) which will be restricted to stock until September 15th of each year. This trail is narrow, making it difficult for hikers to move safely off the trail to allow stock to pass. In other words, similar to the Pine Creek Lake Trail in the Absaroka Beartooth, I chose to preclude horses during the summer due to concerns about congestion, user conflicts and user safety. My decision is different from what I proposed in Alternative 7 of the DEIS in that this trail would be opened to day use stock travel after September 15th. The public safety issue (i.e. conflicts between people and horses) is not as much a concern after Labor Day. Also, part of my rationale for restricting stock use is that the lake basin accessed by this trail does not have the capability to adequately handle stock overnight. The trail is very popular with the public and used by hiking groups. My decision precludes overnight stock camping in the Lava Lake area, but still provides opportunities to use the trail during the hunting season.

Lee Metcalf - Taylor Hilgard Travel Planning Area

Similar to the other units of the Lee Metcalf Wilderness there was little difference between alternatives. My decision continues the current foot and stock opportunities that exist today. As with other Wilderness areas this area does not provide good cross-country ski or snowshoe opportunities and therefore there are no winter recreation goals.

We did receive comment that the West Fork of Beaver Creek Trail should be closed to stock due to the unsuitability of portions of the trail to accommodate this use. I chose not to close it at this time because of recent investments we've made to re-engineer the trail to address this concern. The success of this work and the long-term suitability of the trail to be managed for stock may need to be re-evaluated in the future.

Lionhead Travel Planning Area

The eastern portion of this Travel Planning Area is extensively roaded. In my decision I wanted to balance opportunities for motorized use, non-motorized use, and the need to improve grizzly bear habitat in this area. I attempted to provide and improve ATV/motorcycle opportunities using this road system, existing trails and new connectors to create loops. My decision will however restrict summer motorized use on the trails in the Watkins Creek, Sheep Creek, and Mile Creek drainages. The reasons for these restrictions are to manage this area more consistently with the Forest Plan recommendation that this become wilderness; to increase the amount of secure habitat provided for the grizzly bear; and to provide for wildlife movement across the Henry's Lake Mountain Range to and from the southwest and to and from the Madison Mountain Range.

Goal 4, which I've adopted in my decision, also emphasizes providing for wildlife migration and movement.

My decision proposes to add a new non-motorized trail parallel to the Ski Hill Trail #114 (Objective 1-2) to meet national direction that the Continental Divide Trail (in total) be managed as a non-motorized route.

My decision will not allow motorized travel 300 feet off designated routes for camping along the Beaver Creek Road. Instead, the District Ranger will specifically identify the go-down access routes to the Creek that will remain open. The term "go-down" defines the designated route where travel is allowed to reach a dispersed recreation site. In other words, the 300 foot off-route allowance to access a campsite provided in Forest-wide Standard A-8 shall not apply to the Beaver Creek Road.

The eastside of the Lionhead Travel Planning Area provides some of the best backcountry snowmobiling on the Gallatin National Forest. My decision continues to provide for that use in this part of the area. Alternative 7-M would also allow snowmobile use in a portion of the Lionhead recommended wilderness area. In my decision I have chosen to prohibit it because I found through the Gallatin Forest Plan, that the highest and best use of this area is wilderness then we should be managing travel consistent with that determination. I have also restricted snowmobiling in this area to protect big game winter range (See FEIS, pages 41 and 42). Snowmobiling will also be precluded in the Trapper Creek area in favor of protecting important moose winter range (id.).

In Alternative 7, my DEIS preferred alternative, I had included a snowmobile closure north of Earthquake Lake to minimize conflicts with users of the Refuge Point Ski/Snowshoe Trail and placed a non-motorized emphasis on winter recreation in this area. In my decision I dropped the closure area west of Beaver Creek and north of Highway 287 because this area is not conducive to snowmobiling anyway and therefore I saw no need to impose a restriction. I've also decided to provide an open snowmobile route that would run downstream to the Crazy House. This route will accommodate desired fishing access to the Madison River (public comment) while not affecting sking opportunities in the Refuge Point area.

Using the same logic for the recommended wilderness area that I had for snowmobiling, I also believe that mountain bikes should be prohibited on area trails. However we made a mistake in the alternatives we presented for public comment in that none of them would have precluded mountain bikes. While we corrected this oversight by modifying Alternative 6 in the FEIS, I still don't believe that it would be appropriate to make a decision to prohibit mountain bikes without first providing a public comment opportunity. Instead, it is my intent to propose a modification to the Travel Plan to preclude this use in the Lionhead recommended wilderness area, allow for public comment, and then make a decision within the next year or so.

Main Boulder Travel Planning Area

This Travel Planning Area is a narrow roaded corridor into the heart of the Absaroka-Beartooth Wilderness and serves as a portal into the Wilderness. In terms of travel management the Main Boulder Road is the primary feature and it is open year-round. This road is under Park and Sweet Grass County jurisdiction, and we recognize this jurisdiction to the road's terminus at

Million Dollar Basin. I found no reason to significantly change the uses currently enjoyed within this area.

My decision will not allow motorized travel 300 feet off designated routes for camping along the Main Boulder River as provided for in most other travel planning areas under Forest-wide Standard A-8. Instead, the District Ranger will specifically identify the go-down access routes to the river that will remain open.

I've adopted an objective (Objective 1-2) to cooperate with the County to provide a route for high clearance vehicles that connects the end of the improved road at Box Canyon to the Independence area. This route is a good place to meet the demands for 4x4 recreation. I have also identified a need to gain road access to the National Forest boundary and across checkerboard private inholdings in the Burris Flat area which I've adopted as Objective 1-3.

Mill Creek Travel Planning Area

Similar to Hyalite, this Travel Planning Area is very popular for a variety of recreation users in the summer. In my decision I wanted to continue to provide for both motorized and non-motorized uses and improve the quality of experiences for both. In the summer, a variety of opportunities for 4 x4 and ATV travel will be provided utilizing the existing road system including the addition of a connector in the Wicked/Snowbank area that will provide an ATV/motorcycle loop. I will continue to preclude motorized use on Road #1764 in the Counts Creek drainage to minimize potential sedimentation impacts to cutthroat trout. Trails will be restricted to non-motorized uses since most of them are a relatively short distance to the Wilderness and thus would only invite trespass. Mountain biking will be an emphasis on the road system to the west of Passage Creek including the Wicked/Snowbank ATV/motorcycle loop. One change from my DEIS preferred alternative (Alternative 7) is that my decision now prohibits motorized use on Trail #65, Emigrant Gulch, due to unauthorized user created routes near the Wilderness boundary. I have precluded motorized use on the Passage Falls Trail (#558) and the Wallace Pass Trail (#58) to the Wilderness boundary because of congestion, safety, and water quality concerns. This Trail is very popular with hikers, including church camp groups, and is immediately adjacent to Passage Creek.

Trails will be open to stock use with the exception of the Pine Creek Trail (#47) which will be restricted to stock until September 15th of each year. This trail is narrow, making it difficult for hikers to move safely off the trail to allow stock to pass. In other words, similar to the Lava Lake Trail in the Spanish Peaks area, I chose to preclude horses during the summer due to concerns about congestion, user conflicts and user safety. My decision is different from what I proposed in Alternative 7 of the DEIS in that this trail would be opened to day use stock travel after September 15th. The public safety issue (i.e. conflicts between people and horses) is not as much a concern after Labor Day. Also, part of my rationale for restricting stock use is that the upper basins accessed by this trail do not have the capability to handle stock overnight. The trail is very popular with the public and used by hiking groups. My decision precludes overnight stock camping in the Pine Creek area, but still provides opportunities to use the trail during the hunting season.

My decision will leave open much of the area that is currently open to snowmobiling. A groomed snowmobile trail will be provided on the upper Mill Creek road system. The southwest

corner of this Travel Planning Area will continue to have an area closure to protect important big game winter range. In response to some comments received I've expanded this closure to the Emigrant Peak Road (Road #3272 and Trail #65) to protect the integrity of the backcountry ski opportunities this area is targeted to provide. It's also steep terrain and there is limited snowmobile use there currently. There is a closure in the Wicked/Snowbank area to provide a non-motorized experience around a groomed cross-country ski trail system. My decision also adds an area closure in the Pine Creek area to provide non-motorized winter recreation opportunities.

In the Benchmark we had proposed a new non-motorized trail running from George Lake to Mill Creek. I have chosen not to include it in my decision due to the potential cost of constructing such a trail and concerns I have about private land trespass below. I have however adopted an objective (Objective 1-3) to provide additional road access to the Forest between Pine Creek and Mill Creek. Adequate public access does not currently exist in this area.

My decision will not allow motorized travel 300 feet off designated routes for camping along Mill Creek. Instead, the District Ranger will specifically identify the go-down access routes to that will remain open. The term "go-down" defines the designated route where motorized travel is allowed to reach a dispersed recreation site.

My route-by-route decision for this area includes a new ATV/motorcycle connector route from Emigrant Creek to Arrastra Creek. Since there are currently no roads or trails to provide the connecting routes I've adopted an objective (Objective 1-2) to provide a system of 1 or 2 designated ATV and/or motorcycle routes. I've also included an objective (Objective 1-3) to highlight the need for acquiring access across patented mining claims and other private lands in the Chico Peak area.

Mission Creek Travel Planning Area

The Mission Creek Travel Planning Area basically provides a few end-of-road facilities (trailheads) that provide access to trails leading into the Wilderness. There was not a lot of difference between alternatives. Motorized use is not an emphasis. Area trails are used primarily by horseback riders and hikers. My DEIS preferred alternative would have closed Road #649 to public motorized use (contingent on County approval) and moved the existing Mission Creek trailhead facility out to Bruffie Road. The rationale for this was to provide a more visible trailhead facility that would reduce illegal activities and improve law enforcement safety. In my decision I've chosen not to move this facility because it had little public support. There are concerns over conflicts between the private landowners and the public and some thought that moving the trailhead facility would negatively affect the hiking experience. Moving the facility would require a 2 mile hike along a road to reach the current trailhead.

I have also dropped the West Boulder to Mission Creek portion of the snowmobile area restriction at the north end of this Travel Planning Area because this area is not generally suitable for snowmobiling anyway. I didn't see a need to impose a restriction where use is not occurring.

In addition to the programmatic direction I discussed earlier in this ROD my decision includes additional objectives (Objectives 1-2 and 3-1) to restore and rehabilitate non-system trails. This area has seen a proliferation of stock routes that are adding to the sedimentation of area streams.

The ultimate goal (Goal 3) is to provide habitat for Yellowstone cutthroat trout in the Mill Fork of Mission Creek and Tie Creek.

North Bridgers Travel Planning Area

This Travel Planning Area is in checkerboard ownership and public access is difficult. It is one of the least used areas for recreation on the Gallatin National Forest. Therefore there was little difference between alternatives. My decision maintains the existing trail system for foot and horse traffic but it will not be managed for summer motorized uses due to the checkerboard ownership and relatively low demand for recreation opportunities in this area. The area is restricted to snowmobiles during big game hunting season (October 15th to December 1st) to provide for habitat security during migration. My decision extends the seasonal restriction on motor vehicle use of some roads in the Flathead Pass area to a period from September 15th to June 15th to better provide for fall wildlife migration and coordinate road closure dates.

Due to the difficulty of public access to the National Forest in this area (i.e. checkerboard ownership) I've included an objective in my decision (Objective 1-2) to acquire legal trail access across private parcels to provide longer horseback riding opportunities. I've also included a goal and objective (Goal 3 and Objective 3-1) to acquire administrative access to all National Forest parcels in this Travel Planning Area. Access would be acquired as opportunities become available.

Lastly, since this Travel Planning Area lies at the north end of the Bridger Mountain Range I've included a goal (Goal 5) to provide for wildlife movement to and from the Big Belt Mountain Range. No specific actions are needed at the present time but if ownership patterns change and/or the Forest Service acquires additional access in this area, I felt it was important to highlight the value of this area as a wildlife migration corridor.

Porcupine-Buffalo Horn Travel Planning Area

My decision for this Travel Planning Area was largely influenced by the fact that it falls within the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area and management must maintain the pre-existing wilderness character as it was in 1977 (see the General Rationale section). Therefore my decision prohibits ATV use within the Wilderness Study Area but provides for motorcycle use on some trails. It will allow for ATV access on the Hidden Lakes Trail because it is outside the study area and it provides one of the few trail opportunities for ATV access to a high mountain lake destination. My selected configuration of the motorcycle routes was designed to provide and maintain secure habitat for the grizzly bear. I have included seasonal restrictions on motorcycles from September 5th to July 15th annually. The fall restriction is designed to provide secure habitat for the grizzly bear at a time when they are foraging in white-bark pine habitat. The spring restriction, to July 15th, is needed because there is still snow covering portions of many of these trails until that time. An earlier opening date could lead to motorcyclists leaving the designated trail to avoid snow banks, thus causing damage to surrounding vegetation. My decision also prohibits motorcycle use on the Rock Creek South Trail (#178) to improve secure habitat for the grizzly bear yearlong.

In the winter the historic Big Sky Trail will be managed as a designated route through a closed area. Cross country snowmobiling will be prohibited in the historic use area of Buffalo Horn.

This closure facilitates management of the State Gallatin Wildlife Management Area sections, and reduces conflicts with wintering big game, thus improving natural integrity. This Travel Planning Area also contains important habitat for wolverine and elk that I believe warrant winter restrictions on snowmobiles. The open area where cross country snowmobiling is allowed runs from Windy Pass across the Crest through Rock Creek. This allows high quality "challenge" snowmobile opportunities but limits the acreage available to remain consistent with the acreage used in 1977.

In addition to the programmatic direction I discussed earlier in this ROD I believed it was important to include a goal and objective (Goal 4 and Objective 4-1) to manage the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area to sustain the recreation setting and existing Wilderness characteristics as they were in 1977 and to preserve the area for future consideration as Wilderness. While I've concluded that my travel management decision is consistent with Montana Wilderness Study Act, I believe that it is important to ensure that evolving use patterns don't negatively affect the natural integrity, or apparent naturalness of this area.

For additional discussion, please refer to my rationale for the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area on page 25 and my conclusions on the issue of the Wilderness Study Area beginning on page 108 of this ROD.

Sawtooth Travel Planning Area

My decision for this Travel Planning Area will change little from the current situation. It contains two trails; the Mill Creek Trail (#106) and the Sawtooth Trail (#297). Because of access issues these routes have historically received only minor amounts of foot and horse travel. The area provides outstanding secure habitat for the grizzly bear and other wildlife. I believe that it should continue to be managed with an emphasis on its wildlife habitat values. In my DEIS preferred alternative (Alternative 7) I would have abandoned the Sawtooth Trail and would not have included a new Sawtooth connector trail as proposed in the Benchmark. My concern was that I did not want to encourage higher levels of human use in this area. However, after further discussion with my staff, I decided to retain the Sawtooth Trail #297 and the new connector across State land as a non-motorized route. What we've discovered is that the public has been pioneering a trail into the area anyway, but this route is steep and could create sediment problems. By adding a new connector route as a system trail we can develop and maintain a means of access that will not result in resource problems.

Shields Travel Planning Area

The Shields Travel Planning Area is conducive to providing motorized use opportunities. It has an extensive road system that could be used to provide ATV and motorcycle loop opportunities. In developing my decision I decided that I wanted to provide a balance of opportunities (motorized and non-motorized) on the west side of the Crazy Mountain Range as a whole. One consideration was the watershed restoration efforts that occurred in the Shields area in the mid-1990's. The Forest Service spent over $100,000 obliterating and restoring old logging roads to improve water quality. I wanted to maintain our initial investment in watershed restoration. For the Shields in the summer, I chose to emphasize motorized use in the Smith Creek area and non-motorized use in the Upper Shields drainage in cooperation with the Lewis and Clark National

Forest. I decided to provide a system of motorized loops in the Smith Creek area based on existing use and input from local publics. The Upper Shields area is managed primarily as a non-motorized opportunity to protect the watershed restoration investments, and maintain quality non-motorized hiking, biking and hunting opportunities. My decision also includes some fall seasonal closures to restrict hunting season use of the motorized routes when they are soft and wet, prone to damage, and could result in impacts to fisheries. Mountain bike opportunities will be provided on the ATV loops as well as other non-loop routes. Lastly, my decision includes a new summer non-motorized route that will provide a means of access into the South Fork of the American Fork drainage. I've also included this in my decision as Objective 1-2. This drainage is currently not accessible from the east side and this route will serve as one means to resolve that problem.

In the winter I wanted to balance opportunities for snowmobiles and skiers. The northern and eastern portions of the area will provide for a significant amount of traditional snowmobile use. The Sunlight Creek/South Fork Shields area will be restricted to snowmobiles in favor of providing a segregated, cross-country skiing opportunity in a non-motorized setting.

Changes in my decision from what was in my preferred alternative in the DEIS (Alternative 7) are as follows:

- A project road (E ½ of sec. 6, T6N R10E, to private land) was changed to a 4x4 and mountain bike route. My decision designates this route through section 6 into the private land in section 5. This route provides an alternative egress for private landowners in case of emergency. Opening this route is dependant on the landowners forming a Road Users Association to cooperate with the Forest Service on management of the road.
- The East Fork-Bitter Creek ATV connector was dropped. An ATV route will be constructed parallel to the East Fork Smith Creek road and into section 6 up to the ATV parking lot. My decision to drop this new connector was based on water quality concerns in the East Fork of Smith Creek and Smith Creek, and because the local landowners did not support the connector route due to concerns for elk habitat.
- An ATV connector was added from the end of the East Fork Smith Creek road to the new route on the Lewis and Clark National Forest with some minor road additions (see map). This connector maintains a traditional use route for accessing the Forest Lake area on the Lewis and Clark National Forest, and is part of a larger loop route.
- Changes made to ATV routes result in a corresponding change for mountain bikes.

In addition to the programmatic direction I discussed earlier in this ROD my decision includes an objective (Objective 1-3) to restore and designate old roads for motorized opportunities and mountain bike use. This objective provides us with the direction to bring the area facilities that are designated for motorized and mountain bike use in the Travel Plan to a standard that will accommodate those uses without unacceptable impacts to soil, vegetation or water quality.

Lastly, since this Travel Planning Area lies at the north end of the Crazy Mountain Range I've included a goal (Goal 5) to provide for wildlife movement from the Shields area to and from the Castle and Little Belt Mountains. No specific actions are needed at the present time but if the situation changes in the future, I felt it was important to highlight the value of this area as a wildlife migration corridor.

South Plateau Travel Planning Area

This travel planning area borders Yellowstone National Park and lies to the south of the community of West Yellowstone. West Yellowstone is dependent on tourism and this area is used heavily by summer and winter visitors. It has been extensively roaded for past timber harvest but much of this system has been closed and restored over the past decade. My decision for this area will continue to provide for high levels of summer and winter recreation use emphasizing pleasure driving, ATV and snowmobile use. My rationale for this choice is based on the high level of human use this area currently receives, it's existing roaded and timber harvested character, stable soils, and the importance of summer and winter motorized recreation to the economy of West Yellowstone.

The area is within the recovery zone for the threatened grizzly bear and the high open road density is not optimal for bear habitat security. Invasive weed spread along motorized routes is also of concern. While these problems could be improved through increased restrictions on summer motorized use I do not find that to be an acceptable option at this time. To balance motorized use opportunities with grizzly bear habitat needs, restrictions in summer motorized use have been included in nearby Travel Planning Areas rather than in this area. I also believe that the Forest Service must accept that ongoing treatment of weeds will be necessary in areas of high human use.

South Plateau is one of few places on the Gallatin National Forest where my decision will allow ATVs to use the passenger car road system. This decision allows forest users to access ATV routes directly from town. Also, adding a few ATV loops to the Plateau system on administrative roads will provide more opportunity and disperse use. ATV use is already occurring and I believe that the relatively lower level of passenger vehicle use of these roads makes it acceptable for dual designation with appropriate signing and education.

My decision will relocate the Continental Divide Scenic Trail (Objective 1-2) to separate it from the motorized trail. The segment of this trail from Reas Pass to the Cream Creek Divide will not allow mountain bikes (i.e. mountain bikers will use the ATV route). However, the section from Cream Creek Divide to Targhee Pass will be managed for hiking, mountain biking and stock use. This new route is proposed to meet the national direction that the Continental Divide Trail be managed as a non-motorized route emphasizing foot and stock travel.

Some commenters indicated a desire for mountain biking opportunities on non-motorized routes that will be close to and accessible from West Yellowstone. In response my decision will restrict summer motorized use and stock use on the Rendezvous ski trail system to provide a non-motorized, exclusive mountain biking opportunity.

In the winter, my decision emphasizes groomed snowmobiling opportunities throughout most of the area, and groomed cross-country skiing opportunities on the Rendezvous ski trail system. I've added a groomed snowmobile loop to the Plateau system on administrative roads to provide more opportunity and disperse use. My decision will also move the access route from town (Objective 2-2) from Iris Street to Electric Street such that it will no longer cross the ski route from town to the Rendezvous system. The existing snowmobile closure around the Rendezvous Ski Area was retained to prevent conflicts between these uses. A small snowmobile closure was

added around Black Sand Spring to protect important moose winter range and bald eagle habitat. The road to Black Sands Spring (#1716) will be a designated route open to snowmobiles.

In addition to the other programmatic direction I've included in my decision, I've also adopted an objective (Objective 1-3) to provide an alternative ATV route south of Highway 287, in the Buttermilk Creek area, that alleviates the safety concerns I have with people riding in the highway right-of-way.

Taylor Fork Travel Planning Area

This Travel Planning Area provides some of the most important habitat for grizzly bears, big game, and other wildlife on the Forest. Over the past decade we have put forth significant effort to consolidate and acquire private in-holdings, in part, to maintain the wildlife habitat values that this area provides. This area was identified as having high grizzly bear mortality due to conflicts with humans that could be due, in part, to the area's accessibility. For these reasons in general, my decision is more restrictive on summer motorized use than what was proposed in the Starting Benchmark. On the other hand, I recognize that there has been some popular historic motorized use of this area and believe it is appropriate to continue to provide for it in this Travel Plan. My decision will allow ATVs on the Oil Well Road Trail (#68) to Pika Point but not further south into the Cabin Creek Recreation and Wildlife Management Area (CCRWMA). This road was in existence prior to 1983 and used by jeeps when the Lee Metcalf Wilderness Act was passed. Motorcycle use will be permitted on mainline routes within the Taylor Fork Travel Planning Area, including a connector route from the Oil Well Road Trail to trails within the CCRWMA. Overall my selection of motorcycle and ATV routes was based on an objective to increase the amount of secure habitat for the grizzly bear, to emphasize opportunities for non-motorized uses on the trail system, and to minimize the potential for motorized encroachment into designated Wilderness. Mountain biking will be permissible and managed for on trails that also do not access Wilderness.

In the winter much of this Travel Planning Area will remain closed to snowmobile use to provide secure habitat on important winter range for elk and moose. Snowmobiling will be permissible south of the Taylor Fork Road from just to the east of the Oil Well Road Trail west to the Eldridge Trail. The Big Sky Snowmobile Trail will continue to be open and groomed but re-routed on the lower three miles by using the east end of Trail 68; about 1.5 miles of new trail construction just west of Trail 71; and the lower 1.5 miles of Trail 71 to the Sage Creek Trailhead. This trail re-route avoids sensitive moose winter range in the lower Wapiti drainage. The winter access point will be moved from the Wapiti Trailhead to the Sage Creek Trailhead to resolve concerns over snowmobiles traveling on plowed roads. Cross-country skiing is permissible but not a management emphasis for the Taylor Fork Travel Planning Area.

Changes in my decision from what was in my preferred alternative in the DEIS (Alternative 7) are as follows:

- The Minnie Wapiti Trail #203 from the Wapiti Trail to Pika Point was changed to a motorcycle route. Trail #74 was then changed to a non-motorized route. I made this change because it made more sense to me to keep all motorized use on the same route.
- The winter range snowmobile closure was reconfigured in lower Wapiti Creek and the Cache/Lightning drainages. Because the Wapiti Road #2522 will no longer be designated

as a snowmobile route, I replaced it with a designated snowmobile route from Sage Creek to the Wapiti Cabin. I did this to protect the most important elk and moose winter range while allowing snowmobile use in the Eldridge Creek area which contains lower quality habitat. See Alt. 7-M winter map.

- The Deadhorse Road was made a motorcycle route (open July 15 to December 1) to provide a continuous route between the Cabin Creek Travel Planning Area and the Gallatin Crest Travel Planning Area.
- Trail #6 becomes a non-motorized route between the junction of Trail #30 and the junction of Trail #223. I made this change because Trail #30 will be managed for motorcycle use and parallel trails are not needed in this area.
- The map was corrected to show Trails 63& 8 as open to motorcycles to Lizard Lake.
- My decision will not allow motorized travel 300 feet off designated routes for camping along the Taylor Fork Road. Instead, the District Ranger will specifically identify the go-down access routes to the creek that will remain open. The term "go-down" defines the designated route where motorized travel is allowed to reach a dispersed recreation site.

Lastly, I've included a goal and objective (Goal 4 and Objective 4-1) to highlight the need for administrative access into this area to administer permitted grazing in Wapiti Creek.

Tom Miner-Rock Travel Planning Area

This Travel Planning Area contains a significant amount of private land and has been moderately roaded. There are only 3 trails, none of which have been open to summer motorized uses. There is little difference between alternatives except that consideration was being given to managing the Donahue Trail (#183) for motorcycle use in Alternative 3 and restricting snowmobile use on specific roads in Alternatives 5, 6 and 7.

For the summer, my decision will continue to allow vehicle travel on existing open roads and will continue to restrict summer motorized use on area trails. The area has a higher open road density than is desirable within the Grizzly Bear Recovery Zone (FEIS, page 3-259), but I found little opportunity to improve this situation given the amount of interspersed private land. My decision does include however a goal (Goal 3) and two associated objectives (Objective 3-1 and 3-2) to effectively close to public use the Soldier Creek/Twin Peaks road system and work with the private landowner to reduce open road density in Divide Creek.

In the winter snowmobile use will be restricted north of the South Rock Creek Road. In addition, the road itself, which is currently a groomed snowmobile trail, will no longer be groomed, but will be open to snowmobiling to allow access into the Rock Creek drainage.

One change I have made in my decision that was different from Alternative 7 (my DEIS preferred alternative) was to change the date in which roads would be closed annually in the Tom Miner Basin to January 1st. This will provide an opportunity for local residents to access areas providing early skiing and for Christmas tree cutting.

West Bridger North Travel Planning Area

This Travel Planning Area does not currently receive much recreation use however it does provide opportunities for motorcycle, mountain bike, and horseback riding as well as hiking. My decision provides a short ATV loop opportunity on the Johnson Canyon road system with a new connector route, and motorcycle access up the Limestone Trail (#544) (also known as Corbly Gulch) onto the Bridger Foothills Trail (Objective 1-2). The Bridger Foothills Trail then connects into routes further south and over the ridge into the eastside of the Bridger Mountain Range. Mountain bike use will also be emphasized on the motorcycle routes. With the exception of the Johnson Canyon ATV loop, the Travel Planning Area north of Corbly Gulch will emphasize non-motorized uses. My decision includes a new connector route from the North Cottonwood Trail #545 to the Johnson Canyon system for foot and horse travel (Objective 1-3). The rationale for my decision in this area was to provide for a mix of motorized (ATV/motorcycle) opportunities and hiking, biking and stock use opportunities in a non-motorized setting.

Although not included in the "Detailed Description of the Decision", I've decided to add an objective to the programmatic direction for this area (Obj. 1-4) to to rehabilitate the Corbly Trail access within the county right-of-way on private land and restore the National Forest System route to a single track trail designed to accommodate motorcycles, mountain bikes and foot/stock travel.

My decision differs slightly from what I had included in my preferred alternative with the DEIS (Alternative 7) in that Trail #528 will be opened to ATVs to the top of the Felix road system and existing roads would be used between Johnson Canyon and Felix for ATVs and motorcycles (See map). This will provide additional ATV opportunity in an area that can accommodate that use.

There are no winter recreation goals for this Travel Planning Area however I did add a snowmobile area restriction near the ridge to protect winter wolverine and mountain goat habitat. This restriction balances my decision in the Fairy Lake Travel Planning Area to open a portion of the higher country for high-marking and to provide a means of transport for skiing.

West Bridger South Travel Planning Area

This Travel Planning Area is very close to Bozeman and receives a significant amount of use from hikers, runners, and mountain bikers. My decision will place more emphasis on these uses by restricting motorized use, segregating non-motorized uses to some degree, and educating users to provide for public safety on high use routes (i.e. Sypes Canyon and M Trails). In comparison to the Starting Benchmark, my decision allows motorcycle use on the Middle Cottonwood Trail to provide another means of access to the Bridger Foothills Trail north. My rationale was that I felt that motorcycle opportunities were deficient on the west side of the Bridgers as a whole when considering my decision for the West Bridger North Travel Planning Area. Opening the Middle Cottonwood Trail increases motorcycle access points (trailheads) from 2 to 3, which in my view, better balances motorized and non-motorized uses throughout the west side of the Bridgers. There were no significant resource issues influencing my choices for this area. It was based on improving the quality and distribution of recreation opportunities as well as promoting public safety. One difference from my DEIS preferred alternative (Alternative

7) is that stock will be allowed on the Bridger Ridge Trail #513 north of the "M". Public comments indicated that conflicts between hikers and horse users were not a significant problem and therefore closing this trail to stock was unwarranted.

As I discussed earlier in this ROD I've decided to manage the trails in this area during the summer as "time shared" trails to address social problems (i.e. "user conflict") between motorized and non-motorized users, and between bikers and stock users/hikers. I intend to work with various users over the next year or so to develop the specific schedules. Please refer to my discussion of time-shared trails on page 37 of this ROD.

There are no winter recreation goals for this Travel Planning Area however I dropped the snowmobile area closure except for the "M" and Sypes trail connector. The area is not conducive to snowmobile use and therefore I saw little need to impose an area restriction.

In addition to the programmatic direction I've discussed earlier in this ROD I've adopted three objectives for this Travel Planning Area to help in implementing my route management decisions and improve the overall recreation experiences provided in this very popular area. My first objective (Objective 1-2) is to provide a mountain bike route connector from the "M" Trail to Sypes Canyon. My second objective (Objective 1-3) is to coordinate with Gallatin County and the City of Bozeman on "Main Street to Mountains" trails projects to provide connectors to National Forest system trails. My third objective (Objective 1-4) is to promote quality recreational experiences and provide for user safety on high use trails (Sypes Canyon and "M" Trails) through user education.

Yankee Jim Travel Planning Area

This Travel Planning Area includes a significant amount of private land and access is limited. Except for the Sphinx Creek Trail, there are no opportunities for summer or winter motorized use except for vehicle travel on County Roads. The area is within the Grizzly Bear Recovery Zone and contains good habitat for a variety of wildlife. Because of this my overall goal for travel management in this area is to provide reasonable public access to the National Forest but not encourage increased recreation use. My decision will limit travel to non-motorized uses and provide a few mountain bike opportunities including a new bike loop near Cutler Lake.

There is currently limited access to public lands in the upper Mulherin Creek drainage of this Travel Planning Area. Therefore, I've included an objective (Objective 1-2) to highlight the need for access into this area. Consistent with my route decision I've also included an objective (Objective 1-3) to provide a hiking and biking route to Aldrich Lake.

Yellowstone Travel Planning Area

This Travel Planning Area also includes a significant amount of private land and access is also limited from the Yellowstone Valley. Motorized travel will continue to be allowed on the West Pine Creek road system to the north and the Big Creek and Dry Creek roads to the south. The Dry Creek Road will be open to 4x4 vehicles beyond the existing vehicle restriction gate in section 17 through the private land in section 19. All motorized vehicle travel will be restricted at the gate in section 17 from Sept. 5 to June 15 annually to maintain a quality hunting opportunity near Livingston. My decision includes no summer motorized trail opportunities due

to lack of access and concerns over impacts to private land. Mountain biking opportunities are limited to the West Pine and Dry Creek North areas of the TPA. In the winter, snowmobiles will be prohibited to protect big game winter range. See the rationale section for Issue #2, Elk and Mule Deer, later in this ROD.

There is currently limited access to public lands within the Gallatin Mountain Range from the Yellowstone Valley. Therefore, I've included an objective (Objective 1-2) to highlight the need for up to 4 additional routes of access to this Travel Planning Area.

In addition, since portions of this TPA is in a Wilderness Study Area, I believed it was important to include a goal and objective (Goal 4 and Objective 4-1) to manage the Hyalite Porcupine Buffalo Horn Wilderness Study Area to sustain the recreation setting and existing Wilderness characteristics as they were in 1977 and to preserve the area for future consideration as Wilderness. While I've concluded that my travel management decision is consistent with Montana Wilderness Study Act, I believe that it is important to ensure that evolving use patterns don't negatively affect the natural integrity of this area.

For additional discussion, please refer to my rationale for the Hyalite Porcupine Buffalo Horn Wilderness Study Area on page 25 and my conclusions on the issue of the Wilderness Study Area beginning on page 108 of this ROD.

D. Consideration of the Issues

Scoping is an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action [40 CFR 1501.7]. Based on comments received during the three comment periods for this proposal and the environmental analysis disclosed in the EIS, I found 23 issues to be significant to my decision. My conclusions about each of these issues are discussed below.

1. Bald Eagle. In relation to the management of travel on the Gallatin National Forest, bald eagles are of issue only around the 8 nesting territories near Hebgen Lake. Eagles are most sensitive to human activities during the nest building, egg laying, and incubation periods, which normally runs from February 1 to May 30 (FEIS, page 3-2). Because of this the key consideration in my decision was the effects of winter snowmobile use around the Horse Butte, Ridge, and Narrows nesting territories. I was able to conclude that winter recreation use around the remaining 5 territories and summer use around all 8 territories, under any alternative, would not result in any serious adverse effects.

The Greater Yellowstone Bald Eagle Management Plan (GYBEMP) uses nest site management zones as one strategy to facilitate conservation of bald eagles (FEIS, page 3-2). Zone I is the area within 400 meters (1/4 mile) of a nest where birds on the nest are likely to be especially sensitive to disturbance. Zone II is within 800 meters (1/2 mile) of the active nest and all alternate nests, and is typically heavily used for foraging and perching. The GYBEMP recommends that light human activity levels not be exceeded during the nesting season, with moderate use allowable during the rest of the year. Zone III is most of the home range used by eagles during the nesting season, generally within 4 km (2.5 miles) of the nest, and contains

important foraging areas while providing management buffers for zones I and II. The GYBEMP recommends that moderate human activity levels not be exceeded.

Horse Butte Nest Site

Under all alternatives the Horse Butte snowmobile trail system would continue to be groomed and they all include a 75 acre closure area around the Horse Butte nest site (Zone 1). Alternatives 5 and 6 would also restrict snowmobiles to the designated trail on Horse Butte and along the Madison Arm of Hebgen Lake. The intent of this restriction was to make snowmobile travel more predictable thereby resulting in less disturbance to foraging and perching eagles in Zones II and III. Open water can be found on the Madison Arm of Hebgen Lake during the early nesting season, and the Horse Butte eagles have been documented to use this area heavily for perching and foraging at this time of the year. However, violations of the Zone 1 closure area during the nesting season have been documented in the past and I believe that they are likely to continue in the future. I believe that this would also be the situation with an area closure on Horse Butte and therefore I did not adopt it in my decision. Because snowmobile use off the groomed trail is well-established and the open terrain encourages this type of use, it is likely that violations of this restriction will occur despite efforts to enforce it. I don't believe that this restriction would lead to a meaningful decrease in disturbance to eagles.

My decision does include a snowmobile closure along the Madison Arm of Hebgen Lake and the Madison River from the break at the bluff to the water's edge. Although not as extensive as the closure proposed in Alternatives 5 and 6, it will provide greater area for the Horse Butte pair to forage in without disturbance from snowmobiles relative to Alternative 2 (current condition).

None of the alternatives would fully meet the GYBEMP guidelines, however Alternatives 5 and 6 would come closer to meeting the intent. Alternatives 5 and 6 would also meet the recommendations of J.T. Stangl, a former Hebgen Lake Ranger District Wildlife Biologist. Stangl provided management recommendations for all the bald eagle territories known to exist on Hebgen and Earthquake Lake as of the year 2000 (FEIS, page 3-3). Because of the popularity of snowmobiling in the Horse Butte area and the importance of snowmobiling in general to the economy of West Yellowstone, along with my assessment that bald eagles on Hebgen and Earthquake Lake as a whole would continue exhibiting productivity trends consistent with recovery goals under my decision (FEIS, page 3-11), I was unwilling to impose a prohibition on snowmobiling in the Horse Butte area for a possible improvement in bald eagle nesting success.

The Ridge Nest Site

Under my decision, and Alternatives 1 through 4, impacts to nesting bald eagles in this territory from snowmobile use would be similar to those described for the Horse Butte territory. An important exception is that this nest will have no area closure for Zone I. Snowmobile use off the groomed trail regularly occurs through much of Zone I around both territories through late March, and this will likely continue. Under Alternatives 5 and 6 there would be no groomed trail within Zone I of the Ridge nest and elimination of off-trail snowmobile use could reduce disturbance to the Ridge territory. Again however, because of the popularity of snowmobiling in the Horse Butte area and the importance of snowmobiling in general to the economy of West Yellowstone, I was unwilling to impose a prohibition on snowmobiling for some possible improvement in bald eagle nesting success. Because snowmobile use off the groomed trail is

well-established and the open terrain encourages this type of use, I don't believe that attempts to limit snowmobiling to designated routes would be effective nor lead to a meaningful decrease in disturbance to eagles.

The Narrows Nest Site

This territory has been highly productive despite heavy snowmobile use in close proximity to the nest (FEIS, page 3-4). The Narrows birds appear to be highly tolerant of snowmobile use and I concluded that any of the alternatives would have minimal effects on them. This nest site was not a factor in my decision.

In summary, Bald eagle populations in the United States have increased over the past several decades. All recovery criteria have been met, and the species was proposed for de-listing by the U.S. Fish and Wildlife Service in 1999 (although this has not yet occurred) (FEIS, page 3-3). The Gallatin Forest Plan specifies that *"management of the Forest will provide for the recovery of the bald eagle"* (USDA Forest Service 1987:II-4). All alternatives would be consistent with this goal, reflecting the fact that bald eagle productivity in the Hebgen and Earthquake Lakes area has increased considerably since the first nest was monitored by the Forest Service in 1977 (FEIS, page 3-11). No Travel Plan alternative would have more negative effects on bald eagles than the current management of summer and winter travel. For these reasons this issue was not a significant factor in my choice between alternatives.

2. Big Game (Ungulates). It is difficult for me to summarize how the effects of the alternatives to big game influenced my decision because there are many facets to this issue and various species are affected in different ways by human travel. In general, I believe that big game populations have reached or exceeded MFWP goals on the Gallatin National Forest with the level and types of human travel that have been, and are currently occurring on Forest (FEIS, pages 3-24 through 3-59; Alternative 2). The Gallatin Forest provides a large amount of high quality elk habitat, and elk populations are currently above objectives set by MFWP in most areas of the Forest (FEIS, page 3-16). Mule deer utilize similar habitat to elk and are also very common. Moose, bighorn sheep, and mountain goat are less common but populations are largely unaffected by summer travel. No big game species found on the Forest has been identified as threatened, endangered or sensitive. Therefore, since Alternatives 3 through 7-M include more control measures on human travel than exist today, I could assume that any of these alternatives, as well as Alternative 2, would not result in unacceptable impacts to big game populations. While I believe big game populations are currently fine, I was not comfortable with Alternative 1. Alternative 1 would allow off-route summer motorized use which could have adverse effects on big game over time through increased volume and distribution of those uses.

I was able to eliminate white-tailed deer and antelope as a significant concern because there is very little habitat for these species on the Gallatin National Forest (FEIS, page 3-17). I was also able to eliminate bison as an issue because they are managed under the Interagency Bison Management Plan which is minimally influenced by travel on the National Forest (FEIS, page 3-17). This left the potential effects to elk, mule deer, moose, bighorn sheep and mountain goats as considerations in my decision. My findings on each of these are described below:

Elk and Mule Deer

The Gallatin Forest Plan identifies elk as a management indicator species or a species whose habitat is most likely to be affected by Forest management activities (FEIS, page 3-16). In travel planning I found the issue to be primarily associated with summer motorized uses. Many studies have shown that motorized access influences elk habitat use (FEIS, page 3-18). Elk have been repeatedly shown to avoid habitat adjacent to open roads. Motorized trails are likely to have similar effects. Management of motorized travel on the Forest could also affect the vulnerability of elk to hunting. However the Gallatin Forest provides a large amount of high quality elk habitat, and elk populations are currently above objectives set by Montana Fish Wildlife and Parks in most areas of the Forest. The six elk management units on the Forest are also currently achieving bull/cow ratio goals (FEIS, page 3-20). One exception is the Upper Gallatin herd that summers in the Gallatin Range, mostly in Yellowstone, and migrates to winter ranges in the Yellowstone River Drainage and the Madison Valley (FEIS, page 3-16). I believe that my decision to maintain lower motorized route densities in the southern Gallatin Range, primarily for grizzly bear habitat security, will also adequately provide adequate security for elk in this area. Alternatives 3 through 7-M overall, increase the amount of secure elk habitat (FEIS, pages 3-24 through 3-34) and are consistent with Montana Statewide Elk Management Plan. Therefore, summer habitat for elk was not a significant factor in my choice between alternatives. Mule deer are similar to elk in their habitat needs so I concluded that the summer habitat provided under Alternatives 3 through 7-M was adequate for this big game species also.

My decision was influenced in a few specific areas to protect important big game winter range. For example part of the rationale for a portion of the snowmobile area restrictions I've included in the Porcupine-Buffalo Horn and the Taylor Fork Travel Planning Areas was to protect elk/moose winter range. Snowmobile restrictions in the Cougar/Duck Creek area of the Hebgen Basin Travel Planning Area is designed, in part, to protect moose winter range. I believe it is important to prevent disturbance on important winter range during a time of year when big game are energetically stressed.

Moose, Bighorn Sheep, Mountain Goat

Moose are found in many areas across the Forest, but are generally more selective in the habitats they utilize than deer or elk. Willow-lined riparian areas, aspen stands, subalpine fir forests, and moist high-elevation meadows are some key habitats for moose, with willows and forests with subalpine fir understories of particular importance during winter due to the browse that they provide (FEIS, page 3-20 and 3-21). Moose are not of concern with summer recreation travel; winter is the critical time.

Bighorn sheep are one of the least common big game species on the Forest. Although they are native to southwest Montana and were probably abundant prior to European settlement, they are now much more restricted in distribution and fewer in number primarily as a result of over-harvest in the late 1800s and early 1900s, as well as competition with domestic livestock and the diseases they transmit (Legg 1999:5). Mountain goats on the Gallatin National Forest are descended from animals transplanted by the State of Montana during the mid-twentieth century. They have increased their distribution into most areas of suitable habitat and are now found in all of the mountain ranges on the Forest (FEIS, page 3-17). Because bighorn sheep and mountain

goats typically are found in high elevation areas with low motorized route density during the summer months, again summer travel was not of issue.

Winter is the time of year when energy expenditure invariably exceeds intake, due to increased metabolic demands and energetic costs of locomotion, coupled with decreased forage quality and availability. Under such conditions, ungulates typically lose a substantial percentage of their body weight. Severe weight loss leads to increased risk of mortality through starvation and predation, and lower production and survival of calves the following spring. Humans can exacerbate these impacts through winter travel. Disturbance can cause animals to run through deep snow, which is very energetically demanding (FEIS, page 3-20). Animals that do not flee often exhibit an increased heart rate, which may result in elevated energy expenditures. Lastly, animals may be displaced from important wintering areas to lower-quality habitats, thus reducing their chances of survival and successful reproduction.

There were two primary winter travel variables affecting big game animals that I considered in making my decision. They were the density of designated winter routes within winter range, and the amount of winter range relatively free of human disturbance available to each species.

Table 3.2.6 of the FEIS displays the density (mi/sq mi) of groomed and designated snowmobile, cross-country ski, and snowshoe routes within elk, moose, bighorn sheep, and mountain goat winter range by hunting district, by alternative. This table showed me that there was very little variation in terms of marked and groomed routes by alternative. I also found, in reviewing the big game section of the FEIS that established travel routes can have much less effect on big game animals because there is a higher degree of predictability than there is with off-route travel. In other words, big game animals tend to habituate to human travel on these routes and therefore don't react as strongly or expend as much energy.

Table 3.2.7 of the FEIS displays the percentages of elk, moose, bighorn sheep and mountain goat winter range closed to snowmobiles off designated routes, by alternative. What this table showed me was that Alternatives 3 through 7-M substantially increase the amount of secure winter habitat for big game species over the current situation (Alternatives 1 and 2). While there are some differences among these alternatives I found them all to be acceptable options in maintaining big game winter habitat.

The disclosure of predicted impacts on big game in Chapter 3 of the FEIS basically shows that the more restrictive one gets on human travel within the Gallatin National Forest, the better it is for big game. As I stated earlier, I believe that big game populations on the Gallatin National Forest as a whole are healthy and therefore found any of Alternatives 2 through 7-M to be acceptable as they relate to this issue.

3. Biological Diversity and Ecological Sustainability. This issue was addressed in the FEIS based on concerns that use of roads and trails could hinder wildlife movement in key areas of the Forest, and travel routes may have detrimental effects to rare habitats such as willow, aspen, cottonwood, and whitebark pine. . Based on the discussion beginning on page 3-65 of the FEIS I concluded that the impacts of the Travel Plan alternatives were somewhat minor compared to the impacts that Interstate 90, other highways and private land development have had. The analysis also indicates that the amount of rare habitats affected by travel routes was very small, an estimated 60 acres out of over 10,000 acres of rare habitats across the Forest (FEIS, page 3-

33-81). Still, I certainly did not want to adopt a Travel Management Plan that would further hinder wildlife movement or isolate populations of some species into metapopulations. As is the case with many wildlife issues, movement seems to be adversely affected by high motorized route densities. This cause-effect relationship, has led me to favor the alternatives that reduce motorized route density from the current situation in identified corridors between mountain ranges (Alternatives 4 through 7-M) versus those alternatives that result in higher or the same motorized route density as exists today (Alternatives 1 through 3). My decision also includes the following provisions to provide for wildlife movement:

- In the Bear Canyon TPA it restricts motorized use on the Chestnut Mountain Trail (#458) and it includes an objective to move this and a portion of the Bear Loop Trail (#440) off of the ridge. Many species of wildlife tend to move along ridgelines and Bear Canyon is an important area to facilitate movement between the Bridger and Gallatin Mountain Ranges.
- In the Lionhead TPA, my decision reduces motorized road density from 0.54 mi/sq mi (current condition/Alternative 2) to 0.46 mi/sq mi, the lowest of any alternative (FEIS, page 3-76).
- In the North Bridgers TPA, my decision would not increase motorized route density from the current situation (0.85 mi/sq mi), which is the same as for any of Alternatives 2 through 7-M (FEIS, page 3-74). In this area, my ability to reduce motorized route density was limited by private land and routes not under Forest Service jurisdiction.
- In addition, direction for corridors becomes Forest-wide direction for other known or suspected corridors and others that may be discovered in the future (Goal F and Objective F-1).
- My decision also includes programmatic direction (i.e. goals, objectives, standards, and guidelines) that will serve to maintain and improve biodiversity on the Gallatin National Forest as future management activities are undertaken. Refer to the FEIS, pages 3-88 to 3-91 for a discussion regarding the benefits of this direction.

4. **Cultural Resources.** This issue concerns the potential effects that travel management under the seven alternatives may have on the scientific, traditional, cultural and intrinsic values of archeological, cultural and historical sites on the Gallatin National Forest. In addition, there was concern that motorized use in high-elevation areas of the Crazy Mountains (i.e., portions of the Ibex and East Crazies Travel Planning Areas (TPAs)) could have an adverse effect to certain areas of traditional importance to the Crow Tribe. New or significant increases in motorized use would affect their ability to conduct traditional practices in these high elevation zones of the Crazy Mountains.

My first consideration relative to the potential effects of public travel on cultural resources was direct damage to sites. The Gallatin National Forest has inventoried over 900 archeological sites to date. Potential damage could come from vehicle use or route construction/re-construction directly on top of a site, or could be caused by vandalism or illegal collecting of artifacts. Based on the discussion of this issue in Chapter 3 of the FEIS, I've concluded that Alternatives 2 through 7-M all have an equal level of risk for archeological site damage. Alternative 1 would increase the risk of damage since off-route OHV use would be allowed. Cross-country motorized travel could lead to direct damage of sites, either inadvertently or deliberately. This became another reason that I did not find Alternative 1 to be an acceptable option for a travel

management plan. While there has been some damage of sites from existing travel patterns, studies (FEIS, page 3-97) have shown that there is a significant difference between high public use areas that includes motorized use and adverse effects to archaeological sites verses those off-trail areas with less public use and intact archaeological sites. As such, keeping "use" on existing travel systems and not pioneering new trails into archaeological site complexes previously in remote, off-trail locations became a design criteria in the development of Alternatives 2 through 7-M. Thus, current use patterns, as reflected by Alternative 2, do not seem to be a significant problem. I also believe that any concerns over the potential for route construction or reconstruction to damage bisected sites can be alleviated through survey and relocation of the route as needed to avoid cultural resource sites. Appropriate mitigation can be considered and incorporated at such time in the future when such projects are proposed.

My second consideration was to create a travel management scenario for the high-elevation areas of the Crazy Mountains that would maintain or improve the setting of areas deemed to hold strong traditional importance to the Crow Tribe. During the travel planning process we held numerous meetings with the Crow Cultural Committee and Traditional practitioners. Based on these meetings I concluded that new or increased motorized access, both winter and summer, into high elevation areas of the Crazy Mountains would cause potential conflict with traditions amongst the Crow people. These cultural values affected my decision for the configuration of motorized and non-motorized routes, as well as the area open to snowmobiles, on for the west slopes of the Crazy Mountains (Ibex and East Crazy Travel Planning Areas). While some, including the Crow Tribe, would prefer that OHV and snowmobile use be precluded entirely in these travel planning areas, my objective was to provide opportunities for both motorized use, and also hiking, horseback riding, and skiing in a non-motorized setting. I believe that my decision strikes a good balance between my recreation objectives and the protection of the cultural values of the Crow people.

The existing management of travel in the high country of the Crazy Mountains, as well as Alternative 1, has been deemed unacceptable by Crow practitioners. In the winter, improvements in snowmobiles allow users to reach areas that they were previously unable to get to, including the higher elevations of the Crazy Mountains. The remaining alternatives address this concern to varying degrees with Alternative 5 probably being the preferred option. This Alternative has some advantages in gaining compliance with restrictions (e.g. more readily identifiable boundaries), however it is also more restrictive on established snowmobile use than I was willing to accept. Alternative 7-M (my selected alternative), while not as desirable as Alternative 5, was developed through consultation with the Crow Tribe with the objective to maintain existing snowmobile use, and place restrictions on those places with little but evolving snowmobile use that would conflict with high value Crow cultural areas. Alternative 7-M balances protection of the core high-country with opportunities for snomobiling.

In the summer, motorized access was restricted to those trails with historic use, primarily tied to private land motorized access. It is my decision that the public should maintain a north-south motorized connector route on the west side. Trespass Trail has served that purpose historically. However, the "Lowline trail" serves to meet that public desire without the conflict that the Trespass Trail presents in regard with Crow cultural concerns. My decision, Alternative 7-M, balances historic motorized use, private land access and protection for the core high-country Crow cultural values.

5. Social/Economic Effects. There were a number of public comments received indicating concerns that changes in the management of travel on the Gallatin National Forest could have significant effects on the area economy. We produced an expanded economic analysis after the DEIS was published to more thoroughly address these concerns. This analysis has been included in Chapter 3 of the FEIS. Based on this discussion I have concluded that none of the Travel Management Plan alternatives would result in any notable effects to the local economy and therefore this was not a factor in my decision. I based this conclusion on the following:

- The economic activities related to the motorized and non-motorized recreation visitation to the Gallatin National Forest account for less than 1% of the total employment and labor income of the three county area (FEIS, page 3-123).
- The alternatives for the Travel Plan differ in the areas open or closed to motorized use in the winter and miles of road and trail open or closed to motorized and non-motorized summer uses. None of the alternatives I considered would eliminate recreation opportunities. I have concluded that the variations between alternatives are not large enough or significant enough to cause economic change. There is little evidence to suggest that changes in road, trail, and area closures on various parts of the National Forest will cause recreationists to reduce their visitation or choose not to use the National Forest for that activity.
- Both local and non-local recreation visits are increasing for both motorized and non-motorized activities. The non-local visitor is responsible for more of the economic effects than the local visitor (FEIS, page 3-122). Due to the continued population growth it is likely that local and non-local visitation will increase to the Gallatin National Forest regardless of my Travel Plan decision and consequently economic growth in this sector will continue.
- None of the Travel Plan Alternatives, except Alternative 6, significantly change the management of snowmobiling around the communities of Cooke City and West Yellowstone. Therefore future variations in snowmobile use and the related economic effects in these two heavily used areas would likely be caused by factors outside of the Travel Plan decisions.

6. Enforcement. During the initial comment period on the proposed Gallatin National Forest Travel Plan, numerous comments were received regarding the agency's ability to enforce travel management restrictions. There is wide skepticism among some users about the ability to make travel management restrictions effective due to the perceived limited ability of the agency to enforce restrictions. As a result, some indicated that more restrictions on motorized use were needed to reduce these enforcement problems.

There has been an increasing trend in the number of incidents, warnings and violations issued for motor vehicle-related types of violations between 1998 and 2003 (FEIS, pages 3-156 to 3-159). This is primarily due to speeding snowmobiles on groomed routes in the West Yellowstone area, and inappropriate OHV use of trails after the Montana/Dakota OHV decision (January, 2001), violations of 36 CFR 261.55(d). In 2003, over 450 violations occurred in this category, compared to only 70 in 1998 (id.). While some of these violations could be in blatant disregard to rules and regulations, many may be a result of (a) having more officers on duty in 2003 than in 1998 and/or (b) confusion or ignorance of the rules and regulations. The current Travel Plan that governs use of roads and trails on the Gallatin National Forest is a confusing mix of regulations and special closures, a large number of seasonal restrictions and complex map legends and

displays. The map is very difficult for some readers to understand and interpret. This situation contributes to innocent violations of travel restrictions.

My approach to resolving this problem is focused more on taking actions to improve compliance with the Travel Plan, rather than on enforcement alone. This includes such things as providing better maps, better signing, use guides, improved information and education, and a route configuration that minimizes trespass. I believe that these measures will go a long way to reducing violations regardless of the travel plan alternative I selected. In addition, the regulation at 36 CFR 261 was recently changed to relieve the Agency of the posting/signing requirements in order to enforce travel regulations. Map notification is now the only requirement which will improve the ability for citations to be held up in court.

In reviewing the discussion of this issue in Chapter 3 of the FEIS, I have concluded that Alternatives 3 through 7-M all provide more enforceable travel management scenarios than does Alternative 1 or the current situation. There are differences in how well each alternative ranks against criteria, but overall there are only minor differences between these alternatives from an enforceability perspective. There are pros and cons to each. Alternative 5 has fewer dead-end summer motorized routes, but it provides worse spatial distribution of opportunities close to towns and has fewer reasonable motorized loops or opportunities that would fulfill motorized users' recreation desires (see the FEIS, Issue 16: Recreation for a more thorough discussion of recreation opportunities, by alternative). Forest law enforcement officials concluded that Alternative 6 would be the most enforceable alternative for summer uses. It would provide clear direction on permissible uses and limit the complexity of closures and restrictions. It would also limit open summer motorized routes to smaller geographical areas, minimizing the amount of country that would need to be patrolled. However, it does not provide a broad mix of opportunities close to towns or motorized loops or routes providing satisfying opportunities for motorized trail users. I believe that the lack of motorized loops and longer routes would likely lead motorized users to trespass into restricted areas seeking longer opportunities.

Winter uses are slightly different in their enforceability. All alternatives adopt an "open unless managed closed" scenario for snowmobiles. The number of acres closed to snowmobiles, either yearlong or seasonally, would be highest under Alternatives 5 and 6. These alternatives would likely create enforcement issues by substantially limiting the available legal snowmobile terrain over current condition. Under Alternatives 3 through 7-M, additional closures in areas currently being used by snowmobilers would likely lead to enforcement issues, at least in the short term until the new closures were accepted by the public. Alternatives 5 and 6 would have the greatest number of acres closed to snowmobiling that are probable trespass terrain.

In conclusion, the issue of "Enforcement" was not a significant factor in my choice between alternatives. I chose Alternative 7-M for other reasons. I believe that the actions I intend to take during implementation of the Travel Plan will be the most effective approach to gaining compliance with travel regulations. In addition, there are other solutions that can be executed where-ever problems may arise. We can concentrate law enforcement personnel in those areas, establish temporary use restrictions, or even propose modifications to the Travel Plan for a more permanent solution if necessary.

7. Fisheries and Aquatic Life. My decision determines the various modes of travel that are permissible on Gallatin National Forest roads and trails, and for some uses, the off-route area

that would be available. The issues of water quality and fisheries definitely contributed to my choice not to select Alternative 1, which would permit off-route wheeled motorized travel. As evidenced by the discussion of these issues in Chapter 3 of the FEIS, off-route motorized use would increase the proliferation of user-built trails which can remove vegetation, expose bare soil and lead to increased sediment run-off and erosion. Beyond that, in choosing between Alternatives 2 through 7-M, I determined that the actual use, or mode of travel (e.g., motorized versus non-motorized) is inconsequential to water quality and fisheries. Rather, it is the facility itself (i.e., road or trail) that has potential to impact aquatic habitat and biota (FEIS, page 3-181). With the exception of a few specific routes, I found that any of Alternatives 2 through 7-M were acceptable in terms of the uses allowed on roads and trails. In my decision I responded to water quality and fisheries concerns primarily by adopting goals, objectives, standards, and guidelines (programmatic direction) for future route construction, reconstruction, maintenance and decommissioning. I established use restrictions only on a few specific trails with high erosion potential where it would not be cost-effective to attempt to move or reconstruct the facility to accommodate those uses.

I believe that the programmatic direction I've included in my decision (Alternative 7-M) will improve and protect aquatic habitats and biota. For example, Forest-wide Standard E-4 of my decision will give fishless streams and those with less significant fisheries a level of protection that ensures non-impairment. Potential future actions in all watersheds would be evaluated with respect to impacts on habitat connectivity, disturbance regimes, and organism meta-populations, again with the intent that actions would not lead to aquatic impairment. Forest-wide Standard E-5 was modified in Alternative 7-M to include language precluding construction of roads and trails within floodplains of rivers and streams, or wetlands, except at stream crossings, so that impacts would be reduced to riparian areas as well as rivers, streams, and wetlands.

My decision also adopts goals, objectives, standards and guidelines at the travel planning area scale where water quality and fisheries are of concern.

In the Bear Canyon Travel Planning Area my decision includes a goal (Goal 3) and an associated objective (Obj 3-1) to provide habitat for Yellowstone cutthroat trout in Trail Creek and provide for beneficial uses in Bear Creek. I've also adopted three standards (Standards 3-2, 3-3, and 3-4) that, in the short-term would: (1) Preclude ATV, motorcycle, mountain bike and horse use on Trail #440 until the facility is upgraded to a condition that alleviates sedimentation and water quality impacts. (2) Preclude summer ATV, motorcycle, mountain bike and horse use in the Bear Canyon drainage until the facilities are upgraded to a condition that alleviates sedimentation and water quality impacts. (3) Prohibits any off-route wheeled motorized vehicle travel including the 300 foot allowance for dispersed camping.

In the Cooke City Travel Planning Area my decision includes a goal (Goal 3) and two associated objectives (Obj. 3-1 and 3-2) to provide habitat for Yellowstone cutthroat trout in Soda Butte Creek and Goose Creek, and provide for beneficial uses in all other stream courses. Objective 3-1 gives us direction to "effectively close and stabilize all non-designated motorized routes to eliminate erosion and sedimentation." Objective 3-2 gives us direction to "implement a maintenance program on the Goose Lake Road, Sheep Basin Road and Kersey Lake Road to eliminate erosion and sedimentation." While objectives do not mandate that action be taken in a given time-frame, they are meaningful for developing annual programs of work and competing for funding.

In the Deer Creeks Travel Planning Area, to reduce impacts to Yellowstone cutthroat trout, my decision would allow motorcycle use of Lower Deer Creek Trail #5 between the junction with Trail #156 and the Deer Creek cabin only after the facility has been sufficiently modified to not allow degradation of Yellowstone cutthroat trout habitat. ATV use would be restricted along Trail #5 between Trail #256 and Deer Creek cabin, and again would only be allowed after the facility is sufficiently modified to not allow degradation of Yellowstone cutthroat trout habitat. On Trail #5 south of the cabin, motorized use would be restricted because crossings sufficient to reduce impacts to Yellowstone cutthroat trout would be difficult to construct.

In the Gallatin Roaded Travel Planning Area I've adopted a goal (Goal 3), three associated objectives (Objs. 3-1, 3-2 and 3-3) and a Standard (3-4) to provide habitat for westslope cutthroat trout in the West Fork of Wilson Creek and provide for beneficial uses in all other streams. The objectives target an increase in trout habitat for the West Fork of Wilson Creek to 90% of its potential habitat capability and the decommissioning/stabilization of old logging roads throughout the area to reduce sedimentation. The adopted standard precludes new road or trail construction or reconstruction in the West Fork of Wilson Creek drainage until trout habitat reaches 90% of its inherent capability.

In the Mission Creek Travel Planning Area, I've adopted a goal (Goal 3) and objective (Obj. 3-1) to provide Yellowstone cutthroat trout habitat in the Mill Fork of Mission Creek and to effectively close and/or restore non-system trails to non-erosive single track trails.

In the Shields Travel Planning Area I've adopted a goal (Goal 3) and objective (Obj. 3-1) to provide habitat for Yellowstone cutthroat trout in upper Shields River and Smith Creek watersheds. The objective is to reduce contributed sediment from the road and trail system in the upper Shields and Smith Creek watersheds to achieve Yellowstone cutthroat trout habitat at 90% of its potential habitat capability.

In the Taylor Fork Travel Planning Area I've adopted a goal (Goal 4), and two associated objectives (Objs. 4-1, and 4-2) to provide habitat for westslope cutthroat trout in Cache Creek and Buck Creek and provide for beneficial uses in all streams of the upper Taylor Fork above Eldridge Creek. The objectives target achievement of westslope cutthroat trout habitat at 90% of its potential habitat capability, removal of the stream as a "Water Quality Limited Segment" and the decommissioning of 25 miles of undesignated road in Cache Creek and Dead Horse Creek drainages.

In the Cabin Creek, East Boulder, East Crazies, Fairy Lake, Gallatin Crest, Gardiner Basin, Hyalite, Ibex, Lionhead, Mill Creek, Sawtooth, South Plateau, Tom Miner/Rock, and Yellowstone Travel Planning Areas I've also included a fisheries goal, but found that no specific actions were needed beyond the forest-wide goals, objectives, standards, and guidelines described above. The reason I included these goals is to bring attention to streams that provide habitat for Yellowstone and westslope cutthroat trout (classified as sensitive species by the Northern Regional Forester).

In the Bangtails Travel Planning Area, my preferred alternative (Alternative 7) in the DEIS proposed a standard stipulating that no new route construction could occur within this TPA until sediment delivery standards were met by decommissioning 12 miles of existing roads (DEIS,

Detailed Description of the Preferred Alternative, page II-16). It also included an objective (id.) to restore or stabilize up to 30 miles of road to further reduce sediment delivery to streams containing Yellowstone cutthroat trout. This past fiscal year, the Gallatin National Forest received funding to complete the decommissioning work in the Bangtails and a Decision Notice and Environmental Assessment (EA) was completed for it in May 2006 (Bangtail Road Decommissioning Project EA and Decision Notice, May 24, 2006). Therefore my decision for a Travel Management Plan no longer includes this objective and standard.

Alternatives 2 through 6 proposed a guideline (Guideline A-11) that would establish blanket (forest-wide) spring restrictions on horse and mountain bike use, in addition to motorized uses, as a means of protecting facilities from damage during the wet freeze/thaw period. In my preferred alternative at the time (Alternative 7 of the DEIS) I also included this provision. Research used in the analysis of the fisheries issue (FEIS, Page 3-181) indicates that horses can have a higher potential to disturb soils and increase erosion than other uses and that was most of the basis for my preference. During the comment period on the DEIS however, I and members of my staff had a chance to speak with a number of stock users and they convinced me that blanket restrictions were not necessary. Their long history and experience riding on the Forest led me to the conclusion that it was more appropriate to include any needed restrictions on specific trails and then rely on increased information and education to deter travel when other trails are soft and prone to damage. The good point they had was that, if trails are wet and soft, they are also undesirable to ride. Thus there is a natural deterrent to using these trails. Therefore in my decision I've identified about a dozen specific trails where horses and mountain bikes would be restricted in the spring. In dropping the blanket restrictions however, I questioned whether we should also drop blanket spring restrictions on motorized use. My conclusion was to keep these in place as they currently are. I'm not convinced that wet/muddy conditions would be as much of a deterrent to ATVs and motorcycles as they are to horses and mountain bikes. I also found that there were other wildlife related issues (e.g. elk calving, bear den emergence) associated with spring motorized use that warrant these use restrictions.

There is a distinction between travel route effects and the effects of various modes of travel. In most cases, the actual use, or mode of travel (motorized versus non-motorized) is inconsequential. Rather, it is the facility (road or trail) that has the potential to impact aquatic habitat and biota. Water and sediment can concentrate on roads and trails during spring snowmelt runoff or periods of intense rain and be delivered to streams. With sufficient drainage, water and sediment from upland segments of trails and roads can be diverted off trails or roads, filtered through forest vegetation, and not routed to streams (FEIS, page 3-182). As such, upland segments of roads and trails can generally be designed to mitigate sediment delivery concerns.

With the adoption of the programmatic direction, seasonal restrictions and other components of Alternative 7-M discussed above, and based on a review of the predicted environmental impacts to fisheries disclosed on pages 3-177 to 3-213 of the FEIS, I have concluded that my decision will lead to improved fisheries habitat conditions across the Forest. The Big Sky Travel Planning Area is the only one that will not meet Gallatin Forest sediment guidelines (FEIS, pages 3-180 and 3-205). As disclosed, this is a result of extensive private land development and not Forest travel.

8. Forest Plan Amendments to Remove Existing Standards related to Travel Management. My decision amends the Gallatin Forest Plan to remove included direction related to travel. Removing this direction will not directly result in ground disturbance or environmental effect. However, because a few of these standards limit management activity or require maintenance of specific conditions, there was some public concern that their removal from the Forest Plan would allow the Forest Service to pursue actions that would result in greater adverse environmental effect. The standards of concern were:

Forest-wide standard 6.a.4 (USDA 1987:II-18)

This standard states, *"The 1982 Elk Logging Study Annual Report contains procedures for analyzing elk habitat security as it is affected by timber harvest and road construction activities. An 'elk effective cover' analysis based on this report will be conducted for timber sales and effective cover ratings of at least 70 percent will be maintained during general hunting season."* The purpose of this standard was to maintain or improve elk habitat in conjunction with decisions for timber sales. The habitat effectiveness rating (HEI) used 2 variables to measure the quality of elk habitat, cover/forage ratio and open road density. Shortly after the Forest Plan was signed it was discovered that the cover variable was not scientifically supportable or logical. Therefore open road density became the only variable as long as cover remained above 40%. An HEI value of 70 percent equates to open road density of about 0.75 miles per square mile (FEIS, page 3-217). This standard has been problematic since the Forest Plan was signed. A more detailed discussion of these problems and the background can be found in the FEIS, pages 1-11, 1-12, 3-217 through 3-221, A-1 and A-2 and also Appendix G of the Darroch-Eagle Creek Timber Sale Environmental Assessment (1/2004). Among the problems are:

1) The cover curve associated with the habitat effectiveness model was found to actually compel more timber harvest than would be realistic or desired in a given area.
2) There was disagreement over the analysis area on which to calculate the habitat effectiveness index (HEI) and how to include highways, city streets, switch-backed and closely parallel roads, and roads on private land.
3) Application of this standard only during the general hunting season largely defeated the security benefits for elk.
4) In many areas, the existing (or baseline) HEI was already below 70% and it often was not possible or desirable to close enough motorized routes to meet the standard. Seven times so far, this has led to the standard being amended or proposed for amendment site-specifically in conjunction with timber sales.

My decision replaces this standard with specific decisions concerning motorized use in the Travel Management Plan. It also includes a new Travel Plan standard that restricts any increase in public motorized routes beyond those identified in the Travel Plan (see Forest-wide Standard M-8 in the "Detailed Description of the Decision"). Table 3.8.1 of the FEIS displays the habitat effectiveness ratings that result from Alternative 7-M, my selected alternative. This table shows that HEI will actually improve over existing conditions in a number of TPAs across the Forest. In building a travel management plan that balances the needs of wildlife with opportunities for motorized recreation and access I believe that this is as good as it can be. I also have concluded that habitat for elk and other big game is and will remain more than adequate on the Gallatin National Forest (see my discussion of the Big Game issue earlier in this section). Lastly, I want to point out that amending this standard out of the Forest Plan does not mean that the 1982 Elk

Logging Study or calculation of HEI will no longer be used. It will remain an appropriate tool for analyzing the effects of proposed timber sales and road construction activities.

Forest Plan Management Area Standards for the Recreation Opportunity Spectrum (Forest Plan, Chapter III)

Within the management area (MA) direction of the Forest Plan, my decision removes standards that direct recreation use to be managed to meet certain "Recreation Opportunity Spectrum (ROS)" classes. ROS is an indicator of the recreation setting provided and is affected by the presence or lack of roads and motorized trails. There are two principle reasons for this amendment. First, the Forest Plan management areas are not place-based; they are scattered throughout the Forest and there may be a number of different Management Areas within a given drainage. Managing for different ROS classes within the same general area is not practical or desirable. Second, changes in public recreation demand have led to a need to consider changes in the current recreation settings being provided.

Public comments included concern that removing these standards would allow managers to add motorized routes without considering the effects they might have on the broader recreation setting. To address this concern initially my proposal was to replace ROS standards with objectives for "miles of opportunity" within each travel planning area (TPA) (See Objectives 1-1(a) for Alternatives 2 through 6 under each travel planning area in Chapter II of the "Detailed Description of Alternatives"). This would have established a targeted amount of opportunity by TPA for motorized and non-motorized travel which, at the time, I felt would have been less open to interpretation than ROS. Since release of the DEIS however, many in my staff convinced me that establishing a targeted level of opportunity using "miles" was much too specific at the travel planning area scale. Therefore, in my decision I've included the mileage table forest-wide (Objective A-1), and included different objectives by TPA, Objective 1-1(b) for summer, and 2-1(b) for winter, that direct consideration of the targeted recreation setting (i.e. the ROS map) for any future proposals to change the uses specified.

The FEIS (page 3-222) indicates including a standard that zones the Forest to provide and maintain certain recreation settings (ROS) could make potential future changes in travel management more difficult. While I'm not anticipating changes in the foreseeable future, my decision moots this concern by including it as an "objective" rather than a "standard". An objective identifies a targeted condition that we wish to maintain or achieve whereas a standard is a binding limitation on management activity. In other words a ROS standard could be problematic if there was an identified need for additional motorized use restrictions. As an objective it becomes a consideration in evaluating the trade-offs.

Forest Plan Management Area 11, Habitat Effectiveness Standard

Management Area 11 of the Forest Plan contains a standard to: *"Implement road use restrictions to achieve an elk habitat effectiveness level of at least 60% or a specified elk hunter opportunity objective."* There is a need to remove this standard for the same reasons as discussed for the forest-wide standard to maintain elk effective cover ratings of 70% (Forest Plan standard 6.a.4, USDA 1987: II-18). Note that this Management Area Standard has always been moot because the Forest-wide standard was more restrictive.

Other Forest Plan Direction

One reason for removing other existing Forest Plan direction relative to travel management is that it was not well written. Goals, objectives, standards and guidelines (see the definitions in the Glossary) were used interchangeably. Many of the "standards" in the current Forest Plan reflect a belief of Forest managers during the 1980s that once the Forest Plan EIS was completed, NEPA requirements were met for all subsequent management activity covered by the Plan. In other words, it was believed that the Forest Plan would be the one and only decision level. It was later established that there was a need for a second decision level, subject to NEPA, for making decisions for final agency actions. A "standard" should be an expression of a binding limitation on future actions that may be proposed. Many of the current standards I'm removing are not written as "binding limitations" rather they are written as decisions designed to permit categories of activity. These standards are now inappropriate and should be removed as Forest Plan direction.

Other standards are being removed because they are outdated and do not provide any meaningful direction. The current Gallatin Forest Plan was the first one prepared on this Forest under the National Forest Management Act (NFMA). At that time, Forest managers believed it was important to inform the public of existing policies even though they did not set specific objectives to be achieved or standards that would establish sideboards on management action.

For example, Forest-wide standard 16.h. (USDA 1987:II-28) pertaining to eligible Wild and Scenic River segments states that *"motorized travel on land or water may be permitted, prohibited or restricted. Controls will usually be similar to surrounding lands and waters."* It is apparent that this standard provides no direction at all. Any action would be consistent with this standard and therefore it is unnecessary.

Another example is Forest-wide standard 12.b.5 (USDA 1987:II-27), which states, *"Rights-of-way across National Forest lands will be granted in situations involving a statutory right of access, subject to compliance with applicable rules and regulations of the Secretary of Agriculture."* This statement is redundant to that established by law, regulation, and policy. There is no need for the Forest Plan to simply state that laws, rules and regulations will be followed.

The travel planning process has provided an opportunity to remove these unnecessary and redundant statements related to travel management from the Forest Plan.

Several Forest Plan standards I'm removing in this decision establish procedures to follow or specific publications to use in evaluating the effects of proposed actions. In implementing the Forest Plan it was learned that this type of direction is inappropriate because analysis processes change rapidly and often new, better information becomes available.

For example, Forest-wide standard 13.1 (USDA 1987: II-27), states, *"Analysis for transportation needs will be integrated into resource area analysis and will be completed prior to transportation project work."* I'm amending this direction out of the Forest Plan because the "Resource Area Analysis" (RAA) process is no longer used. RAA was a process unique to the Gallatin National Forest used during the 1980s. It was developed in attempt to meet the requirements of NEPA for multiple projects within a given area. Subsequent appeals of

decisions made through this process however showed that it was not legally sufficient to meet some of the specific requirements of NEPA and therefore was discontinued. Today, transportation system proposals would be evaluated through an environmental assessment or environmental impact statement.

Another example is Forest-wide standard 6.a.2 (USDA 1987:II-17), that directs that the recommendations and guidelines found in the publication, "Coordinating Elk and Timber Management, Final Report of the Montana Cooperative Elk-Logging Study 1970-1985" will be used in evaluating and formulating prescriptions for timber sales and road development projects. While this report is still useful, when new information becomes available this publication may no longer be applicable in certain situations and therefore the Forest Plan should not direct that it be used. NEPA requires federal agencies to use accurate scientific analysis in evaluating impacts of proposed actions (40 CFR 1500.1). They must also consider and disclose research and other information that may or may not support the same conclusions. Removing this standard from the Forest Plan will allow Forest Service biologists to select and use the scientific publications that best predicts environmental effect.

It should be noted that many of the standards I'm removing are statements of good intention regarding protection of the environment. For example, there may be direction to manage the road and trail system such that it minimizes sediment delivery to area streams or such that it provides for good wildlife habitat. Amendment of the Plan to remove these standards is not because I disagree with these principles, it is simply because the wording of the direction is not consistent with what a standard should be. Again, a "standard" should be a binding limitation on management activity. It must be specific such that compliance can be precisely measured. As stated above new standards are being proposed as part of this Travel Plan.

For more detailed discussion of the reasons for my amendment decisions please refer to the FEIS, Chapter 1 (pages 1-11 through 1-14), Appendix A, and the discussion of this issue in Chapter 3 (pages 3-214 through 3-224).

9. General Wildlife. This issue was addressed in the FEIS to help me and other readers understand the potential effects of recreation travel on wildlife in general. Species of special interest were addressed as separate issues and my conclusions on these are addressed throughout this section. What I've been able to conclude from reviewing the General Wildlife section of the FEIS is that the more restrictive on human use of the Forest I would get with my Travel Plan decision, the better it would be for wildlife. However, I could not identify a specific threshold, or breakpoint, among the range of alternatives in which the prescribed level of recreation opportunity would become acceptable or unacceptable to me. Also, while the analysis seems to indicate that motorized uses would have greater adverse effects than non-motorized uses, there are few studies available that have addressed the potential effects of the latter. From the studies that are available it would seem that non-motorized use can also have adverse effects to wildlife.

There are three facets to this issue: A. The potential for direct wildlife mortality due to collisions with vehicles on Forest roads and trails. B. The direct loss of habitat due to the presence of road and trail prisms. C. The indirect loss of habitat through wildlife displacement from human activity associated with roads and trails. I found the first two facets of this issue to be non-significant. Direct mortality to wildlife from collision is an issue mostly with high speed roads such as federal highways (FEIS, page 3-226). Gallatin National Forest roads and trails are all

low speed routes and it is believed that there is very low vehicle-caused mortality on Forest Service roads and trails. The direct habitat lost (i.e. vegetation loss) due to the presences of road and trail prisms amounts to less than 1 % of the Forest and therefore this is a minor effect under all alternatives (FEIS, page 3-233). This is also an effect that relates to the actual footprint of roads and trails and does not vary based on the types of uses designated for those routes. That leaves wildlife displacement from human activity as the primary factor I considered relative to this issue in weighing the alternatives.

To address wildlife displacement, the analysis (FEIS, Chapter 3) used a 1 km buffer on each side of both motorized and non-motorized routes (FEIS, page 3-234). The percent of each travel planning area untouched by the 2 km footprint of these routes was then identified as "core" habitat for wildlife. What this analysis shows is that core habitat for the Gallatin Forest, including Wilderness acreage, ranges from 58-79% core (medium to medium-high) under all of the seven alternatives considering motorized routes only (FEIS, Fig. 3.9.7 and Table 3.9.3). Alternative 7-M would increase core over the existing condition (Alternatives 1 and 2), and Alternatives 5 and 6 generally have the highest percentage of core of any alternatives. With both motorized and non-motorized routes counted, the percentage of core is virtually the same across all alternatives. As with other issues, I found Alternative 1 to be unacceptable because it would allow for a proliferation of motorized use beyond what exists today. This unmanaged situation in my view could eventually lead to detrimental effects on wildlife populations as user built routes are created, further reducing the amount of core habitat over time. Beyond that I found no basis to conclude that 58% core (as shown in Table 3.9.3 for motorized routes under Alternative 1) was too low. Therefore the remaining alternatives, Alternatives 2 through 7-M (which maintains or increases the amount of core habitat) were acceptable to me as it specifically relates to this issue. I drew similar conclusions considering the values in Table 3.9.3 with wilderness acreage excluded.

Similar to my conclusions regarding big game earlier in this section, the General Wildlife analysis in Chapter 3 of the FEIS basically shows that the more restrictive one gets on human travel within the Gallatin National Forest, the better it is for wildlife. It's important not to look at the effects of the travel plan alternatives on wildlife in a vacuum. Cumulatively, management actions unrelated to the Travel Plan over the last 20 years or so, such as our land acquisition program, road closures, and the grizzly bear food storage order, have improved wildlife habitat substantially. I see this trend continuing into the future. My decision adopts a number of goals, objectives, standards and guidelines that will be of benefit to a number of wildlife species as future management activities are undertaken. Refer to the FEIS, pages 3-245 through 3-249, for a discussion of these projected benefits. I believe that wildlife populations on the Gallatin National Forest as a whole are healthy and therefore found any of Alternatives 2 through 7-M for a travel management plan to be acceptable as they relate to this issue.

10. Grizzly Bear. The issue of travel management is important to the conservation of the grizzly bear, a species currently listed as threatened under the Endangered Species Act. The grizzly bear is known to be sensitive to the effects of access management, especially as related to motorized use (FEIS, page 3-255). Grizzly bears tend to avoid areas used by motorized vehicles. This issue was influential in the development of alternatives for a travel management plan. To help meet the goal of grizzly bear recovery, the Gallatin National Forest is guided by Forest Plan Amendment 19 which captures the direction given by the U.S. Fish and Wildlife Service (USFWS) in their 1995 Biological Opinion on the Forest Plan (FEIS, page 3-255). The crux of

Amendment 19 is that the Forest would manage human motorized access in the Recovery Zone (Primary Conservation Area, ICST 2003) to help meet the goal of grizzly bear recovery. Yellowstone Park access standards were to be adopted when they become available. In the interim, the Forest would manage bear subunits (unless allowed through consultation with the USFWS) for:

A. No increase in open motorized access route density (OMARD) from the current level.
B. No increase in total motorized access route density (TMARD) from the current level.
C. No decrease in secure area from the current level.

In addition, applicable direction is based on a Memorandum of Understanding (MOU) and a Conservation Agreement (CA) with the United States Fish and Wildlife Service (USFWS). See MOU, Conservation Strategy (ICST 2003:12-13). The Conservation Strategy for Grizzly Bear in the Yellowstone Ecosystem (ICST 2003) was developed by the Interagency Conservation Strategy Team and completed in March 2003. The three Regional Foresters managing Forests in the Greater Yellowstone Area, the three Directors of State Fish and Game agencies and Bureau of Land Management signed a Memorandum of Understanding (ICST 2003:12-13) to seek implementation of the Grizzly Bear Conservation Strategy. The Conservation Strategy has recently gone through a NEPA analysis as an amendment to the Forest Plans of Greater Yellowstone area national forests (USDA Forest Service, April 2006). It replaces most, if not all, of their current Forest Plan direction for grizzly bears.

The above direction was used as criteria in developing Alternatives 3 through 7-M for a travel management plan. In other words, each of these alternatives was designed to be consistent with Amendment 19, and the MOU with the USFWS. Since the grizzly bear is protected under the Endangered Species Act I considered this to be a limitation on my decision space. To not do so would have rendered these alternatives un-selectable. Alternative 2 is also consistent with this direction, not so much by design, but because it locks in place current travel patterns and therefore does not increase motorized route density. Alternative 1 would allow off-route motorized travel and thus a proliferation of use that would not be consistent with either Amendment 19 or the MOU with the USFWS. For this reason in part, Alternative 1 is not an acceptable alternative to me.

Beyond that, my decision was based on projected impacts to the bear in three subunits designated as needing improvement: Henry's Lake #2, Gallatin #3 and Madison #2 (FEIS, page 3-256). These lie at least partially on the Gallatin National Forest.

The Gallatin #3 subunit falls in the southern Gallatin Mountain Range and currently has about 55% secure habitat. Secure habitat would increase to about 60% under Alternatives 2 and 3, 62% under Alternative 4, 72% under Alternative 5, 81% under Alternative 6, and 70% under Alternative 7-M (FEIS, pages 3-285 and 3-286). Alternatives 5, 6, and 7-M offer substantial improvement in the security of this subunit. Under Alternative 7-M, my selected alternative, the improvement is primarily due to the removal of motorized use from the southern part of the subunit and the reduction in motorized use on the east side of the Gallatin Crest. This creates two fairly large pieces of secure habitat. While Alternatives 5 and 6 were somewhat better, I was not willing to prohibit motorcycle use of Trail #120, because that route is part of a trail system that connects the Paradise Valley to Gallatin Canyon and provides the only motorized access from the east into the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area.

The Madison #2 subunit generally encompasses the Hebgen Lake Basin and currently has about 67% secure habitat (FEIS, pages 3-291 and 3-292). This would increase to about 72% under Alternatives 2 through 7-M (id.). There is little difference between alternatives in this area and I found that there was limited opportunity to increase secure habitat further. Grizzly bears face a higher risk of conflict with humans here than in many other subunits due to private dwellings and attractants. Given the inherent low habitat value, the attractants available, and mortality risk to bears, I believe that additional restrictions on travel (increase in secure habitat) would be of questionable benefit. The Hebgen Lake area is also a heavily used recreation area for both local residents and tourists. Maintaining roaded motorized recreation opportunities in this area was of high importance to me in making my decision.

Henry's Lake #2 subunit generally lies in the southern half the Henry's Lake Mountain Range and includes the southeast portion of the Lionhead Travel Planning Area. It currently has about 53% secure habitat (FEIS, pages 3-294 and 3-295). This improves to about 58-59% under Alternatives 2 through 4, to about 65% for Alternative 5, 68% for Alternative 6, and 63% for Alternative 7-M (id.). Similar to the Madison #2 subunit this is a heavily used area and maintaining motorized recreation opportunities was important to me in making my decision.

To summarize the rationale I had for my decision for travel management within the above 3 subunits I would say that my objective was to improve secure habitat as much as possible without taking away roads and trails that are important for vehicular access or popular for motorized use. In my judgment, Alternatives 2 through 4 did not go far enough in improving secure habitat, while Alternatives 5 and 6 were too restrictive on motorized recreation.

All other Grizzly Bear subunits on the Gallatin National Forest either remain the same that they are at the present time or have increased secure habitat under Alternatives 2 through 7-M (FEIS, pages 3-298 through 3-300). For these areas I found any of the alternatives, except for Alternative 1, to be acceptable in terms of the predicted effects to the grizzly bear. Again, Alternative 1 would allow off-route motorized travel and thus a proliferation of use that would not be consistent with either Amendment 19 or the MOU with the USFWS.

I also considered the impacts of non-motorized summer travel and winter uses in making my decision, but based on the analysis disclosed on pages 3-269 through 3-275 and 3-300 through 3-307 of the FEIS I concluded that these were not significant issues.

My decision also includes programmatic direction (goals, objectives, standards, and guidelines) that are designed to maintain and/or improve wildlife habitat in conjunction with future management activities. Two objectives in particular I believe will be of benefit to the grizzly bear over time. These are Forest-wide Objectives D-1 and D-2 of my decision (Objectives C-1 and C-2 of Alternatives 2 through 6). These objectives target the effective closure of roads and trails that are in excess to administrative, recreation and access needs. Other direction that I've included will also benefit the bear. Refer to pages 3-322 through 3-327 of the FEIS for discussion of this direction.

Alternatives 2 through 6, and Alternative 7 of the DEIS, proposed additional direction for grizzly bears that I chose not to include in my decision (Alternative 7-M). This direction includes proposed Objective F-2 and Standard F-3 and are described on pages I-16 and I-17 of the

"Detailed Description of Alternatives". This direction was proposed in anticipation of what could emerge as direction from the proposed Grizzly Bear Conservation Strategy Amendments to Yellowstone Area forest plans. I determined that this was inappropriate. If I were to adopt this direction in the Travel Plan, and the Amendment decision was different, then the Travel Management Plan may have to be changed. Even if I was to adopt this direction and the Amendment decision was identical, at best it would be redundant. Therefore, in the interim I have decided to follow Forest Plan Amendment 19 (1995) and the Memorandum of Understanding (MOU) and Conservation Agreement with the United States Fish and Wildlife Service. See MOU, Conservation Strategy (ICST 2003:12-13), the USFWS Biological Opinion on Access (1995).

My decision also includes an objective and standard that provides direction for the review of proposals for backcountry airstrips (Forest-wide Objective A-6 and Standard A-7). This is a variation of the objective that was included in Alternative 3 of both the Draft and Final EIS (Objective A-6). I've adopted and modified this direction to potentially provide an opportunity for backcountry landings while establishing where and under what conditions these will be considered. Different from Objective A-6 of Alternative 3, my decision precludes consideration of such proposals within the Grizzly Bear Recovery Zone.

In conclusion, I have found that any of Alternatives 2 through 7-M, all improve conditions for the grizzly bear over the current situation, but that Alternatives 5, 6 and 7-M are superior in providing increased habitat security. These alternatives take the strongest measures to limit motorized use and protect connectivity. In addition to the rationale I've discussed above, Alternatives 5 through 7-M would better provide for the protection and propagation of wildlife in the Cabin Creek Recreation and Wildlife Management Area compared to Alternatives 1-4. Alternatives 5 through 7-M would reduce disturbance, displacement, and mortality risk for grizzly bears by restricting ATV on all but small portions of Trails #68 and 203.

11. Transportation System Implementability. The Gallatin National Forest transportation system consists of over 2,100 miles of road and 2,800 miles of summer and winter trails. The transportation system provides recreation opportunities within the National Forest, provides access for forest management and protection, and provides access to private land inholdings. The analysis of this issue in the EIS addresses the predicted schedule, costs and physical changes necessary to implement each of the Travel Plan alternatives. In making my decision I wanted to be sure that my selected alternative was reasonable to implement. After all, it would make little sense to adopt a travel management plan that is too costly or that could not be accomplished in a reasonable time frame. Based on a review of this section in Chapter 3 of the EIS, I have determined that any of Alternatives 2 through 7-M are reasonable to implement. Alternative 1 would be disproportionately laborious and costly. For most issues this Alternative reflects the predicted effects that could be anticipated under a "no action" (no travel plan) scenario. A conscious decision to select Alternative 1 however reasons that all routes that were legally open to motorized uses prior to the imposition of the Montana/Dakota OHV decision (January 2001), will in fact be converted into ATV routes. Since many of the trails outside the Wilderness are open to motorized uses, most would have to be rebuilt to accommodate ATVs. Under "no action" these costs would not be incurred.

Alternatives 2 through 5 and 7-M (my selected alternative) would take between 4 to 6 years to rebuild and open routes to designated uses (FEIS, page 3-340). Alternatives 5 and 6 would take

less time and be less costly because they include fewer routes that would be opened to ATV use. For a 15 to 20-year Travel Plan, I believed that 4 to 6 years is a reasonable time frame for implementation and therefore all alternatives except for Alternative 1 were acceptable.

12. Invasive Weeds. Invasive weeds are plants that are either legally declared "noxious" weeds by the State of Montana, or other non-native plants that are aggressively spreading throughout the ecosystem. I am concerned about the spread of invasive weeds because they can alter the native plant species composition resulting in a decrease in habitat quality for wildlife and livestock, an increase in sediment levels of streams, and a decrease in aesthetic/recreational quality (FEIS, page 3-350). On the Gallatin Forest, the majority of mapped weeds are adjacent to motorized travel routes (FEIS, page 3-352). According to the Gallatin weed survey data as of 2002, 53 percent of the weed patches are within 100 feet of motorized Forest Service routes, and 65 percent when including state highways within the Gallatin Forest boundary, with only 3 percent on non-motorized routes (id.). Given that, I'm pleased that my decision (Alternative 7-M) ranks low in the amount of area impacted with motorized routes in areas with existing weeds among the range of alternatives (FEIS, Table 3.12.3). This table also shows that Alternative 7-M will result in the lowest amount of motorized route corridor (200 foot buffer) intersecting areas at high risk of leafy spurge. Leafy spurge is of concern because they have deep rhizomatous roots and are difficult to control (FEIS, page 3-355). There is also an abundance of high risk habitat to this species within the Gallatin National Forest and it is rated high-risk in 15 different types of plant communities (id.).

That being said I cannot claim that this issue was significant in my choice among the seven alternatives. While the analysis of this issue in Chapter 3 of the EIS provides evidence that the alternatives with lower mileage of motorized routes are better, I could not identify a clear break-point that would allow me to separate acceptable alternatives from unacceptable ones. Invasive weeds are a much greater problem than simply an issue over motorized use of the roads and trails on the Gallatin National Forest. In this larger context it would be disingenuous for me to say that the amount of motorized route in Alternatives 1 through 4 was unacceptable due to the risk of weed spread, whereas the amount of motorized route in Alternative 7-M was somehow okay. I'm also not willing to say that non-motorized types of travel don't also pose some risk of weed spread. The bottom line is that controlling invasive weeds is an ongoing effort that requires cooperation of multiple agencies, organizations and private landowners. We will continue to do our part as I described in my recent Record of Decision for The Gallatin National Forest Noxious and Invasive Weed Treatment Project (June 2005).

13. Lynx. The Canada lynx was listed as a threatened species under the Endangered Species Act in March 2000. Lynx have been documented, historically and currently, throughout the Rocky Mountains of Montana. Lynx are considered a potential and confirmed resident of occupied habitat on the Gallatin Forest. Lynx have been trapped here as recently as 1997 (FEIS, page 3-362). Trapping records beginning in 1978 indicate that approximately 20 individual lynx were legally trapped before Mt FWP's change in trapping regulations in the winter of 2000-2001 to exclude the capture of lynx (id.). No incidental take of lynx has been reported since the closure.

In making my decision for the Travel Management Plan, I relied on the analysis of how the alternatives compared to conservation measures contained in the Canada Lynx Conservation Assessment and Strategy (LCAS) (FEIS, pages 3-363 through 3-367). The LCAS is the primary basis for determining effects to lynx. There are no specific methodologies for determining

effects to lynx other than guidelines and standards identified in the LCAS (FEIS, page 3-363). A Conservation Agreement between the US Forest Service and the US Fish and Wildlife Service committed the Forest Service to consider recommendations in the LCAS when determining the effects of actions on lynx. Primary concerns for travel management include open road density (ORD), landscape scale connectivity of lynx habitat, and the potential for competing predators to utilize packed snow routes for access into areas normally only accessible to lynx.

There are no recommended thresholds for lynx in the literature in terms of open road density (ORD); however, roads may pose a risk (illegal or non-target trapping, accidental vehicle death, or illegal shooting) to the reproduction and/or survival of lynx within a particular home range. The LCAS provides a programmatic guideline for Forest backcountry roads and trails relative to road density at 2 mi/sq mi. Table 3.13.5 of the FEIS demonstrates that none of the travel plan alternatives would result in an ORD of over 2 mi./sq. mi. for any lynx analysis unit (LAU). Forest-wide, Alts. 1 through 4 maintain ORD at 0.8 mi/sq mi; Alts. 5 and 7-M reduce it to 0.7 mi/sq mi; and Alt 6 drops it to 0.6 mi/sq mi. Also, in a recently published Federal Register (USDI 2003) that addressed potential threats to lynx, the US Fish and Wildlife Service concluded that the threat to lynx populations from high traffic volume on roads that bisect suitable lynx habitat is low. Therefore this parameter was not a factor in my decision.

Relative to the parameter of landscape scale connectivity, the US Fish and Wildlife Service (USDI 2003) asserts that no information currently exists to determine the level at which traffic volume or roadway design may influence or create an impediment to lynx movement (FEIS, page 3-374). They addressed potential threats to lynx and concluded that the threat to lynx populations from high traffic volume on roads that bisect suitable lynx habitat and associated suburban developments is low. In addition, they concluded that there is low threat to the contiguous United States lynx population to maintain connectivity between habitats in Canada and the United States. They state their belief that all historic habitats, including boreal forest that exists in patches or is of marginal quality, is still available to dispersing lynx except for areas where development has encroached on the boreal forest or is isolated from source lynx populations. Generally speaking, lynx habitat and grass/shrubland or riparian habitat serving as interconnected blocks between lynx habitat would improve with the implementation of Alternatives 2 through 7-M, due to the restriction of travel to designated routes and subsequent reduction in road and trail density. Therefore this parameter was also not a factor in my choice among alternatives.

Predicted effects to lynx during the winter did influence my decision. Deep, low-density snow allows lynx to exploit higher elevation areas during winter that typically exclude competitors such as coyotes, bobcats, and mountain lions (FEIS, page 3-371). These potential competitors cannot compete under deep, low-density snow conditions because of the physical anatomy of the size of their body and feet. Availability of compacted snowmobile trails may provide other predators, especially coyotes, access to lynx habitat during annual periods of deep snow that facilitates competition for primary prey (snowshoe hare) predation opportunities or by directly killing lynx. The subsequent decrease in snowshoe hare numbers available to lynx may negatively affect lynx distribution and abundance. Despite current research, there continues to be no solid, consistent data on the role of competition between lynx and other species. Despite the activity that causes effects to lynx during the winter, they may cause lynx to expend energy beyond their caloric intake, decreasing natality and increasing mortality. The LCAS specifies that, on federal lands in lynx habitat, there should be no net increase in groomed or designated

over-the-snow routes and designated snowmobile play areas by LAU unless the designation serves to consolidate unregulated use and improves lynx habitat though a net reduction of compacted snow area.

Table 3.13.8 of the FEIS displays compliance by LAU with the LCAS. See Figure 3.13.1 of the FEIS for an index map of LAU's on the Gallatin National Forest. In terms of compacted snow area the table and associated discussion shows that Alternative 2 would not be consistent with the LCAS in the Bridger/Bangtails and East Gallatin LAU's. Alternative 3 would not be consistent with the LCAS in the Bridger/Bangtails, East Gallatin, Emigrant, Henry's Lake, N. Gallatin, S. Fork Madison, Upper Gallatin, West Crazies and West Gallatin LAU's. Alternative 4 would not be consistent with the LCAS in the Bridger/Bangtails, Emigrant, N. Gallatin, S. Fork Madison, West Crazies and West Gallatin LAUs. Alternative 6 would not meet the LCAS for the West Crazies LAU. Alternatives 1, 5, and 7-M remain consistent with the LCAS in terms of over-snow compaction. However, Alternative 1 may add direct, indirect and cumulative effects to the existing situation. Assuming human recreational activities increase in the future, this alternative has the most potential to affect lynx long term. There is no reasonable logistical way to deter an increase in snowmobile use without designating routes with area closures as proposed in Alternatives 2 through 7-M. Snowmobile and ski accessible areas would continue to increase where land topography, snow conditions, and increased technology make it feasible. Alternatives 5 and 7-M were my preferred alternatives for winter travel due, in part, to the fact that they would be consistent with the LCAS.

My decision includes a Forest-wide goal (Goal F) that will serve to highlight and potentially protect those areas considered important to lynx movement (i.e. corridors). Otherwise, there is no specific programmatic management direction for lynx. The Gallatin Forest is obligated to meet the current direction for lynx, whether in the LCAS or revised LCAS, until such time that the proposed Northern Rockies Lynx Amendment supercedes it. A Conservation Agreement between the Forest Service and the US Fish and Wildlife Service (Agreement #00-MU-11015600-013) committed the Forest Service to use the LCAS when considering the effects of actions on lynx until the Forest Plans are amended (USDI 2005). Therefore I determined that it was not necessary to include programmatic direction for lynx in the Travel Plan.

14. Migratory Birds. Many bird species are protected under the Migratory Bird Treaty Act (16 USC 703-711). A January 2001 Executive Order requires agencies to ensure that environmental analyses evaluate the effects of federal actions and agency plans on migratory birds, with emphasis on species of concern. Over 200 species of migratory birds inhabit the Gallatin National Forest at some stage in their life cycle (Cherry 1993). Migratory birds are very diverse and include raptors, waterfowl, shore birds, game birds and songbirds. They are an extremely diverse group, and as such, occupy all types of habitat available on the Gallatin Forest, including lakes, streams, wetlands, riparian areas, grasslands, shrub lands, deciduous forest, coniferous forest, mixed forest, recently burned forest, alpine tundra, rock outcrops and sheer cliff walls. Human access and travel can affect migratory birds primarily through disturbance.

This issue was not a factor in my choice among alternatives except that it provides additional support for not allowing off-route summer motorized travel as would occur under Alternative 1. Travel management actions can have adverse effects on some species, while being neutral, or benefiting others (FEIS, page 3-397). Generally speaking, habitat alterations associated with road and trail corridors will typically benefit more generalist species, and have negative impacts

on habitat specialists (id.). As with other species, birds can be disturbed by noise and human presence within the Forest. However, birds are able to adapt and habituate more quickly to mechanical (or motorized) noise than to human presence (FEIS, page 3-404). Therefore, non-motorized use on and off trails may be a more severe disturbance factor for some birds than motorized travel restricted to designated routes. None of the alternatives restrict hiking or cross-country skiing, and there are limited restrictions on stock use. Therefore I was unable to conclude that any one alternative would be better than the others in terms of their potential effects to migratory birds. Alternative 1 is somewhat less desirable because it would allow proliferation of motorized use leading to additional user created roads and trails and easier access to areas that otherwise may not see much use. In Alternatives 2 through 7-M, motorized travel would be restricted to designated routes. Project roads and user-built routes would be closed to public motorized use. Road widths and levels of roadside treatment would not likely vary greatly between alternatives. Alternatives 2 through 7-M would also reduce the overall miles of road corridor from the existing condition. Road closures under these alternatives would result in vegetative regrowth, eventually reducing or eliminating habitat modification effects in some places across the Forest, whereas most existing road corridors would be expected to remain under Alternative 1.

Based on the analysis of this issue disclosed in Chapter 3 of the FEIS I recognize that human access and travel has adverse effects on many bird species. Travel management activities clearly can have adverse effects on migratory birds, and all alternatives have the potential for causing negative impacts to individual birds. However, there is no evidence that Gallatin Forest travel management activities alone have had adverse effects at the population level for any migratory bird species (FEIS, page 3-405). Alternatives 2 through 7-M all include proactive measures that would facilitate restoration and enhancement of bird habitat through elimination of unacceptable travel routes in key habitats, implementation of seasonal restrictions in some areas, and establishment of goals, objectives, standards and guidelines that would facilitate the protection, restoration and enhancement of important nesting areas (see the FEIS, pages 3-408 through 3-411 for a discussion of this programmatic direction). To further improve habitat for migratory birds would require restrictions on all types of human use of the Forest. Bird watching is one of the most often-cited activities participated in by recreationists on National Forest System lands (FEIS, page 3-408). The Travel Plan will facilitate access to bird watching opportunities.

15. **Noise.** An issue raised during comment periods was the impact that noise from off-highway vehicles (OHVs), snowmobiles and other motorized vehicles have on the quality of people's recreation experience. Noise from motorcycles, ATVs and snowmobiles in particular can detract from the natural setting some users have come to the Forest to enjoy.

Noise from OHV's and snowmobiles was a factor in my decision. Many people enjoy recreating on public land to escape the noise of modern civilization. The natural soundscape and tranquility is a condition that they seek as part of their recreational experience. Alternatives 4 through 7-M were designed to cluster motorized use areas, concentrating the total area potentially affected by noise from recreational vehicles. Alternative 1 would allow off-route summer motorized use and Alternative 2 would, in general, manage travel for summer motorized use as it is today. Alternative 3 also favors motorized use of the trail system. Earlier in this ROD I outlined my four principle decision criteria. My first two criteria were to: (a) provide well-distributed opportunities for both OHV's and exclusive non-motorized uses of the trail system outside of Wilderness and (b) to provide well-distributed opportunities for both snowmobiling and

exclusive, quiet non-motorized cross-country skiing and snow-shoeing. Alternatives 1 through 3 did not meet these criteria as well as Alternatives 4 through 7-M in my view.

Many comments from motorized users suggested that if non-motorized users were seeking solitude and tranquility, that they should use trails in Yellowstone National Park and designated Wilderness. They felt that it was unfair to impose additional motorized use restrictions in non-Wilderness areas of the Gallatin National Forest. This concept was not acceptable to me because I don't believe that our Wilderness areas satisfy the demand for half-day and evening hiking, horseback riding and mountain biking opportunities in a non-motorized setting within a reasonable travel distance from area communities. Also, based on the discussion in the Recreation section of the FEIS (Page 3-420), I have concluded that the demand for non-motorized recreation opportunities will exceed the demand for motorized uses, particularly in the summer. In addition, the non-motorized user's experience is more impacted by motorized use than vice versa. Again, my objective is to provide a balance of opportunities for Forest users. To me, a 50/50 split of area or route miles allocated to motorized and non-motorized uses does not achieve that goal.

Some commenters also suggested mitigation to resolve the noise issue rather than motorized use restrictions. The first suggestion was to impose noise restrictions on trail vehicles. This option was considered and addressed in Chapter 2 of the FEIS (Page 2-29). Noise is regulated in Montana on public lands by Montana State Code 61-9-418. This law states that all motorcycles or quadricycles operated on streets and highways in the state shall be equipped with noise suppression devices at all times. Forest roads and trails are considered public ways under this law, and are covered by this requirement. However noise infractions have been difficult to enforce (FEIS, page 3-414) and I don't believe that simply reducing motor vehicle noise is sufficient to provide the types of experiences most non-motorized users are looking for.

Another suggestion was time-share whereby trails could be opened to motorized use on alternating days, or weeks, etc., and then precluded at other times. I believe that this idea has merit and I would like to try it on certain identified motorized routes within about 30 miles of Bozeman. Over the next few years I would like to work with a variety of users to develop a schedule that may resolve conflicts among competing users on our more heavily used trails. That being said, I again did not find this to be a complete solution to the noise issue forest-wide. The alternating use concept would be confusing and difficult to enforce on such a large scale.

16. Recreation. Recreation was the most influential issue in my decision for a travel management plan. Responding to changes in recreation demand within the capability of the land was the primary purpose for proposing the "Starting Benchmark" (now Alternative 4) in 2002 and initiating a comprehensive analysis of public travel on the Forest. Until now, there had been no grand plan for the management of public travel on the Gallatin National Forest. The road and trail system was created over time; influenced by a number of factors including land ownership patterns, use of Forest resources, legislation, recreation demand and changes in public attitudes. In 2000, then Forest Supervisor Dave Garber realized that with the growth in population, new information on potential effects to resources and diverse personal value sets, that it was time to develop a Forest travel management plan.

The Starting Benchmark and now my decision result in a reduction of motorized use opportunities over the current situation. This reduction is largely based on several studies that

consistently show that participation in non-motorized activity exceeds that of motorized activity (see the FEIS, pages 3-421 through 3-428). The number of participants driving off-road by 2010 in the Rockies is projected to be 3,270,000 (FEIS, page 3-426). The number of participants biking, hiking and pursuing non-consumptive wildlife viewing activities projected for 2010 in the Rockies is 22,535,000 (id.). The number of days that recreationists are projected to spend hiking, biking or participating in non-consumptive wildlife viewing activities in the Rockies in 2010 is estimated at over 1,000,000,000 days (id.). The number of days people spend participating in non-consumptive wildlife viewing activities alone is projected to exceed 740,000,000 days by 2010 (id.). The number of days recreationists are projected to participate in off-road driving in 2010 in the Rockies is estimated at over 64,000,000 (id.). Of these activities, non-consumptive wildlife viewing activities are projected to have the fastest growth of all dispersed recreation activities studied in the Rockies; nearly 50% by 2020 (id.). These recreation use projections would indicate that the largest future demand for supply of recreation opportunities would be for activities that typically occur in non-motorized settings.

A study completed by the Forest Service in 2002 surveyed the American public regarding their values with respect to public lands, objectives for management of public lands (including recreation management) and beliefs about the role the Forest Service should play in fulfilling those objectives (FEIS, page 3-427). The study concludes that the public sees the promotion of ecosystem health and the protection of watersheds as important objectives. When queried specifically about recreation opportunities, the public supports multiple uses, but not all uses to the same degree. The study found that providing access to additional motorized recreation opportunities was not a high priority objective, while preserving the opportunity to have a "Wilderness experience" was important. Providing opportunities and facilities for non-motorized recreation was seen as a somewhat important objective and role for the agency. In addition, through the comments received during the three comment periods provided on the proposed Gallatin National Forest Travel Management Plan, I've learned that non-motorized recreationists feel that their recreation experience is negatively affected by motorized recreation, and in general, motorized recreationists do not perceive any user conflict. Separating these often conflicting types of pursuits (motorized and non-motorized uses) was an objective I had in building the Travel Plan.

The Recreation Opportunity Spectrum (ROS) is a mid-scale recreation planning and analysis tool long used by the Forest Service for recreation planning. The system was developed to improve recreation planning and to recognize the importance of zoning and managing different recreation experiences and settings as important Forest resources (FEIS, page 3-435). ROS classifications in order from most developed to least developed include urban, rural, roaded natural, semi-primitive motorized, semi-primitive non-motorized and primitive settings. ROS as a planning tool was used to develop the objectives for each travel planning area (TPA) during the development of the Starting Benchmark. Desired Future Condition statements were included for each TPA to help identify the targeted setting. Because the projected demand for non-motorized recreation opportunities and settings is expected to exceed that for motorized uses and settings, and because the desired experiences of non-motorized users are adversely affected by motorized use, the Starting Benchmark resulted in an overall decrease in motorized use opportunities, particularly on trails. This basic rationale also carried forward into my final decision.

I knew that the Starting Benchmark was not a perfect plan. It was not intended to be. It was developed largely based on our thoughts for providing recreation opportunities across the Forest

and did not have the benefit of comprehensive resource effects analysis or public comment. The purpose of the Starting Benchmark was to identify the resource issues that should be considered in analysis and facilitate public feedback on how they were actually using the Forest transportation system. This information served as the basis for developing the range of six alternatives. This range was not bound by the ROS objectives used to develop the Starting Benchmark. Alternative 1 was intended to reflect a no action scenario and responded to users who felt that off-route summer motorized travel should be allowed on the Forest as it was in 1999 which was the date of the last Forest Recreation Visitor Map at the start of this analysis. Alternative 2 was developed to reflect current travel patterns, including decisions made in the Montana/Dakota OHV Decision (USDA, 2001) and would essentially maintain the status quo for the next 15 years or so. Alternative 3 was developed placing heavier weight on comments received from motorized users. While it would not allow for as much motorized use as provided in Alternatives 1 or 2, it would provide for it on additional specific routes identified by users that were not included in the Starting Benchmark (i.e. Alternative 4). Alternative 5 was developed with a greater emphasis placed on other Forest resources than with providing recreation opportunity. This resulted in it being more restrictive on motorized uses than Alternative 4. Alternative 6 was the most restrictive alternative on motorized use and reflected the position of certain groups and non-motorized users that heavy restrictions were needed to protect wildlife habitat, preserve the character of unroaded lands and maintain other resource values. All alternatives were designed to be as selectable as they could be within these basic principles. My summary here is an over-simplification and one should refer to Chapter 2 of the FEIS for a more detailed discussion of the alternatives. My decision, as well as Alternative 7 of the DEIS and Alternative 7-M of the FEIS, is a compilation of my preferred attributes of these other alternatives. From a broad recreation perspective my final decision results in recreation settings (ROS) similar to that originally identified for the Starting Benchmark. The targeted recreation setting set the context within which I attempted to respond to other issues and made the use decisions for each specific route and sub-area of the Forest. Alternatives 1 and 2 were not acceptable because they were completely unresponsive to the projected changes in demand described above. Alternative 3 would certainly be an improvement over the current situation but I felt it did not provide sufficient non-motorized settings close to area communities for shorter half-day and evening hiking and skiing opportunities. On the flip side I felt that Alternatives 5 and 6 went too far in restricting motorized opportunities. Alternative 6 in particular, removes opportunities for motorcycle rides on trails. Restricting motorcycles (and ATVs) to roads only would not provide the full spectrum of opportunities most of these users are seeking.

From the many comments and discussions I've had throughout this process I know that many motorized users will strongly disagree with my decision. For some it's a matter of principle, but in terms of the motorized opportunity provided I believe that my decision is more than adequate. Broad forest-wide comparisons using total miles or acres available often don't give an accurate picture. My objectives to increase the amount of non-motorized setting and respond to other resource issues is largely accomplished by bringing motorized use under greater management control as opposed to forcing a reduction in overall use. For example, the opportunities for pleasure driving and use of ATVs actually increase over the current situation. Pleasure driving increases due to planned improvements of some of the existing road system. ATV opportunity increases by converting parts of the old road system to ATV trails. Significant improvements in the ATV trail system will be established in the roaded portion of the Gallatin Range, the Shields drainage in the Crazies, South Plateau and Henrys Mountains, Deer Creeks, Fairy Lake, Cooke City, Buck Ridge and in the Mill Creek area. These alternatives focus on creating loops and

connected routes to increase the total mileage of riding available within a given area. While my decision reduces the amount of single-track motorcycle routes by 36%, the bulk of this reduction is really a shift to routes shared with ATVs. While my decision increases area restrictions on backcountry snowmobiling it also increases the number of marked and groomed trails provided over current conditions.

For snowmobiling I was sensitive to the popularity of this activity around the communities of West Yellowstone and Cooke City. Maintaining this established use was the principle reason my decision did not include many additional restrictions over the current situation in these areas. I also tried to maintain opportunities for high-marking and other backcountry use in the southern Gallatin Mountain Range, the West slopes of the Crazy Mountains and the Fairy Lake Travel Planning Area. This is a shift from what I had included in my DEIS preferred alternative, largely due to public comments informing me that I would be removing a unique and popular experience for the snowmobile community. The opportunity I've provided here though is still more restrictive than it is currently due to other resource issues. Lastly, my decision still emphasizes family-oriented cross country skiing in the Hyalite drainage, but does provide a separated opportunity for family snowmobile activities in Hyalite and snowmobile access to Grotto Falls Trailhead for ice climbers. My decision will allow plowing of the main Hyalite Road to the Blackmore Day Use area and the area around the reservoir will be managed for cross country skiing.

A number of users also raised the issue of cumulative effects to motorized use from travel management plans that have been executed or are being considered on other area national forests, Yellowstone National Park, and other public lands. This issue has been addressed in the cumulative effects section of the Recreation issue of Chapter 3 in the FEIS. Based on this discussion I have concluded that it is likely that the types of opportunities available will change (that is the mix of motorized and non-motorized opportunities). I believe that overall number of summer motorized routes available today will decrease, primarily due to the elimination of a network of "unauthorized user created routes" that are not "system trails" that were established prior to the Montana and National OHV decisions. While there is likely to be a net decline in the total number of summer motorized trails available near the Gallatin National Forest, I don't believe that supply is limiting at this time. With the low population base of Montana, small proportion of OHV users to total recreation use, and the extensive trail systems on public land, ample opportunities for summer motorized recreation still exists. A Gallatin National Forest employee who rode several hundred of miles of trail during peak season while completing trail surveys in 2004 and 2005 indicated that he rarely encountered other motorized users (Personal Communication, Todd Orr). This and other similar observations supports the idea that motorized use has not reached saturation on trails within much of this area, nor does supply appear to be limited at this time.

My decision would not restrict mountain bikes to designated routes but it does place additional restrictions on the number of miles of trail available for mountain biking outside of Wilderness. It closes 200 miles of trail to mountain biking that are currently open. My reasons for mountain bike prohibitions include: (a) I believe that mountain bike trails within the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area should approximate an equivalent amount of route that was available to motorcycle use in 1977 in order to be consistent with the Montana Wilderness Study Act. (b) Trails proximate to dude ranches receive heavy stock traffic and therefore if bikes were allowed it could lead to potential safety concerns and user conflict. (c) Closure of short trail

segments that lead to wilderness boundaries made sense to me so as to not invite wilderness trespass. (d) The need to restrict mountain bikes in the Crazy Mountains where the easements across private land don't allow for bicycle travel.

Since cross-country travel is not prohibited a large network of user-created routes will be open for biking. Biking would not be prohibited on any road at any time of the year. I did not adopt the proposed blanket spring restrictions to biking on trails as was included in Alternatives 2-7 of the DEIS. I instead opted for spring closures on about a dozen specific routes known to be a problem. The reason for the original proposal was to better protect trail facilities, reduce erosion and lower maintenance costs (DEIS Forest-wide Guideline A-11). In public comments stock users and bicyclists expressed opposition to blanket spring closures arguing that spring opportunities are very important to them and that many trails are either dry in the spring or they are so durable that spring use is not a problem. My staff and I discussed this issue and I have concluded that blanket spring restrictions across the Forest was going too far in attempting to correct a problem that could otherwise be addressed through restrictions on specific routes or information and education. I was also convinced that wet, muddy spring conditions would serve as a natural deterrent to foot and horse use where I don't believe that would necessarily true in the case of OHV use.

There are few changes in my decision that would drastically affect current opportunities for riding horses or other pack stock. A few miles of trail would be closed, primarily to address user safety concerns, either because of heavy mixed traffic or trails that are poorly suited to stock traffic and cannot be fixed. As I stated for mountain bike use above I elected not to adopt the proposed blanket spring restrictions to stock on trails as was included in Alternatives 2-7 of the DEIS, again, for the same reasons. I also did not include the proposed 34,000 acre area restriction on the trail-less portion of the Beartooth Plateau in the Absaroka Beartooth Wilderness as was proposed in Alternatives 3 through 7 of the DEIS. My decision would instead employ a seasonal restriction and a prohibition to overnight stock use within this area. I believe that the trail restrictions will accomplish the same objective of providing for public safety and protecting fragile alpine vegetation, without setting the precedent of an area prohibition.

Winter recreation activities, including snowmobiling, cross-country skiing, snowshoeing and ice climbing, are very popular on the Forest. The number of people participating in snowmobiling in the Rockies is projected to be 848,000 in 2010 and 880,000 in 2020 (FEIS, page 3-426). The number of people participating in cross-country skiing is projected to be 721,000 in 2010 and 987,000 in 2020 (id.). The number of days people snowmobile in the Rockies is projected to be 7,102,000 in 2010 and 8,040,000 in 2020(id.). The number of days people cross-country ski in the Rockies is projected to be 6,048,000 in 2010 and 7,938,000 in 2020 (id.). These statistics indicated to me that while it was important to continue to provide quality snowmobiling opportunities, I also needed to be responsive to the fact that cross-country skiing is the fastest growing dispersed winter recreation activity in the Rockies (id.). My decision is responsive to concerns raised that there are currently few accessible areas of family-friendly cross-country ski terrain that are not shared with snowmobiles outside of Wilderness. The most substantial increases in non-motorized cross-country ski terrain would be close to Bozeman, in the Hyalite drainage and the southern end of the Bridgers Mountains. There is also an increase in the total number of miles of marked or groomed ski trails over current conditions. The amount of marked and groomed route I could provide was limited however by the need to remain consistent with

higher level management direction for lynx, a threatened species (refer to the discussion of Issue 13 above).

Another part of my decision where the recreation issue was influential was in establishing a goal, objectives and guidelines for access (see Forest-wide Goal B, Objectives and Guidelines B-1 through B-9 as well as objectives within certain TPAs in the "Detailed Description of the Decision"). This direction identifies routes and areas of national forest land where I believe better public access is needed. It also provides guidance to ensure protection of valid existing rights. Access to public land has been an increasingly controversial issue in the west. Reasonable access has been and has the potential to be blocked for a variety of reasons including ownership changes, subdivision of ranches, and just a landowner's desire for exclusive use. Recreationists accustomed to using certain public lands may increasingly encounter "no trespassing" signs and locked gates. Lack of access reduces the amount of public land available to accommodate recreation use of the Forest. It can also give private landowners undue control of the types of activities that may be allowed on public land, including administrative activities. Acquisition of public access identified in my decision will provide opportunities to disperse recreation use over a wider area and reduce difficulties in accomplishing other resource objectives. It is important to note however, that my adoption of this programmatic direction does not constitute a final agency action. Discussion and negotiation with the respective landowners and further analysis under NEPA would be required before desired access could be acquired.

My decision also adopts an objective and standard for backcountry aircraft landing strips (Forest-wide Objective A-6 and Standard A-7). Adoption of this direction means that we will entertain proposals for the construction and use of backcountry landing strips that may be submitted by the Montana Pilots Association or others. I adopted this direction in response to an increased interest in this type of opportunity and I found no good reason to preclude it on a forest-wide scale. My decision does however identify areas where we would not consider such use including designated wilderness, the Hyalite Porcupine Buffalo Horn Wilderness Study Area, the Cabin Creek Recreation Wildlife Management Area, the Lionhead and Republic Mountain recommended wilderness areas, or within the Grizzly Bear Recovery Zone. Adoption of this programmatic direction is also not a final agency decision to authorize such use. Further analysis under NEPA would be required before any specific proposal is approved.

I've adopted additional programmatic direction in my decision, much of which was also included in Alternatives 2 through 7 of the DEIS, designed to guide Forest Service management of travel over time such that it remains consistent with the intent of this Travel Management Plan. For example, Forest-wide Objective A-1 summarizes the miles of opportunity to be provided on roads and trails for each use forest-wide. This is a way of measuring over time how well we are doing in providing the targeted mix of use intended. Similar objectives (i.e. Objectives 1-1 and 2-1) are included in the Travel Planning Area direction although I've chosen to use the ROS maps rather than the miles of opportunity tables at this scale. Forest-wide Objectives, Standards and Guidelines A-2 through A-12 are included to help us manage trails for their intended uses and articulate the few exceptions in which off-route summer motorized travel is permissible. Goal J and associated standard and guidelines will help us maintain a wilderness trail system that will preserve the natural integrity of the Lee Metcalf and Absaroka-Beartooth Wilderness Areas. I found no reason not to adopt this management direction.

Lastly, I believe that my decision is responsive to the current strategic recreation direction within the Forest Service to better address unmanaged recreation by discretely defining motorized trail opportunities. It is in accord with the Final OHV management policies presented to the public in November, 2005 as a final rule change in managing motorized recreation (USDA 2005). There are several tables and figures in the Recreation section of Chapter 3 of the FEIS that display the level and quality of opportunities that would be provided under the various alternatives (FEIS, pages 3-440 through 3-468). I believe that these tables and figures demonstrate that my decision (Alternative 7-M) for a Travel Management Plan provides a good balance in meeting the variety of recreation demands on the Gallatin National Forest.

17. Riparian Areas. The predicted effects to riparian areas were another factor leading me to conclude that Alternative 1 for a travel management plan was unacceptable. Riparian zones are diverse, dynamic and complex habitats. They provide habitat for a variety of species including rare and threatened species, and are sites of biological and physical interaction at the terrestrial/aquatic interface. Riparian cover types make up less than 0.5% of all land area in the Northern Region of the Forest Service yet tend to incur a disproportionate amount of human activity (FEIS, page 3-485). Allowing off-route motorized travel, which Alternative 1 does, would continue creating mechanical damage to riparian vegetation, compacting soils, contributing sediment, and disrupting wildlife. This practice would serve to increase the amount of ATV and motorcycle routes and accelerate riparian degradation (FEIS, page 3-490).

While Alternatives 2 through 7-M were developed under different guiding themes, our objective was to make each of them the best that they could be. Each of these alternatives include features that are designed to maintain and improve riparian habitat over current conditions

First, Alternatives 2 through 7-M would restrict summer motorized use to designated routes which will prevent the proliferation of new user-built routes and restrict that use on existing routes that are not otherwise designated. The Montana/Dakota OHV Decision (USDA, January 2005) alone, only restricts summer motorized use to routes where that use was already established. In absence of designation and mapping it can be difficult to determine if motorized use of a user-built route was established before or after the Montana/Dakota OHV Decision. It is also more difficult to enforce.

Second, under Alternatives 3 through 7-M, motorized trails decrease in number of miles and non-motorized trails increase slightly over current conditions. Specifically, ATV routes would decrease Forest-wide with an increased designation on existing road systems. Motorized trails, particularly those developed for ATVs and modern motorcycles, would not further add to the loss of riparian habitat. Trails identified for stock and mountain bike use would decrease slightly under these alternatives, further reducing impacts to riparian habitat. With the implementation of any of these alternatives, riparian habitat would increase in complexity and diversity (FEIS, page 3-491). The number of species using riparian habitat for foraging, nesting, cover, or as movement corridors would increase while displacement and disturbance would decrease. Habitat degradation would be minimized or eliminated indicated by an increase in biomass production and structure.

Third, Alternatives 2 through 7-M include programmatic direction (goals, objectives, standards and guidelines which would restore a number of existing project roads and trails (see Objectives D-1 and D-2 in the "Detailed Description of the Decision") and facilitate actions and mitigation

to improve riparian habitat over time. The goals, objectives and standards to maintain Yellowstone cutthroat trout habitat, protect soil and watershed conditions and restore or stabilize roads to minimize sediment would serve to maintain riparian areas in good condition and minimize potential impacts to wildlife species within riparian areas. Refer to the "Detailed Description of the Decision", Goal E and associated direction included under various travel planning areas.

In making my decision I recognize that existing roads and trails passing through or parallel to riparian areas have been affecting many wildlife species both directly and indirectly. Table 3.17.1 of the FEIS estimates that existing routes have resulted in a loss of about 18 percent of riparian habitat Forest-wide. In some of the more heavily roaded areas this number can range from 30 to 50 percent. I considered whether a Travel Plan alternative should be studied that would close and restore major access roads that are located within or near riparian zones (e.g., the Hyalite Road, Swan Creek Road and others within Forest Service jurisdiction) (FEIS, page 2-26). I concluded that such an alternative would be clearly unreasonable at this time and it also would not meet the purpose and need as discussed earlier in this ROD. Society in general accepts the consequences associated with most types of human use and development in exchange for opportunities and better quality of life. This includes the acceptance of major highways and other developments within valley bottoms and river corridors where the riparian habitat value exceeds what occurs on the Gallatin National Forest. While many advocated further restrictions on motorized use and an overall reduction in open road density, they did not desire a loss of passenger car access to campgrounds, trailheads and other destinations within the Forest. In addition, Alternatives 2 through 7-M all would result in improved riparian conditions and there is no proposal to construct new roads.

In conclusion, in making my decision I found that any of Alternatives 2 through 7-M were acceptable options. I found that these alternatives are consistent with Gallatin National Forest Plan direction applicable to riparian areas. The direction proposed, as well as the route-by-route management specified under each alternative, is consistent with the existing Forest-wide goal to *"provide habitat for viable populations of all indigenous wildlife species and for increasing populations of big game animals"* (Gallatin Forest Plan, Goal 7, p. II-1), and the Forest-wide standard that *"emphasis will be given to management of special and unique wildlife habitats such as wallows, licks, talus, cliffs, caves, and riparian areas"* (Gallatin Forest Plan, Standard 6.A.8, p. II-18). The unique habitat that riparian areas provide would improve over time relative to road and trail management strategies. In contrast I found that Alternative 1 would not be consistent with management direction applicable to riparian areas.

18. Roadless Areas. There was an identified concern by the public over motorized recreation within roadless lands and the potential that motorized activities like snowmobiling or riding ATVs have to diminish roadless character and/or negatively impact the potential for future designation of some roadless areas as Wilderness. There are approximately 700,000 acres of roadless land on the Gallatin National Forest. Originally, roadless areas were simply a result of mapping public lands without roads. The purpose of this exercise was to identify lands that may be suitable for future designation as Wilderness. The first inventory of roadless lands took place in the early 1970s during the RARE (Roadless Area Review and Evaluation) I evaluations, and then again in the late 1970s during RARE II. The inventory displayed in the current Forest Plan EIS, Appendix C, is an output of the RARE II inventory. Twelve separate Inventoried Roadless Areas (IRAs), located in all the mountain ranges on the Forest, were identified through this

process. During the analysis for the current Gallatin Forest Plan, all inventoried roadless areas were reviewed and alternatives considered whether to recommend these areas for designation as Wilderness. The selected alternative for the Forest Plan recommended an additional 28,000 acres of roadless land to be designated as Wilderness. These areas are located in the Lionhead area of the Henrys Mountains (Lionhead Unit 1-963), and just south of Cooke City adjacent to the North Absaroka Wilderness (Reef Unit 1-914). Neither of these recommended wilderness additions has been designated as Wilderness by Congress.

Over the last 19 years, roadless land has taken on new meaning. Regardless of whether they are ever designated as Wilderness, they hold special values for many individuals. Roadless areas often have unique characteristics that may not be found in more developed areas such as natural integrity, remoteness, and solitude. They also often provide diverse plant and animal habitat, high scenic quality, cultural sites and other attributes. Refer to the FEIS, pages 3-500 through 3-502 for a discussion of wilderness attributes and roadless characteristics. In the 1980s, the Chief of the Forest Service determined that management activities which would substantially alter the undeveloped character of a roadless area of 5,000 acres or more was a class of actions that would require an EIS [FSH 1909.15(20.6)]. In other words, the "roadless" issue was no longer just a question of whether or not these lands should be designated as Wilderness, there was also concern over the degradation of the characteristics these areas provide. Lastly since the late 1990's there have been several changes in rules and policies that provide direction on how roadless lands should be managed. In general, these changes have affected proposals for timber harvest and road building within roadless areas (refer to the FEIS, pages 3-516 through 3-517).

In public comments received on the proposed travel management plan, some felt that roadless lands on the Gallatin National Forest should be re-evaluated for potential recommendation as Wilderness prior to, or at least in conjunction with, decisions regarding management of travel. The concern was that a decision to designate routes for motorized use within roadless areas in the Travel Plan, would preclude a fair consideration of those areas for recommendation as Wilderness in the Forest Plan revision process (currently scheduled for 2009). Early in the analysis for the proposed Travel Management Plan I determined that we would not re-visit the recommended wilderness decision of the current Forest Plan in the Travel Plan. To do so would greatly expand the scope of an already complex analysis and decision. Wilderness recommendations require consideration of other factors such as suitability of the lands for timber management, potential future needs for fuels reduction activities, and other needs for roaded access. A decision on recommended wilderness would also add an element of significant public controversy that could jeopardize our ability to attain a successful decision for the management of travel. I also concluded that my decision for a travel management plan would not preclude a fair consideration of roadless areas for recommended wilderness designation. First, motorized vehicles (ATVs, motorcycles, and snowmobiles) are currently being used on trails within roadless areas. The travel plan alternatives are not introducing new motorized uses that are currently prohibited. No new roads are proposed in roadless areas. None of the alternatives would affect roadless boundaries, nor the future manageability of these areas as potential Wilderness based on boundary or minimum size criteria. Lastly, decisions to allow motorized travel on trails within roadless areas are not irreversible. ATV routes, which are double track trails, could be converted back to single-track non-motorized trails should Wilderness designation be determined to be the highest and best use of a roadless area.

With the exception of Forest Plan recommended wilderness, the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area and the Cabin Creek Wildlife and Recreation Management Area, the fact that a trail or area was within the roadless inventory was not a factor in my decision. This is somewhat difficult to explain because, as the analysis on pages 3-502 through 3-516 of the FEIS show, some alternatives are better than others in terms of the effects to roadless character (FEIS, Tables 3.18.4 through 3.18.8). The number and miles of ATV routes within roadless areas in Alternatives 1, 2 and 3 are much greater than the amount included in Alternatives 5, 6 and 7-M. Trails designed specifically for ATVs vary in tread width from 4-5 feet, and are a more obvious, constructed facility on the ground, especially where they cross side slopes requiring larger areas of cut and fill. This can affect the natural integrity and apparent naturalness of the area. Alternatives which provide more opportunity for snowmobiling, ATV and motorcycle use would also have adverse effects on opportunities for solitude and the feeling of remoteness. Alternative 6 would be the best alternative in maintaining roadless character since it precludes motorized use of roadless area trails in the summer and heavily restricts winter snowmobile use. While there are differences in effect to roadless characteristics between alternatives, none were substantial enough to beome factors in my decision. All alternatives are consistent with current Agency policy on the management of roadless lands. Therefore, my travel management decisions were based on other issues including maintenance of wildlife habitat and providing opportunities for motorized use and hiking, biking, horseback riding and cross-country skiing in non-motorized settings outside of Wilderness.

My decision was influenced by the effects to roadless character in the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area (WSA), the Lionhead and Republic recommended wilderness areas (RWAs), and the Cabin Creek Recreation and Wildlife Management Area (CCRWMA). My rationale for the travel management decisions I made in the WSA and RWAs is discussed later in this section. The CCRWMA was designated in the Lee Metcalf Wilderness Act (PL 98-140) as a special management area where motorized use is permissible. For this area the Act states:

> *"The area shall further be administered by the Secretary of Agriculture to maintain presently existing wilderness character… The Secretary shall permit continued use of the area by motorized equipment only for activities associated with existing levels of livestock grazing, administrative purposes (including snowmobile trail maintenance) and for snowmobiling during periods of adequate snow cover but only where such uses are compatible with the protection and propagation of wildlife within the area: Provided, That the Secretary may, in his discretion, also permit limited motor vehicle access by individuals and others within the area where such access is compatible with the protection and propagation of wildlife and where such access was established prior to the date of enactment of this Act"* (FEIS, page 3-517)**.**

The law was passed in October 1983. At that time, motorized use of the area was primarily snowmobiling, with limited motorcycle use. ATVs were not an established use in the area, nor were jeep trails present except on the Oil Well Road, which extends from the north in the Taylor Fork into the CCRWMA (FEIS, page 3-518). Alternatives 1-4 would manage ATV use on certain trails within the roadless portion of the area. ATV trails not co-located with jeep trails that existed in 1983 would not be consistent with the direction of the law. Therefore, my decision was to prohibit ATV use of trails within this area except on the pre-existing Oil Well Road.

For winter use the legislative record indicates that one of the primary reasons this portion of the Madison Range was not designated as wilderness was the established very popular use of this area for backcountry challenge snowmobiling. The caveat was that motorized uses be compatible with wildlife values. Alternatives that allow continued use of this area for backcountry snowmobiling (Alternatives 1 through 5 and 7-M) are consistent with the original legislative intent of the Act. The wildlife effects analysis indicates that continued snowmobile use in the CCRWMA would be acceptable (see FEIS, Chapter 3, Issue 9:General Wildlife).

19. Soils. Concerns over how various uses can impact soil productivity, cause compaction and erosion, and loss of ground vegetation was often brought up in public comments. Most often it was cited as a reason to restrict motorized use. Contrary to these opinions, soil impacts was not a major factor in my choice between Alternatives 2 through 7-M. It did however contribute to my decision not to select Alternative 1 and reinforced the need for certain objectives, standards and seasonal restrictions I adopted for specific areas and routes. The primary reason this issue was not a major factor is that the analysis for this issue, as well as for the fisheries and water quality issues in Chapter 3 of the FEIS, shows that soil/sedimentation impacts are largely caused by the facilities (i.e. roads and trails) and not from the use of them. My route-by-route decisions are limited to the types of uses and season of use that is appropriate for each road and trail (including potential new routes). I'm also not making final decisions to construct, reconstruct, maintain, or decommission roads and trails through the Travel Plan. My intent has been that once the appropriate uses were identified for each route through the Travel Plan, we then could begin the process of proposing construction/relocation and maintenance of the transportation system to accommodate those uses in a manner that protects soil and watershed conditions. These proposals would be subject to further analysis and decisions in compliance with NEPA, but the debate over uses would be resolved.

Alternative 1 was unacceptable to me because it allows for off-route wheeled motor vehicle use. Several studies support the assertion that impacts to trails increase from hikers and mountain bikes to higher levels for horses and motorized vehicles (FEIS, page 3-521). ATVs, with a greater width and weight than motorcycles, may cause the greatest impacts. Other studies have shown that the majority of environmental changes due to recreational trampling occur with initial trampling of vegetation or trail construction (FEIS, page 3-522). One study found that the majority of damage to plants occurred with the first off-trail pass (id.). Their research also showed that high alpine and tundra plants were especially vulnerable to trampling. Trampling also increases soil compaction, and decreased water infiltration (id.). Trampled areas with little visible vegetation wear may already have increased runoff from soil compaction and decreased infiltration (id). Increased runoff leads to increased erosion and loss of soil quality. Alternative 1 also does not adopt the programmatic direction and seasonal restrictions incorporated into the other alternatives designed to improve soil and watershed conditions in problem areas.

In all other alternatives wheeled motor vehicle use would be restricted to designated routes. I would expect some illegal off-route use to continue in the future, especially in the first few years of travel plan implementation, but as the public adjusts and through information and education I expect the situation to be manageable. For purposes of comparison, Alternative 6 would have resulted in the least amount of OHV accessible area with sensitive soils (Table 3.19.11). My decision (Alternative 7-M) results in the next lowest. In other words, these two alternatives have the least potential for off-trail impacts, respectively (Table 3.19.11).

Although there have been studies that show horses can cause deeper rutting and higher sediment yields than most other conveyances (including motorcycles), widespread concerns over off-route stock use have not been identified, nor is there higher level Forest Service direction to restrict such use to designated routes. The Montana/Dakota OHV Decision EIS (page i) indicates that between 1990 and 1998 the number of registered ATVs and motorcycles increased 92% in the three-state area. The increased use has resulted in environmental effects on public resources in numerous areas, including roads and trails that have developed as the result of repeated use. Such significant increases are not expected in the use of pack and saddle stock and therefore I did not believe that restricting stock to designated routes was necessary. There are identified effects from stock in specific areas of the Gallatin Forest but I believe that these can be adequately addressed through other means such as administration of outfitter permits and public information and education.

Travel planning areas with trails on sensitive soils include Bear Canyon, Cabin Creek, the Gallatin Crest, Porcupine-Buffalo Horn, Taylor Fork, Deer Creeks, East Boulder, Fairy Lake, Gallatin River Canyon, Gallatin Roaded, Main Boulder, Mill Creek and Mission Creek. In terms of managing these routes in the future to prevent soil erosion, sedimentation, and damage to the trail facilities, Alternative 6 would be the best alternative since it severely restricts motorized use in these areas. However, my decision also reduces motorized use on trails with sensitive soils and includes seasonal restrictions on other routes during the spring when they are most vulnerable to damage. Again, any of the alternatives, except Alternative 1, were acceptable to me. I just had to recognize that correcting facility problems in the future would require more effort and expense in Alternatives 2 through 5 and 7-M than it would under Alternative 6.

The Bear Canyon drainage is probably the best known area on the Forest with sensitive soil problems. The rutting, braiding, and erosion of trails is evident in many places. It has also been an area that is popular for summer motorized use, and I felt it was important to continue to provide these opportunities here as discussed earlier in this ROD (page 38). To correct the soil, sedimentation and facility problems in this drainage my decision includes several mitigation measures. First, Trail #440 is not to be opened to summer motorized, mountain bike and horse use until facilities are upgraded to a condition that alleviates sedimentation and water quality impacts from those facilities (Standard 3-2). Second, trails in the Bear Canyon drainage are not to be opened for the summer season to ATV, motorcycle, mountain bike and/or horse use until the trail system is of a condition that prevents adverse erosion and watershed damage (Standard 3-3). Third, due to sensitive soils in this area, wheeled motorized vehicle travel shall be prohibited off of designated routes within this travel planning area (Standard 3-4) (i.e. the 300-foot off-route allowance to access campsites provided in Forest-wide standard A-8 shall not apply). Lastly, I've incorporated seasonal restrictions on trails in Bear Canyon that would preclude motorized use, mountain bikes and stock from October 15 to July 15, thus helping limit use to the driest period. This mitigation will greatly reduce negative effects on soil quality. It should be noted that these provisions also pertain to Alternatives 2 through 7-M.

20. Watershed Management (Water Quality). The issues of fisheries, soils, and water quality are closely related in terms of the predicted impacts of the travel management alternatives. Similarly, my conclusions about these issues were the same (see these issue discussions earlier in this section). They were factors in my choice not to select Alternative 1, but in choosing between Alternatives 2 through 7-M, I determined that the actual use, or mode of travel (e.g., motorized versus non-motorized) was inconsequential. Rather, it is the facility itself (i.e., road

or trail) that has the highest potential to impact water quality. Again, Alternative 1 would allow off-route wheeled motorized use. This would increase the proliferation of user-built trails which can remove vegetation, expose bare soil and lead to increased sediment run-off and erosion.

With the exception of a few specific routes, I found that any of Alternatives 2 through 7-M were acceptable in terms of the uses allowed on roads and trails. In my decision I responded to water quality and fisheries concerns primarily by adopting goals, objectives, standards, and guidelines (programmatic direction) for future route construction, reconstruction, maintenance and decommissioning. I established use restrictions only on a few specific trails with high erosion potential where it would not be cost-effective to attempt to move or reconstruct the facility to accommodate those uses.

Roads can increase sediment levels and are the predominant non-natural sediment source in most managed forested watersheds including the Gallatin Forest (FEIS, page 3-535). Trails generally have reduced sediment impacts since trail prisms are much narrower than roads and cut and fill slopes are smaller. Again, my decision for a travel management plan does not include final agency decisions to construct or reconstruct roads or trails. Such proposals would require further analysis under NEPA and separate decisions. The amount of existing roads that would remain open to vehicle travel also does not vary substantially among alternatives. This is because they are mostly principle routes of access to the National Forest and they service a number of activities including recreational pursuits. Project roads, not designated through the Travel Plan for public or administrative use will be targeted for effective closure and stabilization (i.e. decommissioning).

Table 3.20.10 of the FEIS shows that total sediment levels forest-wide do not vary much between alternatives. This is because watershed impacts are dominated by natural sediment, road sediment, and timber and fire sediment (FEIS, page 3-549). Alternatives vary largely in terms of the amount of trail in which motorized uses would be allowed. In general, the more restrictive alternatives are predicted to result in the lowest amount of contributed sediment but I found the differences not to be significant enough for it to influence my decision.

The State of Montana Water Quality Act requires the state to protect, maintain, and improve the quality of water for a variety of beneficial uses. Section 75-5-101, MCA established water quality standards based on beneficial uses. The Montana Department of Environmental Quality has classified all non-Wilderness surface waters on the Gallatin National Forest as B1 except for Bozeman Creek (A-Closed) and Hyalite Creek (A-1). Waters classified as B1 must be suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply. A 5 NTU (nephlelometric turbidity units) turbidity increase above naturally-occurring turbidity is allowed in B1 waters. Surface waters within the Absaroka Beartooth Wilderness are classified as A1, and have similar suitability criteria for beneficial uses, except that no turbidity increase above naturally-occurring turbidity is allowed.

All action alternatives (Alternatives 1 through 7-M) are consistent with the State of Montana Water Quality Act as well as other applicable laws policies, and the Gallatin Forest Plan (USDA 1987) (FEIS page 3-555). Best Management Practices will be employed under all alternatives to ensure consistency with these protection measures.

Winter use (motorized or non-motorized) has essentially no incremental sediment effects since road and trail prisms are already in place and winter use causes very little additional ground disturbance.

Relative changes in cumulative sediment delivery between alternatives is small and will remain within existing Forest sediment guidelines with the exception of the Big Sky Travel Planning Area (FEIS, pages 3-555). The Forest Service cannot mitigate sediment delivery in the Big Sky TPA, as the majority of the sediment impacts are on private land.

Separate from the Travel Management Plan I believe that it is important to note that the Gallatin National Forest has had a very active land acquisition program since 1987, acquiring 143,700 acres of lands within the National Forest boundary. Many of the acquired properties have significant wildlife, wetland, and water quality values and were subject to potential subdivision and development. The net result has been considerably fewer roads and residential development on these parcels than would have occurred otherwise. Another benefit has been the opportunity to decommission about 150 miles of roads in the Taylor Fork, North Gallatin, and Shields drainages. Fisheries management projects have often been coordinated with watershed projects and objectives resulting in a beneficial effect to watershed management.

As discussed under the Fisheries section, my decision includes Forest-wide Goals, Objectives, Standards, and Guidelines that will provide important constraints and guidance for watershed management. Standard E-5 provides key constraints to allowable watershed disturbance (roads, harvest units etc.) and is directly tied to the Montana water quality standards and attainment of beneficial uses.

Goal D and associated objectives (D1 – Road Rehabilitation, D-2 Trail Rehabilitation, and D-3 Road and Trail Maintenance) give more specific direction for road and trail maintenance with particular emphasis to closing excess roads (decommissioning) and trail maintenance. Guideline D-7 provides additional direction to close and re-vegetate project roads when not needed. Again, as discussed in the Fisheries section my adopted standards E-4 through E-7 will help us in future decisions to maintain and improve water quality.

21. Wilderness, Wilderness Study Areas, and Recommended Wilderness. The Gallatin National Forest manages significant portions of the Absaroka Beartooth and Lee Metcalf Wilderness Areas. The Forest also manages one Congressionally-designated Wilderness Study Area; the Hyalite/Porcupine-Buffalo Horn (HPBH WSA). The Gallatin Forest Plan (USDA 1987) recommended that 22,000 additional acres of roadless lands in the Lionhead and Republic roadless units be added to the National Wilderness Preservation system. The projected impacts of the Travel Plan alternatives on these areas were the topic of discussion for this issue in the FEIS. For organization and clarity of thought I have discussed my conclusions regarding each of these areas separately.

<u>Designated Wilderness</u>

As stated above, The Gallatin National Forest manages significant portions of two Congressionally designated Wilderness Areas. The Gallatin National Forest portion of the Absaroka-Beartooth encompasses about 576,000 acres of the Forest and has over 700 miles of

trail providing extensive opportunities for hiking, backpacking and equestrian travel. Hiking and backpacking are more popular in the Beartooths, while traditional stock supported pack trips and hunting adventures are more common in the Absaroka portion. The nearly one million acres of Wilderness provide ample opportunities for primitive unconfined recreation, and solitude. Many portions of the area are trail-less and rarely traveled. The Lee Metcalf Wilderness consists of four separate units in the Madison Range. The Monument Mountain Unit lies on the northwest boundary of Yellowstone National Park. It is an isolated area lightly visited by humans, but rich in wildlife, including a robust population of grizzly bears. All 30,000+ acres are on the Gallatin Forest. The 78,000-acre Spanish Peaks Unit encompasses steeply rugged, glaciated peaks rising more than 11,000 feet above scenic cirques and gem-like lakes. This heavily used area, a favorite of local and regional visitors, hosts a well-developed trail system and many popular destinations. At about 141,000 acres, the Taylor-Hilgard Unit is the largest. It runs along the crest of the Madison Range, with several peaks exceeding 11,000 feet above the Hilgard Basin. High mountain meadows and lakes are surrounded by snowcapped summits.

In Wilderness all motorized or mechanized recreation activities are prohibited by the Wilderness Act (P.L. 88-577), therefore these uses were not of issue in my decision. Trails are presently managed for hiking and pack and saddle stock use and this would remain the same under the various alternatives. There were no identified objectives for new trails and with the exception of some contemplated restrictions on stock use, non-mechanized travel would be unrestricted.

Alternatives 2 through 6 included several changes to the way trails are currently managed, both within and outside of Wilderness. Seasonal restrictions would be employed on trails, restricting stock use during spring break up (April 1 to either May 15, June 1, June 15 or July 15). The purpose of this proposed restriction was to prevent damage to trails during the freeze/thaw cycle, and to protect fragile areas during times when soils are saturated and plants are in a delicate phenological growth phase. In terms of preserving wilderness character this would facilitate keeping trails to a minimal "footprint" on the landscape, by minimizing tread creep, go-arounds, bog holes and wide muddy trails. In many portions of the Wilderness, trails are the most obvious sign of man's presence. In addition, within the Beartooth Plateau portion of the AB Wilderness, a pack and saddle stock restricted area was proposed in Alternatives 3 through 6. This restriction would prohibit the use of stock anywhere in the restricted area, which is largely trail-less. Within the restricted areas (which differ slightly by alternative, see the summer non-motorized alternative maps) Trails #573, #574 and a spur trail to Mariane Lake would also have stock prohibitions. These trails access Lower Aero, Zimmer and Mariane Lakes. The trails are extremely rugged and steep, and are not suitable for stock travel, though it is not currently prohibited.

While the spring restrictions and Plateau area restriction would provide better resource protection of the facility and minimize impacts to apparent naturalness, additional user restrictions are philosophically counter to the Wilderness ideal in many peoples view. Wilderness is viewed as an area where challenge and risk are high and regulations few. Wilderness managers typically resort to additional user restrictions only where education and on-the-ground management techniques have been unsuccessful in mitigating an issue. In public comments stock users expressed opposition to blanket spring closures arguing that spring opportunities are very important to them and that many trails are either dry in the spring or they are so durable that spring use is not a problem. My staff and I discussed this issue and I have concluded that blanket spring restrictions across the Forest was going too far in attempting to correct a problem that

could otherwise be addressed through restrictions on specific routes or information and education. In my decision the only spring restriction I've included within Wilderness was on the Thompson Lake Trail which enters the Absaroka-Beartooth Wilderness from the Mill Creek drainage. This trail receives heavy use, and has multiple boggy and wet areas such that I didn't believe that information and education was sufficient to protect wilderness character here. The seasonal restriction would be in place until trail reconstruction could repair the facility issues.

Stock users were also opposed to the area restriction on the Beartooth Plateau, not so much because they felt they should be able to ride there, but because of the precedent such a restriction would set. In my decision, I still saw a need to protect the alpine vegetation and provide for user safety in this area. However, rather than establishing a yearlong area restriction, I've elected a slightly different stock restriction configuration on the Beartooth Plateau. Under my decision, stock will be prohibited seasonally within the restricted area (see the Alternative 7-M summer non-motorized map) from December 2 to August 1, and overnight camping within the restricted area would be prohibited year-long. This will allow day use traffic on the trail-less portion of the plateau during the driest months of the year when these fragile areas are more resilient. There will be two small stock closures (yearlong prohibitions): one in the Zimmer Creek drainage at the Trail # 573 and 574 junctions, and one between Summerville Lake and Castle Lake. System trails that fall within the restricted area (like the trail to Mariane Lake) will only be open to stock after August 1. Only the Russell Creek Trail (the through route from the Clarks Fork Trailhead to the East Rosebud) will be emphasized for stock use. On all other system trails (except Trail # 573 and 574 above the closure) on the plateau, stock use will be allowed but not emphasized. I believe that my decision achieves the objectives to protect natural integrity, and apparent naturalness, but still allows limited stock access (day use only) to the trail-less portion of the plateau, and minimizes restrictions that limit the public's opportunities for "primitive and unconfined recreation" in wilderness.

My decision also includes seasonal restrictions on the Pine Creek Trail #47 within the Absaroka-Beartooth Wilderness and on the Lava Lake Trail #77 within the Spanish Peaks. On both trails stock will be prohibited seasonally – from December 2 through September 15th. After September 15th – day use only stock travel will be allowed. Over night stock use will be prohibited year long in the area surrounding the lakes in order to eliminate damage from stock containment and allow damaged areas to rehabilitate. My decision to limit stock traffic on these trails until the fall responds to user safety concerns about mixing stock traffic on heavily traveled popular day hike routes during the summer.

In my decision, Alternative 7-M, I've also adopted a set of goals, objectives, and guidelines (see Objectives A-3, A-4 and A-5; Goal J, Standard J(1) and Guidelines J(2 and 3 in the "Detailed Description of the Decision") that will: (a) help preserve large acreages of Wilderness in its wildest state; (b) help ensure that future trail projects do not have an unintended consequence of degrading Wilderness character, particularly as related to apparent naturalness and primitive recreation opportunities; and (c) provide for human use, enjoyment, safety, and resource protection where more intensively managed trails may be necessary. Alternatives 2 through 6 included similar programmatic direction and therefore this was not a factor in my choice between these alternatives and Alternative 7-M. Alternative 1, which represents a no action scenario, did not include this direction.

Hyalite/Porcupine-Buffalo Horn Wilderness Study Area (HPBH WSA)

The Montana Wilderness Study Act of 1977 (P.L. 95-150) created eight wilderness study areas in Montana, including the HPBH WSA. This study area is located in the roadless core of the Gallatin Range, running north to Hyalite Canyon and south to the Yellowstone National Park boundary. In the early 1980s, the Forest Service studied the suitability of the area for inclusion in the Wilderness preservation system, and recommended that it not be designated Wilderness at that time. The checkerboard ownership pattern was largely responsible for the conclusion that the area was unsuitable for Wilderness designation. Since then, nearly 37,000 acres of private land have been acquired within the HPBH WSA boundary (FEIS, page 3-562).

The principal legal direction for managing the HPBH WSA comes from the Montana Wilderness Study Act (S. 393). Section 3(a) of the Act states: *"… wilderness study areas designated by this Act shall, until Congress determines otherwise, be administered by the Secretary of Agriculture so as to maintain their presently existing wilderness character and potential for inclusion in the National Wilderness Preservation System"* (FEIS, page 3-597). For the HPBH WSA my primary objective was to design a travel management scenario that is consistent with the direction of the Montana Wilderness Study Act.

A Region 1 Forest Service Manual Supplement (FSM 2300-2005-1) provides interpretations of what sorts of activities are appropriate in a WSA. This manual supplement provides clarity on the issue of ATVs and mountain bikes, types of recreational vehicles that did not exist in their current form in 1977. It states that ATVs are appropriate on routes that were used as four-wheel drive jeep routes in 1977, but are not appropriate on what were single-track motorcycle trails in 1977. It also states that mountain bikes are appropriate on all trails that were open to motorcycles in 1977. This interim directive expired in August of 2006, and is being re-written to clarify several sections (personal communication, Chris Ryan). It is expected to be republished in October 2006. One key section that has been redrafted relates to mountain bikes in WSAs. The draft id-2320-2006-1 addresses mountain biking as follows: FSM 2329 section 3 (d) states: "Mountain bikes may be allowed on trails that had established motor-bike use in 1977, or on non-motorized trails as long as the total amount of mountain bike and motorcycle use maintains the wilderness character as it existed in 1977 and the area's potential for inclusion in the National Wilderness Preservation System". This clarification was developed recognizing that mountain biking has become an established use on some routes that may not have had motorcycle travel in 1977, while acknowleding that the mere presence of mountain biking does imply that wilderness character as it existed in 1977 (defined by the Wilderness Attribute Rating System - WARS) has necessarily been compromised.

Alternatives 1, 2, 3, 4 and 6 all have some feature that could be construed as contrary to the direction in the law, or the clarified intent found in the Congressional record associated with the law. Alternatives 1-4 all would designate some trails within the study area for ATV use. There were no four-wheel drive jeep routes in the HPBH WSA in 1977. The continued use of ATVs within the WSA would not be consistent with the manual supplement interpreting the Montana Wilderness Study Act nor the mandate to maintain existing wilderness (curca 1977) character found within the Act. Alternative 6 would prohibit motorized use entirely which was not the intent of Congress nor in keeping with current Forest Plan direction.

Alternatives 1-4 and 7-M would allow mountain bikes on two trails that were closed to motorcycles in 1977 (Blackmore/South Cottonwood, and Big Creek). This would be inconsistent with original (now expired) direction in the interim directive FSM 2300-2005-1, but would not be inconsistent with the proposed revised interim directive (see Schlenker's 9/2006 letter). Mountain bike use on the South Cottonwood/Blackmore and Big Creek trails has not altered the physical wilderness characteristics originally inventoried in the HPBH WSA using the WARS (Wilderness Attribute Rating System) during the Congressionally mandated study of the WSAs. The total number of motorcycle and mountain bike trails taken together in Alternative 7M are less (by 20 miles) than the total number of open motorcycle trails in 1977, resulting in an improvement of wilderness character as it existed in 1977.

Alternative 6 would eliminate all motorized recreational use in the WSA, as well as mountain biking. Examination of the Congressional record associated with this law provides clarity on the intent of Congress at the time. House of Representatives Report No. 95-620 specifically addresses the use of off-road vehicles within WSAs, concluding that: *"The use of off-road vehicles, while generally prohibited in designated wilderness, is entirely appropriate in wilderness study areas, including the nine areas in S. 393. Nothing in S. 393 will prohibit the use of off-road vehicles, unless the normal Forest Service planning process and travel planning process, which applies to all national forest lands, determines off-road vehicle use to be inappropriate in a given area"* (FEIS, page 3-597). There are no demonstrated Wilderness Study Area specific issues nor other recreation goals or objectives that would compel the Forest to eliminate all motorized recreation activities within the WSA, to be in keeping with S. 393, thus Alternative 6 would not be consistent with Congressional intent for the management of this WSA.

My decision (similar to Alternative 7-M) would maintain a mix of summer motorized and non-motorized recreation opportunities in the HPBH WSA. The configuration of open routes for motorcycles and mountain bikes was developed to provide a mix of motorcycling and mountain biking options, and to provide areas dedicated to hiking and horseback riding. Several key components of my decision include:

- The "Crest" trail will remain open to motorcycles from the north beginning in the Hyalite drainage – south to Windy Pass.
- Several other popular loops will remain open to motorcycles including Porcupine/Buffalo Horn loops, Storm Castle and Swan Creek Trails.
- Motorcycles will be restricted to a mid-July to early-September season of use to protect facilities, and mitigate wildlife conflicts in the fall.
- Mountain bikes will be allowed on all routes open to motorcycles.
- The East Fork of Hyalite Creek Trail will remain open to motorcycles and mountain bikes however it is my intention to develop a "time share" scenario where these mechanized vehicles will alternate use with pedestrians during the peak summer season. I believe that time share will provide a good means of resolving user conflict on this very popular trail[3]. My objective is to

[3] Time share was a concept suggested in public comments as a means for resolving user conflict instead of yearlong prohibitions. While I believe it to be a good suggestion for heavily used trails like the East Fork Hyalite Creek Trail, it would be too confusing and difficult to administer on a Forest-wide scale. The scope of my decision documented in this ROD determines whether certain uses will be allowed on specific roads and trails and any seasonal restrictions that may apply. I intend to work with various user groups in developing a schedule for time share on the more popular trails within a 30 mile radius around Bozeman.

work out the exact details of this system with the various user groups before the 2007 summer season.

- A core of trails in the eastern and southern portion of the study area will be managed for non-motorized use to provide discrete opportunities for hiking/horseback use and to improve grizzly core area.
- ATVs will be prohibited on all routes within the HBPH.

It was recognized in 1977 that use would grow and conditions within wilderness study areas would not remain static into the future. Use can be adjusted or modified to meet resource or recreation objectives as long as it did not diminish the integrity of the area. The Congressional record is clear that Congress did not intend for the Forest Service to exclude existing "ORV" use until they decided whether to add the study areas to the wilderness system. ORV use can however be adjusted through the normal travel planning process if it is determined to be inappropriate in a given area.

Use can be excluded, reduced, patterns of use changed, or use can be geographically limited in portions of the HPBH WSA while still maintaining an appropriate recreation opportunity. For recreation uses such as motorcycling and mountain biking I can continue to provide a high quality backcountry single track riding experience as long as it does not encourage single track riding proliferation across the entire Study Area.

Interim Directive FSM id-2320-2005-1 clearly states that ATV use is appropriate on jeep roads that were open to that sort of travel in 1977. There were no "jeep roads" or double track routes open to vehicles larger than 50" wide in the HPBH WSA in 1977, except for private roads accessing timber harvest on private land. Therefore my decision prohibits ATVs on all routes within the HPBH WSA.

All routes to be managed for motorcycles in my decision were open to motorcycles in 1977 (FEIS, page 3-566). The seasonal restrictions I've included are designed to protect wilderness character and trail facilities in this high elevation area, as well as to minimize motorized traffic in critical grizzly bear habitat during critical pre-den feeding periods in the fall.

The southern portion of the Gallatin Crest Trail will be managed for foot, stock and mountain bike travel only. This configuration along with foot, stock and mountain bike only on several other routes allows us to significantly improve grizzly bear secure area in the Gallatin 3 bear management sub-unit that does not currently meet open motorized route density criteria. Additionally, the southern portion of this trail would have to be reconstructed to be passable to motorcycles – which would be in conflict with 2329 1(c.) in the interim directive.

In my decision approximately 85% of the area will be closed to snowmobiling. The open snowmobile areas include the historic Big Sky Trail – which will be managed as a designated route through a closed area. The open area where cross country snowmobiling is allowed runs from Windy Pass across the Crest through Rock Creek. This allows high quality "challenge" snowmobile opportunities but limits the acreage available to remain consistent with the Montana Wilderness Study Act. I also considered a designated route from Hyalite through a closed area, to a small open area in the East Fork of Hyalite (Heather/Emerald) but concluded that opening both this area and the Windy Pass/Rock Creek area would not maintain wilderness character as it existed in 1977. Cross country snowmobiling will also be prohibited in the historic use area of

Buffalo Horn, with a designated open snowmobile route to Ramshorn Lake instead. This area closure in Buffalo Horn facilitates management of the State Gallatin Wildlife Management Area sections, and reduces conflicts with wintering big game, thus improving natural integrity.

In summary, the rationale for my decision in the HPBH WSA is as follows:

- It maintains recreation opportunities that existed in 1977.
- It provides very high quality single track motorcycling and mountain biking opportunities in a way that preserves wilderness character circa 1977 and that will not preclude future wilderness designation.
- It provides high quality "challenge" snowmobile opportunities, but does not allow proliferation of use across the entire area.
- It maintains the pre-existing wilderness character as it was in 1977.
- It adjusts geographic use patterns to reduce social conflict.
- It prevents proliferation of motorcycle and mountain bike use across the Wilderness Study Area as a whole.
- It improves grizzly secure habitat in a critical area of the Forest, improving natural integrity and apparent naturalness.
- It provides non-motorized and non-mechanized settings for backcountry recreation throughout a substantial portion of the Wilderness Study Area.
- It will lead to the restoration of trails that have developed into double tracks over time to their 1977 single track condition.

Recommended Wilderness

The Lionhead RW addition straddles the Continental Divide along the Idaho/Montana border. The roadless (and RW addition) portion of this area extends into Idaho on the Targhee National Forest. The Gallatin Forest Plan (USDA 1987) recommended adding 22,800 acres of the 32,780-acre roadless unit (Gallatin portion) to Wilderness. This recommendation has been in most of the Montana Wilderness bills introduced as legislation in the 1990s. As of today, Congress has not acted to designate the area as Wilderness. Trails in the Mile Creek, Sheep Creek, Watkins Creek and Coffin Creek drainages access several cirque basins and small lakes. The southeast portion of the area receives some backcountry snowmobile use. The Sheep Creek trail is popular for hiking and horseback use, and receives occasional motorcycle traffic, as does the connector trail from Watkins Creek to Sheep Creek (#216). Currently, the Sheep Creek and West Fork trails are open to motorcycles. All the other trails within this RW are closed to motorized uses. The area is also closed to snowmobiles, though trespass in upper Watkins Creek and in the Slide Rock Creek drainage is common.

The Gallatin Forest Plan (USDA 1987) also recommended adding an area to the North Absaroka Wilderness located immediately south of Cooke City, Montana. This area is known as the Republic Mountain recommended wilderness consisting of a rugged trail-less zone that is steep with numerous talus slopes, ravines and spur ridges. The area receives light use, mostly hiking, hunting and some backcountry skiing in the winter. There are currently no motorized restrictions for any uses in the area though it receives little if any motorized use.

My travel management decision for both of these areas is to manage them strictly for non-motorized use only. This was a difficult choice for the Lionhead area in particular because it currently receives some summer motorized use and a portion of it has become popular for snowmobiling. However, since the roadless area evaluation of the Gallatin Forest Plan led to the conclusion that these areas should become part of the Wilderness Preservation System, I believe that they should be managed that way until such time that Congress acts on these recommendations or a revised Forest Plan concludes that these areas have some other higher, better use than as wilderness. Forest Service Region 1 guidance is also to generally prohibit motorized and mechanized use within recommended wilderness. My decision does not preclude mountain biking on trails with the Lionhead recommended wilderness at this time, but I believe it ultimately should for the same reasons as I've discussed above. The reason I have not chosen to prohibit them is because of an oversight on our part in developing the range of alternatives. We failed to present such a prohibition in any alternative that was released with the DEIS (although it has now been included in Alternative 6). This meant that the public was never made aware that this was to be considered and therefore had no opportunity to comment on it. It is my intent to propose a change to the Travel Plan within the next year or so that would prohibit mountain bike travel within Gallatin National Forest recommended wilderness areas.

22. Wolverine. The wolverine (*Gulo gulo*) is a mid-sized forest carnivore that persists at low densities across the Gallatin Forest. In this area, wolverines are classified as a Forest Service Sensitive Species, which are those species identified by the Regional Forester for which population viability is a concern. Direction for management of sensitive species is contained in the Forest Service Manual (FSM 2672.1), which states that these 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. The Montana Natural Heritage Program and Montana Fish, Wildlife and Parks Department also consider the wolverine a Species of Concern (FEIS, page 3-598).

In consideration of this issue, I had two objectives. The first was to ensure that my decision would be consistent with Forest Service direction for sensitive species; that is to provide adequate habitat to sustain wolverine viability and to preclude trends toward endangerment that would result in the need for Federal listing. The second objective I had was to improve wolverine habitat on the Forest over current conditions. Based on the analysis of this issue in the FEIS, I found that for both summer and winter uses, Alternatives 3 through 7-M meet my objectives. However, Alternatives 4 through 7-M each incorporate specific measures designed to reduce known impacts on wolverine habitat (e.g. they spread the distribution of low motorized route densities more evenly across the Forest) and therefore I found these to be preferable.

There are four primary ways in which human activities can impact wolverine: habitat modification, disturbance, exploitation and pollution (FEIS, page 3-602). The primary effect of concern to me in making my decision was disturbance. Similar to my conclusions regarding summer use for wildlife in general, the wolverine analysis in Chapter 3 of the FEIS basically shows that the more restrictive one gets on human travel within the Gallatin National Forest, the less disturbance potential there would be for the wolverine (FEIS, pages 3-598 through 3-365). For summer travel Alternatives 3 through 7-M would result in lower motorized route density when compared to Alternatives 1 and 2. I expect the lowering of motorized access route density and restricting motorized use to designated routes to improve habitat utilization by wolverines (FEIS, page 3-609). I drew this conclusion because motorized users have the ability to cover

more territory and can reach wolverine habitat in shorter time frames as opposed to non-motorized users. There is little information on the effects of non-motorized use to wolverines (FEIS, page 3-606). Therefore my decision was not based on a belief that summer motorized use results in greater effect than non-motorized use within a given travel distance.

Winter is the most critical time for wolverine. Environmental conditions are more extreme, food sources can be limited and energy demands are highest during this time (FEIS, page 3-617). In the analysis for the FEIS, designated winter routes and areas open to dispersed snowmobile use were used to compare winter access among alternatives and travel planning areas (TPAs). Snowmobile area closures were considered to provide a measure of habitat protection, particularly in wolverine denning areas. Each travel planning area was evaluated relative to winter route densities combined with proportion of land base open to dispersed snowmobile use for all alternatives. Using a combination of route density and proportion of land base open to snowmobile use, four categories of winter use appeared meaningful for effects analysis: 1) lower route density (<=0.7 mi/mi^2) combined with lower (<=50%) proportion of land base open; 2) higher route density (>0.7 mi/mi^2) combined with lower proportion open; 3) lower route density combined with higher (>50%) proportion open; and 4) higher route density combined with higher proportion open. For analysis purposes, category 1 was considered to have the least winter impacts for wolverines, with progressively greater impacts for categories 2-4. For the travel planning areas that contain high quality winter habitat for wolverines (FEIS, page 3-621) conversion from higher impact winter access categories (3 or 4) to lower impact categories (1 or 2) is expected to benefit wolverines. Alternatives 1 and 2 (which reflect current conditions for winter) result in less than half the Forest land base falling in category 1. Under these alternatives, most of the category 1 lands are in designated Wilderness Areas. Only one TPA outside of designated Wilderness, Yankee Jim Canyon, is in category 1 under Alternatives 1 and 2. Alternatives 3 through 7-M all bring the proportion of the Forest in category 1 to over half the land base. These alternatives add progressively more area restrictions to dispersed snowmobile use outside of designated Wilderness. My decision (Alternative 7-M) falls between Alternatives 4 and 5. Category 3, where lower winter route densities are combined with higher proportions of land open to snowmobile use decreases considerably from Alternatives 1-2 (existing condition) to Alternatives 3 through 7-M. An increase in category 1 coupled with a decrease in category 3 (as indicated for Alternatives 3 through 7-M) will benefit wolverines.

Lastly my decision adopts a number of goals, objectives, standards and guidelines that will be of benefit to a number of wildlife species, including wolverines, as future management activities are undertaken. Refer to the FEIS, pages 3-632 through 3-635, for a discussion of these projected benefits.

23. Wolves. Wolves were reintroduced to the Greater Yellowstone Area in 1995, and were designated a "non-essential experimental" population under Section 10 of the Endangered Species Act. After reintroduction, gray wolves quickly colonized areas of the Gallatin Forest adjacent to Yellowstone National Park (YNP). In identifying this as an issue I was interested in whether human travel within the Forest could affect wolf populations. Based on the discussion beginning on page 3-636 of the FEIS, I concluded that none of the travel plan alternatives would result in significant adverse effects. While my selected alternative reduces open motorized route densities from the current situation, which is considered to be of some benefit, this really wasn't a factor in making my decision. Livestock depredation, illegal killing, and vehicle collisions on highways are the key factors that limit the distribution and population size of wolves.

Non-significant Issues

NEPA provides for the identification and elimination from detailed study those issues which are not significant or which have been covered by prior environmental review, thus narrowing the discussion of those issues to a brief statement as to why they will not have a significant effect on the human environment or by providing reference to their coverage elsewhere (40 CFR 1501.7(3)). The following issues were evaluated but found not to be significant to decisions regarding human travel on the Gallatin Forest.

24. **Air Quality.** Concern was raised over the potential effects of travel under the alternatives (particularly motorized uses) on air quality. I determined this issue to be non-significant to the decision between Travel Plan alternatives. The issue was raised in public comments as an undesirable effect of encountering motorized use emissions on Forest roads and trails. We acknowledge that odor generated by emissions from combustion engines, particularly two-cycle engines, can diminish a non-motorized user's experience of Forest trails. However, this is a recreation (user satisfaction) issue rather than a general air quality issue. Air quality is not significantly affected by potential motorized use of Forest roads and trails under any of the seven alternatives.

25. **Research Natural Areas.** Research Natural Areas (RNAs) are a part of a national network of ecological areas designated in perpetuity for research and education and/or to maintain biological diversity on National Forest System lands (FSM 4063). RNAs are managed such that natural physical or biological processes are allowed to prevail without human intervention. According to FSM 4063.3, standards for protection and management of an RNA must support and promote the basic objectives and purposes of establishing the area. No logging or firewood gathering is permitted; grazing is only permitted under specific management prescriptions. Also prohibited is any form of recreation use that may threaten or interfere with the objectives for which the RNA was established. Roads, trails, fences, signs, or buildings are not permitted.

Seven RNAs were established on the Gallatin Forest through an Environmental Assessment and Decision Notice in 1997. These include Sliding Mountain, East Fork Mill Creek, Passage Creek, Palace Butte, Wheeler Ridge, Black Butte, and Obsidian Sands. Each RNA contains representative or unique natural features in a relatively undisturbed condition. The designation of these areas provides long-term protection and recognition of their natural values for research and baseline ecological study, observation, and conservation of biological diversity.

Most of the RNAs are within wilderness area boundaries and would continue to be managed in accordance with wilderness goals. For those RNAs outside of designated wilderness, there are no system roads or trails within the established boundaries. No snowmobile use is occurring in the RNAs due to heavy forest and it is not considered rideable terrain. There are no proposals to construct any new routes or introduce new recreational uses in the RNAs through objectives included with my decision and therefore this issue was not a factor.

26. Energy Consumption. Managing for motorized uses on the Gallatin Forest and just promoting recreation use in general under the alternatives will result in the consumption of energy. However, regardless of the alternative selected, people will continue to use the Forest for recreation and continue to consume energy for that purpose. All alternatives provide for a

variety of recreation opportunities, both motorized and non-motorized. While Alternatives 5 and 6 provide less miles of opportunity for motorcycle and ATV use than the others, it cannot necessarily be said that they would result in significantly less energy consumption. Motorized trail use in these alternatives could simply become more concentrated or the restrictions could attract more visitors for non-motorized activities. The gasoline used by motorcycles, ATVs and snowmobiles is insignificant when compared to that consumed to access trailheads and other destinations by car or truck, or from a broader perspective, the gasoline consumed for people to travel to the Yellowstone area from other parts of the country. There was no aspect of the proposed Travel Plan that could be modified to notably reduce overall energy consumption from a regional perspective. Even closing the Forest to human use would simply result in people traveling elsewhere to recreate. Therefore this issue was not a factor in my decision.

27. **Extractive Uses.** During scoping, concern was raised over the potential effects that the Travel Plan alternatives may have on extractive uses of the Gallatin National Forest. Primarily, how any road restrictions or decommissioning may affect timber harvest/wood fiber production, livestock grazing and mineral extraction. The scope of the Travel Plan deliberately defers decisions regarding potential road use, construction or reconstruction for access to timber stands to the analysis that would be completed for those specific actions. In other words, the Travel Plan does not authorize nor preclude road access to serve project activity and therefore I determined that this part of the issue was not significant.

Another facet of this issue was the potential for the management of trails within active grazing allotments to result in some users redistributing livestock or leaving gates open. Reports from Gallatin Forest range conservationists provide no evidence that bad human behavior is associated with any particular user group. Since none of the alternatives propose to restrict humans from allotment areas, it can be concluded that no Travel Plan alternative is any better or worse than another in terms of potential recreation/livestock use conflicts.

28. Fire. This issue concerns the potential for various forms of travel allowed under the alternatives to increase the risk of unplanned fire ignitions. Several comments were received expressing concerns that illegally or improperly operated vehicles can often create a fire hazard on public or private lands and that the Forest Service should restrict travel in the entire Forest when the fire danger is high and before "extreme" dryness occurs.

According to the Forest's fire occurrence records, there have only been four fires caused by vehicles since 1980. Motorized vehicle use is typically restricted during times of high fire danger through the implementation of the Forest's fire restrictions and Forest closure process. Unwanted fire starts from the improper use of motorized off-road vehicles off designated trails and roads are rare, and therefore this is not considered a significant issue for travel management planning.

29. Fire/Fuels Management. This issue concerns the potential effects of travel management under the alternatives on the Gallatin Forest's fire prevention/fuels reduction program and the ability to suppress wildfire. Roads and motorized trails provide access for fire suppression and fuel management activities and ground-based fire suppression equipment; access to and from water sources, lookouts and helicopter staging areas; fire breaks for fire suppression and fuels management activities for low severity fires; and from a safety standpoint, anchor points for pre-

positioning firefighting resources and fire line construction. Roaded access can also have a negative effect by providing an increased opportunity for unwanted human-caused fires.

In planning suppression strategies for fire events lasting several days or weeks, roads and motorized trails provide alternative transportation options. These options play an important role in developing a wider range of strategies, commensurate with management area objectives that address cost-effectiveness and public and firefighter safety.

Road and motorized trail access is an important factor in effectively managing fuels and providing protection to wildland-urban interface areas. In a wildfire situation, response time for suppression actions can become a critical factor, especially when human lives are at stake. Roaded access allows pre-positioning of firefighting resources in the immediate area. All alternatives maintain the existing roaded access around wildland-urban interface areas.

In terms of cost-effectiveness, road and motorized trail access are important considerations for fire suppression and fuels management activities on the Gallatin Forest. They provide a wider array of treatment and suppression tactic options. Under all alternatives, road and motorized trail access for Forest administrative uses would be allowed on roads and trails closed to public motorized uses, except in designated Wilderness areas. Proposed Alternatives 2 through 7-M would adopt programmatic direction that would allow road and motorized trail access for fire emergencies and fuel management projects on National Forest lands. Therefore, the access concern was not considered a significant issue.

30. Fragmentation. The Forest Service considered whether there could be the potential for travel uses on the road and trail system under the alternatives to fragment wildlife or aquatic habitat, but concluded this was not of issue. Fragmentation is a concern related to vegetative manipulation or construction activities and these are not proposed in the Travel Plan alternatives. Fragmentation in relation to wildlife corridors was addressed for the Biodiversity issue and fragmentation of aquatic habitat was addressed for the Fisheries issue. Therefore, fragmentation was not addressed as a separate issue.

31. **Land Values.** There were two facets to this issue. The first was, what potential effect do the proposed goal, objectives and guidelines to acquire access to National Forest across private land (Goal B, Obj. B-1 through B-3, and Guidelines B-4 through B-9) have on the private land value. The second was, what potential effect could traffic volume on Forest roads have on adjacent private land value.

I did not find the first facet of this issue significant to the decision among alternatives because the access objectives exist with the Forest Service regardless of whether they are stated as part of the Travel Management Plan. For the most part they are common to all alternatives, except that under Alternative 1, the existing Forest Plan direction for access would remain in effect. In addition, proposed Objective B-3 only serves as disclosure of the general locations where the agency believes that there is a need for access should the opportunity arise. The appropriate decision point in which to analyze and consider the effects to private land values is when a specific proposal has been identified (e.g., during a negotiated land exchange or when a private landowner approaches the Forest Service for access).

I also found the second facet of the issue to be not significant, for two reasons:

1) Because there is no information indicating that varying the types and mix of uses on roads and trails accessed by roads adjacent to or through private land would affect traffic flow.
2) It cannot be concluded that more or less traffic on roads adjacent to or through private land has a positive or negative effect on land values.

Therefore this issue was not a factor in my decision.

32. Public Safety. In managing travel on the Gallatin Forest, consideration must always be given to public safety. Concerns include hazards of two-way travel on trails open to motorized use, mechanized travel encounters with horse and pack stock, snowmobile encounters with skiers and snowshoers and mountain bike encounters with foot and horse travel. The effects to user safety were similar for all alternatives. Three factors influence the safety of the road and trail system: the condition of the facilities, the mixture of uses on a particular facility and user behavior. Safety is enhanced if Forest roads and trails are routinely maintained and unexpected damage or unsafe conditions are identified and corrected in a reasonable amount of time. Safety was not a factor in my choice between alternatives but will become a concern in Travel Plan implementation. Better facilities and better user information will the key factors in providing for public safety.

33. Rare Plants. The Gallatin National Forest currently has 21 plant species listed as "sensitive" by the Forest Service. Most are found in bogs, wet meadows and along streambanks. For a list of these species and their habitats, refer to the Rare Plant Effects Report in the project file (Cherry 2004). There are no plants on the Gallatin National Forest currently listed as threatened or endangered.

I determined this issue to be non-significant to my decision between Travel Plan alternatives. The Travel Management Plan does not include the project-specific actions to construct or reconstruct new roads or trails. Alternatives 2 through 7-M would also restrict summer motorized use to designated routes (i.e., existing routes where the surface is already devoid of vegetative cover). Therefore, no new impacts to rare plant habitat were predicted.

34. Sensitive Wildlife. All Forest Service planned, funded, executed or permitted programs and activities are to be reviewed for possible effects on sensitive species (FSM 2672.4). The following terrestrial species are listed as sensitive on the Regional Forester's Sensitive Species list and are either known or suspected to occur on the Gallatin National Forest: northern goshawk, peregrine falcon, black-backed woodpecker, flammulated owl, Townsend's big-eared bat, harlequin duck, trumpeter swan and wolverine. An identified management consideration for most of the sensitive species included restricting human activities during critical times such as breeding seasons. However, special closure orders are a tool that can be used to site-specifically manage transportation routes for specific periods of use based on a particular species' annual activity. Use of this tool would serve to effectively mitigate without unnecessarily restricting public use or access to a particular area. The Travel Plan does not prevent temporary use restrictions when there is a need during critical times in critical habitat areas.

35. Snags/Down Woody Debris. This issue concerned the potential habitat loss of snag habitat. Snags serve as a growth substrate for microorganisms and invertebrates and provide nesting and foraging habitat for a variety of wildlife species. Directly, building roads or trails through

forested habitats can reduce snag and down log density. Indirectly, roads facilitate public access for hazard tree removal and firewood retrieval, which leads to a reduction of snags. I determined this issue not to be significant because none of the alternatives propose to construct new roads or trails so there are no additional direct effects on snags and down logs. Additional NEPA analysis would have to be completed for any newly constructed routes. Effects on snag and down woody habitat could be addressed at that time. In terms of the potential loss of snags and downed trees through firewood cutting from the existing road system, I believe that any problems identified is better addressed through area cutting restrictions than it would be by closing roads for all public access. Firewood cutting restrictions were not within the scope of my decision for a travel management plan.

36. Subnivian Small Mammals. This issue concerned animals dwelling and/or foraging under snow cover. It was mentioned in several comments received. Subnivian habitat areas occur seasonally throughout the higher elevation areas of the Gallatin Forest. Typically, area of persistent deep snow cover occurs above 6,000 feet in elevation on the Forest, but may vary widely because of localized events and topographical features. Many trail systems are present within this zone and provide recreational opportunities for snowmobiles, cross-country skiing, snowshoeing and other winter recreation. The effects of this recreational use to subnivian mammals can be described in general terms of thermal regulation concerns and direct loss of subnivian habitats. I did not consider this a significant issue because analyses revealed that the extent of potential winter recreation impacts to subnivian species was very limited, both temporally and spatially regardless of the alternative.

37. Tourism. A total of 3.8 million non-resident travel groups, generally couples or families, visited Montana in 1998 (FEIS, page 4-32). By 2005 this number had risen to 4.3 million groups. According to the Institute for Tourism and Research eighty-four percent of these visited during the summer, spring and fall, while 16% visited during the winter (id.). The top five recreation activities of visitors are viewing wildlife, hiking/walking, viewing natural features, relaxing and driving for pleasure. Except for hiking and walking, these are all passive activities. In addition, while the Travel Plan alternatives varied in terms of restrictions applied to certain routes and areas, no alternative contemplated the elimination of opportunities that exist today. There is no evidence that adjustments in travel management within the range of alternatives would have any notable effect on area tourism. For these reasons I determined this issue not to be significant to my Travel Plan decision.

a. Most non-resident visitors come because of the attraction of Yellowstone National Park and surrounding tourist communities.
b. The top five recreation activities identified above are accommodated in each of the seven alternatives.

38. Water (Snow) Chemistry. Water chemistry poses only limited and slight differences in effects between alternatives. The EPA (1995) indicates that roads, highways, and bridges can be a significant source of pollutants to surface water in areas of heavy vehicle traffic such as urban areas and major highway corridors. Run-off pollution from rainwater or melting snow over roads, highways, and bridges can flush dirt and dust, rubber and metal deposits from tire wear, antifreeze and engine oil, and trash into surface water. Vehicle use on the Gallatin Forest is far less than that in the more urbanized areas used in the EPA (1995) evaluation.

Ingersoll (2002) reported on a snowpack chemistry monitoring network at 52 sites along the Rocky Mountains from New Mexico to Montana including local monitoring of snowpack chemistry in concentrated snowmobile use areas in Yellowstone National Park (West Entrance and Old Faithful). There was a measurable increase in ammonium and sulfate detected in snowpack samples taken directly in the roadway. However, in samples taken 50 meters from roads or parking lots, the snowpack chemistry samples did not detect elevated levels of contaminants. Ingersoll (2002) concluded that the contribution of snowmobile emissions in the Rocky Mountain region to regional atmospheric deposition is likely to be minimal. Ingersoll (1998) also concluded that elevated snowmobile emission levels in snow along highway corridors are dispersed into surrounding watersheds at concentrations below levels likely to threaten human ecosystem health. Since snowmobile use on the Forest is far more dispersed than those concentrated areas evaluated by Ingersoll, streamflow chemistry effects from snowmobile emissions in each alternative is expected to be very low and not of ecosystem or water quality significance.

E. Alternatives Studied In Detail

The Draft and Final Environmental Impact Statements (EISs) studied 7 alternatives in detail. They were developed to be responsive to the significant issues identified over the "Starting Benchmark" (i.e. Proposed Action) that was released for public comment in August of 2002. See Section D of this ROD for a discussion of these issues. The alternatives also had somewhat of a philosophical foundation. Those who use, or are otherwise interested in management of the Gallatin National Forest have different value sets and therefore varied opinions on how travel should be managed.

Many people that favored more restrictions on motorized use tend to see the value of the Gallatin National Forest as one of very few places remaining that are largely free of societal influences. It is important to these individuals that here, humans remain subordinate to wildlife and natural processes.

Many letters indicating opposition to restrictions on motorized use see travel more as an issue of civil rights. The National Forest belongs to all American citizens and it is not "right" to exclude one user group in favor of another. These individuals tend to not be in support of separating uses wondering "why can't we just all share and get along." They value the experience of nature, relating memories of riding with their families to special places and hoping that their grandchildren can have those same opportunities. They would not agree that motorized use equates to adverse resource impacts, or at least they are willing to accept higher levels of impact in order to maintain motorized recreation opportunities.

We were able to use these two different value sets to define each end of the range of alternatives (i.e. Alternatives 1 and 6). They also served to define the range of variation in resource impacts that would be incurred as I considered travel management options that would go from lower levels of restrictions to higher levels of restrictions. Analysis of the Starting Benchmark (i.e. Proposed Action) and the current situation relative to the significant issues showed, in general, that impacts varied with the level of human use, particularly motorized use. Therefore the range of alternatives varied mostly on the amount of motorized use opportunity provided. Alternative 1 was the least restrictive and Alternative 6 was the most restrictive. Alternatives 2, 3, 4 and 5 fall within this range and are incrementally more restrictive on motorized uses. Alternative 4

closely represented the Benchmark. See pages 2-15 through 2-19 of the FEIS for a more detailed description of the alternative development process. The six alternatives were presented for public comment in August of 2003 to ensure that they sharply defined the issues and sufficiently represented the different interests.

Travel planning is different than a typical NEPA analysis for a site-specific project. Alternatives 1 through 6 were developed with the understanding that my final decision would be made based on a comparison of the merits of each of these options on a Forest-wide, Travel Planning Area, and route-by-route scale. In other words, my decision would likely be some combination of these alternatives and thus would be described as a new alternative. Alternative 7 of the DEIS and Alternative 7-M of the FEIS were identified based on a comparison of the benefits and consequences of the other six alternatives. This principle is important as I explain my rationale for not selecting the other alternatives below. Alternative 7-M was the only alternative I found to be acceptable for all issues. Other alternatives were acceptable for specific issues, but not all of them. This could lead to the question as to why we didn't make adjustments to any of the other alternatives to make them acceptable. For example, we could have made Alternative 6 acceptable in terms of impacts to lynx by adjusting snowmobile use within the Crazy Mountains. The reason is that if we were to change any or all of the alternatives to make them acceptable in terms of their effect on each of the significant issues, they would duplicate Alternative 7-M. While we strived to make each alternative as selectable as it could be, it was also important to stay within the overall guiding theme for that alternative. This gives a better understanding of the consequences and provides the public with an understanding of why I didn't find certain philosophical views of how best to manage travel acceptable.

Alternative 1 – no action

This alternative most closely reflects "no action" as required under NEPA, plus it reflects a large share of the comments received. There were many who stated that they liked the Travel Plan the way it was before the January 2001 Montana/Dakota OHV decision and that the Starting Benchmark proposal was overly restrictive, particularly on motorized uses. This alternative reflects the consequences of no change to travel management as outlined on the 1999 Gallatin National Forest Recreation Visitor Map. It also reflects the effects that we might anticipate over time even with the Montana/Dakota OHV decision in place because routes legal to motorized use would not be designated, and therefore such use, although illegal, could become established where it does not exist today. Under this alternative existing snowmobile and seasonal restrictions would remain unchanged. Current Gallatin National Forest Plan direction would not be amended.

I had a number of reasons for not selecting this alternative not the least of which was that it would not meet my purpose and need for proposing a travel management plan. It would not bring area, road and trail use into compliance with higher level management direction for grizzly bear and lynx, which are listed under the Endangered Species Act as "threatened" species. It would allow motorized travel within the Cabin Creek Wildlife and Recreation Management Area and the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area in a way that I don't believe is consistent with the Lee Metcalf Wilderness Act and the Montana Wilderness Study Act respectively. It also does not amend the Gallatin Forest Plan to remove outdated and problematic programmatic direction for the management of travel. I also have concluded that it would not be

adequate to correct unacceptable resource damage that has been occurring and more likely it will make the situation worse.

This alternative would allow for a proliferation of motorized summer use which I found to be unacceptable in terms of effects to wildlife, biological diversity, fisheries, soils, and water quality. Essentially, this alternative to me represents unmanaged use. With the growth in population and increased visitor use expected this scenario has the potential to create serious resource problems in the future. This Alternative also does not respect (i.e. preclude motorized travel from) the high elevation area of the Crazy Mountains that is of traditional importance to the Crow Tribe.

Another principle reason that I found this alternative unacceptable is that it is not responsive to projected changes in recreation demand and public attitudes over what's important. Several studies consistently show that participation in non-motorized activity exceeds that of motorized activity (see the FEIS, pages 3-421 through 3-428). A study completed by the Forest Service in 2002 surveyed the American public regarding their values with respect to public lands, objectives for management of public lands (including recreation management) and beliefs about the role the Forest Service should play in fulfilling those objectives (FEIS, page 3-427). The study concludes that the public sees the promotion of ecosystem health and the protection of watersheds as important objectives. Alternative 1 is not responsive to the fact that the projected demand for non-motorized recreation opportunities and settings is expected to exceed that for motorized uses and settings, and that the desired experiences of non-motorized users are adversely affected by motorized use.

Lastly, I concluded that Alternative 1 would not be reasonable to implement. A conscious decision to select this alternative reasons that all routes that were legally open to motorized uses prior to the imposition of the Montana/Dakota OHV decision (January 2001), will in fact be converted into ATV routes. Since many of the trails outside the Wilderness are open to motorized uses, most would have to be rebuilt to accommodate ATVs. I would also expect off-route summer motorized travel to lead to user-created routes with inadequate drainage and/or high erosion potential. This would significantly increase the investments we would have to make to correct problems and minimize impacts to other resources.

Alternative 2

This alternative may be described as maintaining the status quo. In general it took the current Travel Management Plan (i.e., the 1999 Gallatin National Forest Recreation Visitor Map as modified by the 2001 Montana/Dakota OHV decision) and focused on incorporating mitigation (such as programmatic direction, seasonal restrictions, information and education) to respond to issues rather than opting for some uses over others on specific routes. In other words, Alternative 2 was designed to correct resource problems to the extent possible while retaining as much of the existing opportunities as possible.

The benefits of Alternative 2 over Alternative 1 were substantial. By restricting summer motorized use to designated routes I could be sure that resource impacts would not worsen and in many cases would improve. As compared to Alternative 1, I found Alternative 2 to be acceptable in terms of the impacts to big game, fisheries, migratory birds, riparian habitats, soils and water quality. I also found it to be reasonable to implement, although more costly than the

higher end of the range of alternatives. I did not select this alternative primarily because I didn't think it went far enough in improving some resource conditions nor was it responsive to projected changes in recreation demand and public attitudes.

Alternative 2 would be consistent with the Memorandum of Understanding (MOU) and Conservation Agreement (CA) with the United States Fish and Wildlife Service (USFWS) (ICST 2003:12-13), as well as Forest Plan direction for protection of the grizzly bear, however I didn't find it adequate in improving secure habitat within the Gallatin #3 subunit at the southern end of the Gallatin Mountain Range. Alternative 2 would also not be consistent with the Canada Lynx Conservation Assessment and Strategy (LCAS) in terms of compacted snow in the Bridger/Bangtails and East Gallatin Lynx Analysis Units (LAUs). In addition, Alternative 2 did not adequately meet an objective I had to improve winter habitat for wolverine nor reduce motorized route density sufficiently in corridors between mountain ranges.

In terms of recreation I did not select Alternative 2 (the status quo) because it does not provide sufficient front-country area in non-motorized settings for hiking, horseback riding, cross-country skiing, and to some extent mountain biking. In other words, it is not responsive to the increases in projected demand for these opportunities. It also allows a level of motorcycle and snowmobile use in the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area that I don't find as being consistent with the Montana Wilderness Study Act, and it allows ATV use in the Cabin Creek Wildlife and Recreation Management Area which I don't believe to be consistent with the Lee Metcalf Wilderness Act except on the Oil Well Road. As with Alternative 1, this Alternative also does not respect (i.e. preclude motorized travel from) the high elevation area of the Crazy Mountains that is of traditional importance to the Crow Tribe. Lastly, Alternatives 2 through 6 included a proposed blanket spring restriction on mountain bike and stock use to protect trail facilities. I concluded that this was going too far in attempting to correct a problem that could otherwise be addressed through restrictions on specific routes and/or information and education.

Alternative 3

This alternative was developed in response to many of the comments received from motorized users on the Starting Benchmark proposal. Essentially, it emphasized motorized recreation outside of Wilderness, but in comparison to Alternatives 1 and 2, would more actively manage for it. It would reinstate many of the popular motorcycle trails and, to a lesser extent, ATV trails that would have been restricted under the Benchmark. Alternative 3 included new trail routes that would be opened to motorized use, primarily to create loop opportunities and prevent the temptation to proceed beyond trail ends. The area legally available for snowmobile use would be approximately 80% of what is currently legally available. Additional marked and groomed snowmobile and ski routes were also included under this alternative. The number of existing open roads would not increase but objectives would be adopted to upgrade some backcountry (4x4 only) road such that it could accommodate passenger car travel. Horse and mountain bike opportunities would not be prohibited but there would be blanket spring restrictions forest-wide to protect trail facilities.

My conclusions over Alternative 3 were similar to Alternative 2. As with Alternative 2, I found Alternative 3 to be acceptable in terms of the impacts to big game, fisheries, migratory birds, riparian habitats, soils and water quality. I also found it to be reasonable to implement, although

more costly than Alternative 2. Again though, I did not select this alternative primarily because I didn't think it went far enough in improving some resource conditions nor was it responsive to projected changes in recreation demand and public attitudes.

Alternative 3 would be consistent with the Memorandum of Understanding (MOU) and Conservation Agreement (CA) with the United States Fish and Wildlife Service (USFWS) (ICST 2003:12-13), as well as Forest Plan direction for protection of the grizzly bear, however I didn't find it adequate in improving secure habitat within the Gallatin #3 subunit at the southern end of the Gallatin Mountain Range. Alternative 3 would also not be consistent with the LCAS in terms of compacted snow in the Bridger/Bangtails, East Gallatin, Emigrant, Henry's Lake, N. Gallatin, S. Fork Madison, Upper Gallatin, West Crazies and West Gallatin Lynx Analysis Units (LAUs). It also does not adequately meet an objective I have for improving winter habitat for wolverine nor does it reduce summer motorized route density sufficiently in corridors between mountain ranges.

In terms of recreation I did not select Alternative 3 because, like Alternatives 1 and 2, it does not provide sufficient front-country area in non-motorized settings for hiking, horseback riding, cross-country skiing, and mountain biking. In other words, it is not responsive to the increases in projected demand for these opportunities. It also allows a level of motorcycle and snowmobile use in the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area that I don't find as being consistent with the Montana Wilderness Study Act, and it allows ATV use in the Cabin Creek Wildlife and Recreation Management Area which I don't believe to be consistent with the Lee Metcalf Wilderness Act except on the Oil Well Road. As with Alternatives 1 and 2, this Alternative does not respect (i.e. preclude motorized travel from) the high elevation area of the Crazy Mountains that is of traditional importance to the Crow Tribe. Lastly, Alternative 3 included the blanket spring restriction on mountain bike and stock use to protect trail facilities and as with Alternatives 2 and 4 through 6, I concluded that this was going too far in attempting to correct a problem that could otherwise be addressed through restrictions on specific routes and/or information and education.

Alternative 4

This alternative essentially was the Starting Benchmark proposal developed for scoping/public involvement in August 2002. It was responsive to projected changes in recreation demand and it attempted to bring area, road and trail use into compliance with laws, regulations, and other higher-level direction. To this extent this alternative was more restrictive on motorized uses than Alternatives 1 through 3. Since it was developed as the initial proposal, this alternative did not have the benefit of early environmental analysis nor public involvement.

Alternative 4 would have designated approximately 180 miles of existing single-track motorcycle trail to combined ATV/motorcycle use. Objectives were proposed to bring this trail up to ATV standard. New trail connectors were also proposed, similar to Alternative 3, to create loop opportunities and prevent the temptation to proceed beyond trail ends. Alternative 4 would have provided about 90% of the OHV trail opportunity provided under Alternative 2 but the amount of trail allowing motorcycles without ATVs would decline over 50%. The area legally available for snowmobile use would be approximately 80% of what is currently legally available. Additional marked and groomed snowmobile and ski routes were also proposed under this Alternative. The number of existing open roads would not increase but, like Alternative 3,

objectives would be adopted to upgrade some backcountry (4x4 only) road such that it could accommodate passenger car travel. Horse and mountain bike opportunities would not be prohibited but there would be blanket spring restrictions forest-wide to protect trail facilities. This alternative would also preclude mountain bike use on the Hyalite and East Fork of Hyalite Trails. Seasonal restrictions would be adopted on uses other than foot and ski travel on certain routes throughout the Forest.

As with Alternatives 2 and 3, I found Alternative 4 to be acceptable in terms of the impacts to big game, fisheries, migratory birds, riparian habitats, soils, water quality and in our ability to implement it. In addition, I found Alternative 4 to be acceptable in terms of providing sufficient front-country area in non-motorized settings for hiking, horseback riding, cross-country skiing, and mountain biking. It was developed to be responsive to the increases in projected demand for these opportunities. The restrictions on summer and winter motorized use were also sufficient to me in alleviating potential adverse effects on biological diversity and wolverine habitat. However, I did learn through public comment that the configuration of motorized routes (including new loops) identified in this alternative was not as desirable to the users as other routes were. Therefore, from a recreation perspective, I did not select Alternative 4 in preference for the route configuration I adopted in my decision (Alternative 7-M).

Through analysis I also found that Alternative 4 was not acceptable in providing habitat for the grizzly bear and lynx. As with Alternatives 2 and 3, I didn't find it adequate in improving secure bear habitat within the Gallatin #3 subunit at the southern end of the Gallatin Mountain Range. Alternative 4 would also not be consistent with the LCAS in terms of compacted snow in the Bridger/Bangtails, Emigrant, N. Gallatin, S. Fork Madison, West Crazies and West Gallatin Lynx Analysis Units (LAUs).

Alternative 4 was also not acceptable to me in terms of the designated uses that would have been allowed in the Cabin Creek Wildlife and Recreation Management Area, the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area, and also the Lionhead recommended wilderness area of the Gallatin Forest Plan. In the Cabin Creek Wildlife and Recreation Management Area, Alternative 4 would allow ATVs which I believe is inconsistent with the Lee Metcalf Wilderness Act except on the Oil Well Road. In the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area some trails would be designated under Alternative 4 for ATV use which I believe is contrary to the Montana Wilderness Study Act. In the Lionhead recommended wilderness the Sheep Lake Trail would be managed for motorcycle use which is not consistent with Regional guidelines on travel management within these areas. As with Alternatives 1 through 3, this Alternative does not respect (i.e. preclude motorized travel from) the high elevation area of the Crazy Mountains that is of traditional importance to the Crow Tribe. Lastly, Alternative 4 included the blanket spring restriction on mountain bike and stock use to protect trail facilities and as with Alternatives 2, 3, 5 and 6, I concluded that this was going too far in attempting to correct a problem that could otherwise be addressed through restrictions on specific routes and/or information and education.

Alternative 5

Early in the analysis it became apparent that there is an inverse relationship between the level of human use of the Forest and the condition of other resources. For example, as opportunities for motorized use is increased, wildlife habitat security is decreased. Conversely, the more

restrictions one places on recreation use of the Forest, the better it is for wildlife and other resources. It is a sliding scale of travel management options. For many of the issues, I found Alternative 4 (the Starting Benchmark proposal) to be acceptable. However, that does not necessarily mean that these effects were preferable. Alternative 5 was developed to identify a travel management scenario that would further improve wildlife habitat and other resource conditions beyond Alternative 4. Consequently, this alternative is more restrictive for both summer and winter motorized use. Alternative 5 would provide about 70% of the OHV trail opportunity provided under Alternative 2. The area legally available for snowmobile use would be approximately 65% of what is currently legally available. The amount of marked or groomed snowmobile or ski trails would remain close to what it is today. Overall, the amount of open road, particularly high clearance vehicle roads would decline somewhat. The shift to non-motorized use is focused on trails. Mountain biking would be restricted beyond Alternative 4 in some areas including the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area. Horse use would generally be managed the same as in Alternatives 2 through 4. The length of seasonal restrictions applied to various uses would be greater than the previous alternatives for many Forest trails.

I found Alternative 5 to be preferable to Alternatives 1 through 4 for all of the environmental issues discussed in Chapter 3 of the FEIS. It resolved the unacceptable impacts I found for Alternative 4 relative to grizzly bear habitat in the Gallatin #3 subunit, and winter lynx habitat in the Bridger/Bangtails, Emigrant, N. Gallatin, S. Fork Madison, West Crazies and West Gallatin Lynx Analysis Units (LAUs). I also found the motorized use restrictions in the high elevation area of the Crazy Mountains to be responsive to Crow Tribal concerns. The reason I did not select this alternative was based primarily on it being too restrictive on motorized recreation opportunities. My primary objective in management of travel was to provide well-distributed opportunities for motorized vehicle use and exclusive hiking, horseback, skiing and mountain biking in non-motorized settings. Alternative 5 was not sufficient in providing the former in my judgment. This alternative would have prohibited motorcycle use on many trails that are currently popular for this use such as the Hyalite Creek Trail and trails on the west side of the Bridger Mountains. In the winter, this alternative virtually eliminated snowmobiling in the higher elevations of the Gallatin National Forest and I found that to be unacceptable.

Another reason I did not select this alternative is because it would have precluded mountain biking in the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area, even on trails that would be open to motorcycles. While the objective was to limit travel in this area to uses known to occur in 1977, it made little sense to preclude mountain bikes when motorcycles were allowed. Lastly, Alternative 5 included the blanket spring restriction on mountain bike and stock use to protect trail facilities and as with Alternatives 2, 3, 4 and 6, I concluded that this was going too far in attempting to correct a problem that could otherwise be addressed through restrictions on specific routes and/or information and education.

Alternative 6

Alternative 6 was responsive to a significant number of comments received and reflected a position that heavy restrictions on motorized use were needed to protect wildlife habitat, retain the primitive character of unroaded lands and maintain other resource values. Under this alternative, motorized use would be precluded in the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area, the Lionhead Travel Planning Area and in other inventoried roadless areas. ATV

and motorcycle use would be largely removed from the trail system. There would be more area closures on snowmobile use than in the other alternatives. More restrictions are placed on mountain bikes in certain areas including the Wilderness Study Area. Horse use would be managed similar to the other alternatives but there would be some additional seasonal restrictions imposed as a potential solution to correct resource damage and reduce maintenance costs.

Because of the heavy motorized use restrictions, Alternative 6 was preferable to Alternatives 1 through 4 for all of the environmental issues discussed in Chapter 3 of the FEIS. As with Alternative 5 however, I found it to be much too restrictive on motorized and mountain bike use. I found no good reason to eliminate motorcycle opportunities from the trail system entirely or to prohibit snowmobiling throughout so much area of the Forest. Essentially, Alternative 6 would manage inventoried roadless areas as if they were designated wilderness and I do not believe that to be appropriate. As with Alternatives 2 through 5, Alternative 6 also included the blanket spring restriction on mountain bike and stock use to protect trail facilities and I concluded that this was going too far in attempting to correct a problem that could otherwise be addressed through restrictions on specific routes and/or information and education.

Table 7. Comparison of Alternatives. Summary of summer opportunities by miles (approximate).

Recreation Opportunity	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7-M
Pleasure Driving							
Miles of Road	309	314	421	415	397	401	400
Emphasized for passenger car use. Other uses allowed include any licensed vehicle, motorcycle or ATV plus mountain biking. Hiking and stock use are not prohibited, but they are not encouraged.							
Backcountry Roads (4x4)							
Miles of Road	417	411	354	360	326	289	347
Emphasized for 4X4 driving. Other uses allowed include any licensed vehicle, motorcycle, or ATV. Some roads may be dual designated for unlicensed ATV and motorcycle use. Hiking and stock use are allowed.							
ATV and Motorcycle							
Miles on Road	77	73	372	342	308	285	389
Miles on Trail	680	281	225	234	130	51	145
Total Miles	757	354	597	576	438	336	534
ATV and motorcycle use is emphasized on these roads and trails. Mountain biking is also emphasized on many of these routes while all other uses are allowed but not encouraged.							
Motorcycle							
Miles on Road	3	8	14	7	9	0	17
Miles on Trail	71	458	393	194	149	0	279
Total Miles	74	466	407	201	158	0	296
Motorcycles are emphasized on these roads and trails while ATVs are prohibited. These are in addition to the miles of road and trail listed above under ATV and motorcycle. Mountain bikes are also emphasized on some of these routes and other non-motorized uses are allowed.							
Mountain Bike (Use Emphasized)							
Miles on Road	1,071	1,071	509	496	488	488	545
Miles on Trail	1,315	1,269	787	743	609	599	769
Total Miles	2,386	2,340	1,296	1,239	1,097	1,087	1,314
These roads and trails are emphasized for mountain bikes and in some cases, there is a dual emphasis with motorized road or trail use. All these trails allow foot and horse use but horse use may not be encouraged.							

Recreation Opportunity	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7-M
Mountain Bike (Use Allowed)							
Miles on Road	880	880	1,453	1,467	1,475	1,474	1,371
Miles on Trail	18	17	447	473	353	341	400
Total Miles	898	897	1,900	1,940	1,828	1,815	1,771
These roads and trails are emphasized for other uses such as hiking, stock use, or motorized use, but mountain biking is also allowed. Many of these roads are revegetated.							
Pack and Saddle Stock (Use Emphasized)							
Miles on Trail	2,115	2,034	1,766	1,750	2,018	2,034	1,767
These trails are emphasized for horse use and generally have a dual emphasis with hiking. These are both inside and outside Wilderness. Other uses are also allowed and in some cases these trails are shared with motorcycle use.							
Pack and Saddle Stock (Use Allowed)							
Miles on Trail	1	81	342	354	99	109	331
These are managed for other emphasis such as motorcycle, ATV, or mountain biking, but horses are allowed.							
Hiking (Use Emphasized)							
Miles on Trail	2,109	2,000	2,046	2,036	2,054	2,114	2,008
Hiking (Use Allowed)							
Miles on Trail	1	115	137	147	126	63	149

Table 8. Comparison of Alternatives. Summary of winter opportunities in miles (approximate).

Recreation Opportunity	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7-M
Pleasure Driving (Plowed Road)							
Miles of Plowed Road	162	170	177	168	173	172	168
Snowmobiling							
Miles of Groomed Trail	320	333	374	347	336	327	346
Miles of Marked Trail	80	80	146	136	85	87	134
Total Miles	400	413	520	483	421	414	480
Cross-country Skiing							
Miles of Groomed Trail	48	50	71	79	52	54	52
Miles of Marked Trail	166	160	180	179	152	181	174
Total Miles	214	210	251	258	204	235	226

Table 9. Comparison of Alternatives. Summary of snowmobile area restrictions by acre.

Recreation Opportunity	Alt. 1 Acres	Alt. 2 Acres	Alt. 3 Acres	Alt. 4 Acres	Alt. 5 Acres	Alt. 6 Acres	Alt. 7-M Acres
Yearlong Closure							
Wilderness	717,369	717,369	717,369	717,369	717,369	717,369	717,369
Non-Wilderness	179,267	184,838	376,241	430,900	541,800	583,409	498,857
Seasonal Closure *							
Wilderness	0	0	0	0	0	0	0
Non-Wilderness	91,767	109,437	93,720	76,677	142,043	36,907	77,908
No Restrictions							
Wilderness	0	0	0	0	0	0	0
Non-Wilderness	953,969	948,398	756,995	702,336	591,436	549,827	634,379
* Seasonal restrictions are displayed under the route-by-route management section.							

Table 10. Comparison of Alternatives. Forest-wide summary of facilities by miles (approximate).

Alt. 1 Miles	Alt. 2 Miles	Alt. 3 Miles	Alt. 4 Miles	Alt. 5 Miles	Alt. 6 Miles	Alt. 7-M Miles
MILES OF ROAD						
Passenger Car Roads (Non-PFSR)[1]						
309	314	196	193	175	179	192
Passenger Car (PFSR)[1]						
0	0	225	222	222	222	208
Backcountry Roads[1]						
417	411	354	360	326	289	347
Project Roads – open to all trail uses including motorized uses						
36	36	103	94	84	66	106
Project Roads – motorized uses prohibited; all other uses not prohibited						
805	805	732	741	776	798	704
Administrative Use Roads – open to all trail uses including motorized uses						
30	30	98	77	90	97	89
Administrative Use Roads – motorized uses prohibited; all other uses not prohibited						
354	354	255	276	289	312	270
User-Built Roads[2]						
160	160	100	100	100	100	160
New Roads to be Constructed						
0	0	0	0	0	0	0
TOTAL ROAD MILES						
2111	2111	2062	2063	2063	2062	2076
MILES OF TRAIL - SUMMER						
Existing Trails – Open to most uses including motorized						
750	738	563	382	248	39	386
New Trails to be Constructed – Open to most uses including motorized						
0	0	54	46	31	13	39
Existing Trails – Open to most uses excluding motorized						
1358	1370	1545	1726	1860	2070	1722
New Trails to be Constructed – Open to most uses excluding motorized						
0	0	59	57	48	48	0
TOTAL TRAIL MILES						
2109	2109	2222	2211	2187	2169	2147
MILES OF TRAIL - WINTER[3]						
Existing Trails – Open to most uses including motorized						
399	413	520	482	421	415	480
New Trails to be Constructed – Open to most uses including motorized						
0	13	120	83	22	15	80
Existing Trails – Open to most uses excluding motorized						
246	241	288	297	234	270	260
New Trails to be Constructed – Open to most uses excluding motorized						
0	0	43	51	0	24	14
TOTAL TRAIL MILES						
645	653	808	779	655	685	739

1 PFSR = Public Forest Service Roads. Road miles include dual designated ATV and motorcycle routes.

2 User-built roads in Alternatives 3-7 include short spur roads next to main roads that access dispersed areas.

3 Most winter trails including new trails are located on existing summer roads and trails.

Environmetanlly Preferred Alternatives

Alternatives 2 through 7-Modified were all projected to improve environmental conditions over current management of Forest travel and therefore would be environmentally preferred over Alternative 1 or no action.

F. Alternatives Not Given Detailed Study.

There were several other alternatives that I considered but, for one reason or another, I had determined that they did not warrant detailed study in the EIS. These alternatives and my reasons for not having them studied in detail are described below.

Eliminate Motorized Use of the Forest.

This alternative was not given detailed study because:

1) No issues were identified that would warrant closure of the entire road and trail system to motorized use.
2) Most public comments from non-motorized interests advocated a management scenario that parallels Alternative 6 above.
3) Closing the entire Forest to motorized use would preclude passenger vehicle access to many trailheads, thus reducing opportunities for shorter day hikes and horseback rides.

Increase Motorized Recreation Opportunities Beyond that Provided in Alternative 1.

This alternative was not given detailed study because I determined that Alternative 1, which represents the management of travel as it was in 1999 and allows for off-route summer motorized travel, to be sufficient in representing the more motorized end of the range of alternatives. I saw no reason to consider alternatives that would further relax control of motorized use in general. While these alternatives may be favored by certain users, they would be in violation of legal requirements and higher level direction imposed since 1999 (e.g., the Endangered Species Act for grizzly bear and lynx, the Montana Wilderness Study Act for parts of the Gallatin Range) and would not be responsive to much of the purpose and need identified for a Travel Management Plan.

Managing Helicopter Landings on the National Forest.

Comments received on the Benchmark (Proposed Action) expressed concern over helicopter landings on the National Forest, primarily for backcountry downhill skiing. Federal Aviation Regulation 7-4-6a prohibits the landing of aircraft on lands or waters administered by the National Park Service, US Fish and Wildlife Service or the US Forest Service without authorization from the respective agency. Part 6b further requires pilots to maintain a minimum altitude of 2,000 feet above the surface in Wilderness and Primitive areas. I do not intend to authorize helicopter landings for recreational purposes at undesignated sites and therefore it wasn't necessary to address it in the EIS.

Close and Obliterate Primary Access Roads into the Gallatin National Forest.

Environmental analysis of the impacts of Forest travel to riparian areas discloses that historical roaded development into the Forest has significantly impacted riparian habitat. This raised the question on whether a Travel Plan alternative should be studied that would close and restore major access roads that are located within or near riparian zones (e.g. the Hyalite Road, Swan Creek Road and others within Forest Service jurisdiction). I concluded that such an alternative would be clearly unreasonable at this time. Society in general accepts the consequences associated with most types of human use and development in exchange for opportunities and better quality of life. This includes the acceptance of major highways and other developments within valley bottoms and river corridors where the riparian habitat value exceeds what occurs on the Gallatin National Forest. While many advocated further restrictions on motorized use and an overall reduction in open road density, they did not desire a loss of passenger car access to campgrounds, trailheads and other destinations within the Forest. In addition, Alternatives 2 through 7-M all would result in improved riparian conditions and there is no proposal to construct new roads. For these reasons, this alternative was not given detailed study in this EIS.

Restrict Mountain Bikes to Designated Routes.

Consideration was given to whether mountain bikes should be restricted to designated routes, as is proposed for motorized uses. Some parts of the country are incurring problems with off-route bike travel but that is currently not the case on the Gallatin Forest. Growth of mountain biking over time, and resulting resource or social effects, may cause the Forest to have to consider additional mountain bike restrictions in the future. There are no known areas of the Forest where off-route mountain bike impacts would compel me to manage biking on designated routes only at this time and therefore I dismissed this alternative as not ripe for decision.

Restrict Stock to Designated Routes.

There were some comments that suggested if off highway vehicles (OHVs) were to be restricted to designated routes then so should pack and saddle stock. Restricting OHV use to designated routes is proposed in part, in response to the Montana/Dakota OHV decision (Off-Highway Vehicle Record of Decision and Plan Amendment for Montana, North Dakota, and portions of South Dakota, January 2001). This decision amended the nine forest plans (including the Gallatin Forest Plan) and established a standard that restricted wheeled motorized cross-country travel yearlong. The decision also directed forests to conduct site-specific planning that would result in the designation of roads and trails for their appropriate uses (id., page 4). The goal of managing OHV use is to provide a range of safe motorized recreation opportunities, recognizing their legitimate use while minimizing the current or anticipated effects on wildlife and their habitat, soil, native vegetation, water, fish and other users (EIS for the Montana/Dakota OHV decision, page i). According to the OHV EIS (id.,) between 1990 and 1998 the number of registered ATVs and motorcycles increased 92% in the three-state area. The increased use has resulted in environmental effects on public resources in numerous areas, including roads and trails that have developed as the result of repeated use.

Similar widespread concerns have not been identified over off-route stock use nor is there higher level Forest Service direction to restrict such use to designated routes. There are identified effects from stock in specific areas of the Gallatin Forest but I believe that these can be

adequately addressed through other means such as trail reconstruction, potential seasonal restrictions, administration of outfitter permits and public information and education. Therefore this alternative was not given detailed study.

Restrict Snowmobiles to Designated Routes.

There were a number of commenters that suggested snowmobiles be restricted to designated routes and areas, similar to how summer motorized use is proposed to be managed. I considered this option but then eliminated it from detailed study for the following reasons:

1. There were no significant adverse effects identified at a forest-wide scale that would indicate such blanket restrictions were necessary. Over-snow travel does not have the potential to cause soil and vegetation damage like off-route summer motorized travel can. In specific areas where snowmobile impacts can be of concern (e.g. windswept ridges, big game winter range, and other areas of low snowpack) we included area and seasonal restrictions within the range of alternatives studied in detail within the EIS.

2. Snowmobile trails do not have a defined tread like summer routes do which makes defining an exact designated route on the ground more difficult. Again, using area and seasonal restrictions, along identifiable boundaries to the extent possible, was considered a better approach to addressing resource concerns.

3. In response to comments that snowmobiling should be restricted to designated play areas, the alternatives studied in detail accomplish the converse of that. In other words they identified areas, otherwise suitable and attractive to snowmobilers, where that use would not be allowed due to a resource protection need. It should be noted that snowmobiling opportunities are also limited by topography, brush and tree cover, and areas of low to no snow.

Evaluate Roadless Areas for Potential Recommendation as Wilderness.

There were comments that we should not make decisions regarding mechanized travel in Inventoried Roadless Areas without first re-evaluating these areas for potential recommendation as wilderness. I chose not to do this through the travel planning process because:

1. Inventoried Roadless Areas were evaluated in the analysis for the existing Gallatin National Forest Land and Resource Management Plan (Forest Plan, Sept. 1987). The Forest Plan recommended two areas for wilderness designation at that time; Lionhead and Republic Mountain. The remaining roadless lands, outside of the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area, were allocated for management of a variety of uses. Travel Plan decision-making regarding mechanized travel in Inventoried Roadless Areas is consistent with the Forest Plan.

2. Motorized travel is currently an allowed and established use within Inventoried Roadless Areas. The proposal to manage motorized use within these areas would not be a new and irreversible decision that would preclude their future designation as Wilderness.

3. Designation of public lands as Wilderness is a decision reserved for the United States Congress. It is also highly contentious, particularly in the western states. If the Forest Service were to propose wilderness recommendations through the Travel Plan, it would generate intense public debate without providing any better information on how to manage travel within roadless areas.

It is important to understand that the choice not to re-evaluate Inventoried Roadless Areas for potential recommendation as wilderness does not mean that I considered concerns over the effects of the Travel Plan on wilderness character or designatability to be irrelevant. Chapter 3 of the EIS includes a discussion of this issue and the Alternatives studied in detail varied considerably in the amount of motorized use that would be allowed within roadless lands.

Establish Noise Restrictions on Motorized Vehicles.

There were comments recommending that the Forest Service establish noise restrictions on motorized vehicles. I did not study this alternative in detail because noise is regulated in Montana on public lands by Montana State Code 61-9-418. This law states that all motorcycles or quadricycles operated on streets and highways in the state shall be equipped with noise suppression devices at all times. Forest roads and trails are considered public ways under this law, and are covered by this requirement. For any cycles manufactured after 1987, the decibel limit is 70 dbA, measured at 50 feet. For snowmobiles, the same requirement applies (Montana Code 23-2-634) with a decibel limitation on machines that were built after 1975 of 78 dbA, measured at 50 feet. State game wardens have the authority to enforce noise infractions, but have not been successful in doing so due to difficult testing requirements. Accurate field-testing of noise from OHVs has been problematic for many enforcement entities. While field-testing equipment is available, ambient noise can create erroneous readings, as can other environmental factors. Field tests have been successfully challenged in court, limiting the effectiveness of this enforcement tool (FEIS, page 3-414).

The Forest Service also has the authority to enforce noise standards set by other federal (typically EPA or OSHA) agencies and by the state under 36 CFR 261.13. The agency also has the authority to set specific limitations through special order 36 CFR 261.55 (j). The standard fine for noise violations is $50. Several years ago, an attempt was made to establish such a noise regulation for snowmobiles in the West Yellowstone vicinity on National Forest land. Officers investigating this enforcement option came to the conclusion that the field-testing equipment and test rigor available at that time would not hold up in court, and dropped the proposal (FEIS, page 3-414). In order to accomplish a test that would hold up in court, the vehicle would have to be tested in a controlled environment where ambient noise and other factors would not bias the test.

Separate Motorized and Non-Motorized Uses in Time (e.g. Time Share).

A number of public comments were received suggesting that we consider the concept of alternating use periods to address social problems (i.e. “user conflict”) between motorized and non-motorized users on popular trails rather than prohibiting motorized use altogether. For example, a trail could be managed as open to motorcycles on alternating days, alternating weeks, or even by the time of day. This concept has merit and I plan to implement it on trails in the Bozeman area (see discussion on page 17 of this ROD). However, for the purpose of the analysis disclosed in the EIS (i.e. to assess potential environmental consequences) routes were

identified as either open or closed to specific uses. For example, if a trail was identified as a good candidate to consider allowing motorcycle use on alternating days, it would be identified in an alternative or alternatives as managed for motorcycles.

Consider Actions to Construct, Reconstruct and Conduct Maintenance on Roads and Trails.

A number of public comments were received that raised issues and concerns relevant to conditions on specific roads and trails (i.e. facility issues). For example a concern about erosion and sedimentation of streams is primarily a facility issue, not a "use" issue. Our intent is to address these through future site-specific analysis, consistent with applicable NEPA procedures. My travel plan decision was needed first so that we would know the use or uses to be designed for in future proposals for road and trail construction, reconstruction, or maintenance. For example, roads that are to accommodate passenger cars must be designed to a different standard than roads that are targeted for 4 X 4 travel. Trails that are to accommodate ATVs must be designed to a different standard than trails targeted for motorcycle, foot or horse use. In addition, attempting to make these type of decisions through this travel plan would have been complex and impractical. For these reasons the scope of the analysis was limited to those actions described in Chapter 1 of the EIS (e.g. "appropriate uses").

VI. Public Involvement

A. Overview of the Public Involvement Process

Scoping to determine potential issues and concerns was conducted over a two year period, beginning in 2002. The first scoping period was for the Starting Benchmark (i.e. Proposed Action), distributed to approximately 1,700 people in August, 2002. The Starting Benchmark provided the initial opportunity for people interested in Gallatin Forest travel planning to submit comments. The document represented an aggregate of opportunities that could be provided in various areas throughout the Forest. The Starting Benchmark did not represent our preferred alternative. It was a beginning point from which to develop alternatives based on issues identified and information on how the public was using the Forest's transportation network (i.e. roads, trails and specific geographical areas). This comment period ran for 90 days and during that time we hosted six open houses and a number of individual and group meetings. Over 1,600 comment letters were received.

The comments received on the Starting Benchmark, along with early analysis by Forest Service specialists, were used to develop six draft alternatives. These alternatives were presented for public comment in August of 2003 to ensure that they sharply defined the issues and sufficiently represented different interests and points of view on how travel should be managed. This comment period ran for 60 days and again during this time we hosted six open houses. Over 3,200 comment letters were received. The resultant alternatives, along with my preferred alternative (Alternative 7), became the basis for analysis in the DEIS.

Open Houses for both the Starting Benchmark and alternatives were held in:

- Cooke City
- Gardner
- Big Timber
- Livingston
- Bozeman
- West Yellowstone

In addition to the open houses we met with numerous groups and individuals to discuss and explain the documents and maps.

A Notice of Intent to prepare an Environmental Impact Statement was prepared and published in the Federal Register on December 13, 2002. The proposed Travel Management Plan has also been included on the Forest's Schedule of Proposed Actions since 2002. Prior to the comment periods, news releases were distributed to area media outlets announcing the availability of each document and the schedule of open houses. Direct notification was also provided to those asking to be included on our travel planning mailing list. The documents and maps were made available in both printed and electronic formats (internet and compact disc).

The Forest released the Draft Environmental Impact Statement (DEIS) for the Proposed Travel Management Plan in mid-February, 2005. The DEIS disclosed the analyzed consequences of the six alternatives discussed earlier in this ROD plus my preferred alternative at the time which was identified as Alternative 7. During late February and early March 2005, ten open houses, attended by approximately 1,000 people, were held in communities surrounding the National Forest. In addition to the open houses, the Forest met with over 80 groups and individuals to discuss the DEIS and preferred alternative. The written comment period was extended twice and ultimately closed on September 2, 2005. During this time approximately 2,500 written comments and 9,000 electronic comments were received on the DEIS.

A more detailed discussion of the public involvement process can be found in Chapter 5 of the FEIS. Copies of comments received, meeting notes, and Forest Service correspondence can be found in the Gallatin National Forest Travel Management Plan project file. Responses to comments received are available electronically, either on compact disk or the Gallatin Forest website, as an appendix to the FEIS.

B. Consideration of Public and Other Agency Comments

As discussed above, there were thousands of comment letters submitted during the three comment periods provided on the proposed Gallatin National Forest Travel Management Plan. We've prepared responses to those received during the comment period on the DEIS and they are available electronically on the Gallatin National Forest website or on compact disk. It would be impractical to elaborate here on how each of the comments were considered in making my decision but I do want to provide a general overview.

Comments on the Starting Benchmark. In August of 2002 we began the public involvement process for travel planning with the release of a document we called the "Starting Benchmark." Typically, when beginning analysis under NEPA, federal agencies refer to planned actions as a

"proposal" (40 CFR 1508.23) or "proposed action." We elected not to use that terminology because we thought it implied that this was the Plan we intended to implement and therefore would encourage comments that were simply in favor of or opposed to it. The Starting Benchmark (i.e. Benchmark) was intended to be one option for travel management that we believed would meet the several objectives we had (i.e. Purpose and Need) as discussed at the beginning of this ROD. The Starting Benchmark however did not have the benefit of effects analysis or public input in its development. I and my staff had thoughts on how people were using their National Forest but we really didn't know for sure. We needed input from Forest users to help us determine how to best meet the recreation demands of the public we serve. Our primary goal in soliciting public comment at this stage was to get the public to tell us where they most like to hike or ride and why. Through the Benchmark we also wanted to give them something to react to, thereby helping us to understand the issues and concerns we should address through analysis and in the development of alternatives. While we did still receive numerous comments that were simply for or against the Benchmark or specific modes of travel (e.g. against motorized use), I believe we accomplished our objectives during this phase. We were amazed at how important certain roads, trails and parts of the Forest were to people in their desired recreational pursuits. One surprise was the large number of comments received from ice climbers using the Hyalite area. While we are aware of that activity, we underestimated the number of people taking advantage of it. We also learned a lot about the divergent value sets our constituents have and how mixed uses in certain areas can lead to diminished recreational experiences. The public comment received on the Starting Benchmark helped us considerably to identify the alternatives to study and issues to consider through the analysis process.

Comments on the Alternatives. Travel planning is a very complex undertaking. The Gallatin National Forest is approximately 1.8 million acres in size with over 1,000 miles of road and over 2,000 miles of trail. Combine this with nine primary modes of travel to be managed for, possible seasonal restrictions on use, and other components of a Travel Management Plan and the result is an infinite number of permutations and combinations that could have been developed as alternatives. Yet, through early analysis and consideration of comments we received on the Benchmark, we condensed this down to six (6) alternatives to study in detail. Public comment was very important to us at this stage to validate that our range of alternatives was adequate to sharply define the issues and represent various points-of-view.

The alternatives provided options for management of specific routes and sub-areas of the Gallatin Forest. We knew that there would be issues associated with many of these routes and areas that may not be adequately addressed by an overall Forest-wide management philosophy (i.e. alternative theme). Public comment at this stage helped us identify different approaches to resolving these more site-specific issues such that they could be incorporated into one or more of the alternatives and their relative merits considered. Likewise, we wanted to be sure that we did not include features within any of the alternatives that had no real merit and thus could bias the comparison of effects. The public comment we received helped us understand where there was no identified need for change, or where a proposed change was clearly necessary and/or non-controversial and therefore should apply to more than one alternative. The goal was to make each alternative (2-6) the best it could be within the scope of the guiding theme for that alternative.

Comments on the Draft Environmental Impact Statement. Comments at this stage certainly met the purpose for which they were intended under NEPA (40 CFR, Part 1503). That is they helped

us improve upon the analysis in the DEIS to create a better FEIS. Each section of the FEIS now begins with a section titled "Changes from the Draft to the Final EIS." Many of the changes made were due to the comments received. However, the largest benefit to me was through the discussions we had and letters we received specifically commenting on Alternative 7, which was my preferred alternative at the time. Some of the more significant changes I made in my decision based on what I heard from the public included the following:

- Stock users convinced me that blanket spring restrictions across the Forest on mountain bike and stock use was going too far in attempting to correct a problem that could otherwise be addressed through restrictions on specific routes or information and education. I also agreed with stock users and mountain bikers that wet muddy conditions would provide a natural deterrent to those uses.
- Stock users also influenced my decisions regarding a yearlong area restriction on the Beartooth Plateau and for the Lava Lake and Pine Creek Trails. My decision now permits stock use on the Beartooth Plateau area from August 1st to December 2nd. Instead of stock use prohibitions on the Lava Lake and Pine Creek Trails, these will now be available for riding during the fall.
- Comments from the Montana Pilot's Association led me to include an objective and standard for potential future proposals for backcountry landing strips but with a caveat to exclude areas of the Forest where this use would clearly be inappropriate.
- Cross-country skiers convinced me to drop the marked ski route and associated snowmobile area closure from the Skunk Creek Road (#974) to the Stone Creek Divide.
- Comments from skiers and snowmobilers led me to reconfigure the snowmobile area restriction in the Fairy Lake area to allow for some high-marking opportunities and transport of skiers to popular areas. They also influenced me to make the first two miles of the Bear Canyon trail a ski trail only in winter and to lift the rest of the snowmobile area restriction within the canyon.
- Snowmobilers were influential in my decision regarding the area to leave open for snowmobile use within the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area.
- Motorcyclists helped me identify a trail configuration for the Cabin Creek and Taylor Fork Travel Planning areas more conducive to the opportunities they desired while still maintaining secure habitat for grizzly bears. They were also influential in my decisions for trails within the Deer Creeks Travel Planning Area and other parts of the Forest.
- We had a number of meetings with the Crow Tribe to design a travel management plan for the east side of the Crazy Mountains that would respect their traditional values and still provide for a variety of both motorized and non-motorized uses.
- Recommendations of Montana Fish, Wildlife and Parks were used in making my decision on snowmobile area restrictions within the Bridger Mountains, the Taylor Fork Travel Planning Area and the Porcupine-Buffalo Horn Travel Planning Area.
- Comments from ice climbers, skiers and others helped me craft my decision for winter travel in the Hyalite Travel Planning Area and develop a contingency plan should the plowing of the road become infeasible.
- Non-motorized users helped me conclude that separation of these uses from motorized uses was important in some areas.

These are just a few examples of how public and other agency comments were used. Throughout the analysis process the comments that were received helped me to continue to formulate my thoughts and ultimately arrive at this decision for a travel management plan.

VII. Determination of Non-Significant Forest Plan Amendment

The National Forest Management Act (NFMA) regulations contain a provision that allows for amending Forest Plans [16 U.S.C. 1604(f)(4), 36 CFR 219.10(f), 1982]. My decision amends that Gallatin Forest Plan to remove direction that is outdated, does not effectively provide limitations on management activities, is open to misinterpretation, and/or could be in conflict with the concept of establishing forest-wide, travel planning area and route-by-route management direction. For amendments, the NFMA regulations require the decision-maker (me) to determine whether the amendment would result in a significant change to the Plan based on an analysis of the objectives, guidelines and other contents of the Plan.

Based on the analysis and other information provided within the FEIS (i.e. FEIS, pages 1-11 to 1-14, pages 3-14 to 3-24, and Appendix A), I have determined that my amendment decision is not significant. The Forest Service Handbook at FSH 1909.12(5.32) provides a list of factors to be considered in making this determination. These include timing; location and size; goals, objectives, and outputs; and management prescription. The following discloses my conclusions on each of these factors.

Timing
This Forest Plan amendment is to become effective immediately, or at such time that any stay of this decision is lifted. It also applies indefinitely.

Location and Size
This Forest Plan amendment removes 119 standards from the Forest Plan and applies Forest-wide.

Goals, Objectives, and Outputs
This Forest Plan amendment does not alter the long-term relationships between the levels of goods and services projected by the Forest Plan. All of the 119 standards proposed for replacement pertain to travel management or road and trail facilities.

Eighty-four (84) standards fall into one or more of the following categories that do not limit or compel management action and therefore I don't see why they are necessary. No concerns about removing them from the Forest Plan were identified during the public comment periods and there are no identified consequences in doing so.

1) The standard provides procedural direction to use a certain methodology or publication in environmental analysis, or coordinate management with other agencies (e.g., analysis for transportation needs will be integrated into resource area analysis). Removal of this type of direction does not mean that using appropriate methodology, publications or other agency coordination will be discontinued. It simply allows Forest Service specialists to select the most current and most appropriate scientific approach to environmental analysis.

2) The standard repeats direction that already exists in laws, regulations or higher-level policy direction (e.g., rights-of-way across National Forest will be granted in situations involving a statutory right of access, subject to compliance with applicable rules and regulations of the Secretary of Agriculture). There is no need for the Forest Plan to repeat direction that is already covered elsewhere.
3) The standard highlights a project proposal that has already been completed (e.g., the Hyalite Road will be reconstructed). This type of direction is no longer meaningful.
4) The standard provides notice to the public of possible management actions that could occur in the future (e.g., road and trail use may be restricted to meet management needs). This type of standard is simply a notice. It does not establish a goal or objective to be achieved nor does it set sideboards on future management activities.

Other standards are removed because they no longer are meaningful given the direction included in the Travel Plan. The Travel Plan identifies specifically how each road and trail on the Forest would be managed. Maintenance would be performed consistent with their specific designated uses. This is in contrast to the Forest Plan that included much broader direction. Many of the existing standards, while not necessarily in conflict with the Travel Plan, are not specific enough to provide meaningful direction. Examples of non-specific, broad-scale wording that is removed from the Forest Plan (USDA Forest Service 1987) include:

1) *"Existing roads and trails will be maintained consistent with management area goals."* (II-28)
2) *"The Forest Service investment in road and trail maintenance will be at a minimal level necessary to protect the investment and provide for soil and water protection and user safety."* (III-6, 7)
3) *"Coordinate with other agencies to improve roads under their jurisdiction to achieve the goals of this management area."* (III-14, 16)
4) *"Existing trails may be closed, reseeded or relocated."* (III-8)
5) *"Develop trails and end-of-road facilities to provide access and disperse use throughout the area."* (III-17, 18)
6) *"Conflicting recreational uses such as hiking, trail biking, horse riding, snowmobiling, and skiing may be separated or restricted in some areas."* (III-17, 18)

These types of standards are so permissive that they have not provided guidance for management that would not have occurred in their absence. Since the Forest Plan was signed they have been seldom, if ever, referenced. Therefore it can be inferred that removal of these standards would not affect future management decisions or goals, objectives, and outputs. No concerns were identified during the comment periods over removing this direction from the Forest Plan and there are no identified consequences in doing so (FEIS, page 3-215).

Concerns were raised during public scoping over the proposed removal of existing standards relating to open road density (one Forest-wide standard and one Management Area standard) and the Recreation Opportunity Spectrum (ROS) (23 Management Area standards).

The open road density standards require an "elk effective cover" analysis to be conducted in conjunction with timber sales and that effective cover ratings (HEI) of at least 70% be maintained during the general hunting season (Forest-wide Standard 6.a.4, Gallatin Forest Plan, page II-18). In Management Area (MA) 11 there is a standard to maintain an HEI of at least

60%. The 70% standard essentially equates to an open road density of 0.75 miles per square mile.

Removing these standards may seemingly appear to relax restrictions, thus allowing more of the Forest to become open to motorized use in the future, but this would not be the case. The amendments to the Forest Plan to remove this direction are connected actions to the Travel Plan decisions for management of specific roads and trails. In other words the Travel Plan has determined which routes will be open and which will have restrictions to motorized use. In addition, my Travel Plan decision adopts a series of goals, objectives, standards and guidelines that limit potential increases in motorized use. In particular, Forest-wide standards D-5 and D-6 specify no increase in summer public motorized routes and that temporary roads constructed for project activity be permanently closed following completion of the activity. Existing Forest Plan direction, through Amendment 19, also requires that any new motorized route constructed within the grizzly bear recovery zone be offset by closure of another motorized route of equal or greater length. Future adoption of conservation strategies for the grizzly bear and lynx could also restrict future motorized routes and use. Recently, the Forest Service nationally adopted regulations that would prohibit summer motorized use off routes unless otherwise designated through completion of travel plan analysis. These regulations mimic the Montana/Dakota OHV decision made by the Northern Regional Forester in January of 2001.

In addition, the purpose of this standard was obviously to maintain habitat for big game populations (primarily elk). As evidenced by the analysis in the FEIS for big game (pages 3-15 through 3-64) we are fully achieving these goals and would do so even if I had chosen a Travel Plan alternative that resulted in higher motorized route densities (see pages 67 through 69 of this ROD).

The Recreation Opportunity Spectrum (ROS) standards within various management areas (MA's) were included to target various recreation settings. In MA's that feature timber management or that are located in more developed areas (MA's 1, 2, 5, 8, 9, 10, 11, and13) the specified ROS classes are urban, rural, roaded-modified and roaded-natural appearing. Because these MA's are already developed or contain objectives for timber harvest, removing these ROS standards will not change the recreation setting. In other words, the specified ROS classes identified for these MA's are actually an acknowledgement of the setting that exists or will be created by development. The standard for the undeveloped Management Areas outside of designated Wilderness (including MA 3, 3a, 6, 12, 14, 15, 16, 17, 18, 19, 20, 21, and 24) states: *"Recreation Opportunity Spectrum classes are semi-primitive motorized and semi-primitive non-motorized."* Since these MA's do not include goals and objectives for timber harvest, the ROS direction is most applicable to management of trails (i.e. travel management). The Travel Plan establishes the areas that provide semi-primitive motorized recreation settings and semi-primitive non-motorized settings through my decisions to allow or restrict motorized use on trails. However, since the ROS standards did not distinguish between motorized and non-motorized use any configuration of designated uses would be consistent with this Forest Plan direction. In other words, the travel planning process itself is evidence that removing the Forest Plan ROS standards will not result in recreation settings that were not otherwise targeted by the Plan.

Management Prescription

I have determined that my decision to amend the Gallatin Forest Plan does not alter the desired future condition of the land nor does it affect the level of goods and services targeted by the Plan. The goods and services to be managed for under the Forest Plan include recreation, scenery, water, fish and wildlife habitat, threatened and endangered species habitat, timber, livestock forage, fire protection and cultural resources. The standards I have removed are applicable to travel management, access and the transportation network. As I discussed above, these standards are not effective or they are no longer needed in light of the decisions made through the Travel Plan. I could find no basis to conclude that this amendment would have any bearing on providing the goods and services of the Forest Plan.

In conclusion, even though this amendment removes 119 standards from the Forest Plan, applies forest-wide, and is effective immediately, it results in very little practical change. No goals and objectives are being removed and it has no effect on the types or level of goods and services to be provided under the Plan. It is on that basis that I've determined this to be a non-significant amendment.

VIII. Findings Required by Other Laws, Regulations, and Policies

36 CFR 219 National Forest System Land and Resource Management Planning (1982)

There is one finding requirement applicable to my decision for the Gallatin National Forest Travel Management Plan. The National Forest Management Act (NFMA) implementing regulations requires me to ensure that my decision is consistent with the Gallatin Forest Plan [(36 CFR 219.10(e); 1982)]. Based on the discussions of consistency with laws, regulations, policy and Forest Plan direction included at the end of each issue discussed in Chapter 3 of the FEIS, I have concluded that, with the exception of the included amendments [provided for under 36 CFR 219.10(f)] my decision is consistent with the Forest Plan.

USDA Forest Service, 2005. Travel Management; Designated Routes and Areas for Motorized Use (36 CFR 212, 251, 261).

The Forest Service regulations for travel management at 36 CFR 212.15 identifies criteria for designation of National Forest System roads, National Forest System trails, and areas on National Forest System lands for motorized use. They require me to consider the following:

1. *Effects on natural and cultural resources*. The associated FEIS for my travel plan decision addresses the effects of seven alternatives for a travel management plan on natural and cultural resources. Specifically refer to Chapters 2, 3 and 4.

2. *Public safety*. Public safety was addressed in the FEIS beginning on page 4-20. My conclusion on this issue is discussed on page 117 of this Record of Decision.

3. *Provision of recreational opportunities*. Providing recreation opportunities is one of the primary purposes for the travel management plan. Refer to the FEIS, Chapter 1, the Recreation discussion beginning on page 3-420, and the rationale for my decision beginning on page 21 of this Record of Decision.

4. *Access needs*. The identification of access needs is part of my travel plan decision. Refer to the "Detailed Description of the Decision", pages I-3 through I-8, and page 30 of this Record of Decision. In summary, Goal B, Objectives B-1 through B-3, and Guidelines B-4 through B-9 address my intent to provide and maintain reasonable, legal access to Gallatin National Forest lands to provide for human use and enjoyment and to protect and manage Forest resources and values.

5. *Conflicts among uses of National Forest System lands*. My first two decision criteria, discussed on page 13 and 14 of this Record of Decision, demonstrates my desire to provide well-distributed opportunities for both OHV's and exclusive, quiet non-motorized uses of the Gallatin National Forest trail system. The rationale for my decision, beginning on page 21 of this Record of Decision also demonstrates my efforts in providing a balance of recreation opportunities in a variety of settings. The Recreation section of the FEIS (beginning on page 3-420) also addresses user conflict. Lastly, beginning on page 4-9 of the FEIS, there is a discussion of potential impacts of the travel plan alternatives on extractive uses of the Forest (i.e. timber, grazing, and mineral exploration and development).

6. *The need for maintenance and administration of roads, trails, and areas that would arise if the uses under consideration are designated*. Transportation system implementability was discussed beginning on page 3-330 of the FEIS.

7. *The availability of resources for that maintenance and administration*. This consideration is also addressed under the issue of "Transportation System Implementability" beginning on page 3-330 of the FEIS.

8. *Damage to soil, watershed, vegetation, and other forest resources*. All resources identified as being potentially affected by travel management were addressed in Chapters 3 and 4 of the FEIS.

9. *Harassment of wildlife and significant disruption of wildlife habitats*. The effects of the travel plan alternatives on wildlife and wildlife habitat were addressed in a number of sections of Chapters 3 and 4 of the FEIS.

10. *Conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands*. Again, my first two decision criteria, discussed on page 13 and 14 of this Record of Decision, demonstrates my desire to provide well-distributed opportunities for both OHV's and exclusive, quiet non-motorized uses of the Gallatin National Forest trail system. The rationale for my decision, beginning on page 21 of this Record of Decision also demonstrates my efforts in preventing conflicts between motor vehicle use and recreational uses. The Recreation section of the FEIS (beginning on page 3-420) also addresses effects to recreational uses.

11. *Conflicts among different classes of motor vehicle uses of National Forest System lands or neighboring Federal lands*. My decision, as demonstrated by the associated maps, and the "Detailed Description of the Decision", discriminates between various modes of travel. For example, some roads are designated for 4x4 travel but not passenger cars, and some trails are designated for motorcycles but not ATVs. I and my staff also communicated with line officers on adjacent national forests to ensure that the types of uses designated near our borders were compatible.

12. *Compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors. Most of the Gallatin National Forest is removed from population centers*. There is adjacent Forest land around the towns of Cooke City and West Yellowstone, but these are tourist communities that largely cater to the types of motorized uses designated through the Travel Plan. Noise impacts are discussed beginning on page 3-413 of the FEIS and emissions are addressed in the Recreation section beginning on page 3-420, and in the Air Quality section beginning on page 4-2.

13. *Speed, volume, composition, and distribution of traffic on roads.* My decision results in a designed road system that safely balances anticipated recreational and administrative traffic. Factors used to craft my decision include road geometry, surface type, anticipated vehicle speed and volume, and traffic composition and distribution. For example, use of ATVs are discouraged on roads where traffic volumes are anticipated to be moderate or high, surfacing such as aggregate or asphalt encourage higher speeds, or the mix of traffic is more than just for recreation. Refer to the FEIS sections on Transportation System Implmentability and Public Safety (FEIS, pages 3-330 and 4-20).

14. *Compatibility of vehicle class with road geometry and road surfacing*. Refer to the discussion under #13 above.

IX. Implementation

Implementation of the Travel Management Plan is scheduled to begin in the spring of 2007 upon signing a special order pursuant to 36 CFR 261 and release of the motor vehicle use map and over-snow vehicle use map.

The designation of "go-down" access routes and enforcement of the prohibition of off-route travel except at these designated locations along the west shoreline of Hebgen Lake, along the Gallatin River, the Taylor Fork Road, the Beaver Creek Road, the Hyalite Road, the Main Boulder Road, the Mill Creek Road, the Beartooth Highway (#212) and in Bear Canyon, is scheduled to be completed by the summer of 2008 or within 2 years of the lifting of any stay of implementation of this Travel Plan.

X. Administrative Review or Appeal Opportunities

This decision is subject to appeal pursuant to 36 CFR 215.11. Only individuals or organizations that submitted substantive comments during the comment period may appeal under this rule. A written appeal must be submitted within 45 days following the publication date of the legal notice of this decision in the Bozeman Daily Chronicle, Bozeman, Montana. It is the responsibility of the appellant to ensure their appeal is received in a timely manner. The publication date of the legal notice of the decision in the newspaper of record is the *exclusive* means for calculating the time to file an appeal. Appellants should not rely on date or timeframe information provided by any other source.

Paper appeals must be submitted to: USDA Forest Service, Northern Region, ATTN: Appeal Deciding Officer, P.O. Box 7669, Missoula, MT 59807; or USDA Forest Service, Northern Region, ATTN: Appeal Deciding Officer, 200 East Broadway, Missoula, MT 59802. Office hours: 7:30 a.m. to 4:00 p.m. Fax (406) 329- 3411.

Electronic appeals must be submitted to: <appeals-northern-regional-office@fs.fed.us>. In electronic appeals, the subject line should contain the name of the project being appealed. An automated response will confirm your electronic appeal has been received. Electronic appeals must be submitted in MS Word, Word Perfect, or Rich Text Format (RTF).

It is the appellant's responsibility to provide sufficient project- or activity-specific evidence and rationale, focusing on the decision, to show why the decision should be reversed. The appeal must be filed with the Appeal Deciding Officer in writing. At a minimum, the appeal must meet the content requirements of 36 CFR 215.14, and include the following information: The appellant's name and address, with a telephone number, if available; A signature, or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal); When multiple names are listed on an appeal, identification of the lead appellant and verification of the identity of the lead appellant upon request; The name of the project or activity for which the decision was made, the name and title of the Responsible Official, and the date of the decision; The regulation under which the appeal is being filed, when there is an option to appeal under either 36 CFR 215 or 36 CFR 251, subpart C; Any specific change(s) in the decision that the appellant seeks and rationale for those changes; Any portion(s) of the decision with which the appellant disagrees, and explanation for the disagreement; Why the appellant believes the Responsible Official's decision failed to consider the substantive comments; and, How the appellant believes the decision specifically violates law, regulation, or policy.

If no appeal is received, implementation of this decision may occur on, but not before, five business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for 15 days following the date of appeal disposition.

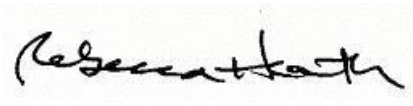
Offer to Meet. When an appeal is received under this rule, the Responsible Official (me), or my designee, must contact the appellant and offer to meet and discuss resolution of the issues raised in the appeal (36 CFR 215.17). If the appellant accepts the offer, the meeting must take place within 15 days after the closing date for filing an appeal (i.e. 45 to 60 days from the publication date of the legal notice of this decision in the Bozeman Daily Chronicle). These meetings, if they take place, are open to the public. For information on if, when and where such a meeting is scheduled, please visit the following web site:

"www.fs.fed.us/r1/planning/final_appeals/current_appeals_and_objections.pdf"

My decision to amend the Gallatin National Forest Land and Resource Management Plan (Forest Plan) is also appealable under 36 CFR 217. Written appeals under this rule must also be submitted within 45 days following the publication date of the legal notice of this decision in the Bozeman Daily Chronicle, Bozeman, Montana and should be sent to the same addresses indicated above for appeals under 36 CFR 215. Under the 36 CFR 217 rule there is no requirement that I make an offer to meet with the appellant. Appeals cannot be filed under both 36 CFR 215 and 36 CFR 217.

XI. Contact Person

For additional information concerning this decision or the Forest Service appeal process, contact Steve Christiansen, Environmental Coordinator, Gallatin National Forest Supervisors Office, P.O. Box 130, Bozeman, MT 59771, (406) 587-6701.



10/30/2006
Date

REBECCA HEATH
Forest Supervisor
Gallatin National Forest

XII. References

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Appendix D
Biological Assessment
Travel Plan

File Code: 2670
Date: April 11, 2006

Mark Wilson
Field Supervisor
US Fish and Wildlife Service
585 Shepard Way
Helena, MT 59601

Dear Mark,

The Gallatin National Forest has completed a Biological Assessment (BA) on the effects of our Forest Travel Plan Alternative 7M on threatened and endangered species. The alternative consulted upon is Alternative 7M (7-Modified), which may not be the final preferred alternative in all cases. No alternative will be selected as the final preferred that has effects on threatened or endangered species that are greater than those of Alternative 7M.

There are no federally listed endangered species on the Forest. Species listed as threatened that occur on the Gallatin National Forest include the grizzly bear (*Ursus arctos horribilis*), bald eagle (*Haliaeetus leucocephalus*), and Canada lynx (*Lynx Canadensis*). The gray wolf (*Canis lupus*) in this area is part of a nonessential, experimental population under the Endangered Species Act (ESA). There is currently no critical habitat designated for any of these species. The Travel Plan will not jeopardize the continued existence of the gray wolf. This species is addressed in detail in the FEIS, but is not addressed in the attached BA. At this time, grizzly bears are not found on the Forest north of I-90, and the Forest does not consult on the effects of grizzly bears north of I-90, outside of the area where bears occur. The determination reached for grizzly bear and bald eagle was "may affect, likely to adversely affect." The determination made for Canada lynx was "may affect, not likely to adversely affect."

For the bald eagle, a determination of "may affect, likely to adversely affect" is made if the Greater Yellowstone Bald Eagle Management Plan (GYBEMP) guidance cannot be met in all cases. The GYBEMP guidelines recommending that minimal activity levels not be exceeded within Zone I would not be met for either the Ridge or Narrows nest territories under Alternative 7M. In the summer, disturbance levels from motorized vehicle use on the road near the Moonlight nest would exceed GYBEMP guidelines for Zones I and II. However, the road was constructed and had been used many years before the territory was established, and this pair has been among the most productive on Hebgen Lake. Also, GYBEMP guidelines for the Halford Camp nest would be met for Zone I, but exceeded for Zones II and III.

For the grizzly bear, a determination of "may affect, likely to adversely affect" was made. The issue of motorized access routes into grizzly bear habitat is very important. The Grizzly Bear Conservation Strategy (ICST 2003) was used as the means by which to assess the effects of the Travel Plan alternatives. Human access into grizzly bear habitat, no matter the means, can affect grizzly bears. The overall and long-term effects of implementation of a Travel Plan, and an Alternative such as 7M that increases secure habitat and decreases motorized routes from the present, has less of an impact on grizzly bears than the baseline situation, and is likely to benefit

bears in the long-term. Alternative 7M increases secure habitat percentages, reduces motorized access routes in many locations on the Forest, does not increase motorized access route densities in any bear subunit, and makes improvements in the three subunits on the Gallatin National Forest "in need of improvement" (Gallatin #3, Madison #2, and Henry's Lake #2) according to the Conservation Strategy (2003). Alternative 7M also reduces the amount of acreage open to snowmobiling, thus protecting more potential denning habitat for grizzly bears. Although this Travel Plan will be an improvement for grizzly bears over the baseline condition for motorized access on the Gallatin National Forest, and large completely non-motorized areas exist, there are also some areas of high motorized route density, thus the determination of effect of this Travel management Alternative on the grizzly bear is "may affect, likely to adversely affect."

The determination for the lynx is "may affect, not likely to adversely affect." This is because all Lynx Analysis Units have met the intent of the LCAS (Lynx Conservation Assessment and Strategy 2000) under Alternative 7M. The primary potential impact to lynx from travel management is from winter use and snow compaction. In all cases, new route, compacted by any means, have been balanced by increasing acres of snowmobile closures.

Because the BA found a 'may affect-likely to adversely affect,' for the bald eagle and grizzly bear, we are requesting formal consultation with your agency.

Please feel free to contact Marion Cherry, Gallatin Forest Biologist (406-587-6739 or mbcherry@fs.fed.us), who was the primary author of this document and its grizzly bear analysis, if you need further information during the consultation process. District Biologists Rachel Feigley and Andy Pils were responsible for the Canada lynx analysis the bald eagle analysis, respectively.

Sincerely,

/S/ REBECCA HEATH
REBECCA HEATH
Forest Supervisor

Biological Assessment
Travel Plan
Gallatin National Forest

April 2006

INTRODUCTION

Consultation pursuant to Section 7 of the Endangered Species Act (ESA) between the US Fish and Wildlife Service (USFWS) and another federal agency normally occurs when a federal action is proposed. The proposal's impacts to threatened and endangered species are analyzed in what is called a Biological Assessment. In some cases, consultation may be done on an existing activity in accordance with the regulations at 50 CFR s 402.16. The action agency makes determination of effect on individuals of the species. If the action agency determines there is "no effect" on a listed species, no further consultation occurs. If the action agency determines that the project "may affect" a listed species, then the agency makes a further finding depending on the degree of effect. If the determination is "may affect, likely to adversely affect" the agencies enter formal consultation and the USFWS writes a Biological Opinion. The USFWS makes a determination of jeopardy or non-jeopardy in the Biological Opinion based on the impacts to the species or population, rather than to an individual.

PROJECT DESCRIPTION

The U.S. Forest Service, Gallatin National Forest, is proposing an amendment to the Forest Land and Resource Management Plan (Forest Plan) to adopt a management plan for public access and travel within the Gallatin National Forest. The proposed Travel Management Plan would identify and establish opportunities for public recreation use and access using the Forest's road and trail system. For each road and trail, it would specify the types of uses for which it would be managed. Specified uses include passenger car pleasure driving, high clearance and off-road vehicle use, motorcycle use, biking, horseback riding, snowmobiling, hiking, skiing and snowshoeing. The Plan will also address off-route travel including area that would be available to snowmobiles. In addition, the Travel Plan would establish goals, objectives, standards and guidelines that provide direction for future management activities related to public access and travel. No vegetative treatment is proposed.

ALTERNATIVE 7-MODIFIED

Alternative 7-Modified (7-M) was the Forest Service "preferred alternative" as of January 2006. It was modified from Alternative 7 through consideration of; the analysis disclosed in the Draft EIS, the recommendations of district rangers and Forest Service specialists, and the comments received on the Draft EIS. The following is a comparison of Alternative 7-M to current travel management.

The total amount of public open system road would remain generally unchanged (approx. 740 miles), however there would be a shift of about 10% of this system from road currently only suitable for high clearance vehicles to road that would accommodate passenger cars. Currently about 325 miles of road are considered suitable for passenger cars, and under Alternative 7-M it would increase to 400 miles. This alternative also includes objectives to close and restore non-system and user-built roads.

ATV opportunities provided on trails would be reduced from 281 miles to 145 miles (about 50%) and motorcycle opportunities on trails would be reduced from 457 miles to 279 miles (about 40%). In general, the reduction in trail opportunity would be shifted to and managed for on administrative and backcountry roads. Currently, many trails (outside of Wilderness) are shared between motorized and non-motorized users.

The amount of area open to snowmobile use (outside of Wilderness) would decrease from about 84% of the Forest to about 53%. In contrast, the miles of marked and groomed trail would rise about 20% from the current situation.

Stock use would generally be allowed on and off-trail although some seasonal and yearlong restrictions would be applied to specific trails.

There would be some restrictions on mountain bikes on trails outside of Wilderness, primarily in the Hyalite/Porcupine-Buffalo Horn WSA and on short routes leading into Wilderness. The trails in Hyalite Creek and the East Fork of Hyalite Creek would remain open to bicycles. Hiking and cross-country skiing would not be restricted.

Alternative 7-M includes Forest-wide and area-specific goals, objectives, standards and guidelines (programmatic direction) and would amend the Forest Plan to replace current direction relative to travel management. In addition to the proposed programmatic direction, travel management under Alternative 7-M would follow current direction applicable to the management of grizzly bear and lynx. At the time of this EIS publication, the applicable direction is based on Memorandums of Understanding (MOU's) and Conservation Agreements with the United States Fish and Wildlife Service (USFWS). See MOU, Conservation Strategy (ICST 2003:12-13), the USFWS Biological Opinion on Access (1995), and Canada Lynx Conservation Agreement (2005).

Grizzly Bear

Under the Grizzly Bear Conservation Strategy MOU (2003), future proposals for roads, trails and other actions relative to travel within the Grizzly Bear Recovery Zone would be governed by the following (further details are available in the Grizzly Bear Issue):

* Within the Grizzly Bear Recovery Zone, proposals to construct or open new motorized routes must be offset by closing other motorized routes such that there will be; no increase in Open Motorized Access Route Density (OMARD) and Total Motorized Access Route Density (TMARD); and no decrease in secure habitat within Grizzly Bear subunits with the following exceptions.

  - A project may decrease secure habitat by 1% of the largest subunit in the Bear Management Unit (BMU). Only one project that affects secure habitat can occur in a subunit at one time, and secure habitat must be restored within one year of the completion of the project.

  - A project may permanently change secure habitat quality provided a replacement of secure habitat of equivalent habitat quality is made in the same subunit. This replacement

habitat must be maintained for a minimum of 10 years and must be in place before project initiation or provided concurrently.

* Maintain the percent of secure habitat in grizzly bear subunits at or above 1998 levels. (Secure habitat is defined as more than 500 meters from an open or gated motorized access route or re-occurring helicopter flight line (3/1-11/30). It must be greater than or equal to 10 acres in size. Replacement secure habitat created to mitigate for loss of existing secure habitat must be of equal or greater habitat value and remain in place for a minimum of 10 years. Large lakes are not included in the calculations.)

* Secure habitat in the subunits "in need of improvement" will be improved above the 1998 baseline (on the Gallatin National Forest these subunits are Gallatin #3, Madison #2, and Henrys Lake #2).

Through an analysis separate from this Travel Plan EIS, the Forest Service has proposed to amend Greater Yellowstone Area Forest Plans (including the Gallatin Forest Plan) to adopt the Grizzly Bear Conservation Strategy (ICST 2003). If and when such decision is made it will supercede the travel management direction above.

Lynx

Under the Lynx Conservation Agreement between the USFS and USFWS (2005), future proposals for roads, trails and other actions relative to travel would be governed by the following:

* Manage over-the-snow routes in accordance with the Lynx Conservation Strategy until superceded by direction forthcoming in the Northern Rockies Lynx Amendment (NRLA 2006) or other direction for lynx habitat management. Baseline snow compaction will be based on the miles of designated over-the-snow routes authorized, promoted, or encouraged in 1998, 1999, or 2000 [as defined in the latest NRLA draft].

Through an analysis separate from this Travel Plan EIS, the Forest Service has proposed to amend Northern Region Forest Plans (including the Gallatin Forest Plan) to establish new direction for the management of lynx (Northern Rockies Lynx Amendment (NRLA) DEIS 2004, NRLA FEIS expected 2006). If and when such decision is made it will supercede the travel management direction above.

Appendix C of this Final EIS provides a general comparison of how Alternative 7-M of this FEIS differs from Alternative 7 of the Draft EIS.

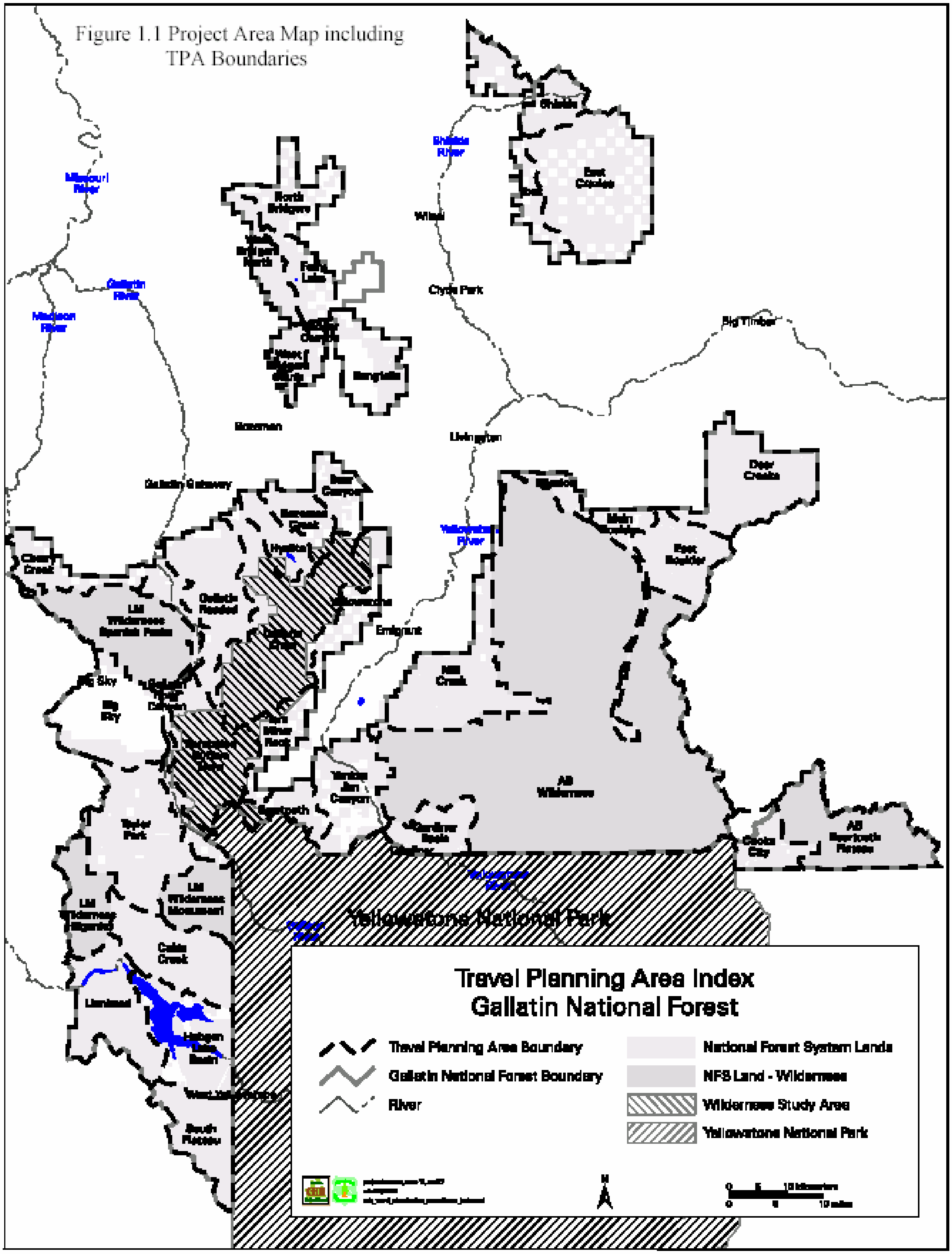
Table I – 1. Summary of Summer Opportunities by Miles – (all mileages are approximate).

Recreation Opportunity	Pleasure Driving	Backcountry Roads (4x4)	ATV	Motorcycle	Mountain Bike (Use Emphasized)	Mountain Bike (Use Allowed))	Pack and Saddle Stock (Use Emphasized)	Pack and Saddle Stock (Use Allowed)	Hiking (Use Emphasized)	Hiking (Use Allowed)
Miles of Road	400	347	389	17	545	1,398	-	-	-	-
Miles of Trail	-	-	145	279	769	400	1767	331**	2,008	149*
Total Miles	400	347	534	296	1,314	1,798	1767	331**	2,008	149*

*Use for this activity is not prohibited on any trails; use is either emphasized or allowed.
** Use for this activity is prohibited on some trails.

Table I – 2. Summary of Winter Opportunities in Miles – (all mileages are approximate).

Recreation Opportunity	Pleasure Driving (Plowed Road)	Snowmobiling	Cross-country Skiing
Miles of Plowed Road	168	-	-
Miles of Groomed Trail	-	346	52
Miles of Marked Trail	-	134	174
Total Miles	167	480	226



DESCRIPTION OF THE ANALYSIS AREA

The analysis area is the entire Gallatin National Forest which consists of approximately 1.8 million acres of National Forest System land and I located along the northern and western boundaries of Yellowstone National Park in southwest Montana. The Forest spans portions of Madison, Gallatin, Park, Meagher, Sweetgrass, and Carbon Counties. Offices are located in the cities of Bozeman, Livingston, Big Timber, Gardiner and West Yellowstone. The Gallatin National Forest includes the Bridger, Bangtail, Crazy, Absaroka, Beartooth, Gallatin, and Madison Mountain Ranges. Major rivers include the Gallatin, Madison, and Yellowstone Rivers.

Included in the Gallatin National Forest are the Lee Metcalf Wilderness Area and the Absaroka-Beartooth Wilderness Area which cover approximately 716,000 acres. Also included are the Cabin Creek Recreation and Wildlife Management Area (approximately 37,000 acres) and the Hyalite/Porcupine-Buffalo Horn Wilderness Study Area (approximately 155,000 acres). In addition to these areas, approximately 704,000 acres of National Forest have been inventoried as roadless. The remaining Forest lands have been mostly roaded and developed for mineral entry and timber production.

FEDERALLY LISTED SPECIES

The listed species known to occur on the Gallatin National Forest include the threatened bald eagle (*Haliaeetus leucocephalus*), grizzly bear (*Ursus arctos horribilis*), and Canada lynx (*Lynx Canadensis*). At this time, grizzly bears are not found on the Forest north of I-90, and we do not consult on the effects of grizzly bears north of I-90, outside of the area where bears occur. The gray wolf (*Canis lupus*) found in this part of Montana is part of the Experimental, Nonessential population and does not need to be addressed in the Biological Assessment, but it is addressed in the NEPA document. There is currently no critical habitat designated for any of these species.

ACTION CONSULTED UPON

The federal action being consulted upon is the Travel Plan for the Gallatin National Forest. The alternative consulted upon is Alternative 7M (7-Modified), which may not be the final preferred alternative in all cases. No alternative will be selected as the final preferred that has effects on threatened or endangered species that are greater than that of Alternative 7M.

HISTORY OF RELEVANT CONSULTATION

February 14, 1986, Gallatin National Forest Plan Biological Opinion, Appendix H of the Forest Plan (all listed species at this time)

January 31, 1995, FWS Addendum to Forest Plan BO (grizzly bear)

February 20, 1996, Forest Plan Amendment 19, Access in the Grizzly Bear Recovery Zone (grizzly bear)

November 30, 1998, Biological Assessment for the Horse Butte Bison Capture Facility - Site A2, Annual Operation from November 1 through April 30, Threatened and Endangered Wildlife, JT Stangl (bald eagle)

July 18, 2000, Consultation on Ongoing Activities in Lynx Habitat (Canada lynx)

2000. BA on effects of Montana Ski Resorts on Canada Lynx.

February 5, 2003. Biological Assessment for Bridger Bowl Ski Area Master Development Plan, Gallatin National Forest, Bozeman Ranger District, Bozeman, MT

January 29, 2002. Final Biological Assessment: The Effects of Snowmobile Use on Grizzly Bears Gallatin, Beaverhead-Deerlodge, Custer, Bridger-Teton and Shoshone National Forests, Greater Yellowstone Area, and May 30, 2002 Biological Opinion (grizzly bear)

March 22, 2004. Biological Assessment for Grizzly Bears that Occur outside of the Yellowstone Recovery Zone on the Gallatin National Forest (grizzly bear)

February 1, 2005, Programmatic Biological Assessment for Activities that are not Likely to Adversely Affect Threatened and Endangered Terrestrial Species on the Beaverhead-Deerlodge, Bitterroot, Custer, Flathead, Gallatin, Helena, Idaho Panhandle, Kootenai, Lewis and Clark and Lolo National Forests, updated in 2006 (all species listed at this time)

History of Consultation on this Project

June 6, 2004 Meeting among M.Cherry and D.Tyers (USFS) and A. Vandehey and K.Dixon (FWS)
July 8, 2004, Meeting of Marion Cherry (USFS), Anne Vandehey and Katrina Dixon (USFWS)
March 8, 2005. Agency Expert Grizzly Bear Meeting, Chuck Schwartz and Mark Haroldson, IGBST, Anne Vandehey and Katrina Dixon, USFWS, Kevin Frey, MFWP, Kim Barber, Shoshone NF, Jim Claar, USFS RO R1, Marion Cherry, Bev Dixon, Andy Pils, Dan Tyers, Rachel Feigley, Steve Schacht, GNF
November 16, 2005 discussion between M. Cherry and A. Vandehey
March 22, 2006, Phone Conservation between M.Cherry and K. Dixon Biological Assessment for the Travel Plan.

RELEVANT MANAGEMENT DIRECTION

All direction related to access or travel management in the 1987 Forest Plan will be deleted, and new direction in this Travel Plan will take its place. Direction related to threatened or endangered species that will stay in place includes:
Forest Plan Goal 8. Provide sufficient habitat for recovered populations of threatened and endangered species (i.e., grizzly bear, bald eagle, and peregrine falcon). (FP, p. II-1)
Goal 9. Strive to prevent any human-caused grizzly bear losses. (*Ibid*.)
Forest-Wide Standards

6.b.1. A Biological Assessment will be completed prior to implementation of projects that have the potential to affect listed species. Formal consultation with the USFWS will occur if a "may affect, likely to adversely affect" is determined (p. II-19).
6.b.2. The Grizzly bear standards and guidelines in Appendix G will be followed.
6.b.3. Management direction for the bald eagle and its habitat is found in *A Bald Eagle Management Plan for the Greater Yellowstone Ecosystem*.
Management Areas 13, 14, and 15 have some specific management goals for wildlife. They include:

1. Manage vegetation to provide habitat necessary to recover the grizzly bear.
2. Meet grizzly bear mortality reduction goals as established by the IGBC. (pp. III-40, 44, 47)

And allow some other uses consistent with goal #1.
Direction not related to access or travel management that is within Appendices G and H will continue to be followed until or unless the Forest Plans are amended with the Conservation Strategy for Grizzly Bears in the Yellowstone Area.

The Canada lynx was listed as threatened in March 2000, after the Forest Plan direction was created. Guidance for lynx is provided in the August 2000 Canada Lynx Conservation Assessment and Strategy (Reudiger et al.).

In addition, much has been learned about grizzly bears since the Forest Plan was written. That and the increase in the bear population in the Yellowstone Area led to the creation of a document called the *Final Conservation strategy for the grizzly bear in the Yellowstone Ecosystem* that was developed by the Interagency Conservation Strategy Team and finalized in March 2003. The three Regional Foresters managing Forests in the Greater Yellowstone Area, the three Directors of State Fish and Game agencies and Bureau of Land Management signed a Memorandum of Understanding (ICST 2003:12-13) to seek implementation of the Grizzly Bear Conservation Strategy. The Conservation Strategy is currently undergoing a NEPA process that will amend it to the Forest Plans of Forests in the Yellowstone area and will replace most, if not all, of their current Forest Plan direction for grizzly bears after the grizzly bear is delisted.

Because it is likely that the Conservation Strategy (ICST 2003) will supercede the Gallatin National Forest Plan direction and for grizzly bear access via amendment to the Forest Plan, the Conservation Strategy (*Ibid.*) direction was used in this issue to assess the effects of travel management on grizzly bears. The 1995 Biological Opinion and Amendment #19 to the Forest Plan stated that the Gallatin National Forest was to adopt Yellowstone access standards when they became available. The Conservation Strategy makes these standards available.

The Conservation Strategy direction will be followed. This direction applies only to the Recovery Zone (Primary Conservation Area). There are three subunits designated as needing improvement: Henrys Lake #2, Gallatin #3 and Madison #2. These lie at least partially on the Gallatin National Forest

The following direction is excerpted from Chapter 2 for grizzly bear under Alternative 7M.

Under the Grizzly Bear Conservation Strategy MOU (2003), future proposals for roads, trails and other actions relative to travel within the Grizzly Bear Recovery Zone would be governed by the following (further details are available in the Grizzly Bear Issue):

* Within the Grizzly Bear Recovery Zone, proposals to construct or open new motorized routes must be offset by closing other motorized routes such that there will be; no increase in Open Motorized Access Route Density (OMARD) and Total Motorized Access Route Density (TMARD); and no decrease in secure habitat within Grizzly Bear subunits with the following exceptions.

- A project may decrease secure habitat by 1% of the largest subunit in the Bear Management Unit (BMU). Only one project that affects secure habitat can occur in a subunit at one time, and secure habitat must be restored within one year of the completion of the project.

- A project may permanently change secure habitat quality provided a replacement of secure habitat of equivalent habitat quality is made in the same subunit. This replacement habitat must be maintained for a minimum of 10 years and must be in place before project initiation or provided concurrently.

* Maintain the percent of secure habitat in grizzly bear subunits at or above 1998 levels. (Secure habitat is defined as more than 500 meters from an open or gated motorized access route or re-occurring helicopter flight line (3/1-11/30). It must be greater than or equal to 10 acres in size. Replacement secure habitat created to mitigate for loss of existing secure habitat must be of equal or greater habitat value and remain in place for a minimum of 10 years. Large lakes are not included in the calculations.)

* Secure habitat in the subunits "in need of improvement" will be improved above the 1998 baseline (on the Gallatin National Forest these subunits are Gallatin #3, Madison #2, and Henrys Lake #2).

Through an analysis separate from this Travel Plan EIS, the Forest Service has proposed to amend Greater Yellowstone Area Forest Plans (including the Gallatin Forest Plan) to adopt the Grizzly Bear Conservation Strategy (ICST 2003). If and when such decision is made it will supercede the travel management direction above.

The following are new Travel Plan Goals, Directions, Standards or Guidelines that are relevant to threatened and endangered species and other wildlife. These are Forest-wide for the action alternatives.

STANDARD A-8. Off-Route Travel. "Wheeled motorized vehicle travel shall be prohibited off of designated routes with the following exceptions:

- Wheeled motorized cross-country travel may be allowed in designated firewood gathering areas.
- Wheeled motorized cross-country travel may be allowed for any military, fire, search and rescue or law enforcement vehicle for emergency operations subject to authorization from a line officer.

- Wheeled motorized vehicle travel will be allowed to access a campsite within 300'of a designated road or trail unless specifically restricted or unless such use would result in damage or unreasonable disturbance to land, wildlife or vegetative resources.
- Wheeled motorized cross-country travel for lessees and permittees may be allowed but limited to the administration of a federal lease or permit. Authorization by a line officer is required.
- Wheeled motorized cross-country travel is allowed for Forest Service employees and contractors conducting official authorized business.
- Motorized wheeled cross-country travel may be allowed for other government entities and contractors on official administrative business subject to authorization from a line officer."

GOAL D. Resources (General). "Manage a system of roads and trails and associated use that is consistent with Forest Plan goals for water quality; wildlife habitat; fish habitat; threatened and endangered species recovery; and historical resources (Note: Until Forest Plan revision refer to Forest Plan (9/87), pages II-1, II-2, and Amendment 19)."

OBJ. D-1. Road Rehabilitation. "Close and rehabilitate existing roads that are in excess to administrative, recreation and access needs."

OBJ. D-2. Trail Rehabilitation. "Close and rehabilitate existing non-system trail not otherwise designated for public travel."

STANDARD D-5. Project Roads. "Existing roads that were constructed for project use and not designated for motorized use via the Forest Travel Plan are to remain closed to public motorized use."

STANDARD D-6. Wildlife. "There shall be no increase in public motorized routes within any travel planning area beyond those identified through this Travel Management Plan without amendment."

GOAL E. Water Quality, Riparian, Fisheries and Aquatic Life. "Manage a road and trail system that fully supports the protection of water quality, and habitat for fish, riparian dependent species and other aquatic organisms." There are many objectives, standards and guidelines under this goal that are beneficial to all wildlife.

GOAL F. Wildlife Corridors. "Provide for wildlife movement and genetic interaction (particularly for wide-ranging species) between and within mountain ranges throughout the Gallatin National Forest and connecting wild lands."

OBJ. F-1. Wildlife Corridors. "Provide habitat connectivity consistent with wildlife movement patterns between mountain ranges such as that at Bozeman Pass (linking the Gallatin Range to the Bridger/Bangtails); the North Bridgers (linking the Bridger Range to the Big Belt Mountains; the Lionhead area (linking the Henry's Lake Mountains to the Gravelly Mountains); the Shields (Crazy Mountains to the Castle and Little Belt Mountains) and other such areas.

GOAL G. Threatened, Endangered and Species of Special Management Designation. "Manage human use of the Forest road and trail system that allows for the recovery of threatened and endangered species and maintains species of special management designation and their habitats."

GUIDELINE G.10 T&E Species. Consider applying temporary localized restrictions on activities on the Forest where needed to prevent conflicts with T&E species.

GOAL H. Wildlife. "Protect key habitats such as willow, riparian, wetlands, whitebark pine, old growth, snags and down woody debris, ridgelines, saddles, and forest/ non-forest ecotones from damage or depletion associated with forest travel management."

OBJECTIVE H-1. Wildlife. Relocate, reconstruct or take other appropriate action (such as informational signing) on system roads and trails that are found to have adverse impacts on key habitats.

GUIDELINE H-2. Wildlife. Roads or trails that are constructed for motor vehicle use should be located such that construction and use do not result in adverse impacts to key habitats, or should be designed so as to mitigate for adverse effects in areas where impacts to key habitats cannot be avoided via the route location. *Note that construction of roads and trails for public motorized use on routes not designated for that use in this Travel Plan is not permissible. Modification of the Travel Plan following analysis in compliance with NEPA and other applicable laws is required to designate new routes for public motorized travel.*

GUIDELINE H-3. Wildlife. Adverse impacts to key habitats will be a priority factor in the scheduling of closure for project roads and undesignated routes.

GOAL I. Wildlife. "Provide high quality security habitat in areas important to wildlife reproduction (e.g. calving, fawning, denning and nesting habitat) and wintering areas, including ungulate winter range

OBJ. I-1. Wildlife. "Minimize stress factors from human recreation use to species of management concern during calving, fawning, denning and nesting seasons in habitats used for reproduction."

GUIDELINE I-2. Wildlife. "In the management of winter travel consider Montana FWP goals for achieving optimal ungulate survival rates on big game winter range."

BALD EAGLE

STATUS, HABITAT USE, AND BEHAVIOR

The information in this section of the BA is taken from the 2005 programmatic Biological Assessment for activities that are not likely to adversely affect listed terrestrial species in Montana.

Distribution

The bald eagle (*Haliaeetus leucocephalus*) historically ranged throughout North America except extreme northern Alaska and Canada, and central and southern Mexico. Prior to 1940, the eagle population began to decrease. This decrease was directly related to the decline in number of prey species, as well as direct killing and loss of habitat. In 1940, the Bald Eagle Protection Act was passed. The law made it illegal to kill, harm, harass, or possess bald eagles, alive or dead, including eggs, feathers, and nests. As a result of passing this law, the bald eagle began to partially recover (USDI 1996a). The bald eagle was listed as endangered in Montana in 1978. It was reclassified as threatened in 1995.

Subsequent to World War II, the use of dichloro-diphenyl-trichloroethane (DDT) to control mosquitoes became very widespread along coastal and wetland areas. Organochlorides had a drastic affect on bald eagles; as a result of foraging on contaminated food, populations plummeted. It was determined in the late 1960s and early 1970s that DDE, the principle breakdown product of

DDT, built up in the fat tissues of adult females. This prevented calcium release necessary to produce strong eggshells, and caused reproductive failure from eggshell thinning (USDI 1996a).

The Secretary of the Interior, on March 11, 1967, listed bald eagle populations south of the 40th parallel endangered under the Endangered Species Preservation Act of 1966. However, the decline continued until DDT was banned from use in the United States on December 31, 1972. Bald eagles were listed endangered under the ESA in 1973. From 1973 through 1995 bald eagles were listed as endangered, but due to cooperative efforts by government agencies and public and private non-government organizations, populations have increased and in 1995 it was down-listed to threatened status.

The bald eagle is presently listed threatened in Idaho, Montana, and North Dakota, but is currently proposed for de-listing (USDI 1996a)

Life History

Bald eagles are in the family *Acciptiridae*. In the adult plumage, the head, neck, tail, and upper and lower tail coverts are white. The remainder of the plumage is dark brown. The bill, cere, iris, and feet are yellow, and the tarsus is featherless. Juveniles and sub-adult plumages are mainly brown, including the head and tail. White or buff mottling is extensive in some individuals, particularly in the under-wing coverts, tail, and abdomen. The bill and cere of the immature are dark brown or gray, the iris is brown, and the feet are yellow. Adults reach sexual maturity at four to six years of age (full adult plumage appears with sexual maturity). Bald eagles are monogamous and believed to mate for life. If a mate is lost a new pair bond is formed, often in the same breeding season (USDI 1996a).

Bald eagles nest almost exclusively in live trees usually within one mile in line of sight of a large river or lake. In Montana, courtship begins in January; egg laying is initiated in early February or as late as mid-April. Alternate nest sites are typically present in the breeding area and most frequent clutch size is two (range of one to three eggs). Incubation spans 31 to 35 days and may be influenced by ambient temperatures. Young hatch from mid-March to mid-May and nestling period lasts from 11 to 14 weeks; once fledged, young are dependent on adults for six to ten weeks (Montana Bald Eagle Working Group – MBEMP - 1994).

Although some nesting pairs remain in Idaho, Montana, and North Dakota year-round, the winter population is generally composed of migrants from Canada (Magaddino 1989). Winter habitat is generally associated with areas of open water where fish and waterfowl congregate (Stalmaster 1987). Perching and roosting trees are typically dominant mature conifers or cottonwoods providing a good view of the area (Magaddino 1989). Bald eagles use perches during the day while hunting, feeding, or resting; roosts are used at night or for protection during bad weather and may be occupied by one to several hundred bad eagles; roost sites, like nest sites, are used year after year (ibid).

The bald eagle is an opportunistic predator and feeds primarily on fish, but also consumes a variety of birds and mammals (both dead and alive) when fish are scarce or these other species are readily available. Fish may comprise up to 90 percent of the diet (70 percent to 90 percent) depending on

geographic location, season, and relative abundance. Carp, suckers, salmon, and trout are important fish species preyed on by bald eagles. Bird prey species are more important in bald eagle diets during winter when fish are less available due to ice formation on streams, lakes, and reservoirs. Waterfowl are the most common bird species preyed on by eagles. Mammals are taken at a lesser degree than fish and birds. Mammals are taken as live prey or carrion in all seasons, but become more important during winter (USDI 1996a).

Threats to Bald Eagles

The environmental baseline for bald eagles is described in terms of those parameters that threaten bald eagles because of human activity and development that disturbs and/or displaces bald eagles or because of vegetation management that may reduce available habitat. In addition, bald eagle nest baseline data will be determined during the annual bald eagle nest survey.

Human Activity and Development

Bald eagles are sensitive to a variety of human activities and development and may either temporarily or permanently abandon an area (Mahaffy and Frenzel 1987, Buehler et al. 1991, McGarigal et al. 1991). Disturbances at nest sites can lead to lowered productivity and site desertion (Anthony and Isaacs 1989); disturbances at foraging areas can interfere with an eagle's ability to meet its energetic demands (McGarigal et al. 1991, Stalmaster and Kaiser 1998).
However, bald eagles vary in their response to various human activities. The response is often site, pair, and activity specific and is a function of type, intensity, and proximity of the disturbance (MBEMP 1994).

Vegetation Management

Bald eagles nest in a variety of habitats. They usually build nests on prominent landscapes in large trees in close proximity to aquatic foraging areas (Wright and Escano 1986, Anthony and Isaacs 1989). Timber harvest activities can modify bald eagle nesting habitat. The large, mature trees preferred by bald eagles are also preferred as timber products. Anthony and Isaacs (1989) found that bald eagles selected forest stands where logging activities were limited.

Winter roosts are often located in forest stands that have some old growth characteristics. Vegetation management may also affect winter roosts; however availability of nearby roosting sites reduces impacts (U.S. Army Corp of Engineers 1979).

EFFECTS ON BALD EAGLES

Analysis area

Although the Forest Travel Plan affects the entire Forest, the area used to analyze the impacts of travel planning on bald eagles was the Hebgen Basin and Lionhead Travel Planning Areas (TPAs), because these are the only known areas used by nesting bald eagles on the Forest, and effects of human activities on eagle productivity are not expected outside this area. Nest sites were plotted and buffered by 400 meters and 800 meters. They were then displayed with Travel Plan alternatives

to allow an assessment of travel within Zones I and II of each nest. Both winter and summer travel routes were included, along with open motorized and non-motorized travel routes and area closures.

Winter Travel

Horse Butte Territory
Under this alternative a snowmobile closure would be implemented along the Madison Arm of Hebgen Lake and the Madison River. Open water can be found on the Madison Arm of Hebgen Lake during the early nesting season, and the Horse Butte eagles have been documented to use this area heavily for perching and foraging at this time of the year (Stangl 2000:IV-13). This would provide greater area for the Horse Butte pair to forage in without disturbance from snowmobiles. This will help meet the intent of the GYBEMP guidelines for management of Zones II and III, which recommend that light and moderate activity levels not be exceeded. It would also largely meet the recommendation made by Stangl (2000, page VI-8) to restrict snowmobile use adjacent to the Madison Arm.

Ridge and Narrows Territories

Impacts to nesting bald eagles in these territories from snowmobile use would be similar to those described for the Horse Butte territory. An important exception is that these nests would have no area closure for Zone I, as the Horse Butte territory would. Snowmobile use off the groomed trail regularly occurs through much of Zone I around both territories through late March, and this would continue under these alternatives. There would be high potential for disturbance of nesting birds during the part of the nesting season when they are most sensitive to disturbance. The Narrows birds appear to be highly tolerant of snowmobile use and the effects of snowmobile use under these alternatives would have minimal effects on them. The Ridge birds may be more sensitive to disturbance from snowmobile use, and they could continue to exhibit lower than average productivity under these alternatives. GYBEMP guidelines recommending that minimal activity levels not be exceeded within Zone I would not be met for either territory under this alternative. Recommendations for restricting snowmobile use within these territories from Stangl (2000:VI-8) would also not be met.

Moonlight Territory

Winter travel within the management zones of this territory would be managed the same under all alternatives. Snowmobiles would continue to use Forest Road #176 within Zones I, II and III. This road does not lead to any destination snowmobiling areas, and therefore snowmobile traffic is lighter than in many other places around Hebgen Lake that are open to snowmobiling. Also, snowmobile use off the road is discouraged by forest cover in most places. It is likely that this pair has become habituated to snowmobile traffic, and that this would continue to be the case under these alternatives. Effects of snowmobile use would be minor.

Canyon Territory

Zones I, II and III would be open to snowmobile use under these alternatives. However, Zone I is inaccessible by snowmobiles due to the steep terrain. The terrain in portions of Zones II and III is

technically accessible, but the area is not a snowmobile destination and receives only very light use, which is expected to continue. Additionally, any disturbance from winter travel would occur across Earthquake Lake from the nest where impacts to nesting and foraging eagles would be very limited. GYBEMP guidelines would be met in all management zones under these alternatives, given the infrequent snowmobile use the area receives.

Halford Camp

Under this alternative, there would be a designated snowmobile route within Zone II of this territory. However, off-trail snowmobile use would be prohibited in the surrounding area. Snowmobile use would continue to be so low that the effects to bald eagles would be discountable.

Summer Travel

Horse Butte Territory

Summer travel in the management zones for this territory would be the same under all alternatives, and would be the same as the existing condition. Forest Roads #610, #6697 and the Horse Butte Lookout Road would continue to facilitate heavy recreational use (fishing, boating, picnicking, sight-seeing, and numerous other recreational activities) within all management zones of this territory, including important foraging and perching areas. Disturbance to nesting eagles in Zone I would be minimized by continued implementation of the existing 75-acre closure. GYBEMP guidelines for recommended human activity levels within Zones I, II and III would be exceeded. However, eagles would have more options for foraging places by the time the road system opened for motor vehicle use in early May, compared to winter, because ice cover would be rapidly receding on Hebgen Lake.

Ridge Territory

Summer travel in the management zones for this territory would be the same under all alternatives, and would be the same as the existing condition. Forest Road #610 would continue to facilitate heavy summer recreational use (fishing, boating, picnicking, sight-seeing, and numerous other recreational activities) within Zones II and III of this territory, including important foraging areas. Zone I would have no travel routes other than a two-track project road that would be closed to public use. Some illegal use of this road would be expected because of the open, gentle terrain, but it is uncertain how frequently violations would occur and therefore how much disturbance to the nesting eagles there would be.

Narrows Territory

Forest Road 32530 would be managed for project use under this alternative. The least amount of disturbance to the Narrows bald eagles from summer travel would occur under this alternative.

Moonlight Territory

Management of summer travel and resulting effects to the Moonlight territory eagles would be the same under all alternatives. Forest Road #167 is within Zones I, II and III. This is a main access road for the west side of Hebgen Lake, and it receives substantial use from recreationists and summer homeowners along the lake. Disturbance levels from motorized vehicle use on the road would exceed GYBEMP guidelines for Zones I and II. However, the road was constructed and had been used many years before the territory was established, and this pair has been among the most productive on Hebgen Lake. It is likely that this pair has become habituated to traffic along the road, and that this would continue to be the case. Recreational use along the lake facilitated by summer travel would be more likely to disturb nesting birds, but under all alternatives, there would be no motorized access routes leading directly to the lake in the vicinity of the Moonlight nest. Effects to nesting bald eagles from summer travel in this territory would be continue to be minor.

Canyon Territory

Summer travel in Zones I, II and III are the same under all alternatives. The only motorized travel routes are within the Beaver Creek Campground, in Zones II and III. This pair established their territory here long after the campground was developed and used. The routes are on the opposite side of Earthquake Lake from the nest, and would contribute little disturbance to foraging eagles because they are positioned on a bench above the lake and far enough back from the bank. Additionally, the roads do not open to motorized traffic until late May when the campground opens, by which time eagle sensitivity to disturbance decreases (Montana Bald Eagle Working Group:22). Therefore, the effects of summer travel would be minor.

Halford Camp

Summer travel in Zones I, II and III is the same under all alternatives. There are no summer travel routes within Zone I. The Campfire Lodge Road continues to provide access for a large number of summer recreational users (mostly anglers) to Zones II and III, and the administrative road to the Crazy House would be heavily used for foot access to Earthquake Lake in Zones II and III. Zone I of the territory would be free of disturbance related to summer travel, but some disturbance to foraging eagles in Zones II and III would result. Because this territory has only been monitored for one year, this pair's tolerance of human disturbance is difficult to assess. GYBEMP guidelines for managing disturbance within bald eagle territories would be met for Zone I, but exceeded for Zones II and III.

Cumulative Effects

Net Effects of Past and Present Programs and Activities

A variety of human activities that could cause disturbance to nesting and foraging eagles other than travel on Forest Service lands occur within the analysis area (see cumulative effects worksheet for bald eagle issue in project record). These activities undoubtedly influence the way bald eagles use available habitat, leading to reduced foraging efficiency and periodic disturbance to nesting birds in most known bald eagle territories within the analysis area.

Projected Combined Effects of Reasonably Foreseeable Programs and Activities

The effects of most activities on bald eagles in the analysis area are expected to remain relatively constant in the foreseeable future, with the exception of dispersed recreation. This is an important source of disturbance for many territories within the analysis area. Therefore, it is likely that the cumulative disturbance of human activity to nesting and foraging bald eagles will continue to increase within the analysis area.

Cumulative Effects of Past, Present and Reasonably Foreseeable Programs and Activities with the Travel Plan Alternatives

Under Alternative 7M, snowmobile use would probably be the most prevalent source of disturbance to bald eagles in the analysis area during the early nesting period, and would therefore contribute substantially towards cumulative effects on bald eagles. During the snow-free season, dispersed recreational activities such as fishing and boating are probably equally important sources of disturbance to nesting and foraging bald eagles relative to summer travel. These effects may be less important than winter travel because they occur later in the nesting season, when sensitivity to disturbance decreases.

Productivity trends for bald eagles within the analysis area have been consistent with those from an increasing population despite the large amount of human activity occurring throughout much of the analysis area (Figures 1, 2, and 3). An increasing trend in the number of occupied nests within the analysis area is readily apparent. The number of chicks fledged per nest averaged 1.1 during the period 1977-2005, which is consistent with the value of 1.05 reported for the entire Greater Yellowstone bald eagle population (Greater Yellowstone Bald Eagle Working Group 1996, page 7) and exceeds the national Recovery Plan objective of 1.0 young per occupied breeding area (Montana Bald Eagle Working Group 1994, page 15). Some eagles may become tolerant of human activities (Stalmaster and Kaiser 1998, page 40), and this is likely the case for many of the pairs within the analysis area. Bald eagles within the analysis area should continue to exhibit characteristics of a productive population until it nears biological carrying capacity under these alternatives. As recreational activities increase within the analysis area it is possible that a threshold may be reached where cumulative disturbance increases beyond the tolerance levels of most birds. Productivity could begin to decline under this scenario, but it is unknown how much increase in human activity would be necessary before that threshold is reached.

Figure 1. Number of known occupied bald eagle nests on Hebgen and Earthquake Lakes from 1976-2005.

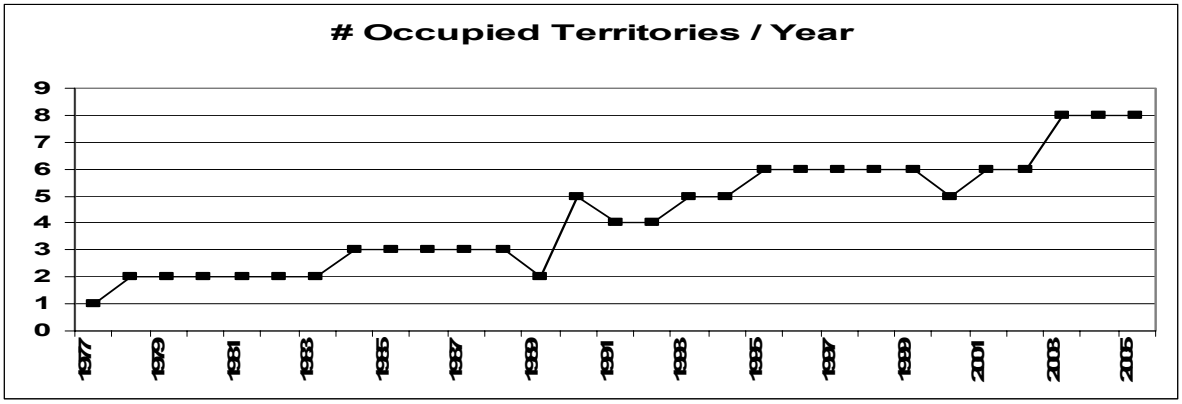


Figure 2. Number of bald eagles fledged on Hebgen and Earthquake Lakes from 1976-2005.

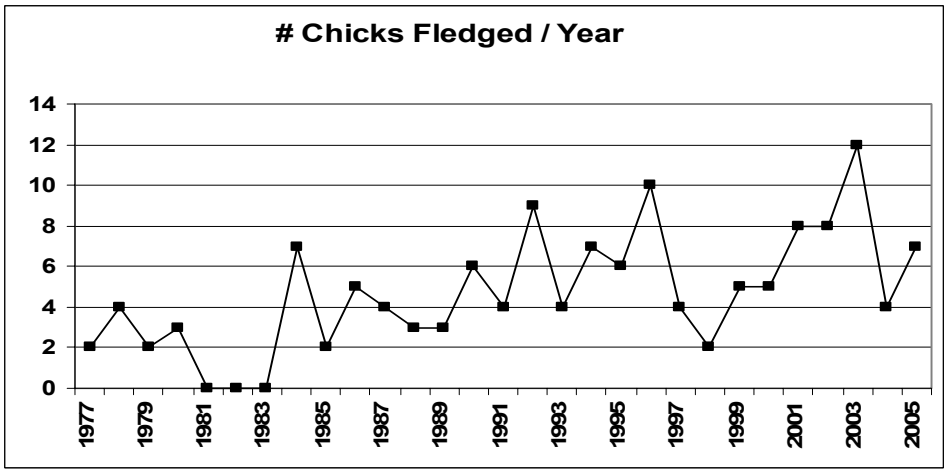
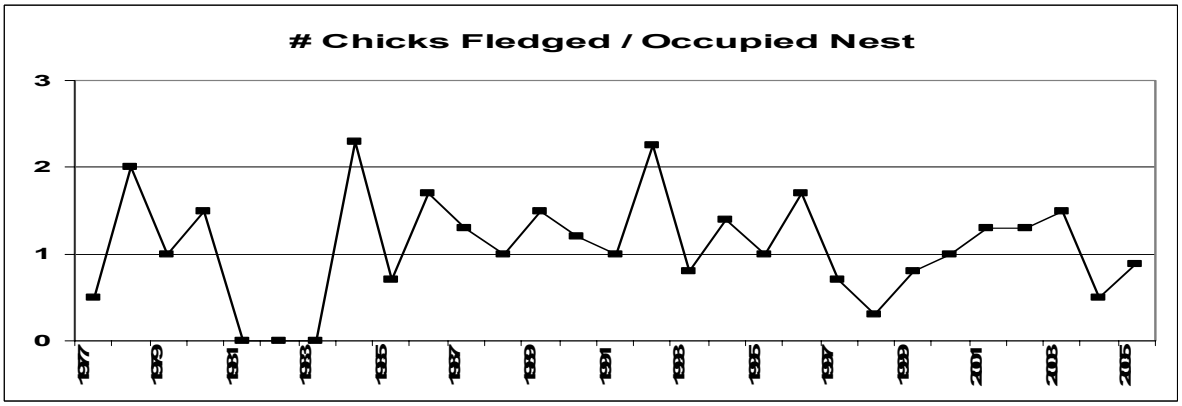


Figure 3. Number of bald eagles fledged per occupied nest on Hebgen and Earthquake Lakes from 1976-2005.



Determination of Effects

For the bald eagle, the determination for the effects of Alternative 7M is "may affect, likely to adversely affect" the bald eagle. A determination of "may affect, likely to adversely affect" is made if the Greater Yellowstone Bald Eagle Management Plan guidance cannot be met.

In the winter, the Horse Butte nest is fairly well protected from disturbance. The Ridge and Narrows nests, however, have no area closure for Zone I, as the Horse Butte territory does. Snowmobile use off the groomed trail regularly occurs through much of Zone I around both territories (Ridge and Narrows) through late March, and this would continue under 7M. There would be high potential for disturbance of nesting birds during the part of the nesting season when they are most sensitive to disturbance. The Narrows birds appear to be highly tolerant of snowmobile use and the effects of snowmobile use under these alternatives would have minimal effects on them. However, the Ridge birds may be more sensitive to disturbance from snowmobile use, and they could continue to exhibit lower than average productivity under Alternative 7M. GYBEMP guidelines recommending that minimal activity levels not be exceeded within Zone I would not be met for either the Ridge or Narrows territories under 7M. Recommendations for restricting snowmobile use within these territories from Stangl (2000:VI-8) would also not be met. Winter effects to the Moonlight, Canyon and Halford nests are minimal.

Most of the nest sites are less subject to serious disturbance in the summer. For the Moonlight nest, disturbance levels from motorized vehicle use on the road would exceed GYBEMP guidelines for Zones I and II. However, the road was constructed and had been used many years before the territory was established, and this pair has been among the most productive on Hebgen Lake. For the Halford Camp nest, GYBEMP guidelines for managing disturbance within bald eagle territories would be met for Zone I, but exceeded for Zones II and III.

The bald eagle has met its recovery criteria and is nearing being removed from protection under the Endangered Species Act. Bald eagles have dramatically increased in the number of nests known in Montana. If delisted, bald eagles will continue to have protected status under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles will continue to receive protection under the Forest Plans as sensitive species or some other designation. Monitoring will help assure continued recovery of this species.

Coordination Measures

Continue to monitor bald eagle nest productivity annually.

Expected Future Status

The bald eagle has met its recovery criteria and is nearing being removed from protection under the Endangered Species Act. Bald eagles have dramatically increased in the number of nests known in Montana and in the Greater Yellowstone Area. Delisting of this species should occur soon. At that time, bald eagles will continue to have protected status under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Bald eagles will continue to receive protection under the

Forest Plans as either sensitive species or some other designation. Monitoring will help assure continued recovery of this species.

GRIZZLY BEAR

STATUS, HABITAT USE, AND BEHAVIOR

The following indented information, on grizzly bear distribution and life history, is excerpted from the draft *Programmatic Biological Assessment for Activities Not Likely to Affect Listed Terrestrial Species* (USDA Forest Service 2005).

Distribution

The historic range of the grizzly bear (*Ursus arctos horribilis*) in the continental United States extended from the central Great Plains, west to California, and south to Texas and Mexico. Between 1800 and 1975, grizzly bear populations in the lower 48 states declined from over 50,000 to less than 1,000. As European settlement expanded westward, the grizzly was extirpated from most of its historical range.

Five areas in the lower 48 states currently support grizzly bear populations; these areas are located in Montana, Wyoming, Idaho, and Washington and include: the Yellowstone Ecosystem, Northern Continental Divide Ecosystem, Cabinet-Yaak Ecosystem, Selkirk Ecosystem, and Northern Cascades Ecosystem. These areas represent less than two percent of the grizzly's former range (USDI 1993).

The grizzly bear was listed as threatened under ESA in 1975 (USDI 1993).

Life History

Grizzly bears are in the bear family (*Ursidae*) and are generally larger than black bears and can be distinguished by having longer front foot claws (two to four inches), a distinctive shoulder hump (muscle mass for digging), rounded ears that are proportionately smaller than the head, and a dished-in profile between the eyes and end of the snout. A wide range of coloration from light brown to nearly black is common. Guard hairs are often paled at the tips; hence the name "grizzly." Spring shedding, new growth, nutrition, and climate all affect coloration. In the continental United States, the average weight of grizzlies is 400 to 600 pounds for males and 250 to 350 pounds for females. Grizzly bears are long-lived and many individuals live over 20 years. Adult bears are individualistic in behavior and normally are solitary wanderers. Females with cubs and bears defending food supplies are common causes of confrontation between humans and bears (USDI 1993).

Home ranges of adult bears may overlap. The home ranges of adult male grizzlies are generally two to four times larger than adult females. The home ranges of females are smaller while they have cubs, but increase when the cubs become yearlings. Home ranges vary in relation to food availability, weather conditions, and interactions with other bears. Home ranges are larger in the

Yellowstone Ecosystem compared to the more productive habitats in the northern ecosystems (USDI 1993).

Age of first reproduction and litter size varies and may be related to nutritional state. Age at first reproduction averages five and one-half years of age (three and one-half to eight and one-half years of age). Reproductive intervals for females average three years and litter size average two cubs (one to four cubs per litter). The limited reproductive capacity of grizzly bears precludes rapid increases in population. Grizzly bears have one of the lowest reproductive rates among terrestrial mammals. During a female's lifetime, if she has litters of two cubs with a 50:50 sex ratio, and a 50 percent survivorship of young to age 5.5 years, at best she can replace herself with one breeding age female in the first decade of her life (USDI 1993).

Coniferous forest cover is very important to grizzly bears. Ninety percent of aerial radio relocations of 46 radio-collared grizzlies were in forest cover too dense to observe the bear. Dense forests are important for thermal cover, hiding cover, and day beds; most beds are located within six feet of a tree. The importance of open grassy parks with coniferous forest cover has also been documented (USDI 1993).

Grizzly bears excavate dens as early as September or prior to den entry in November. Dens are usually dug on steep slopes where wind and topography cause an accumulation of deep snow and where snow is unlikely to melt during warm periods. Dens are generally found at high elevations well away from human activity and development (USDI 1993).

Grizzly bears are opportunistic feeders and will prey or scavenge on almost any available food. Plants with high crude protein content and animal matter are important food items. The search for food has a prime influence on grizzly bear movements. Upon emergence from the den grizzlies move to lower elevations, drainage bottoms, avalanche chutes, and ungulate winter ranges where their food requirements can be met. Throughout spring and early summer grizzlies follow plant phenology back to higher elevations. In late summer and fall, there is a transition to fruit and nut sources, as well as herbaceous materials. This is a general pattern; however, bears will go where they can meet their food requirements (USDI 1993).

The environmental baseline for grizzly bears is described in terms of those parameters that threaten grizzly bears either through human contact and conflict or through reductions in secure habitat. More specifically, parameters that address grizzly/human conflict (e.g. access management, appropriate food storage, and livestock) and vegetation management form the basis against which threats to grizzly bears are measured.

The historic range of the grizzly bear (*Ursus arctos horribilis*) in the continental United States extended from the central Great Plains, west to California, and south to Texas and Mexico. Between 1800 and 1975, grizzly bear populations in the lower 48 states declined from over 50,000 to less than 1,000. As European settlement expanded westward, the grizzly was extirpated from most of its historical range.

Five areas in the lower 48 states currently support grizzly bear populations; these areas are located in Montana, Wyoming, Idaho, and Washington and include: the Yellowstone Ecosystem, Northern

Continental Divide Ecosystem, Cabinet-Yaak Ecosystem, Selkirk Ecosystem, and Northern Cascades Ecosystem. These areas represent less than two percent of the grizzly's former range (USDI 1993). Grizzly bears in the Yellowstone Area have met recovery criteria.

The grizzly bear was listed as threatened under ESA in 1975 (USDI 1993).

EFFECTS ON GRIZZLY BEARS

Introduction

The issue of travel management is important to the conservation of the grizzly bear, a species currently listed as threatened under the Endangered Species Act. The grizzly bear is known to be sensitive to the effects of access management, especially as related to motorized use. Grizzly bears tend to avoid areas used by motorized vehicles (McClelland and Shackleton 1988, Kasworm and Manley 1989, Mace et al. 1996, Wieglus et al. 2002). This section addresses the potential effects of summer motorized use and winter motorized use on grizzly bears. There are more studies of the effects of motorized use on bears than of non-motorized use. Because of this, the effects of non-motorized use are discussed in less detail.

Affected Environment

Background on Motorized Access and Grizzly Bears on the Gallatin National Forest

In general, grizzly bears occur throughout that portion of the Gallatin National Forest south of Interstate 90. In 1996, the Gallatin National Forest amended the Forest Plan for Access in the Grizzly Bear Recovery Zone (Amendment #19). This Amendment was intended to bring motorized access management on the Forest more in line with current science, and removed much of the previous access management direction related to grizzly bears from the Gallatin Forest Plan (USDA 1987) in relation to grizzly bears. The basis of the amendment was a 1995 Biological Opinion from the US Fish and Wildlife Service (USDI 1995). The crux of Amendment 19 is that the Forest would manage human motorized access in the Recovery Zone (Primary Conservation Area, ICST 2003) to help meet the goal of grizzly bear recovery. Standards would be to adopt Yellowstone Park access standards when they become available. In the interim, the Forest would manage bear subunits (unless allowed through consultation with the US Fish and Wildlife Service) for:

1) No increase in open motorized access route density (OMARD) from the current level.
2) No increase in total motorized access route density (TMARD) from the current level.
3) No decrease in core (secure) area from the current level.

A guideline is to utilize the best available technology to analyze human access and its effects on the grizzly bear in the Recovery Zone for motorized access.

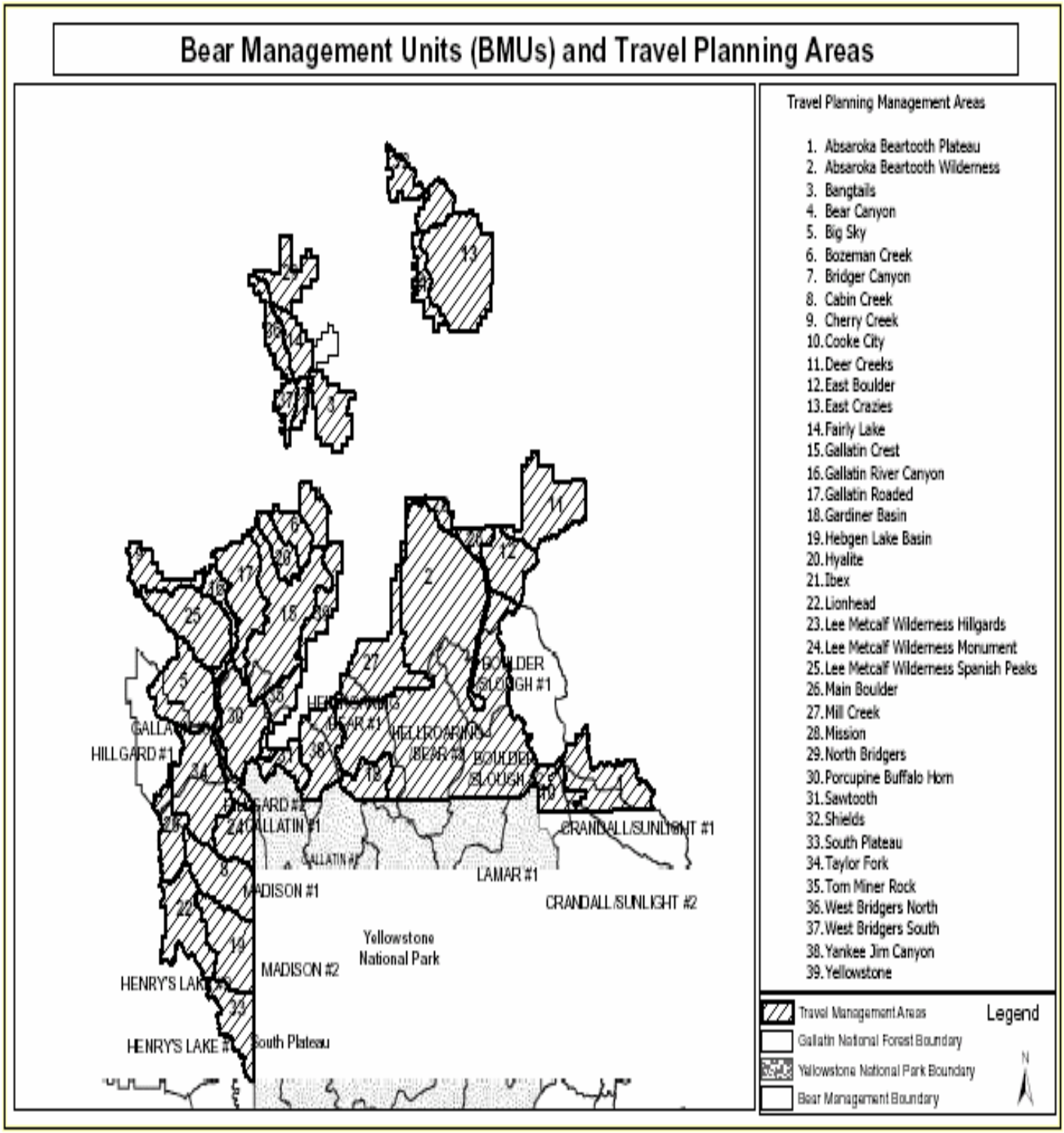
The Conservation Strategy for Grizzly Bear in the Yellowstone Ecosystem (ICST 2003) was developed by the Interagency Conservation Strategy Team and completed in March 2003. The three Regional Foresters managing Forests in the Greater Yellowstone Area, the three Directors of State Fish and Game agencies and Bureau of Land Management signed a Memorandum of Understanding (ICST 2003:12-13) to seek implementation of the Grizzly Bear Conservation

Strategy. The Conservation Strategy is currently undergoing a NEPA process that will amend it to the Forest Plans of Forests in the Yellowstone area and will replace most, if not all, of their current Forest Plan direction for grizzly bears.

The direction in the Conservation Strategy (ICST 2003) makes motorized access direction more clear, and bases it on the most recent science. The Conservation Strategy (2003) direction was used in this issue to assess the effects of travel management on grizzly bears. Amendment #19 and Biological Opinion of the USFWS (1955) stated that the Gallatin National Forest was to adopt Yellowstone access standards when they became available. The Conservation Strategy makes these standards available. The Forest Service will be undergoing consultation with the US Fish and wildlife Service during this travel management planning process that will cover all Threatened and Endangered species in relation to travel management. In addition, if the access standards for the grizzly bear change during the Conservation Strategy amendment process for Greater Yellowstone Area Forests, those standards would then be incorporated into the Gallatin Forest Plan.

The standard for access management in the Conservation Strategy is to *"maintain secure habitat in bear management subunits at or above 1998 levels"* (ICST 2003:39). Secure habitat is defined as any area more than 500 m from an open or gated motorized access route (Table 3.10. 1). The year 1998 was chosen as the baseline because this was the access level at which the grizzly bear population recovered. Some changes are allowed under specific conditions. This direction applies only to the Recovery Zone (Primary Conservation Area). The rule set for projects is found in the Conservation Strategy (ICST 2003:41) (Table 3.10. 1). There are three subunits designated as needing improvement: Henrys Lake #2, Gallatin #3 and Madison #2. These lie at least partially on the Gallatin National Forest (Map 3.1).

Map 3.1 Grizzly Bear Management Units and Subunits and Travel Planning Areas on the Gallatin National Forest.



It should be noted that the Conservation Strategy (2003) also has a standard for a 1998 baseline for the number of developed sites within the Recovery Zone (PCA). If new developed sites are proposed, they must be mitigated for within the subunit. For travel management planning, this direction relates most directly to fact that trails are linked to trailheads that may often be developed sites. This document does not address trailhead development, but it should be kept in mind that there are some constraints in the PCA. This direction also relates to the development of backcountry airstrips which are proposed under Alternative 3. For the Recovery Zone, these would be new developed sites, and they could be associated with an increase in motorized route density and a reduction in secure habitat. If any backcountry airstrips are going to be developed in the Recovery Zone, they would have to be mitigated for within the same subunit. There are three proposed backcountry airstrips proposed in the PCA under Alternative 3. They are Horse Butte (Madison #2 subunit), South Plateau (Plateau #1 subunit), and Ferrell Lake (Gallatin #3 subunit).

Additional information from the Draft EIS for Forest Plan Amendments for Grizzly Bear Conservation for the Greater Yellowstone Area National Forests (p. 36, USDA FS, 2004) indicates that habitat monitoring items include secure habitat, OMARD greater than one mile/square mile, and TMARD greater than 2 miles/square mile. These route densities are of the greatest concern to the US Fish and Wildlife Service because they are the densities at which bears seem to experience more difficulty moving through the landscape.

Table 3.10. 1 The rule set for secure habitat management in the Yellowstone Recovery Zone (ICST 2003:41).

Criteria	Definition
Software, Database and Calculation Parameters	ARC INFO using the moving window GIS technique (Mace et al. 1996), 30 m pixel size, square mile window size and density measured as mi/sq mi. Motorized access features from the Cumulative Effects Model (CEM)* GIS database
Motorized Access Routes in Database	All routes having motorized use or the potential for motorized use (restricted roads) including motorized trails, highways, and forest roads. Private roads and state and county highways counted.
Season Definitions	Season 1 – 1 March to 15 July. Season 2 – 16 July to 30 November. There are no access standards in the winter season (1 December to 28 February).
Habitat Considerations	Habitat quality not part of the standards but 1) Replacement secure habitat requires equal or greater habitat value 2) Road closures should consider seasonal habitat needs.
Project	An activity requiring construction of new roads, reconstructing or opening a restricted road or recurring helicopter flights at low elevations.
Secure Habitat	More than 500 m from an open or gated motorized access route or reoccurring helicopter flight line. Must be greater than or equal to 10 acres in size. Replacement secure habitat created to mitigate for loss of existing secure habitat must be of equal or greater habitat value and remain in place for a minimum of 10 years. Large lakes not included in calculations.
Activities Allowed in Secure Habitat	Activities that do not require road construction, reconstruction, opening a restricted road, or reoccurring helicopter flights. Over-snow use allowed until further research identifies a concern.
Inclusions in Secure Habitat	Roads restricted with permanent barriers (not gates), decommissioned or obliterated roads, and/or non-motorized trails.
Temporary Reduction in Secure Habitat	One project per subunit is permitted that may temporarily reduce secure habitat. Total acreage of active projects in the Bear Management Unit (BMU) will not exceed 1% of the acreage in the largest subunit within the BMU. The acreage that counts against the 1% is the 500-m buffer around open motorized access routes extending into secure habitat. Secure habitat is restored within one year after completion of the project.

Criteria	Definition
Permanent Changes to Secure Habitat	A project may permanently change secure habitat provided that replacement secure habitat of equivalent habitat quality (as measured by CEM or equivalent technology) is provided in the same grizzly subunit. The replacement habitat either must be in place before project initiation or be provided as an integral part of the project plan.
Subunits with Planned Temporary Secure Habitat Reduction	Secure habitat for subunits Gallatin #3 and Hilgard #1 will temporarily decline below 1998 values due to the Gallatin Range Consolidation Act. Upon completion of the land exchange and associated timber sales, secure habitat in these subunits will be improved from the 1998 baseline.
Subunits with Potential for Improvement	Access values for Henrys Lake #2, Gallatin #3, and Madison # 2 have the potential for improvement. The quantity and timing of the improvement will be determined by the Gallatin National Forest Travel Management Plan.
Proactive Improvement in Secure Habitat	A proactive increase in secure habitat may be used at a future date to mitigate for impacts of proposed projects of that administrative unit within that subunit.
Exceptions for Caribou-Targhee National Forest	When fully adopted and implemented the Standards and Guidelines in the 1997 revised Targhee Forest Plan met the intent of maintaining secure habitat levels.

*CEM DEFINITION- Cumulative Effects Model - a model for assessing effects of habitat and human activities on grizzly bears. The model includes a habitat routine and a disturbance routine. Habitat value is the innate value of the habitat for bears based on vegetation, cover, edge and protein sources. Habitat effectiveness is how effective the habitat is for bears after the inclusion of human activities.

Table 3.10. 2a shows the relative size of the subunits, secure habitat, and how much of each subunit is in a situation where it is somewhat protected from the likelihood of additional motorized routes. It can be seen that some subunits have a lot of secure habitat and are likely to stay that way. Most of the largest subunits are have quite a bit of Wilderness and National Park land within them. There are some subunits that have a low percentage of these protected areas and currently have a relatively low percentage of secure habitat. These include Henrys Lake #2, Gallatin #3 and Madison #2 which are also the subunits "in need of improvement" because of a lower percentage of secure habitat existing within the subunit. Other subunits that might be considered at some risk due to the lack of protected areas are Plateau #1, Hilgard #1 and #2, Crandall/Sunlight #1 and #2, and Hellroaring/Bear #1, however, these subunits currently have more than 69 or 70% secure habitat.

Table 3.10. 2a Square miles of secure habitat in the subunits all or part on the Gallatin National Forest (numbers include private inholdings within Forest Service boundaries and all ownerships of roads, FS, NPS, BLM, state, county, private) as given in Conservation Strategy (p. 151). Subunits "in need of improvement" are highlighted.

Subunit	Subunit Area (sq mi)	Total Secure Habitat (sq mi)	Percent Secure Habitat	Wilderness or Park Secure Habitat (sq mi)	Percent Secure as Wilderness or Park
Boulder Slough #1	282	272	96%	269	95%
Boulder Slough #2	232	227	98%	227	98%
Lamar #1	300	268	89%	256	85%
0Crandall Sunlight #1	130	105	81%	57	44%
Crandall Sunlight # 2	316	260	83%	97	31%
Hellroaring/Bear #1	185	142	77%	101	55%
Hellroaring/Bear #2	229	228	100%	228	100%
Gallatin #3	**218**	**120**	**55%**	**8**	**4%**
Hilgard #1	201	140	70%	107	53%
Hilgard #2	141	100	71%	63	45%
Madison #1	227	163	72%	108	48%
Madison #2	**149**	**99**	**66%**	**94**	**63%**

Subunit	Subunit Area (sq mi)	Total Secure Habitat (sq mi)	Percent Secure Habitat	Wilderness or Park Secure Habitat (sq mi)	Percent Secure as Wilderness or Park
Henrys Lake #2	**140**	**64**	**46%**	**0**	**0%**
Plateau #1	286	197	69%	124	43%

Table 3.10.2.b shows the effects of non National Forest routes on the subunits lying all or in part on the Gallatin National Forest. This shows that the 3 subunits 'in need of improvement' are all fairly heavily impacted by non-Forest Service routes. For instance, if the Gallatin National Forest closed all of its routes in Henry's Lake #2, there would still be 15% of the subunit that would not be secure habitat.

Table 3.10.2.b. Effects of non-National Forest routes (private, state, and county) on Gallatin National Forest grizzly bear subunits.

Subunit	OMARD % > 1 mi/sq mi	TMARD % > 2 mi/sq mi	Percent Secure Habitat
Boulder Slough #1	2	0	97
Boulder Slough #2	0	0	100
Lamar #1	2	1	97
Crandall Sunlight #1	6	1	92
Crandall Sunlight # 2	8	1	89
Hellroaring/Bear #1	9	4	91
Hellroaring/Bear #2	0	0	100
Gallatin #3	**16**	**8**	**81**
Hilgard #1	6	2	91
Hilgard #2	2	3	93
Madison #1	6	3	94
Madison #2	**8**	**4**	**90**
Henrys Lake #2	**14**	**7**	**85**
Plateau #1	2	1	95

Habitat Value and Habitat Effectiveness

Habitat value is the quality of the habitat for grizzly bears without taking any human activities into account. From the following table (Table 3.10. 3), it can be seen that more than half of the habitat value in some subunits rates High Moderate value or above. Habitat value is a seasonal habitat value based on habitat characteristics of plant food, cover, edge and protein source (usually big game winter range). These include: Boulder Slough #1 and #2, Lamar #1, Hellroaring/Bear #1 and #2, Gallatin #3 and Hilgard #1 and #2. Of these subunits, Boulder Slough #2, Lamar #1, Hellroaring/Bear #1, Gallatin #3 and Hilgard #1 and #2 have secure habitat that is more than 50% High Moderate or above.

Table 3.10. 3 Percent of six habitat value categories in each of the grizzly bear management subunits on the Gallatin National Forest. Six categories were determined from raw CEM habitat value outputs that provide relative comparisons across seasons. They are: VL = Very Low, L = Low, LM = Low Moderate, HM = High Moderate, H= High, VH = Very High

	Habitat Value Category Percent of Subunit							Habitat Value Category Percent of Secure Habitat						
Subunit	VL	L	LM	HM	H	VH	Subunit Area (sq mi)	VL	L	LM	HM	H	VH	Total Secure Habitat (sq mi)
Boulder Slough #1	12	1	40	45	32	0	282	13	1	42	43	2	0	272
Boulder Slough #2	9	6	33	52	1	0	232	9	6	34	50	1	0	227
Lamar #1	4	2	26	68	1	0	300	4	1	25	70	0	0	268
Crandall Sunlight #1	10	34	43	11	2	0	130	11	35	42	10	2	0	105
Hellroaring/Bear #1	17	20	12	51	0	0	185	17	15	11	57	0	0	142
Hellroaring/Bear #2	21	5	26	47	2	0	229	21	5	26	46	2	0	228
Gallatin #3	18	17	13	51	1	0	218	21	12	12	55	1	0	120
Hilgard #1	19	12	18	51	1	0	201	20	10	19	51	0	0	140
Hilgard #2	13	8	17	61	1	0	141	15	8	13	64	1	0	100
Madison #1	4	12	52	21	10	2	227	5	12	58	17	8	1	163
Madison #2	2	6	69	19	3	2	149	0	4	79	14	2	1	99
Henrys Lake #2	7	19	26	46	2	1	140	9	17	24	50	0	1	64
Plateau #1	2	29	58	11	0	0	286	1	28	58	13	0	0	197

Table 3.10. 4 shows the habitat effectiveness of each subunit throughout the bear year. Habitat effectiveness is a number derived from a combination of habitat qualities and types of human activity or disturbance in the area. It can be seen from this table that some subunits, like Boulder/Slough #1 have habitat effectiveness that is high relative to the other subunits throughout the year. Others, like Plateau #1 and Gallatin #3, do not have especially high habitat effectiveness values at any time of year. Many of the subunits only have good values in one or two of the four seasonal periods. By looking at the value by season, one can decide if seasonal route closures may be of benefit to the grizzly bear in certain subunits.

Table 3.10. 4 Habitat effectiveness by season for subunits on the Gallatin National Forest from the Grizzly Bear Cumulative Effects Model. Subunits "in need of improvement" of secure habitat are highlighted.

Subunit	Spring 3/1 - 5/15	Estrus 5/16 - 7/15	Early Hyperphagia 7/16 - 8/31	Late Hyperphagia 9/1 - 11/30
Boulder Slough #1	105	105	119	853
Boulder Slough #2	123	112	111	521
Lamar #1	127	118	136	571
Crandall Sunlight #1	53	94	78	800
Hellroaring/Bear #1	85	74	95	628
Hellroaring/Bear #2	117	99	98	628
Gallatin #3	**78**	**69**	**89**	**599**
Hilgard #1	99	68	91	614
Hilgard #2	81	97	132	902
Madison #1	53	115	227	329
Madison #2	**41**	**60**	**147**	**63**

Henrys Lake #2	**41**	**41**	**33**	**614**
Plateau #1	26	49	36	109

Overview of the Effects of Motorized and Non-Motorized Use on Bears

Tyers (2006) summarized recent literature on the effects of various types of uses on bears, focusing on grizzly bears. This information is presented in this Overview Section.

Various efforts have been made to aggregate and interpret abundant data related to the effects of human activities on grizzly bears. For example, the Interagency Grizzly Bear Committee, a consortium of state and federal managers, published the Grizzly Bear Compendium (1987), a review all available information on grizzly bear biology and management in North America through 1987.

In addition, Joslin and Youmans (1999) coordinated preparation of Effects of Recreation on Rocky Mountain Wildlife for the Wildlife Society, Montana Chapter. It provides a Montana perspective on the ecology of a variety of wildlife species, including the grizzly bear, as well as insights into the development of regional wildlife management policies (Claar 1999 *in* Joslin and Youman). In contrast to the Compendium, Joslin and Youman's review of grizzly bear management literature is less expansive but more contemporary. Specific to grizzlies, it briefly summarizes current knowledge on the effects to bears of motorized and non-motorized recreation, hunting, and structural developments.

These and other documents reveal that our understanding of the effects of human activities on grizzly bears has evolved, progressing with the addition of each new research finding. The grizzly bear was listed in 1975 under the Endangered Species Act. This initiated a sequence of increasingly sophisticated management strategies directed towards population recovery and enhanced by corresponding research. Associated studies were a successive response to the concerns expressed by agency personnel as the complexities of grizzly bear management emerged following listing.

When the grizzly bear was initially listed, mortality prevention was the primary focus for species conservation. However, succeeding recovery strategy iterations recognized habitat use, quality, and availability as important elements of grizzly bear management (Claar 1999 *in* Joslin and Youman). The effect of human activities on bear displacement and mortality risk levels was prominent in grizzly bear conservation discussions while National Forest Plans were developed in the 1970s and 1980s.

Since the creation of the respective Forest Plans, substantial increases have occurred in the human population within and adjacent to the grizzly bear recovery area, along with a concomitant demand for recreation opportunities on public lands. These patterns necessitated commensurate grizzly bear management guidelines (Claar 1999 *in* Joslin and Youman). In response, in 1986, the Interagency Grizzly Bear Committee outlined procedures for grizzly bear habitat maintenance and improvement, minimizing grizzly-human conflict potential, and resolving grizzly-human conflicts (Claar 1999 *in* Joslin and Youman).

Off-road vehicle (ORV) capabilities have become an additional factor to contend with in managing grizzly bear habitat. From the 1950s through the 1970s, land management agencies established

road systems on public lands outside of wilderness to provide access to timber and mineral resources and to accommodate public use. However, in the interim, there have been major technological improvements to summer and winter ORVs. These machines have become easier to use and more reliable and affordable. Consequently, ORV use on public lands has increased along with concerns for the effects of this use on grizzly bears (Claar 1999 *in* Joslin and Youman).

As stated earlier, research techniques addressing the effects of human activities on grizzly bears evolved parallel to the development of management strategies and practices. For example, a number of early studies (IGBC 1987, Claar 1999 *in* Joslin and Youman) dealt with the effects of roads on grizzly bears and, to various degrees, universally showed negative impacts (Archibald et al. 1987, Mattson et al. 1987, McLellan and Shakelton 1988, Kasworm and Manley 1990). Geographic information systems technology allowed more recent studies to calculate precise estimates of road density and the response of grizzlies to these densities. The next generation of studies used multivariate analysis to examine the relationships among roads, habitat, and grizzly bear use at hierarchical levels. Most simply stated, these efforts indicated that the effects to bears are increasingly negative as road densities and traffic volumes increase (Claar 1999 *in* Joslin and Youman).

Compared to assessments of grizzly bear response to roads, few studies reported the effects of motorized recreation on bears during the winter. Efforts to assess den abandonment resulting from over snow traffic are common to these studies, although data are limited. In addition, various authors express concern that physiological stresses could result in serious consequences to bears, with perhaps the greatest potential for disturbance from snowmobile activity occurring when females with cubs are still confined to the den vicinity during spring and when bears descend to more gentle terrain accessible to snowmobiles. However, again, data are limited. Almost no data are available on the effects of winter non-motorized human use on grizzlies (Claar 1999 *in* Joslin and Youman).

Human activities apart from roadways and settlements have been another management consideration and research focus. Encounters between grizzly bears and people often occur in the backcountry on public lands. Similar to the road density studies, data on the impacts of human foot traffic on bears also indicate a negative relationship, although fewer studies quantify these effects. A common conclusion among these efforts is that the rate of fear-induced charges and consequent injuries is less where human activities are predictable and when trails are separated from preferred habitat (Claar 1999 *in* Joslin and Youman).

The following sections break the effects out by season and type of use.

Summer Motorized Use

Various efforts have been made to aggregate and interpret a plethora of data related to the effects of human activities on grizzly bears. For example, the Interagency Grizzly Bear Committee, a consortium of state and federal managers, directed preparation of the Grizzly Bear Compendium (IGBC 1987:145-148) to facilitate review of all available information on grizzly bear biology and management in North America through 1987.

In addition, Joslin and Youmans (1999) coordinated preparation of the Effects of Recreation on Rocky Mountain Wildlife for the Montana Chapter of the Wildlife Society. It provides a Montana perspective on the ecology of a variety of wildlife species, including the grizzly bear, as well as insights into the evolution of regional wildlife management policies. Compared the Compendium, Joslin and Youman's review of grizzly bear management literature is less exhaustive but more contemporary. Specific to grizzlies, it briefly summarizes current knowledge on the effects to bears of motorized and non-motorized recreation, hunting, and structural developments.

These and other documents reveal that, when the grizzly bear was listed in 1975 under the Endangered Species Act, the primarily focus for species conservation was mortality prevention. However, later species recovery strategies have recognized habitat use, quality, and availability as important elements of grizzly bear management (USDI 1982, 1993).

The effects of human activities on bear displacement and mortality risk levels assumed prominence in grizzly bear conservation discussions as National Forest plans were developed in the 1970s and 1980s. In 1986, the Interagency Grizzly Bear Committee provided guidelines for agencies to maintain and improve habitat, minimize grizzly-human conflict potential, and resolve grizzly human conflicts. Since the creation of these documents, substantial increases have occurred in human population within and adjacent to the Grizzly Bear Recovery Zone along with a concomitant demand for recreation opportunities on public lands, a pattern that necessitates grizzly bear management guidelines commensurate with this phenomenon (Joslin and Youmans 1999).

Off-road vehicle capabilities have become an additional factor to contend with in managing grizzly bear habitat. From the 1950s through the 1970s, land management agencies established road systems on public lands outside of Wilderness to provide access to timber and mineral resources and provide public access. However, in the interim, there have been major technological improvements to off-road vehicles (all-terrain, trail bikes, and snowmobiles). These machines have become easier to use, more reliable, and more affordable. Consequently, their use on public lands has increased along with concerns for the effects of this use on grizzly bears (Joslin and Youmans 1999).

Studies addressing the effects of human activities on grizzly bears have gone through several evolutions. A number of early studies (IGBC 1987, Joslin and Youmans 1999) addressed the effects of roads on grizzly bears and, to various degrees, universally showed negative impacts (Archibald et al. 1987, Mattson et al. 1987, McLellan and Shakleton 1988, Kasworm and Manley 1990).

There have been a number of studies on the effects of various types of routes (motorized roads and trails and non-motorized trails) on different types of wildlife species. Most studies have focused on big game species and grizzly bears. Results vary, but the most common theme seems to be that motorized routes generally displace elk and bears, and they use the habitat adjacent to motorized routes less than areas farther from these routes. Results vary somewhat with habitat quality, cover availability, traffic volume, season and some other variables. There are less studies on the effects non-motorized routes on wildlife species. There are also few studies comparing motorized roads to motorized trails.

Geographic information systems technology has allowed more recent studies to calculate precise estimates of road density and the response of grizzlies to these densities. For example, Mattson (1993) employed this technology in the Yellowstone area and recommended maximum road densities for grizzly bear habitat maintenance of 0.6 mi/sq mi with 0.26 mi/sq mi for home ranges of wary female bears. Similarly, in preliminary reports, Mace et al. (1996) concluded that bear use in the South Fork of the Flathead was significantly less than expected where open road density was >1mi/sq mi or total road density was >2mi/sq mi.

Mace et al. (1996) furthered their studies in the Flathead area by assessing bear habitat use at a landscape level, within the defined area of composite home ranges, and in relationship to roads with differing traffic volume. Most simply stated, this and other studies indicate that the effects to bears are increasingly negative as road densities and traffic volumes increase.

At the broadest scale, female grizzlies selected against private lands with high human and road densities (Mace et al. 1996). The relative probability of occurrence of bear activity was zero for these areas even though they contained high quality seasonal ranges including ungulate wintering areas and riparian habitat. Similarly, selection was greatest for unroaded cover types on multiple use public lands and declined as road densities increased. For example, the relative probability of occurrence of grizzlies on the National Forest Service was negatively associated with increasing values of road density and declined to zero as densities approached 6.0 km/km2 (Mace et al. 1996). Within a 0.5 km buffer around roads, the next level of habitat selection, bear responses differed by season and traffic volume. Few home ranges contained roads with traffic volumes of >60 vehicles/day, and most bears avoided roads having >10 vehicles/day. During all seasons, most individual bears exhibited neutral or positive selection for buffers surrounding closed roads and roads receiving <10 vehicles per day, implying that important habitat features such as avalanche chutes and cutting units occurred near these roads.

Analysis of bear habitat use at three spatial scales in relationship to roads demonstrated a common pattern (Mace et al. 1996). Avoidance of roads increased as road densities and traffic volumes increased. At all landscape levels, bear density declined as road density and traffic volume increased. Under certain habitat conditions and seasons, the positive attraction to specific cover types was stronger than the negative impacts of roads. Thus, in highly preferred seasonal habitats that tended to be open-canopied, grizzly bears would tolerate low levels of disturbance and would not abandon the habitat. In these circumstances, bears tolerated low levels of disturbance but their vulnerability to humans increased.

There was a relationship found between mortality of instrumented grizzlies and human activities (Mace et al 1996). From 1988 through 94, humans killed eight marked grizzly bears in the study area. These deaths were directly influenced by road access through illegal killing and through management removal of bears conditioned to human foods in developed areas.

Mace et al. (1996) summarized by stating that grizzly bears can utilize roaded habitats, but spatial avoidance will increase and survival will decrease as traffic levels, road densities, and human settlement increases. They believe that the long-term survival of grizzly bears in the Swan Mountains in northwest Montana will depend on their ability to utilize and survive in lower elevation, mixed ownership habitats. Moreover, efforts to mitigate road effects through access

restrictions on multiple-use lands would have limited value if habituation and mortality levels are not minimized on or adjacent to private land.

In response to their findings, Mace et al. (1996) recommended several management strategies. They advocated that road density standards and road closure programs incorporate seasonal habitat requirements of grizzly bears. Specifically, management should minimize road density and traffic volume in watersheds having highly preferred habitats. Consequently, based on local knowledge of grizzly bear habitat selection patterns, road density standards could then be relaxed to some degree in less suitable habitats, allowing increased public access while minimizing threats to the local grizzly bear population. Road access programs could include short-term access during periods when displacement impacts to grizzly bear are minimal.

McClelland and Shackleton (1988) found that most grizzly bears used habitats within 100 m of roads to a lesser degree than expected, which equated to an 8.7% habitat loss. The loss of this habitat was disproportionate to (greater than) its size because areas juxtaposed to roads contained high quality bear foods in spring and fall. They also concluded that bear avoidance of roads was independent of traffic volume, suggesting that even a few vehicles can cause displacement. This conclusion is contrary to the findings of some other studies. Reduced use by grizzly bears of habitat within 100 m of roads did not differ among primary, secondary and tertiary roads.

Bear behavior reduced the effects of road-related habitat loss. Roads and nearby areas were used at night but avoided during the day (McClelland and Shackleton 1988). Darkness probably provided security cover, but traffic levels were also likely lower during those hours.

Limited data indicated minimal demographic effects during their study, but the authors also pointed out that roads increased access for legal and illegal hunters, the major source of adult grizzly mortality (McClelland and Shackleton 1988). When roads are developed for resource industries in grizzly bear habitat, the bear population becomes vulnerable unless vehicle access and people with firearms are controlled.

Mattson and Knight (1991) concluded that Yellowstone Park's backcountry remains the safest for bears, and areas impacted by secondary roads and major developments, remain the most lethal. Given questions about the grizzly bear population's viability, they discouraged an increase in the area impacted by secondary roads and major developments.

Archibald et al. (1987) investigated the responses of grizzly bears to logging truck traffic in the Kimsquit River Valley, British Columbia. Sound level readings were recorded along 18 transects perpendicular to the roads in areas with and without cover. Specifically, these readings were recorded at 25 m intervals from 0-200 m along the transects. Noise level contours were drawn around the road at the 80, 70 and 60 dBC (decibels) levels to establish the zone of hauling activity. Noise levels below 60 dBC were not considered relevant because they were often masked by ambient noise. Grizzly bear location information was gathered on two resident radio-collared adult females whose home ranges were bisected by the road. Data were available for four years: two pre-logging years (1982 and 1983) and two logging years (1984 and 1985).

The average number of daily loads hauled over the 1984 season was 14, and the maximum was 27 (Archibald et al. 1987). On average, logging trucks moved along the main haul road at 30-minute

intervals and 15-minute intervals during peak activity. In 1985, hauling distances were greater and the average daily number of loads declined to 10. The maximum daily haul was 15. In 1985, logging trucks traveled the main haul road at 35-minute intervals on average and 25-minute intervals during peak activity. There was a 78% reduction in the percentage of relocations in the zone of hauling activity between the pre-logging and logging periods. Moreover, the bears avoided the zone of hauling activity independent of the presence of visual screens. There was a 33% decline in the number of times Bear #25 crossed the road and a 39% decline in the number of times Bear #8 crossed the road between periods.

Mattson, Knight and Blanchard (1992) found that grizzly bear occupancy of habitat near human facilities was reduced, efficient foraging strategies were disrupted, and subordinate or security–conscious cohorts were displaced into habitat nearer developments by the more dominant ones, particularly during summer and fall. Adult females and subadult males residing closer to developments were management-trapped at a higher rate than animals of the same class residing farther away. Adult females and subadults bore a disproportionate part of costs associated with avoiding roads and developments. For these reasons, and because adult females are generally thought to operate under considerable energetic costs in the Yellowstone area, tolerance of developments and roads may have resulted in higher mortality and lower productivity among the adult female cohort.

Wieglus et al. (2002) investigated grizzly bear selection of three road types in the Selkirk Mountains of northern Idaho, northeastern Washington, and southern British Columbia from 1986-1991. They analyzed use of roads by 11 bears (5 female and 6 male) in an area containing open (motorized public use allowed) and closed roads (no motorized public use allowed) and 11 bears (7 female and 4 male) in an adjacent area containing restricted roads (forestry use only).

As predicted, most females and males selected against open roads (Wieglus et al. 2002). However, most females selected against closed roads, and no bears selected against restricted roads. The fact that female grizzly bears selected against closed roads was contrary to expectations. As an explanation, the authors suggested that females might first choose their home range area based on a paucity of open roads and then select against closed roads within the resulting home range. They did not believe that females avoided closed roads to prevent encounters with males utilizing the best habitat because they did not observe sexual segregation and avoidance of males by females as a general behavioral pattern. Instead, they interpreted the selection against closed roads by females as cautious behavior. Because open roads are in relatively close proximity to closed roads and within bear home ranges, female bears may have failed to discriminate between open and closed roads.

Chruszcz et al. (2003) found that grizzly bears used areas close to roads more than expected, particularly roads with low traffic volume. Habituated bears were closer to roads than wary bears. Males were closer to low-volume roads than females, but crossed roads less than females during the berry season. Bears were more likely to cross low-volume roads than high-volume roads and were more likely to cross at points with higher habitat rankings. In addition, bears were more likely to cross high volume roads when moving from areas with low habitat values to areas with high habitat values.

Efforts to prevent loss of habitat connectivity across highways should involve maintenance of high-quality grizzly bear habitat adjacent to roads and should address the effects of traffic volume on the road-crossing decisions of grizzly bears (Chruszcz et al. 2003). Two patterns emerge from their study: the avoidance of high-volume roads in a major transportation corridor, and the importance of high quality habitat in determining grizzly bear movements in relation to highway traffic volumes. The reduced cross-valley permeability caused by the presence of the Trans Canada Highway (TCH) may result in harmful population effects in view of the great mobility and extensive spatial requirements of grizzly bears. They advocated continuous highway fencing and effective wildlife passages.

Yost and Wright (2000) investigated moose, caribou and grizzly bear distribution in relation to road traffic in Denali National Park, Alaska, 1996-1997. Caribou and grizzly bear distributions indicated no pattern of traffic avoidance. Road traffic appeared to influence grizzly bear distribution less than forage availability, abundance and phenology. While some bears might have been intolerant of road activity and avoided its vicinity, many were clearly habituated and carried out daily activities in close proximity to traffic and human onlookers.

Kasworm and Manley (1989) found that grizzly bears used habitat 0-914 m from open roads less than expected based on availability during spring and fall. Black bears used habitat 0-274 m from open roads less than expected during spring and used habitat 0-914 m from roads less than expected during fall. Grizzly bears used habitat 0-122 m from trails less than expected during spring and fall. Black bears used habitat 0-122 m from trails less than expected during spring and used habitat 0-305 m from trails less than expected during fall. Habitat availability appeared related to grizzly bear avoidance of trails, and black bear avoidance of roads and trails. Mean distance from grizzly bear radio-locations to a seasonally closed road increased when the road was opened, though black bear locations did not.

Trails (including closed roads) displaced both species of bears less than open roads. Twenty-eight percent of all grizzly bear locations occurred in the three closest Distance to Road Categories (DRCs) (60% of the area) (Kasworm and Manley 1989). Grizzly bear avoidance of high quality habitat near roads and trails may lessen the opportunity for individuals to obtain food and increase intraspecific competition by further forcing bears into limited remote habitat. Conversely, 58% of black bear locations occurred in the three closest DRCs. Black bear tolerance of disturbance may provide an opportunity for this species to exploit habitat in DRCs 1-3 in the relative absence of grizzly bears.

Schallenberger (1977) reviewed the literature related to the effects of oil and gas exploration on grizzly bears at a time when few studies were available to establish predevelopment guidelines. He concluded that these activities are generally detrimental to bears and summarized the greatest impacts involved the construction of roads into unroaded areas and increased numbers of people.

Gibeau et al. (2001) used 4,359 daily telemetry locations from 49 grizzly bears from 1994-1998. Of the four types of human developments they investigated, the Trans Canada Highway (TCH was avoided most by grizzly bears. Female bears avoided the freeway regardless of the habitat quality or time of day. Males, and especially subadult males, were found closer to the TCH when within or adjacent to high quality habitat and during the human inactive period. Part of the influence is the

high density of humans in the valley where the TCH is found. Greater use of hiding cover by males may be part of the strategy used to take advantage of high quality habitat near roads. Although grizzly bears become accustomed to predictable occurrences including traffic, these results suggest otherwise. For high-speed high-volume highways, there is a point where the combination of traffic volume and highway configuration overrides a bear's attraction to high quality habitat. Bears were generally reluctant to cross it, and they concluded that it is a barrier to adult female grizzly bear movement. The same pattern of grizzly bear response to paved roads was seen as with the TCH, although both sexes were found closer than a random pattern would predict. Females remained further than males from approved roads regardless of the habitat quality or time of day. Males were found closer to paved roads when within or adjacent to high quality habitat and during the human inactive period. Unlike paved roads that were located in valley bottoms and good quality habitat, high use trails were widely distributed throughout all types of habitats.

While distance measurements were not as great as for the TCH, bear response to high use features (highways) were still twice as high those of paved roads or high use trails females, and especially subadult females were found closer to features when within or adjacent to high quality habitat during the human inactive period (Gibeau et al. 2001). Males, on the other hand, remained further away from features regardless of habitat quality or time of day.

Graves (2002) is the only study known at this time to look at how grizzly bears use the habitat in relation to motorized trails. Although the sample size was small, she found that grizzly bears used areas near trails less than expected. This result was true for both ATV trails and single-track motorcycle trails. Bears selected against areas within 250-900 m of ATV trails and within 450-600 m from single-track trails. Levels of human use, habitat quality, bear experience and habituation may have had something to do with whether or not a bear used an area near a trail less than expected.

Summer Non-Motorized Use

The following information pertains more to non-motorized trails and their effects on bears. McClellan and Shackleton (1989) summarized their study by stating that bears responded more strongly to ground-based human activities, such as people on foot or moving vehicles, when in the open than when in cover. Cover was less important in determining bear behavioral responses to fixed wing aircraft than the other stimuli. With the exception of people on foot, bears generally displayed stronger reactions to human activities that occurred <75 m away than at greater distances. The strongest response of bears was to people on foot, and these reactions were most extreme in areas of low human use.

Jope (1985) found that although bears were seen as often on heavily used trails as on trails with little human use, full charges towards people by bears occurred primarily on trails with little human use. The findings of this research together with records on human injuries in Yellowstone Park suggest that habituation of grizzly bears to hikers reduces the rate of fear-induced charges and consequent injuries.

Gunther (1989) documented 36 encounters between bears and backcountry users. Subadults and females with cubs-of-the-year were involved in 67% of the encounters, but represented 31% of the bear sightings. Grizzlies reacted to encounters by fleeing (53%), showing no reaction (31%), or

charging (14%). In 18 of 19 incidents where bears fled, they ran to forest cover before stopping. Bears made significantly more frequent use of areas>500 m from tree cover during the closed and restricted periods than during the open periods. Foot parties were more likely to be charged during an encounter with a grizzly than were people on horseback.

Mace and Waller (1996) found that grizzly bears in the Jewel Basin Hiking Area did not position themselves in a random fashion relative to trails and lakes with campsites. During each season, bears were significantly farther away from areas frequented by humans than from other areas. Grizzly bear distances from both lakes and campsites and trails generally increased as the seasons progressed. Their data suggest that grizzly bears positioned themselves further from lakes with campsites than from trails. In multivariate models, however, distance to trails and lakes were significant variables only during summer and autumn. During these two seasons, the relative probability of grizzly bear use increased as distances to trails and lakes with campsites increased. During all seasons, grizzly bears in this area selected for open habitat types relative to the forest habitat type. Most of the trail system (66%) occurred in the forest habitat type, which may partially explain the lack of confrontations between hikers and grizzly bears.

Bears were found closer to trails during the night when within high quality habitat and further from trails when distant from high quality habitat (Gibeau et al. 2001). Their observed avoidance of high use trails far from high quality habitat may be a reflection of a greater opportunity for bears to select high quality habitat in the relative absence of humans. Grizzlies may not have the opportunity to truly avoid paved roads without forfeiting access to much of the high quality habitats.

It is clear that bears tend to react negatively to humans on foot. What is less clear is a quantitative relationship of how far bears are displaced from foot trails. Bears apparently also habituate to humans on trails, but cover and habitat quality also have an effect on whether or not bears will be in areas that humans frequent on foot.

Winter Motorized Use

In 2002, the all Greater Yellowstone Area National Forests (Gallatin, Custer, Beaverhead-Deerlodge, Shoshone, Bridger-Teton), with the exception of the Caribou-Targhee, consulted with the US Fish and Wildlife Service on the effects of snowmobile use on grizzly bears on these National Forests. A literature review was conducted and a Biological Assessment was written and submitted to the USFWS (Cherry, 2002). A Biological Opinion was received from the USFWS (USDI 2002).

Humans can access some grizzly bear denning habitat in a number of different ways including cross-country skiing, snowshoeing, driving, snowmobiling, hiking and snowboarding. Any of these winter activities has the *potential* to affect denning grizzly bears.

There is a fairly small volume of literature on the effects of winter use on bears, and even less information about the effects of snowmobiles on grizzly bears. Some of the relevant literature is presented here.

Swenson et al. (1997) recommended that humans avoid areas around known active bear dens. They suggested that dens be avoided by 100 m to 1 km, and that disturbance be minimized in areas with high concentrations of dens. Linnell et al. (2000) reviewed the literature on disturbance to denning bears. They concluded that bears tend to select dens 1-2 km away from human activity such as roads and dwellings, and bears seemed tolerant of activities that occurred more than 1 km from the den. Activity closer than 1 km, especially within 200 m of the den, led to variable responses from bears. Bears may abandon dens if activity occurs within this zone, particularly early in the denning season. Bears often den at some distance from where they denned the previous year, indicating that loss of a single denning area due to human disturbance does not always lead to deleterious effects if alternate denning habitat is available within the bear's home range.

The insulating quality of snow (Blix and Lentfer 1992; P. Farnes pers. comm.), and the locations bears chose to den in the Yellowstone area (forested, steep, north aspects with deep snow) (Judd et al. 1986) are such that the degree of disturbance by snowmobiles activity is questionable. The information on impacts to denning bears is largely anecdotal and collected in the course of other research, with few, if any, studies actually designed to look at this phenomenon. The March 2000 Draft of the Grizzly Bear Conservation Strategy for the Yellowstone area concluded that there was insufficient information to call for specific management direction for snowmobile use (ICST 2000).

Snowmobiling has occurred for many years, with gradual increases in use and improvements in technology (J. Kempff pers. comm.). This means the grizzly bears have likely habituated to snowmobile use (Knight and Gutzweiller 1995 p. 114,133) or bears may have moved their den site to another location the next year (Shoen et al. 1987). Grizzly bears are noted to den primarily in remote locations (Judd et al. 1983). Grizzly bears are unlikely to abandon their dens very late into the winter due to the high costs (both energetic and fitness) of doing so (Linnell et al. 2000). It is likely that hibernating bears exposed to meaningless noise (no negative consequences to the bear) habituate to this type of noise (Knight and Gutzweiler 1995 p. 133). A few researchers have found that some bears do, at least on occasion, appear to respond to noise or disturbance near the den site by waking up and moving around in the den (Reynolds et al. 1986; Miller pers. comm. to Dolan). On rare occasions, bears may abandon a den due to some disturbance (Reynolds et al. 1976, Swenson et al. 1997).

Linnell et al. (2000) advised the following:
1) Locate den concentrations.
2) Minimize winter activity in denning areas.
3) If winter activity is unavoidable, it is better to commence activity about the time bears are entering dens so they can choose to avoid certain areas.
4) Confine winter activity to regular routes and valley bottoms.
5) Avoid known den sites by 1 km.
6) Off-route use, which is not predictable, may have more serious impacts than more predictable activities and should be minimized.

The IGBST analysis using the Mahalanobis distance model for suitable denning habitat showed that a large proportion of the Forest, and the Yellowstone area, is comprised of suitable denning habitat. Approximately 25% of the suitable denning habitat is in areas where snowmobile use occurs (Podruzny et al. 2002).

A large proportion of the Yellowstone Grizzly Bear Recovery Zone is protected from snowmobiling. Of the 380 known den locations in the Yellowstone area, between 1975 and 1999, approximately 88% were in areas currently closed to dispersed snowmobile use (USDI 2000). Most of the known den locations (333) were in the Recovery Zone because that is where trapping and radio collaring efforts have been emphasized. Even if not officially protected by being in the National Parks away from designated snowmobile routes or designated Wilderness Areas, many areas are undesirable for snowmobile use due to being forested, too steep, or inaccessible due to terrain. For instance, only about 15% of the Gallatin National Forest in the Recovery Zone is considered desirable for this type of use although 44% of this area is technically open to snowmobiling. Approximately two-thirds of the Gallatin National Forest south of I-90 (approximately 1 million out of 1.5 million acres) meets the definition of "secure" according to the IGBC (1998). About 9% of this "secure" habitat is used by snowmobiles.

Only about 7% of the den sites documented from 1975-99 in the GYA were inside dispersed snowmobile areas or within 500 meters of these areas or snowmobile routes. Data are not available to evaluate the level or timing of snowmobile use associated with each den site during the year it was documented. It is unknown if den sites within snowmobile areas were located in inaccessible micro sites (steep terrain or dense forest) or were potentially available for snowmobile access (Cherry 2002). Monitoring that has been conducted since 2001 has indicated that known grizzly bear dens within areas legally accessible by snowmobiles are typically in locations inaccessible to the machines due to timber or terrain (USDA FS 2004).

Of the known dens sites in the Greater Yellowstone Area, relatively few (12.4%) were found to be in areas near snowmobiling (Cherry 2002). In addition, 82.6% of dens were located >2000 meters from snowmobile use areas. The Gallatin National Forest had eight dens in snowmobile use areas. The Mahalanobis Distance Model predicted that there was a lot of grizzly bear denning habitat available (greater than 60%) in the Forests and federal land in the Greater Yellowstone Area. It also indicated the Gallatin National Forest had 74% of the Recovery Zone that met the denning criteria, and that 68% of the areas where bears occur on the Forest met denning criteria (Podruzny et al. 2002). Over 70% of this suitable denning habitat both in the Recovery Zone and on the Gallatin National Forest where bears occur is legally open to snowmobiling as of 2000. The definition of "secure" habitat in the Grizzly Bear Conservation Strategy (ICST 2003) does not consider snowmobile use in these areas as removing them from secure.

From a practical standpoint, it should be noted that grizzly bears rarely reuse a den. Therefore, protecting actual den locations is infeasible as they change from year to year. Even protecting denning concentrations is infeasible because we only know where 26 dens were located on the Gallatin National Forest during the last 25 years because most trapping and radio collaring efforts occurred in Yellowstone National Park. Protecting potential denning areas means letting the public know why a certain area is closed, and perhaps focusing unwanted attention on grizzly bear denning habitat. This, in and of itself, may pose a risk to the grizzly bear.

It is possible that there could be a potential negative impact from snowmobiles to sows with cubs-of-the-year (COY) upon emergence from their dens than to denning bears. About 60% of sows emerge between the first and fourth weeks of April (USDI 2000). Most emerging bears move

immediately to a known, reliable spring food source, such as a big game winter range (Reinhart and Tyers 1999). However, sows with COY may remain near the den for a period of time. It is possible that snowmobiles could disturb females with cubs at this time of year, although there is no known incidence of this in the Yellowstone area. Depending on where one is on the Gallatin National Forest, snowmobile season ends from March 30 to late May or June in some years at the higher elevations. The conditions that usually force den emergence (melting snow and moisture in the den) are the same conditions that cause poor snowmobiling conditions (Farnes pers. comm.). In many cases the access to snowmobiling on the National Forest has become limited before the emergence dates due to the exposure of mud and rock at lower elevations. A disturbance would have to be severe for a sow to abandon her cubs (Linnell et al. 2000). Although probably quite rare, the potential seriousness of a sow with COY being displaced post-emergence, and perhaps abandoning her cubs, means this type of disturbance should be considered. The IGBST is conducting research on spring emergence habitat for sows in the GYA that will be utilized once it becomes available. Monitoring efforts since 2001 (USDA FS 2004) have not revealed any conflict between snowmobiling and grizzly bear dens or emergent bears.

Although the determination of the 2002 Biological Assessment for the effects of snowmobiling on the grizzly bear in the Yellowstone (Cherry 2002) was 'may affect-likely to adversely affect,' for snowmobiling, this is extremely conservative and based more upon the potential impact of snowmobiling on sows with COY upon den emergence, rather than the effects on denning bears in the Yellowstone area.

Snowmobiling is not a new use or impact but is merely the continuation of an existing use that has been ongoing for many years with few, if any, impacts on either individuals or the population. Although snowmobiling may occasionally affect an individual bear, it is very unlikely to affect the population as a whole, especially a population such as the Yellowstone grizzly bear, which is nearing recovery.

There are a number of key points about grizzly bears and snowmobiling in the Yellowstone Area. The major points are:

1) The grizzly bear population in the Yellowstone area is nearing recovery or has met recovery criteria.
2) Snowmobiles are only one of several means by which humans can access denning habitat in the winter, on or off trails.
3) Snowmobile use has been around for many years, and has increased over a long period.
4) Bears have had a chance to either habituate or move to a new den site if disturbed.
5) Bears tend to den in remote areas with characteristics that are not entirely conducive to snowmobiling (steep, forested habitats).
6) Snow is an excellent sound insulator.
7) A large proportion of the Recovery Zone and area where bears may occur (68 and 63%, respectively) provides suitable denning habitat (2002, Table 3.10. 9).
8) A large proportion of known dens in the Yellowstone area (88%) are located in areas where snowmobile use does not occur (Cherry 2002, Table 3.10. 6, Table 3.10. 7, Table 3.10. 8) and suitable denning habitat is well distributed on the Forests.

9) Within the Recovery Zone, a relatively small percent (16%) of suitable denning habitat is in areas potentially used by snowmachines (Cherry 2002, Table 3.10. 11). In the areas where grizzlies may occur, this increases to 69%.
10) On the five National Forests looked at in depth, only 3-19% of the secure area within the Recovery Zone that is suitable for denning is potentially used by snowmobiles (Table 3.10. 16). In the area where bears may occur, 6-31% falls into this category. The percentages are very similar for secure areas used by snowmobiles without considering whether or not it is suitable denning habitat (Table 3.10. 17). In the National Parks, less than 5% of the total area is open to snowmobiling. This provides a large acreage of suitable denning habitat where no snowmobiling occurs.
11) Information on effects of snowmobiling on bears is largely anecdotal, although there is sufficient information to indicate that some individual bears have the potential to be disturbed.
12) Potential effects of snowmobiling on reproduction and survival of grizzly bears in Yellowstone Park and the Greater Yellowstone Area are not evident in the population statistics.

The determination of the 2002 Biological Assessment on the effects of snowmobiling on grizzly bears was "may affect-likely to adversely affect" (Cherry, 2002). This is because it is not known where all grizzly bear dens are located, and exact snowmobile routes are not predictable. Thus, preventing snowmobiles from traveling near a den site cannot be assured. Snowmobile activity may disturb or displace an individual grizzly bear. Generally, snowmobile effects are not significant, but because of the unpredictability of snowmobile use and the possibility that a snowmobile could affect an individual bear, especially sows with cubs-of-the-year, we could arrive at a "no effect" determination for bears.

The Biological Opinion from the USFWS (USDI, 2002) concluded that the level of snowmobile activity authorized in 2002 on the Forests (including Custer, Shoshone, Gallatin, B-D and B-T) was not likely to jeopardize the continued existence of the grizzly bear. The best information suggests that current levels of snowmobile use are not appreciably reducing the likelihood of either the survival or recovery of grizzly bears in the Yellowstone recovery zone. They based this on the facts that direct and indirect of snowmobiles on grizzly bears are not well documented, grizzly bears may habituate to disturbance, and that population parameters for Yellowstone grizzly bears are excellent among other things.

Graves and Reams (2001) edited the output of an expert workshop for protocols to monitor snowmobile effects on wildlife. Several issues to monitor were identified for Ursids. These included the effect of presence on emerging animals and the effect of noise on hibernating bears. It appears that although it is important to understand population level effects,that most information available is on individual effects. The expert group discussing bears decided that impact to emergent bears is higher than bears still within their dens. They also believed that determining if bears are avoiding denning in snowmachine use areas is impossible to determine. Possible effects listed by this group were disturbance for emerging family groups before young are mobile, increased movement and energetic costs, and displacement from habitat. Other possible effects of noise for denning bears include den abandonment, loss of young, increased energetic costs, death, learned displacement from denning areas were snowmachine use occurs. Determining where bears are denning and what areas snowmobiles are using are basic steps to understanding effects on bears.

We have attempted to do this in the Yellowstone area (Cherry 2002). In addition, monitoring of spring snowmobile use and known grizzly bear dens is continuing. At this time (2006), there have been no conflicts between denning or emerged bears and snowmobiles. Even with monitoring efforts, there has been no evidence found that snowmobiles affect grizzly bears that are either denning or emerging from dens. In addition, the Forest and other cooperators will continue to monitoring known den sites and snowmobile use (USDA FS 2004). If any conflict is discovered, appropriate mitigation measures will be taken. Grizzly bears are not a legitimate reason to curtail snowmobile use in the spring. .

The Travel Plan management alternatives have different effects on the amount of acres of the Gallatin National Forest open to snowmobiling. For this discussion, the acres of area that are legally closed to snowmobiling either seasonally or yearlong are presented. There are additional acres that, although they are technically open, may not really have snowmobile use due to being heavily forested, having terrain that cannot be negotiated by snowmobile, or generally have too little snow accumulation for snowmobiling to occur.

Winter Non-Motorized Use

There is little literature on the effects of winter non-motorized use on grizzly bears. Therefore, some of this literature is from research on brown bears in other climates or black bears and with in different climates and using different den types.

Swenson et al. (1997) believed that fall hunting, which occurs early in the European brown bear denning period in Sweden, may contribute to fall disturbance and early den abandonment by brown bears. They suggest that bears may be more tolerant of industrial activity located some kilometers from the den, but not of humans or human related activity near or at the den site. A number of the human activities at or near the den site were not motorized (i.e. hunting, survey work, shooting, and fishing at or near the den, and a dog at the den site, etc.). Swenson et al. (1997) found that there was no significant difference in den abandonment in a 'protected area' versus areas where there was military activity and timber harvest. They also found that when there was some type of human activity at or within 100 m of den sites, 12 of 18 dens were abandoned.

Craighead and Craighead (1972) apparently caused den abandonment by a female grizzly bear in the fall that they tracked to within 200 ft of its den.

Kolenosky and Strathearn (1986) found that rates of black bear den abandonment in Ontario were inversely related to duration of denning. In other words, den abandonment is much more likely early in the fall than any other time. Smith (1983) also found that black bears (6 of 9) abandoned their dens less than 2 weeks after den entry, but bears within the dens more than 4 weeks (n = 12) did not abandon their dens. This study was in a mild climate where many bears use tree dens and even den in the open (on the ground), and there is no snow. Beecham et al. (1983) also found that den abandonment was inversely related to the length of time that the bear had been denned. Reynolds et al. (1976) and Tietje and Ruff (1980) also found this for black and brown bears.

Goodrich and Berger (1984) cite 3 cases of black bear cub abandonment (out of 12 cases of den abandonment) - one after researchers entered the den to radio-collar the female and two as researchers approached the den. They conclude, "Since the quiet approach of investigators

sometimes causes abandonment of dens and cubs (this and other studies; Manville 1983, Kolenosky and Strathearn 1987), skiing and other recreational activities could have the same or a heightened effect." Den site abandonment in response to investigator disturbance occurred at both study areas, and all but one disturbed bear remained active after abandonment. Applications of the findings of this study to grizzly bears should be made with caution because these black bears were most commonly denning in trees, either at the base or in elevated tree dens, rock dens, and in some cases in logs, brush piles or on the ground, which can occur when winters are relatively mild. The time of year for den abandonment was not provided.

Direct and Indirect Effects

Analysis Methodology

There is a difference in the way in which the CEM Access map was prepared and the way in which the travel plan alternatives were prepared. The CEM Access map includes a one-mile buffer around each bear subunit that is included in the calculation of route density for the subunit. This one-mile moving window extends outside the Forest boundary for subunits lying on the boundary, includes adjacent subunits on the Forest, and includes non-Forest Service routes in these areas (see attached maps). The maps for the travel plan alternatives do not include any access routes beyond the Forest boundary unless they are on the Gallatin National Forest. These routes within the 1 mile moving window of the GIS model add to the route density categories or subtract from secure, as the case may be. Both the CEM values and Forest Travel Plan Alternatives include federal, private, state and county roads on the Forest. Calculations include private land acreage within the Forest boundary on the Gallatin National Forest. Land outside of the Gallatin National Forest has no road density values. It is ***only appropriate to compare these secure habitat numbers across all seven alternatives to determine which alternative has the most secure habitat or motorized access in grizzly bear habitat and which has the lest because Alternative 1 may or may not match CEM for the reasons presented***. The numbers presented in the alternatives are the portion over which the Gallatin National Forest has jurisdiction.

Alternative 1 is what is legally available to the public for travel on the 1999 Forest visitor map and is the 'no action' alternative. Under this Alternative, the OHV rule is not in place which means that off-route travel is legal, there is no travel plan, and routes are not designated. Alternative 2 is the closest alternative to what people are actually currently doing on the ground with the OHV rule in place, making off-route travel illegal and designating routes if it is selected. Alternative 2 is sort of a 'snap shot' of current use, but with a travel plan in place as its main action. Under Alternative 2, and all the other action alternatives (3-7M), project routes are expected to go out of use over time. Many of them are already grown in and are impassable or have been obliterated. Under all action alternatives (2-7M), administrative routes will be closed to all but administrative use and gated to the public. Under Alternative 1, all motorized routes (including project and administrative) are counted as open to the public.

Under Alternatives 2-7M, in subunits where there are administrative roads, there is a difference between TMARD and OMARD with OMARD density figures being lower. TMARD counts all roads, while OMARD drops administrative roads. Use of administrative roads is limited and should not be viewed the same as a road that is open to the public, and administrative roads are gated. The motorized route density categories of most interest to agencies involved in grizzly bear management

are when TMARD is greater than 2 mi/sq mi and when OMARD is greater than 1 mi/sq mi (ICST 2003). The higher the density of public motorized routes, the less likely a grizzly bear is to use an area.

Although all types of motorized vehicle routes count the same in the access model and CEM, there is likely to be a difference among types and frequencies of use. For instance, a State highway with numerous vehicles at high speeds may not have the same effect on wildlife as a seasonal, rarely used, motorcycle route. However, little research appears to show this distinction. Effects on grizzly bears are complicated by habituation, cover, habitat quality, and other variables. Seasonal closures are not considered in depth in this analysis.

A number of the subunits lying all or in part on the Gallatin National Forest have a high amount of secure habitat (89% or higher in CEM) (Table 3.10. 2a). These are Boulder/Slough #1 and #2, Hellroaring #2, and Lamar #1. Other subunits above 70% secure habitat (in CEM) include Crandall/Sunlight #1 and #2, Hellroaring #1, Hilgard #1 and #2, and Madison #1. There are three subunits that the Conservation Strategy (ICST 2003) designates as "in need of improvement" in amount of secure habitat that currently have less than 70% secure habitat. These are subunits Gallatin #3 at 55% in CEM, Henrys Lake #2 at 46%, and Madison #2 at 67%. Plateau #1 subunit has a 69% secure value in CEM, but the Gallatin National Forest includes only a small portion of this subunit. It should be noted that the calculations for our travel plan alternatives for each subunit do include the portion under adjacent federal management, such as other National Forests or Yellowstone National Park., but do not count routes on these lands. That is one reason why it is correct to only compare the numbers among Alternatives 1 through 7M, and consider that Alternative 1 compares with CEM but may not match those numbers.

The current condition is actually a combination of Alternatives 1 and 2, however Alternative 2, as an action alternative, shows the effects of closing project roads. These alternatives most accurately reflect what was on the ground in 1998 and what is currently on the ground. TMARD and OMARD can be compared among alternatives. TMARD is comprised of all motorized routes of all jurisdictions (FS, state, county, private, etc.) in the subunits. OMARD drops only administrative routes from route density. The direction in the Conservation Strategy (ICST 2003) focuses on secure habitat, however, we have also presented TMARD >2 mi/sq mi and OMARD > 1 mi/sq mi for the subunits.

To analyze snowmobiling and its potential effects on grizzly bears, the acres and percentages of Travel Planning Areas (TPAs) with yearlong and seasonal closures to snowmobiles were reviewed. The TPAs were also combined upward into mountain ranges. Under all action alternatives, the percentage of the Forest legally open to snowmobiling yearlong is reduced from the present.

Effects of Summer Motorized Use by Grizzly Bear Subunit

Boulder/Slough #1 and #2

Throughout the following discussion, Alternative 1 is without the OHV EIS decision in place, which would allow off-road vehicle use to continue.

Effects common to all alternatives

Two of the simplest subunits to address are the Boulder/Slough #1 and #2. Under the CEM Access Model, these had 96.6% and 97.7% secure habitat, respectively (Table 3.10. 5.). Both of these subunits have very high percentages of secure habitat and low motorized route densities under all alternatives. Because these subunits have no administrative roads, TMARD and OMARD percentages are the same for each subunit.

Table 3.10. 5. Total Motorized Access Route Densities (TMARD), Open Motorized Access Route Densities (OMARD), and percent secure habitat of the Boulder/Slough #1 and #2 Grizzly Bear Subunits. These numbers include all road jurisdictions (FS, State, County, Private, etc).

Boulder/Slough #1 OMARD and TMARD	**CEM**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 6**	**Alt. 7M**
Percent Secure	96.6	96.3	96.4	96.4	96.4	96.7	96.7	96.6
Density Percent: >1 mi/sq mi	2.5	2.3	2.3	2.3	3.3	2.2	2.2	2.3
Density Percent: >2 mi/sq mi	0	0	0	0	0	0	0	0
Boulder/Slough #2 OMARD and TMARD	**CEM**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 6**	**Alt. 7M**
Percent Secure	97.7	100	100	100	100	100	100	100
Density Percent: >1 mi/sq mi	0	0	0	0	0	0	0	0
Density Percent: >2 mi/sq mi	0	0	0	0	0	0	0	0

Boulder/Slough #1 lies entirely in the Absaroka Beartooth Mountains on the Gallatin National Forest and varies only a small amount across alternatives. This subunit is almost entirely Wilderness. The small amount of road density occurs due to the Main Boulder road, the Iron Mountain Road to the northeast part of the subunit, and the Lake Abundance Road to the southeast which are within the 1 mile window of the Access model. The difference among the percentages from CEM and the alternatives is in the very southeast portion of the subunit near Cooke City and varies depending on the management of the Lake Abundance Road, which is actually not in this subunit, but is picked by the 1 mile moving window. There is no road density in the >2 mi/sq mi category in any alternative. Without consideration of roads under National Forest jurisdiction, there is 97% secure habitat, therefore, the Forest motorized routes detract slightly from secure and add only slightly to route densities.

Boulder/Slough #1

Alternative 7M has 96.6% secure habitat, 2.3% of the subunit is in the > 1 mi/sq mi density category. There is no route density >2 mi/sq mi. This is a slight improvement over both Alternatives 1 and 2.

Boulder Slough # 2

Effects common to all alternatives

The Boulder/Slough #2 subunit, also in the Absaroka Beartooth Mountains, is shared between the Gallatin National Forest and Yellowstone National Park. The portion on the Forest is 100% secure habitat and is entirely Wilderness. There is no difference among the Gallatin Forest Travel Plan alternatives in percent secure habitat because there are no motorized routes on the National Forest in this subunit.

Crandall/Sunlight #1 and #2

The Crandall/Sunlight subunits #1 and #2 lie on the eastern side of the Gallatin National Forest and are shared with the Shoshone National Forest. The Gallatin National Forest has a small proportion of both subunits, especially for Crandall/Sunlight #2. Crandall/Sunlight #1 and #2 are 81.1% and 82.3% secure habitat in CEM, respectively.

Under CEM, Alternatives 1 and 2 are considered to be an approximation of the current condition on the ground. These percent secure figures do not compare directly with the CEM secure figures because for the Alternatives the roads on the Shoshone National Forest roads are not considered in the calculations. Therefore, the percentages for Alternatives 1 and 2 should be used for comparison to the other alternatives to determine if there is an increase or decrease in secure or percent of area affected by road densities. The alternatives are all very similar. The highest road density in the Gallatin portion of the subunit is primarily related to Highway 212 and development on private land. There are no project or administrative roads within these subunits that make any contribution to road densities, therefore, OMARD and TMARD are the same.

Table 3.10. 6 Total Motorized Access Route Densities (TMARD), Open Motorized Access Route Densities (OMARD), and percent secure habitat of the Crandall/Sunlight #1 and #2 Grizzly Bear Subunits. All road jurisdictions are included, private, county, state and FS.

Crandall/Sunlight #1 TMARD and OMARD	**CEM**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 6**	**Alt. 7M**
Percent Secure	81.1	96.0	96.3	96.1	96.1	96.7	96.7	96.3
Density Percent: >2 mi/sq mi	4.0	1.1	1.1	1.1	1.1	1.1	1.0	1.1
Density Percent > 1 mi/sq mi	16.3	3.0	3.0	3.4	3.3	2.4	2.3	2.9
Crandall/Sunlight #2 TMARD and OMARD	**CEM**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 6**	**Alt. 7M**

Percent Secure	82.3	99.7	99.7	99.7	99.7	99.7	99.7	99.7
Density Percent: >2 mi/sq mi	5.5	0	0	0	0	0	0	0
Density Percent >1 mi/sq mi	13.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Crandall/Sunlight #1

Alternative 7M has 96.3% secure habitat, and 3.4% of the subunit in the > 1 mi/sq mi density category and 1.1% in the >2 mi/sq mi category. This Alternative has the same percent secure as Alternative 2, but more secure than Alternative 1. It has the same density in the >2 mi/sq mi as Alternatives 1 and 2, and is slightly lower in the > 1mi/sq mi density category than Alternatives 1 and 2.

Crandall/Sunlight #2

For Crandall/Sunlight #2, there is no difference on the Gallatin National Forest in secure habitat (99.7%) among alternatives. The small portion of the subunit on the Gallatin National Forest is most affected by Highway 212.

Lamar #1

A small portion of Lamar #1 subunit lies on the Gallatin National Forest, and the remainder lies in Yellowstone Park and the Custer National Forest. Under the CEM Access Model, this subunit has 89.4% secure habitat, and under Alternatives 1 and 2 (closest to 1998 baseline), are 93.9-94.5% secure, respectively
Table 3.10. 7). The analysis for this subunit includes the small portion of the Custer National Forest in this area administered by the Gallatin National Forest. The effects of the heavily motorized Cooke City area are somewhat compensated for by large non-motorized parts of the Lamar #1 subunit. However, the area around Cooke City and to the north provides some good quality bear habitat (Table 3.10. 2a and Table 3.10. 3). Cooke City has also been an area of high grizzly bear mortality in the past. Although this subunit has very high percentages of secure habitat under all alternatives, some alternatives produce more secure and are more responsive than other alternatives to bear habitat quality and road management. This subunit is bisected by Highway 212.

Table 3.10. 7 Total Motorized Access Route Densities (TMARD), Open Motorized Access Route Densities (OMARD), and percent secure habitat of the Lamar #1 Grizzly Bear Subunit. (All road jurisdictions are included.)

Lamar #1 TMARD and OMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	89.4	93.9	94.5	94.4	94.4	95.2	95.1	94.5
Density Percent: >2 mi/sq mi	3.2	3.7	3.5	3.6	3.6	3.4	2.6	3.6

Density Percent > 1 mi/sq mi	6.9	5.4	5.0	5.3	5.3	4.7	4.2	5.3

Alternative 7M has 94.5% secure habitat, a motorized route density of 3.6% of the subunit in the > 1 mi/sq mi category and > 5.3 in the >2 mi/sq mi category. This has more secure habitat and less road densities in the higher categories than Alternative 1. Under Alternative 7M there is a new ATV/motorcycle route #3226 near Miller Creek and a small connecter to #3223 that are not found in Alternatives 1 or 2. Several small project roads (i.e. #570) will no longer exist under implementation of Alternative 7M, which compensate for these small additions.

Hellroaring/Bear #1 and #2

The Hellroaring/Bear #1 and #2 subunits lie east of Gardiner in the Absaroka Beartooth Mountain range. The Hellroaring Bear #1 and #2 subunits have 77% and 99.5% secure habitat, respectively, under the CEM Access Model (Table 3.10. 8). Hellroaring/Bear #1 is located partially inside the Wilderness. Hellroaring/Bear #1 has some project roads that will be gone under full implementation of any of the action alternatives. This is the primary difference between Alternatives 1 and 2 for TMARD and OMARD

The Hellroaring/Bear #2 subunit is entirely in Wilderness. In Hellroaring/Bear #2, the only area of motorized route density lies at the edge of the Wilderness in the Mill Creek drainage. Hellroaring/Bear #1 shows some slight differences amongst the alternatives.

Table 3.10. 8 Total Motorized Access Route Densities (TMARD), Open Motorized Access Route Densities (OMARD), and percent secure habitat of the Hellroaring/Bear #1 and #2 Grizzly Bear Subunits (Including all road jurisdictions).

Hellroaring/Bear #1 TMARD	**CEM**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 6**	**Alt. 7M**
Percent Secure	77	75.1	79.5	81.3	81.3	81.3	81.3	80.4
Density Percent: >2 mi/sq mi	13.5	13.2	11.2	11.2	10.1	10.1	10.1	10.0
Density Percent > 1 mi/sq mi	20.8	18.3	17.2	16.8	16.8	16.6	16.6	16.5
Hellroaring/Bear #2 TMARD	**CEM**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**	**Alt. 5**	**Alt. 6**	**Alt. 7M**
Percent Secure	99.5	98.1	98.5	98.5	99.0	99.0	99.0	99.7
Density Percent: >2 mi/sq mi	0	0	0	0	0	0	0	0
Density Percent >1 mi/sq mi	0	0.4	0.2	0	0	0	0	0

Hellroaring/Bear #1

Alternative 7M has 80.4% secure habitat for OMARD and TMARD, and TMARD of 10.0% in the >2 mi/sq mi route density category. For OMARD this alternative has 16.5% in the >1 mi/sq mi road density category. This alternative provides more than the amount of secure habitat that presently exists (in Alternatives 1 and 2) and less motorized route density in the higher density categories for OMARD and TMARD. This alternative includes an administrative route in the vicinity of Red Mountain south of the State Dome Mountain Wildlife Management Area not seen in other alternatives. This was an error of omission and is actually the same in all action alternatives. Although the overall secure and density percentages for this subunit look fairly good, the non-Wilderness and non-Park portions of the subunit are fairly heavily motorized under all alternatives.

Hellroaring/Bear #2

The differences among the alternatives for this subunit are entirely due to motorized access adjacent to the boundary of the Wilderness to the north in Mill Creek at the East Fork of Mill Creek, Passage Creek, Colley Creek and Lambert Creek. This subunit has 99.5% secure habitat under CEM.

Alternative 7M has 99.7% secure habitat and 0% in the road density categories. This is an improvement over Alternatives 1 and 2.

Gallatin #3

The Gallatin #3 subunit is located in the southern part of the Gallatin Range, and is shared with Yellowstone Park. The vast majority of this subunit lies within the Gallatin National Forest. The CEM Access value for secure habitat in this subunit is 55.3% (Table 3.10. 9). This is one of the subunits in the Yellowstone Area designated "in need of improvement" in the Grizzly Bear Conservation Strategy (ICST 2003). The Gallatin #3 subunit can only improved to a certain point due to the presence of many non-Forest Service routes and their effects on this subunit (Table 3.10.2.b). This subunit has many non-Forest Service routes, especially on the east side of the subunit, and has state highways that bound the subunit on the east and west sides. These routes affect secure habitat by dropping it to 81% before even considering the effect of National Forest routes. All alternatives improve the percentage of secure habitat available in this subunit.

Table 3.10. 9 Total Motorized Access Route Densities (TMARD), Open Motorized Access Route Densities (OMARD), and percent secure habitat of the Gallatin #3 Grizzly Bear Subunit. (All road jurisdictions are included.)

Gallatin #3 TMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	55.3	54.4	59.4	60.1	62.2	71.8	81.0	70.2
Density Percent: >2 mi/sq mi	16.9	15.4	14.0	14.1	12.1	10.9	10.6	11.7
Density Percent >1 mi/sq mi	41.0	36.4	35.0	33.9	32.7	24.6	17.4	24.9

Alternative 7M has 70.2% secure habitat, and it has a TMARD of 11.7% in the >2 mi/sq mi route density category. For OMARD, this alternative has 24.9% in the >1 mi/sq mi route density category. Alternative 7 is a substantial improvement over the current condition (Alternatives 1 and 2). The main changes in between Alternative 7 and Alternatives 1 and 2 are removal of motorized use from much of the southern part of the subunit, and a reduction in motorized use on the east side of the Gallatin Crest. This creates two fairly large pieces of secure habitat that do not currently exist. This alternative comes very close to meeting or exceeding 70% secure, although there are some slight differences between CEM and how the alternatives are compared. Under this Alternative, some of the Gallatin Crest Trails (#82, 185, 187, 186, 96 seg. 1, 434, 427) and Porcupine Buffalo trails (#1, 199, 466, 34, 120, 160, 194, 66) open July 15 and close September 5 to motorcycle use. The early fall closure is primarily due to protecting this valuable fall area for grizzly bear use of whitebark pine.

Hilgard #1 and #2

The Hilgard #1 and #2 subunits lie on the west side of the Gallatin National Forest in the Madison Mountain range. Hilgard #1 is shared with the Beaverhead-Deerlodge National Forest, and the entire part lying on the Beaverhead-Deerlodge is in the Lee Metcalf Wilderness. A small piece of Hilgard #2 lies within Yellowstone National Park. The CEM shows secure percentages at 69.8% and 71.5%, respectively for these two subunits (Table 3.10. 10). The large difference between OMARD and TMARD percentages reflect the extensive administrative routes in this subunit.

Table 3.10. 10 Total Motorized Access Route Densities (TMARD), Open Motorized Route Density (OMARD), and percent secure habitat of the Hilgard # 1 and #2 Grizzly Bear Subunits. Includes all road ownerships, FS, Private, etc.

Hilgard #1 TMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	69.9	75.0	78.6	78.6	81.1	81.7	89.2	81.1
Density Percent: >2 mi/sq mi	12.4	9.9	5.9	5.9	5.1	4.9	2.9	4.9
OMARD Density Percent > 1mi/sq mi	25.0	19.4	15.4	15.4	14.3	11.0	6.7	14.2
Hilgard #2 TMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	71.5	78.7	81.8	81.8	81.3	82.9	90.2	83.1
Density Percent: >2 mi/sq mi	10.3	2.9	2.9	2.9	2.8	2.4	1.8	2.8
OMARD Density Percent: Total > 1mi/sq mi	22.0	14.2	11.2	11.2	11.8	9.5	5.1	9.4

Hilgard #1

Alternative 7M has 81.1% secure habitat, and it has a TMARD of 4.9% in the >2 mi/sq mi route density category. For OMARD, this Alternative has 19.4% in the >1 mi/sq mi route density category. This alternative has decreases in the higher motorized route density categories and increases secure habitat over the current condition. Compared to Alternative 1, it provides a block of secure habitat in the Marble Lake area but adds a motorcycle and ATV route on the Forest just south of Big Sky in the Yellow Mules area. Some of the trails in the Hilgard #1 subunit become motorcycle only rather than ATV and motorcycle that they are presently. Trails north of Taylor Fork are restricted to motorized use from 9/15 to 6/15 to protect for big game (calving) and grizzly bear (hunting season and fall habitat) reasons.

Hilgard #2

The Hilgard #2 subunit is partially comprised of the Monument Mountain part of the Lee Metcalf Wilderness on the east side of the subunit.

Alternative 7M has 83.1% secure habitat, and it has a TMARD of 2.8% in the >2 mi/sq mi route density category. For OMARD, this Alternative has 9.4% in the >1 mi/sq mi route density category. This alternative is almost the same as Alternative 2 except that Slide Creek Trail #71 becomes non-motorized. Alternative 7 is an improvement over the current condition represented by Alternatives 1 and 2. In addition, part of Trail #74 is closed to motorized use while Trail #203 is opened to motorized use. Trail #203 is mostly open to motorcycle use and not ATVs. Trails south of Taylor Fork are restricted to motorized use from 9/15 or 10/15 to 6/15 to protect for big game (calving) and grizzly bear (hunting season and fall habitat) reasons.

Madison # 1 and #2

The Madison subunits #1 and #2 are shared with Yellowstone Park, and lie at the southern end of the Madison mountain range. Madison #2 is one of the subunits in the Conservation Strategy (ICST 2003) that is termed "in need of improvement." The CEM Access Model secure values for Madison #1 and #2 are 71.5% and 66.5%, respectively (Table 3.10. 11). Most of the secure habitat for both of these subunits lies within Yellowstone Park, with some secure habitat in Madison #1 on the Forest, but almost no secure habitat in Madison #2 on the Forest. Madison #1 subunit which includes the Cabin Creek Wildlife Management Area, is high quality grizzly bear habitat, however, most of the secure habitat in this subunit lies within Yellowstone National Park or in the Lee Metcalf Wilderness.

Table 3.10. 11 Total Motorized Access Route Densities (TMARD), Open Motorized Access Route Densities (OMARD) and percent secure habitat of the Madison # 1 and #2 Grizzly Bear Subunits. (All road jurisdictions are included).

Madison #1 TMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	71.5	75.4	79.1	82.2	83.2	83.4	89.6	83.7
Density Percent: >2 mi/sq mi	22.3	6.5	4.8	4.3	3.9	3.5	3.8	3.9
Madison #1 OMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt.

								7M
Density Percent: Total >1 mi/sq mi	24.6	19.5	17.2	14.4	13.0	11.6	8.0	12.4
Madison #2 TMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	66.5	66.7	71.7	71.7	71.7	71.7	71.7	71.8
Density Percent: >2 mi/sq mi	22.3	29.1	17.5	17.5	17.5	16.9	17.5	17.4
Madison #2 OMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Density Percent >1mi/sq mi	31.7	32.9	26.3	26.3	26.4	21.5	19.9	26.5

Madison #1

Alternative 7M has 83.7% secure habitat, and it has a TMARD of 3.9% in the >2 mi/sq mi route density category. For OMARD, this Alternative has 12.4% in the >1 mi/sq mi route density. This is an increase in secure habitat and a decrease in the higher motorized route densities over the current condition. Because of its high quality habitat, and the fact that most of the secure habitat for this subunit exists in either Yellowstone National Park or the Lee Metcalf Wilderness, increasing the percent secure habitat on the portion of the subunit on the National Forest is important. Several large pieces of secure habitat are created under this Alternative, which is highly beneficial to grizzly bears. Alternatives 5 and 7M remove the ATV route that connects to the Taylor Fork. This does not make a very noticeable numerical difference in the percent secure habitat among the alternatives, but may be very important to the human use patterns of this subunit and secure grizzly bear habitat. In addition, motorized routes in the Cabin Creek area are generally restricted until either 6/16 or 7/16 (to benefit elk calving primarily) and close to motorized use on 9/15 or 10/15 to reduce hunter conflicts and protect fall grizzly bear habitat such as whitebark pine.

Madison #2

For Madison #2, the CEM and existing condition in the alternatives secure percentages are fairly close (Table 3.10. 11). This is one of the subunits that has been termed “in need of improvement”. The CEM percent secure is 66.5%. As mentioned above, most of the secure habitat is in Yellowstone Park. There is almost no secure habitat on the Gallatin National Forest. This is a subunit with fairly poor habitat effectiveness and habitat value (Table 3.10. 2a and Table 3.10. 3). This subunit is comprised of relatively poor habitat (Tables 3.10. 12 and 3.10.4) and also has been a place in which bears tend to find attractants due to the high human use of this area (Gunther et al. 2004). Improvement of secure habitat and road densities in this area is of questionable value due to the risk to grizzly bears when they venture into this subunit that is so heavily used by humans.

This Alternative has 71.8% secure habitat, and it has a TMARD of 17.4% in the >2 mi/sq mi route density category. For OMARD, this Alternative has 26.5% in the >1 mi/sq mi route density. All action alternatives for Madison #2 are very similar and an improvement over Alternative 1 because the project roads go out of use. This improvement brings this subunit close to or exceeding 70%

secure, however, most of the secure habitat lies within Yellowstone National Park to the east. A route (#2530) that is currently open to motorized use on Horse Butte is changed to a project road under this alternative indicating that it will go out of public use. In Alternatives 1-6, the Rendezvous Ski Trail routes, located just south of West Yellowstone, were inadvertently omitted administrative routes. These routes are maintained infrequently by motorized vehicles in the summer to remove downfall and trim trees growing into the trails. This was corrected for Alternative 7M for this issue, and it is the same across all alternatives for this issue. This means that all alternatives have 71.8% secure, and there is very little difference among the action alternatives.

Plateau #1

A small portion (about 15%) of the Plateau #1 subunit lies on the Gallatin National Forest. Most of this subunit is in the Caribou-Targhee National Forest and Yellowstone Park. The portion in the Park is almost entirely secure habitat, and the portion on the Caribou-Targhee has several large pieces of secure habitat. The percent secure in CEM and the Conservation Strategy is 68.9% (Table 3.10. 13). The noticeable differences among the alternatives for Plateau #1 are because Alternatives 1-7M analyzed only routes on the Gallatin National Forest and used no motorized routes for the Park and Caribou-Targhee. However, the CEM secure habitat and Alternatives 2 and 7 (both over 90%) appear to be the same on the Gallatin National Forest. The >90% secure figure for Alternative 2 is misleading because the subunit, in its entirety, has much less secure habitat. Therefore, the best way to look at these figures is to compare only among the Alternatives to see if there is improvement or not rather than looking at the CEM percentages.

Table 3.10. 13 Total Motorized Access Route Densities (TMARD), Open Motorized Access Route Densities (OMARD), and percent secure habitat of the Plateau # 1 Grizzly Bear Subunit. All route jurisdictions are included.

Plateau #1 TMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	68.9	92.1	93.8	93.8	93.8	93.8	93.8	93.8
Density Percent: >2 mi/sq mi	9.6	4.3	1.4	1.4	1.4	1.4	1.4	1.4
OMARD Density Percent > 1 mi/sq mi	28.3	5.4	2.8	3.3	3.3	3.3	3.3	2.4

Alternative 7M has 93.8% secure habitat, and it has a TMARD of 1.4% in the >2 mi/sq mi route density category. For OMARD, this Alternative has 2.4% in the >1 mi/sq mi route density. As previously discussed, the 92% secure figure is misleading. The Gallatin National Forest comprises only about 15% of this subunit. Routes on the Caribou-Targhee were excluded from the alternatives, giving it the appearance of a highly secure subunit, when in fact only the Yellowstone Park portion of the subunit has a large proportion of secure habitat. Alternative 7M is an improvement over Alternative 1 and a very slight improvement over Alternative 2. Motorized use

on Two Top Trail is restricted until 7/15 and will benefit grizzly bear spring/early summer habitat. Motorized use restrictions on Cream Creek #1703 seg. 2, E. Cream Road #987, South Fork Madision Road #478, and Beaver Pone Road #1723 until 6/16 will also benefit grizzly bear spring/summer habitat.

Henrys Lake #2

The Henrys Lake #2 subunit lies on the southwest part of the Gallatin National Forest in the Henrys Mountains and is shared with the Caribou-Targhee National Forest. The CEM secure habitat value for Henrys Lake #2 is 45.7% (Table 3.10.14). With Henrys Lake #2, as with Plateau #1 subunit, the Caribou-Targhee routes are only present in the CEM data and not in the Gallatin Forest travel alternatives. Most of the secure habitat lies on the Caribou-Targhee portion of this subunit. The percentages derived from secure and the alternatives do not match CEM since only the Gallatin portion of the subunit counts motorized routes. The Park and Targhee are counting as non-motorized and totally secure. The way to look at the change across alternatives is to compare the percentages for the alternatives, using 1 and 2 as the existing condition to see if there is improvement. The east side of the subunit remains fairly heavily motorized under all alternatives. The Henrys Lake #2 subunit is one of those designated "in need of improvement" in the Conservation Strategy (ICST 2003). This subunit overlaps the Lionhead TPA, which is an area of concern as a wildlife corridor from east to west toward Raynolds Pass. Part of the Lionhead TPA is outside of the Recovery Zone and therefore outside of the subunit. Travel through the eastern part of this subunit and Lionhead TPA could be problematic for grizzly bears and other species, due to high motorized route densities throughout almost the entire east side of the subunit from north to south. There are motorized use restrictions on Contour Road #1718, W. Fork Denny Creek Road #1735 until 6/16 are beneficial for spring habitat for grizzly bears and big game.

Table 3.10. 14 Total Motorized Route Densities (TMARD), Open Motorized Route Densities (OMARD), and percent secure habitat of the Henrys Lake #2 Grizzly Bear Subunit. (All route jurisdictions included).

Henrys Lake #2 TMARD	CEM	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	45.7	52.7	57.7	57.7	58.8	64.5	67.5	62.5
Density Percent: >2 mi/sq mi	28.3	29.0	21.1	21.1	20.7	17.2	15.7	19.0
Henry's Lake #2 OMARD								
Density Percent > 1 mi/sq mi	46.1	36.5	28.0	28.0	27.4	22.6	22.3	25.1

Alternative 7M has 62.5% secure habitat, and it has a TMARD of 19.0% in the >2 mi/sq mi route density category. For OMARD, this Alternative has 25.1% in the >1 mi/sq mi route density. This Alternative is an improvement over both Alternatives 1 and 2, the current condition. It improves the subunit over the current level of secure habitat mostly on the west side of the subunit. Some routes within this subunit (#218 and parts of #215) are closed to motorized use under this Alternative. Several routes become project routes and will go out of public use (#2540).

Areas of the Gallatin National Forest Outside of the Recovery Zone

The portions of the Gallatin National Forest south of Interstate-90 but outside of the Recovery Zone were also analyzed. This is because grizzly bears are moving into these areas. The exception to this analysis is two small areas (part of the Beartooth Plateau and the Hilgard Basin) that are non-motorized and are surrounded by the Recovery Zone. Because these areas are non-motorized, there is no need to conduct an analysis for secure habitat since they should be totally secure. The areas analyzed south of I-90 are analyzed with all route ownerships (federal, state, county and private) (Tables 14-16). The area outside the National Forest boundary does not count toward road density. The Draft Conservation Strategy (2005) requires that only secure habitat be monitored outside of the PCA. Therefore, secure habitat is what this analysis is based upon. There are no CEM data for these areas, because CEM Access data does not exist for the parts of the Forest outside of the Recovery Zone. The Grizzly Bear Conservation Strategy calls for monitoring only secure habitat in areas outside of the PCA where grizzly bears occur.

Alternative 1 is what is legally available to the public on the 1999 Forest visitor map and is the 'no action' alternative. Under this Alternative, the OHV rule is not in place which means off-route travel is legal, there is no travel plan, and routes are not designated. Alternative 2 is the closest alternative to what people are actually currently doing on the ground with the OHV rule in place and making off-route travel illegal and designating routes. Alternative 2 is sort of a 'snap shot' of current use, but with a travel plan in place as its main action. Under Alternative 2, and all the other action alternatives (2-7), project routes are expected to go out of use over time. Many of them are already grown in and are impassable or have been obliterated. Under all action alternatives (2-7), administrative routes will be closed to all but administrative use and gated to the public. Under Alternative 1, all motorized routes are counted as open to the public.

Mile and Sheep Creek

The Mile and Sheep Creek portions of the Henrys Mountains are located west of Henrys Lake Subunit #2 on the Gallatin National Forest, and are part of the Lionhead TPA. The Lionhead TPA is believed to be the wildlife corridor for east to west movement of animals to and from the area west of the Forest. This area is approximately 33 square miles. It is a relatively secure piece of habitat, but could be improved slightly (Table 3.10.15).

Table 3.10. 15 Percent secure habitat in the Mile/Sheep Creek area outside of the Grizzly Bear Recovery Zone. Includes all route ownerships, federal, state, county and private.

Mile/Sheep Creek	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	74.6	77.3	77.3	77.7	87.6	87.6	87.7

Alternative 7M has 87.7% secure habitat. Under this alternative, this area is not bisected from the east to west by the motorized Sheep Creek trail. This is an improvement over the current condition.

Absaroka Beartooth

This is the northern part of the Absaroka Beartooth (AB) Mountains, located to the north of the Recovery Zone on the east side of the Gallatin National Forest and south of I-90. This is a large area (478 sq mi) that includes substantial Wilderness acreage. Most of the motorized routes occur in the Mill Creek, East Boulder and Deer Creeks TPAs. The Deer Creeks is not known to be used by grizzly bears at this time, and it has much drier habitat types than most of the Forest. Mill Creek is a heavily motorized area just north of the Recovery Zone. There are some differences among the alternatives for Mill Creek, but it remains heavily motorized under all alternatives (Table 3.10. 16). All road jurisdictions are counted. As in the analysis inside for the areas inside the PCA, project roads are expected to go away over time in Alternatives 2-7. This area does not have many administrative roads.

Table 3.10. 16 Percent secure habitat of the Absaroka Beartooth area outside of the Grizzly Bear Recovery Zone. Includes all road jurisdictions.

North Absaroka/Beartooth	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	73.8	75.8	75.8	80.6	83.5	83.6	78.9

Alternative 7M has 78.9% secure habitat. There is an increase in secure habitat in this area under this alternative over Alternatives 1 and 2 (representing the current condition).

Gallatin/Madison

This is the portion of the Gallatin and Madison Mountain ranges north of the Recovery Zone and south of I-90. In the Madison Range, it includes the Spanish Peaks part of the Lee Metcalf Wilderness Area. These two TPAs are heavily motorized under all alternatives (Table 3.10.17). The Madison (western) part of the area changes little across alternatives. On the Gallatin side, the alternatives that remove motorized use from some or most of the Gallatin Crest allow grizzly bears and other wildlife to have a relatively non-motorized north-south movement corridor. These alternatives also protect some whitebark pine stands from motorized activity. On the Madison side, there is fairly good secure habitat available north of the Recovery Zone. However, movement into this area is likely hampered by the increasing development in the Big Sky area on the east side of

the Madison Range. Grizzly bears may find a safer or easier route to the north on the west side of the Madison Range, which is on the Beaverhead-Deerlodge National Forest.

Table 3.10. 17 Percent secure habitat of the Gallatin/Madison area outside of the Grizzly Bear Recovery Zone. Includes all road jurisdictions.

Gallatin/Madison	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Percent Secure	49.1	52.6	52.6	57.2	59.1	60.2	57.0

Alternative 7M has 57.0% secure habitat. Under this alternative, there are more motorized routes in the Gallatin Roaded and Hyalite TPAs. This is an improvement over the current level of secure habitat (Alternatives 1 and 2) in this area. Most of the decrease appears to be east of the Gallatin Crest.

Summary for Summer Motorized Use

Boulder/Slough subunits #1 and #2 have an extremely high percentage of secure habitat under all seven alternatives. In both subunits, the preferred alternative (7M) has the same or slightly higher secure habitat values than the current condition. This complies with direction in the Grizzly Bear Conservation Strategy (ICST 2003). Since there are no project roads in these subunits, OMARD and TMARD have the same values.

Crandall/Sunlight subunits #1 and 2 have very high secure habitat values. The Gallatin National Forest has only a small proportion of these two subunits. For Crandall/Sunlight #2, there is no difference among the seven alternatives. For Crandall/Sunlight #1, there is a slight difference among alternatives, and Alternative 7M is a slight improvement over the existing condition. Since there are no project roads in this subunit, OMARD and TMARD have the same values.

Only a small portion of the Lamar #1 subunit is on the Gallatin National Forest, however, it includes Cooke City and a fairly highly motorized area to the north of Cooke City. Alternative 7M is very similar to the current condition with an improvement over Alternative 1 and the same amount of secure habitat as Alternative 2. The main difference occurs in the northwest part of the subunit where an area becomes part of the higher route density category. Since there are no project roads in this subunit, OMARD and TMARD have the same values.

Hellroaring/Bear subunits # 1 and #2 lie east of Gardiner in the Absaroka Beartooth Mountains, and Hellroaring Bear #2 consists almost entirely of Wilderness, resulting in a high secure percentage are some project roads affecting these subunits, therefore they have different OMARD and TMARD.. The percent secure does not change from OMARD to TMARD for Hellroaring/Bear #1. Hellroaring/Bear #1 differs only slightly among the alternatives. Alternative 7M has a higher percent secure than Alternatives 1 and 2. Hellroaring/Bear #2 is almost totally within the Absaroka Beartooth Wilderness, and therefore, it is almost totally secure under all alternatives except for some changes in roads in the Passage Creek area of Mill Creek that influence this subunit.

Gallatin #3 is one the subunits designated "in need of improvement" according to the Grizzly Bear Conservation Strategy (ICST 2003). Alternative 7M improves this subunit to 70.2% secure habitat over the current at 54.4% for Alternative 1 and 59.4% for Alternative 2. Because there are project roads, this area improves with all action alternatives. TMARD and OMARD are slightly different, but they both show a decline in route densities in their highest categories from the current condition to Alternative 7M. Alternative 7M is a substantial improvement over the current condition in all categories. The main change is the removal of motorized use from the southern part of the subunit and the reduction in motorized use on the east side of the Gallatin Crest. This creates two fairly large pieces of secure habitat

Hilgard #1 and #2 subunits lie on the west side of the Forest and both contain some of the Lee Metcalf Wilderness. Hilgard #1 secure habitat is 75% and 78.6% under Alternatives 1 and Alternative 2, respectively. Secure habitat is 81.1% under Alternative 7M. TMARD and OMARD differ somewhat. Alternative 7M decreases in the higher motorized route density categories and increases secure habitat for Hilgard #1. Hilgard #2 subunit shows a slight increase in secure habitat from 78.7% and 81.8% in Alternatives 1 and 2, respectively, to 83.1% in Alternative 7M. Road densities also decrease in the higher road density categories.

Madison subunits #1 and #2 are shared with Yellowstone Park, and Madison #2 is one of the subunits that the Grizzly Bear Conservation Strategy designates as "in need of improvement." Madison #1 shows an improvement from Alternative 1 at 75.4% and Alternative 2 at 79.1% secure to Alternative 7M at 83.7% secure. Alternative 7M also shows a decrease in the higher motorized route densities categories in TMARD and OMARD.

Madison #2 shows a small change from Alternative 1 at 66.7% and Alternative 2 with 71.7% to Alternative 7M with 71.8%. Under Alternative 1, project roads remain open, and under all the action alternatives, these roads go away over time. The OMARD and TMARD percentages for road densities are fairly similar. This subunit has almost no secure habitat on the National Forest. There are many private dwellings and attractants in this subunit. It appears there is little potential to increase secure habitat, and this is a subunit where grizzly bears face a higher risk of conflict with humans than in many other subunits (Gunther et al. 2004). Gunther et al. (2004) studied grizzly bear/human conflicts from 1992 to 2000, and found several clusters of conflicts on the Gallatin National Forest. One is in the Madison #2 subunit, another is in the Hilgard subunits (Taylor Fork), and the third is in Gallatin #3 (near Gardiner). In a review of the conflicts and mortalities since 2000 for Madison #2, there continue to be 2-4 conflicts reported each year in this subunit tied to attractants such as garbage and pet or livestock food. There have also been a number of mortalities on both private and public land in the Madison #2 vicinity (ICST Annual Reports 2000-2003). Although all of the action alternatives increase secure habitat, it is in very small pieces surrounded by motorized access routes. The largest piece of secure habitat created is less than about 200 acres. It does not appear to be logical to use scarce resources to improve this subunit given its inherent low habitat value, the attractants available, and mortality risk to bears in this area. In Alternatives 1-6, the Rendezvous Ski Trail routes were accidentally omitted as administrative routes. These routes are maintained infrequently in the summer by motorized vehicles to remove downfall and trim trees growing into the trails. This was corrected for Alternative 7M, and is the same across all alternatives. This means that all action alternatives have 71.8% secure habitat, but Alternatives 1-6 were not re-run.

A small portion (about 15%) of the Plateau #1 subunit lies on the Gallatin National Forest. Most of this subunit is in the Caribou-Targhee National Forest and Yellowstone Park. The portion in the Park is almost entirely secure habitat, and the portion on the Caribou-Targhee has several pieces of secure habitat. The percentages given are somewhat misleading because they are for the entire subunit but omit motorized routes in the Park and on the Caribou-Targhee National Forest. There is no difference among secure habitat percentages under all the action alternatives (Alternatives 2 - 7M). There is a slight improvement over Alternative 1 due to the closure of project roads over time. There is a slight improvement in the higher motorized route densities from Alternative 1 to Alternative 7M.

Henrys Lake #2 subunit is shared between the Gallatin and Caribou-Targhee National Forests, and is one of the subunits designated "in need of improvement" by the Grizzly Bear Conservation Strategy (ICST 2003). Alternative 7M at 62.5% secure is an improvement over both Alternatives 1 and 2 (52.7% and 57.7% secure, respectively), those alternatives closest to the current condition. It improves the subunit over the current level of secure habitat mostly on the west side of the subunit. Alternative 2 shows an improvement over Alternative 1 due to the loss of project roads. This subunit is heavily motorized on the east side. The amount of secure habitat in this subunit is improved thus meeting the direction of the Grizzly Bear Conservation Strategy.

Areas outside of the Grizzly Bear Recovery Zone are not subject to the Grizzly Bear Conservation Strategy access standards at this time, however, if the Forest Plans are amended with the Conservation Strategy for Grizzly Bear, the percent secure in these areas will be monitored and reported on a regular basis. Sheep and Mile Creek are outside of the Recovery Zone in the Henrys Mountains. This area improves from 74.6% under Alternative 1 and 77.3% secure habitat under Alternative 2 to 87.7% secure habitat in Alternative 7M. This is primarily due to the change to non-motorized use for the Sheep Creek Trail.

The Absaroka Beartooth area north of the Recovery Zone and south of I-90 includes substantial Wilderness acreage. Under Alternative 1, secure habitat is 73.8% and under Alternative 2, secure habitat is 75.8%. Secure improves to 78.9% under Alternative 7M.

The Gallatin/Madison areas north of the Recovery Zone and south of I-90 include some of the Lee Metcalf Wilderness. Under Alternative 1 there is 49.1% secure habitat in this area, and it increases under Alternative 2 to 52.6%. Under Alternative 7M, secure habitat increases to 57.0%.

Motorized Winter Use

The Grizzly Bear Conservation Strategy (ICST 2003) has no standards relating to winter use or snowmobiling. However, due to public interest in this issue, it is being addressed here.

Absaroka Beartooth Mountains

The Absaroka Beartooth Mountains include the following TPAs: Beartooth Plateau, Wilderness, Cooke City on the Gallatin National Forest, Deer Creeks, East Boulder, Gardiner Basin, Main Boulder, Mill Creek, Mission and the Custer National Forest portion of the Cooke City area that is administered by the Gallatin National Forest. Total National Forest acres in the AB Mountains are

approximately 825,900 (Table 3.10. 18). There is a slight variation among alternatives in acreage legally closed yearlong to snowmobiling. Across the alternatives, the range is from approximately 607,700 to 637,800 acres. There is no acreage under seasonal closure to snowmobile in this mountain range.

Table 3.10. 18 Yearlong snowmobile closures in the Absaroka Beartooth Mountains, by alternative.

Absaroka Beartooth Mountains TPAs	Acres		Percent Yearlong Snowmobile Closure						
	Gross	Net	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Beartooth Plateau	65,747	65,670	100	100	100	100	100	100	100
Wilderness	518,959	517,975	100	100	100	100	100	100	100
Cooke City (GNF only)	19,405	16,631	0	0	0	23	23	23	0
Deer Creeks	66,937	65,759	0	0	0	0	5	0	0
East Boulder	41,297	39,831	0	0	9	9	9	9	9
Gardiner Basin	25,509	23,286	52	52	55	55	55	55	55
Main Boulder	20,671	16,788	0	0	1	1	3	1	0
Mill Creek	74,552	69,916	15	20	20	20	39	20	26
Mission	11,736.7	10,010	17	17	61	61	61	61	17
TOTAL	844,815	825,866	74	74	75	75	77	75	75

Alternative 7M has 75% of the A/B Mountains legally closed yearlong to snowmobiling. This alternative has slightly more of the East Boulder, Gardiner Basin, Main Boulder and Mill Creek TPAs closed to snowmobiling than Alternative 1, and has significantly more of the Mission TPA closed to snowmobiling. Some of the Custer National Forest part of the Cooke City TPA is closed to snowmobiling under this alternative.

Gallatin Mountain Range

The Gallatin Mountains include the following TPAs: Bear Canyon, Bozeman Creek, Gallatin Crest, Gallatin River Canyon, Gallatin Roaded, Hyalite, Porcupine Buffalo Horn, Sawtooth, Tom Miner Rock, Yankee Jim Canyon, and Yellowstone. Total National Forest acreage in the Gallatin Mountains is approximately 376,794 acres (Table 3.10. 19).

Table 3.10. 19 Yearlong snowmobile closures in the Gallatin Mountains, by alternative.

Gallatin Mountains TPAs	Total Acres		Percent **Yearlong** Snowmobile Closure						
	Gross	Net	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Bear Canyon	20,533	10,716	3	3	0	36	37	36	44
Bozeman Creek	21,583	17,542	85	85	99	100	100	100	100
Gallatin Crest	112,350	106,086	27	27	53	87	94	94	94
Gallatin River Canyon	35,517	29,930	23	23	58	58	60	64	66
Gallatin Roaded	61,123	57,329	2	2	0	2	2	2	2
Hyalite	20,756	20,281	2	2	95	100	100	100	100
Porcupine Buffalo Horn	60,051	53,891	36	36	29	29	68	86	63
Sawtooth	19,616	16,643	1	1	97	97	99	100	99
Tom Miner Rock	24,539	13,331	0	0	55	55	83	62	56
Yankee Jim Canyon	49,587	33,451	60	60	99	99	99	99	99
Yellowstone	30,383	17,595	46	46	5	25	23	23	100
TOTAL	456,038	376,795	27	27	49	61	70	72	72

Table 3.10. 20 Seasonal snowmobile closures in the Gallatin Mountains, by alternative (in addition to yearlong closures).

Gallatin Mountains TPAs	Total Acres		Percent Seasonal Snowmobile Closure						
	Gross	Net	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Bear Canyon	20,533	10,716	0	0	0	0	0	0	0
Bozeman Creek	21,583	17,542	0	0	0	0	0	0	0
Gallatin Crest	112,350	106,086	0	0	0	0	0	0	0
Gallatin River Canyon	35,517	29,930	11	11	10	0	0	0	0
Gallatin Roaded	6,1123	57,329	0	0	0	0	0	0	0
Hyalite	20,756	20,281	0	0	0	0	0	0	0
Porcupine Buffalo Horn	60,051	53,891	27	27	27	0	0	0	0
Sawtooth	19,616	16,643	0	0	0	0	0	0	0
Tom Miner Rock	24,539	13,331	0	0	0	0	0	0	0
Yankee Jim Canyon	49,587	33,451	0	0	0	0	0	0	0
Yellowstone	30,383	17,595	0	0	0	0	0	0	0
TOTAL			5	5	5	0	0	0	0

Alternative 7M has 72% of the Gallatin Range legally closed to snowmobiling yearlong. This alternative is very similar to Alternative 6 but with less of Porcupine Buffalo Horn and Tom Miner Rock closed to snowmobiling but the Yellowstone TPA is completely closed. There are

no areas closed to snowmobiling under this Alternative, and there was 5% of this area closed under the current condition. (Table 3.10.20). The small seasonal closure was absorbed by the larger closures under Alternative 7.

Henrys Mountains

The Henrys Mountains include the following TPAs: Lionhead, South Plateau and Hebgen Lake Basin. Total National Forest acreage in the Henrys Mountains is approximately 143,000 acres (Table 3.10. 21). Only Alternative 5 has any measurable seasonal snowmobile closures.

Table 3.10. 21 Yearlong snowmobile closures in the Henrys Mountains, by alternative.

Henrys Mountains TPAs	Total Acres		Percent Yearlong Snowmobile Closure						
	Gross	Net	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Lionhead	56,965	56,692	44	44	56	61	61	67	53
South Plateau	39,723	39,174	13	13	13	13	14	32	0
Hebgen Lake Basin	57,811	47,059	9	9	9	9	19	21	0
TOTAL	154,499	142,924	24	24	29	31	34	42	21

Table 3.10. 22 Seasonal snowmobile closures in the Henrys Mountains, by alternative (in addition to yearlong closures).

Henrys Mountains TPAs	Total Acres		Percent Seasonal Snowmobile Closure						
	Gross	Net	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Lionhead	56,965	56,692	0	0	0	0	4	0	0
South Plateau	39,723	39,174	0	0	0	0	0	0	0
Hebgen Lake Basin	57,811	47,059	0	0	0	0	2	0	0
TOTAL	154,499	142,924	0	0	0	0	2	0	0

Alternative 7M has 21%, or about 30,000 acres, of the Henrys Mountains legally closed to snowmobiling yearlong. The Lionhead TPA shows an increase in the percentage closed in 7M over what was closed in Alternatives 1 and 2, and the Hebgen lake Basin and South Plateau have no closures in Alternative 7M. There are a few acres of the Hebgen Lake Basin closed seasonally to snowmobiling and none under Alternative 7M (Table 3.10.22).

Madison Mountain Range

The Madison Mountain Range includes the following TPAs: Cabin Creek, Taylor Fork, Cherry Creek, Big Sky and the three Wilderness TPAs (Lee Metcalf Wilderness Hilgards, Monument and

Spanish Peaks). The three Wilderness TPAs are legally closed to snowmobiling under all alternatives (Table 3.10. 23).

Table 3.10. 23 Yearlong snowmobile closures in the Madison Range, by alternative.

Madison Range TPAs	Total Acres		Percent Yearlong Snowmobile Closure						
	Gross	Net	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Cabin Creek	54,735	54,674	2	2	2	2	2	100	2
Taylor Fork	76,960	73,281	20	20	25	25	28	80	65
Cherry Creek	26,684	20,392	0	0	100	100	100	100	100
Big Sky	64,342	17,798	3	3	24	41	41	41	24
LM Wilderness Hilgards	33,344	33,341	100	100	100	100	100	100	100
LM Wilderness Monument	32,347	32,309	100	100	100	100	100	100	100
LM Wilderness Spanish Peaks	68,076	68,074	100	100	100	100	100	100	100
TOTAL	356,489	299,869	5	50	59	60	6	92	69

Table 3.10. 24 Seasonal snowmobile closures in the Madison Range, by alternative (in addition to yearlong closures).

Madison Range TPAs	Total Acres		Percent Seasonal Snowmobile Closure						
	Gross	Net	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Cabin Creek	54,735	54,674	0	0	0	0	98	0	0
Taylor Fork	76,960	73,281	36	60	61	61	57	6	40
Cherry Creek	26,684	20,392	77	77	0	0	0	0	0
Big Sky	64,342	17,798	45	45	45	48	48	48	45
LM Wilderness Hilgards	33,344	33,341	0	0	0	0	0	0	0
LM Wilderness Monument	32,347	32,309	0	0	0	0	0	0	0
LM Wilderness Spanish Peaks	68,076	68,074	0	0	0	0	0	0	0
TOTAL	356,489	299,869	17	23	18	18	35	4	13

Alternative 7M has 69%, or about 206,700 acres, closed to snowmobiling yearlong in the Madison Range. Under this alternative compared to Alternatives 1 and 2, the percentage closed in the Taylor Fork is increased to 65%, in Big Sky to 24% and Cherry Creek is completely closed. This alternative has seasonal closures in 40% of Taylor Fork and 45% of Big Sky. The seasonal closures in Taylor Fork are less than those under the current condition but appear to be absorbed by the yearlong closures there.

Summary of Winter Motorized Effects

In the Absaroka Beartooth, the alternatives range from 74% to 77% closed yearlong to snowmobiles. In the Gallatin the closures under the alternatives range from 27% to 72%, in the Henrys Mountains they range from 21% to 42%, and in the Madison Range they range from 5% to 92% closed.

Areas with seasonal restrictions to snowmobiling in the Gallatin Range range from 0 to 5% closed. There are no seasonal restrictions in the Absaroka Beartooth, but there is already a large percentage closed yearlong. The Henrys Mountains TPA has from 0-2% seasonal restrictions under the alternatives, and the Madison Range has from 4% to 35% seasonal restrictions under the alternatives.

Most action alternatives for these mountain ranges show an increase in areas closed yearlong to snowmobiling except for the Henry's Mountains which shows a slight increase in area open to snowmobiling yearlong. This indicates that grizzly bear denning habitat will be even less affected than it was at the time consultation with the US Fish and Wildlife Service occurred on this subject (2002). In addition, monitoring of grizzly bear dens and snowmachine use will continue. There is still the potential to affect individual bears, particularly sows with cubs-of-the-year, but it is less than it is under current Forest travel management. In monitoring efforts since 2002, no evidence has been found that snowmobiles have disturbed denning or recently emerged grizzly bears. (USDI FS 2004).

Cumulative Effects

Of some concern for Cumulative Effects, but largely beyond human control, is the potential loss of important food sources to grizzly bears. Food sources most in question are whitebark pine and spawning cutthroat trout that are seeing declines due to disease and introduction of lake trout, respectively. Army cutworm moths are another food source, but seem to be relatively constant in the late summer and fall in certain locations where bears have learned to use them. Ungulates, both live and as carrion may vary somewhat in availability with weather conditions, population size, and other factors. Weather conditions also affect availability of food to bears and may affect reproduction and survival. These items are a component of the environmental baseline.

Net Effects of Past and Present Programs and Activities

There are several recurring themes in discussing past and present cumulative effects on grizzly bears. These are activities or situations in the past that have led to grizzly bear/human encounters and/or mortality. These themes are: 1) motorized access routes, 2) availability of food or garbage attractants, and 3) livestock grazing.

Past effects of timber harvest on the Forest in relation to grizzly bear were mostly temporary in nature: loss of hiding cover, change in forage quality and quantity, and the activities related to the timber sale. The longer lasting effect of these projects was the creation and often maintenance of roads used to access and remove timber from the Forest. Motorized access into areas is known to decrease habitat quality for grizzly bears by displacing them from areas near roads. Motorized access also allows more humans into areas where conflicts with grizzly bears may then arise.

Prescribed fire likely has a neutral to beneficial effect for wildlife depending on the area burned. Where prescribed fire is used to reduce fuels in the urban interface, there is probably a neutral impact since unhabituated bears tend to avoid these areas. Fire can result in an increase in succulent forage post-burn. Fire is a natural component of the environment and the natural fire cycle is important for these fire-dependent systems. Fire suppression has resulted in the disruption of the natural fire regime in this area and caused an unnatural buildup of fuels leading to more intense fires. Although an increase in cover provided by fire suppression has some benefits to the bear due to the presence of humans, it may not be the best overall vegetative condition. Restoration of fire into the landscape in some important habitats and fire dependent species is important.

Livestock grazing has been a part of the area that became the Gallatin National Forest since white settlers first arrived in the area. Sheep, goats, cattle, and horses have been grazed on the Forest, and sheep were grazed in large numbers in the 1800's and early 1900's. Grizzly bears seem to have had relatively few interactions with cattle and horses on the Forest, but have definitely run into conflicts on sheep allotments. It is likely that many grizzly bears were killed due to conflicts with livestock, primarily sheep, prior to grizzly bears being protected by law. The reduction in sheep allotments and numbers that has gradually occurred over the years is beneficial in reducing negative interactions between sheep and bears, and grizzly bear mortalities. A very recent development is the closing of the Ash/Iron Mountain sheep allotment, a site of recent grizzly bear conflict.

Weed control is beneficial to grizzly bears and their habitat. Restoration and maintenance of native plant species is important. Efforts to restore whitebark pine and aspen are both important for the grizzly bear. The whitebark pine is a very important food source, and efforts to plant this species post-fire and conduct research on its status in the area are important.

Projects that benefit fisheries and riparian habitat typically also benefit grizzly bears.

Mining has been occurring on the Forest since the time of early settlement. This activity occurred in some areas of high quality habitat, such as Cooke City, and there were undoubtedly conflicts and grizzly bear mortalities as a result. Small mining activities probably have minor impacts on bears, but large operations and also reclamation efforts probably displace bears from some parts of the Forest (such as New World Mine).

Maintaining and improving motorized routes through the Gallatin National Forest is not beneficial for grizzly bears. High speeds can lead to direct grizzly bear mortality on these routes. Maintenance and improvement of roads can increase users of the Forest which can result in increased bear/human encounters. Federal, state and county roads also have the same issues with direct mortality to grizzly bears mentioned before, especially as driving speeds increase. Major routes, such as I-90, can serve as barriers to grizzly bear movement.

The Gallatin National Forest receives a lot of dispersed recreation use with many visits from the public occurring each year. Recreational activities lead to the potential for grizzly bear/human encounters. Encounters with negative consequences seem to be more frequent during the fall hunting season when occasionally grizzly bears are wounded or killed and humans are injured or

killed. Spring bear hunting season has also led to negative grizzly bear/human encounters and loss of grizzly bears through misidentification for black bears.

When humans bring food to the National Forest and are careless with it or with their garbage, the presence of an attractant can also lead to grizzly bear/human encounters. The Grizzly Bear Recovery Zone has had the Food Storage Order in place for over 25 years, which helps to minimize attractant related encounters. A number of human fatalities and injuries and bear mortalities and injuries have resulted from past dispersed use on the Forest.

There are numerous outfitters/guides of various types bringing people to the Forest to recreate for many days. Hunting season is again a time of most negative encounters. Food storage is a part of the outfitter/guide permit and permits are subject to revocation in cases of noncompliance. Many of the outfitted activities, such as rafting, are very unlikely to result in bear/human encounters, but proper food and garbage handling is essential to avoid the presence of food attractants at either over night camps or during day use activities. Winter activities have little potential to affect the grizzly bear except for minor cover removal due to the removal of trees for the trails on several cross-country ski resorts.

Recreation residences are under special use permits and as long as residents follow the food storage order and do not create attractants for bears, they can coexist fairly well with bears.

Most non-recreational special uses are fairly benign once the facility is in place. However, some of these things, such as power lines, come with increased motorized access to the Forest due to service roads for the facilities.

The checkerboard landownership of the National Forest has been problematic for bears. Much of this private land came to be owned by timber companies and led to harvest of accessible acreage. Other land was sold to private developers. The timber harvest itself was not the real problem for grizzly bears, but the road building to access the timber had impacts. Roads and human activity tied to them displace bears from otherwise usable habitat, and also allow humans easier access into areas where grizzly bears occur and resulted in bear mortalities. Lands that are developed into home sites or ski areas result in direct habitat loss and displacement from grizzly bears in these areas. More human access into these areas increases the probability for bear/human encounters resulting in injury or mortality. A significant portion of the checkerboard lands have recently been added back to the National Forest through land acquisitions and adjustments. Recovering this habitat to public ownership has been very beneficial to many wildlife species, including the grizzly bear.

The Food Storage Order on in the Recovery Zone on the Forest has been very beneficial to bears and has undoubtedly decreased bear/human interactions. The implementation of the Food Storage Order and installation of bear resistant garbage containers and food storage boxes has occurred on the Forest and on private lands. This has reduced bear/human encounters. The Grizzly Bear Conservation Strategy (2003) has helped focus grizzly bear conservation efforts.

The presence of large amounts of fairly secure (non-motorized) habitat in Yellowstone National Park is of benefit to the grizzly bear. Creation of designated Wilderness areas also created large

pieces of secure habitat for grizzly bear. Restriction of OHVs use off-road has helped reduce the chance of bear/human encounters and made motorized use predictable to motorized routes.

MFWP sets the hunting and fishing seasons in Montana. Big game season seems to be one of the times of year when grizzly bear mortality occurs due to numerous people being in areas where bears occur and those people are armed. Occasionally grizzly bears are killed through misidentification for black bears. The MFWP has instituted a bear identification course that all black bear hunters must take before they may hunt. In addition, multiple agencies and groups endorse the carrying and use of bear pepper spray in bear encounters. In addition, bear safety is taught by several groups in the state. The MFWP recently complete the State Grizzly Bear Plan for SW Montana.

The reintroduction of the gray wolf into the GYA in 1995 has led to some interactions among grizzly bears and wolves. In recent years, gray wolves have moved onto the National Forest and caused depredation on some cattle and sheep allotments. In some cases, it is unclear which species (bears or wolves) caused the depredation, and which species just took advantage of the situation.

The Canada lynx was listed as threatened under the ESA in 2000. The Forest has been using guidance in the Lynx Conservation Assessment and Strategy in analysis and to guide decisions, primarily related to winter use (Reudiger et al. 2000).

The combination of the effects of the above activities along with protection of the grizzly bear under the Endangered Species Act has overall been positive for the bear. Some activities or effects have been negative, such as the history of motorized access route building and management. Some have been very positive, such as the acquisition of private checkerboard lands, implementation of the Food Storage Order and decline of sheep grazing on the Forest. On the whole, the resulting effects have been positive. The grizzly bear population in the GYA has met or exceeded recovery criteria.

The following information is on the effects of routes and land not under Forest Service jurisdiction.

The Boulder #1 subunit is almost entirely Wilderness. However, this subunit contains the private land in the Main Boulder corridor as well as the non-Forest Service road leading up the Main Boulder. This subunit offers large secure acreage for grizzly bears.

Boulder #2 lies on the Forest and in Yellowstone Park. The only motorized route in the subunit is the non-Forest Service road in the Park. This subunit also offers large secure habitat for grizzly bears.

The Crandall/Sunlight #1 subunit contains a piece of Highway 212 and has private routes associated with private land near Colter Pass. When combined with Forest Service routes, the northwest edge of this subunit is fairly motorized with an area of highest road density around the private land.

Crandall/Sunlight #2 has only a minute portion on the Gallatin National Forest. This small piece is affected by Highway 212 and only has a small portion non-motorized. The numbers in Table 24 are percentages for the entire subunit, not just the Gallatin National Forest. This subunit lies almost entirely on the Shoshone National Forest.

Lamar #1 is the subunit that includes Cooke City and is bisected by Highway 212. The road density along Highway 212 and the private land area is very high due to the state highway and private routes. Miller Creek road is a county road. When combined with the Forest routes, the portion of this subunit on the National Forest is fairly heavily motorized and has very little secure habitat. A small piece of this subunit lies on the Shoshone National Forest while most of this subunit lies within Yellowstone National Park.

Hellroaring #1 subunit has Highway 89 on the west side with numerous small pieces of private land and high motorized route density all along this highway corridor. The town of Gardiner is within the subunit. The main road to Jardine and then to the southeast is not a Forest Service road. A fairly large piece of this subunit is in the AB Wilderness, with a small portion in the Park, and these are non-motorized areas. When non-Forest Service routes are added to Forest Service routes, almost the entire Bear Creek/Eagle Creek area has high route densities.

Hellroaring #2 subunit is largely in the AB Wilderness on the Forest and partially in the Park. The only private land and route affecting this subunit is the small route up Passage Creek at the north side of the subunit.

Gallatin #3 has many non-Forest Service routes, especially on the east side (Cinnabar and Mulherin drainages), and state highways on the east and west sides (Highway 191 and 89). Tom Miner and other areas on the northeast side of the subunit also have private land and motorized routes. With all motorized routes, including Forest Service routes, the subunit is most heavily impacted on the east side and has numerous routes on the west side with some pieces of secure habitat. The small portion of the subunit in the Park is non-motorized.

Hilgard #1 and #2 include Highway 191 and the Taylor Fork Road. There are some private land parcels and accompanying routes in Hilgard #1 and #2. Hilgard #1 includes a piece on the Beaverhead-Deerlodge National Forest that is all Wilderness and has some minor route density along the western boundary. Hilgard #2 includes the Monument Mountain piece of the Lee Metcalf Wilderness and a small piece of Yellowstone Park. These are non-motorized except for a piece of Highway 191 in the Park. This yields large pieces of secure habitat in both subunits with some smaller pieces of secure habitat as well.

Madison #1 includes parts of Highways 191 and 287. In addition, there is a large piece of private land near the junction of these two routes, a smaller private piece at Red Canyon, and some private land along the north lake shore that are fairly heavily motorized. The portion of the subunit that lies in Yellowstone Park is non-motorized except for Highway 191. In conjunction with Forest Service routes, this gives some secure habitat primarily in the Cabin Creek area and in the Park.

Madison #2 includes the town of West Yellowstone and several private subdivisions that have high motorized route densities. The most noticeable of these are the Horse Butte area and a piece along the South Fork of the Madison River. This subunit also includes Highways 20 and 191, and a county road leading to Horse Butte. In conjunction with Forest Service routes, this cumulatively gives the portion of the Madison #2 subunit lying on the Gallatin National Forest a very high motorized route density. Fortunately, the National Park part of this subunit is almost entirely non-motorized except for the road leading into the Park from West Yellowstone.

Plateau #1 has few cumulative effects from private, state or county routes in the subunit on the Gallatin National Forest. The subunit portion in the Park is virtually entirely non-motorized but has

some route density near the boundary due to buffering routes on the Forest. On the Caribou-Targhee Forest in the southwest part of the bear subunit, there are fairly high route densities on the western part of the subunit and along the Park boundary, but it also has three sizeable pieces of secure habitat.

Henrys Lake #2 is bisected by Highway 20 from east to west. There is high route density in the private land located on the east side of the subunit, mostly north of Highway 20 and west of the South Fork of the Madison River. This area consists of over 3,000 acres of private land. There is also high route density on the private land in the area just north of Spring Creek on the western shore of Hebgen Lake. When added to the road densities on the National Forest and Forest Service routes, this makes almost continuous areas of high motorized route density on the part of this subunit that lies on the Gallatin National Forest. The Caribou-Targhee National Forest portion of this subunit is bisected by Highway 20 and a Forest Service road, Twin Creek. The Caribou-Targhee Forest has three sizeable pieces of secure habitat.

The Absaroka Beartooth Range outside of the Recovery Zone has some effects from non-Forest Service routes. On the Big Timber Ranger District, these areas are mostly in the Main Boulder, East Boulder, some private inholdings on the north edge of the Forest near the West Boulder, Mill Fork and Mission Creek. On the Livingston Ranger District, they are in Mill Creek and Emigrant Gulch areas. The effects of these routes are compounded by the addition of Forest Service routes, especially in the Mill Creek and Main Boulder drainages.

The Madison and Gallatin Range portions outside of the Recovery Zone have quite a few more areas of private inholdings and associated routes, as well as the development up and down the Gallatin Canyon and Big Sky in the Madison Range. There is some checkerboard ownership on the east side of the Gallatin Range in the Fridley and Miller Creek areas, with numerous motorized routes. State Highway 191 goes through the Gallatin Canyon, and the Big Sky area is heavily developed with many motorized routes.

The Mile/Sheep Creek area is located outside of the Recovery Zone. This piece is relatively unaffected by non-Forest Service routes.

It is likely that the number of motorized routes adjacent to the National Forest and accessing private land within the Forest boundaries will continue to increase. Existing state, county and federal routes such as I-90 are unlikely to change very much in the future, and there probably will not be many more of these routes constructed, but existing routes may be widened or otherwise altered. Motorized routes within 500 m of the National Forest boundary affect bears on the National Forest according to the Moving Windows Analysis with the 500-m buffer. Grizzly bears that use this area do venture onto private, state and county lands near the Forest. Where speed limits are higher, bears are more likely to be hit by motor vehicles when they try to cross these routes. There have been some grizzly bear mortalities on highways that pass through the Forest.

Projected Combined Effects of Reasonably Foreseeable Programs and Activities

There are several recurring themes in discussing reasonably foreseeable cumulative effects on grizzly bears. These are activities or situations in the past that have led to grizzly bear/human conflict and/or mortality. These themes are: 1) motorized access routes, 2) availability of food or

garbage attractants, and 3) livestock grazing. An improving trend in all three of these factors is occurring, and is expected to continue to occur.

Future projects involving timber removal may tend to be tied largely to fuels reduction and management and will tend to be partial cuts. The major effect of timber activities on grizzly bears, that of new motorized routes, will be limited to temporary and low grade routes, if any new routes are needed, and all project routes are to be closed and/or obliterated after the project is completed.

Efforts are being made to increase the number of acres treated annually with prescribed fire. These projects will be coordinated and planned with wildlife in mind, and should overall be beneficial or neutral for the grizzly bear. Fire is a natural component of the landscape, and returning the Forest to a normal fire regime is beneficial for many wildlife species.

More efforts to maintain native species of vegetation on grazing allotments and protect riparian areas are occurring through the range management program. These efforts are beneficial to all wildlife species, including grizzly bears. Depredation from grizzly bears should decrease with the loss of sheep allotments on the Forest.

Expanded efforts to control weeds on the Forest are occurring. This will have an overall positive effect for wildlife species. Continuing the whitebark pine and aspen efforts at some level would be beneficial to the grizzly bear.

Future fisheries habitat enhancement will be of benefit to the grizzly bear, especially when riparian areas are improved.

Future minerals activity on the Forest is an issue due to the presence of the grizzly bear. Of particular concern is the exploration for leasable minerals. This can lead to an increase motorized activities such as helicopters and motorized access routes. Direction from the Grizzly Bear Conservation Strategy does not allow new motorized routes or developed sites within the Recovery Zone without compensation within the same subunit. At this time, most of the interest in leasable minerals appears to be in the Crazies and Bridger Mountains which are currently well outside areas currently inhabited by grizzly bears. There is the potential for new mineral claims within grizzly bear habitat and the activity that accompanies them. These activities must be mitigated.

According to the travel plan and following direction from the Grizzly Bear Conservation Strategy, there will be no new developed sites on the National Forest in the grizzly bear Recovery Zone, and there will be no decrease in secure habitat in the Recovery Zone and an increase in secure habitat in some subunits. Road and trail maintenance will continue at the levels stated in the travel plan. Implementation of any of the travel plan action alternatives is an improvement over the current secure habitat situation for grizzly bears given the closure of project roads and designation of routes.

From a dispersed recreation perspective, the types of activities that lead to grizzly bear/human encounters on the Forest seem to show an increase indicating greater future use by day hikers, backpackers, and wildlife watchers among others. With a concurrent increase in the numbers of grizzly bears and an increase in the area utilized by bears, we can expect an increase in bear/human

encounters. The Food Storage Order is planned to be expanded Forest-wide in 2007. This should help modify bear/human encounters related to attractants. In addition, both MFWP and the FS as well as other entities, are encouraging the public to carry bear pepper spray when recreating on the National Forest. In the future, this should help to defuse some bear/human encounters. Educational programs on bear identification and safety are continuing and improving. No matter how much or how hard we work to prevent it, as long as humans and grizzly bears occupy the same landscape, there are likely to be bear/human encounters. We can strive to decrease the negative outcomes of these encounters, and steps are being taken to do so.

Outfitting/guiding is likely to increase with demand on the Forest. Outfitters/guides assuring that their group follows the rules are probably less likely to have bear/human encounters than the general public.

There is no plan to increase recreation residences on the Forest. Permits for most of these facilities are being renewed in 2008. Language is being added to all permits on proper storage of food and garbage and consequences for noncompliance. Language is also being added to assure that any user of the residences is responsible, not just the permit holder.

Requests for special uses permits for non-recreational uses will continue. The main concern would be during the construction phases of the projects and then afterward if any motorized access routes are created. All of these requests will go through site-specific NEPA. Motorized access routes must be minimized or avoided in the Grizzly Bear Recovery Zone and where bears occur on the Forest.

The Forest will continue to acquire appropriate lands and conservation easements that will have an overall beneficial effect for wildlife, including grizzly bears.

The expansion of the Food Storage Order Forest-wide will be beneficial for bears and other wildlife. It will keep wild animals from becoming habituated to human food and losing their innate fear of humans. It should also reduce the potential for bear/human encounters. The future amendment of the Conservation Strategy for Grizzly Bear to the Forest Plans in the GYA will help assure the conservation of this species.

As the grizzly bear population increases, and human population and traffic in the area increases, the potential for grizzly bear mortality on highways increases. Increased driving speeds and poor sight distances contribute to mortality. Working with the highway departments on wildlife passage, including grizzly bears, is important.

The Gallatin National Forest's travel management plan is likely to reduce motorized routes on the Forest and thus increase secure habitat for grizzly bears and reduce motorized route densities. Other Forests are also undergoing travel management planning, either by district or Forest. The trends are likely to be similar to those of the Gallatin within the Recovery Zone.

The bison capture facility is likely to continue to exist at Horse Butte and one may be built north of the Park on the National Forest. The same situation is likely to continue at Horse Butte, and any

new facility on the Forest will have to go through site-specific NEPA and will include an effects analysis for grizzly bears.

Hunting seasons will continue, and due to the presence of hunters with guns and grizzly bears in close proximity, human/bear encounters are likely to continue to occur. Education and enforcement of food storage may help to reduce the likelihood that these will be fatal encounters. Food Storage efforts must be maintained and increased as the human population increases and the bear population expands. The expansion of the Food Storage Order is one item that will occur in 2007.

The combination of wolves and grizzly bears in livestock depredation scenarios is not a good one. At this time, it appears that wolves are exerting a significant influence on some cattle allotments in terms of distribution of animals, etc. Grizzly bears have not been involved in cattle depredations in the past, but it is uncertain what the future holds. Because sheep have gradually phased out of the allotments on the Forest, that issue of depredation has been resolved.

The Grizzly Bear Conservation Strategy Amendment to the Forest Plans in the GYA gives a detailed look at the effects of reasonably foreseeable activity on the grizzly bear on a GYA-wide basis. For additional information, please see this DEIS or FEIS when that becomes available. Using the Lynx Conservation Assessment and Strategy (Reudiger et al. 2000) guidance generally benefits grizzly bear by addressing effects of motorized use on habitat.

Cumulative Effects of Past, Present and Reasonably Foreseeable Programs and Activities with the Travel Plan Alternative 7M

This table (Table 3.10.25) summarizes the effects of Travel Plan alternatives by presenting the percentage of secure habitat across the alternatives by grizzly bear subunit or area outside of the Recovery Zone south of I-90 where grizzly bears may occur. More detail is available in the body of this issue on effects by subunit.

Table 3.10.25. Table of secure habitat percentages by subunit and area outside of the Recovery Zone across Travel Plan alternatives.

Subunits and areas outside Recovery Zone	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
Boulder Slouth #1 Percent Secure	96.3	96.4	96.4	96.4	96.7	96.7	96.6
Boulder Slough #2 Percent Secure	100	100	100	100	100	100	100
Crandall/Sunlight #1 Percent Secure	96.0	96.3	96.1	96.1	96.7	96.7	96.3
Crandall/Sunlight #2 Percent Secure	99.7	99.7	99.7	99.7	99.7	99.7	99.7
Lamar #1 Percent Secure	93.9	94.5	94.4	94.4	95.2	95.1	94.5
Hellroaring/Bear #1 Percent Secure	75.1	79.5	81.3	81.3	81.3	81.3	80.4
Hellroaring/Bear #2 Percent Secure	98.1	98.5	98.5	99.0	99.0	99.0	99.7
Gallatin #3 Percent Secure	54.4	59.4	60.1	62.2	71.8	81.0	70.2
Hilgard #1 Percent Secure	75.0	78.6	78.6	81.1	81.7	89.2	81.1
Hilgard #2 Percent Secure	78.7	81.8	81.8	81.3	82.9	90.2	83.1
Madison #1 Percent Secure	75.4	79.1	82.2	83.2	83.4	89.6	83.7
Madison #2 Percent Secure	66.7	71.7	71.7	71.7	71.7	71.7	71.8
Plateau #1 Percent Secure	92.1	93.8	93.8	93.8	93.8	93.8	93.8
Henrys Lake #2 Percent Secure	52.7	57.7	57.7	58.8	64.5	67.5	62.5
Mile/Sheep Creek Percent Secure	74.6	77.3	77.3	77.7	87.6	87.6	87.7
North Absaroka/Beartooth Percent Secure	73.8	75.8	75.8	80.6	83.5	83.6	78.9
Gallatin/Madison Percent Secure	49.1	52.6	52.6	57.2	59.1	60.2	57.0

Private, state, county and other non-Forest Service motorized routes affect grizzly bears the same way that motorized Forest Service routes affect bears, and many times, the speed limits are higher and surfaces are different. There are some areas with very high amounts of non-Forest Service routes.

Effects common to all Alternatives

Boulder/Slough subunits #1 and #2 have an extremely high percentage of secure habitat under all seven alternatives (Table 3.10.25). In both subunits, the preferred alternative (7M) has the same or slightly higher secure habitat values than the current condition. This complies with direction in the Grizzly Bear Conservation Strategy (ICST 2003). Since there are no project roads in these subunits, OMARD and TMARD have the same values.

Crandall/Sunlight subunits #1 and 2 have very high secure habitat values (Table 3.10.25). The Gallatin National Forest has only a small proportion of these two subunits. For Crandall/Sunlight #2, there is no difference among the seven alternatives. For Crandall/Sunlight #1, there is a slight difference among alternatives, and it appears that Alternative 7M is a slight improvement over the existing condition. Since there are no project roads in this subunit, OMARD and TMARD have the same values.

Hellroaring/Bear subunits # 1 and #2 lie east of Gardiner in the Absaroka Beartooth Mountains, and Hellroaring Bear #2 consists almost entirely of Wilderness, resulting in a high secure percentage are some project roads affecting these subunits, therefore they have different OMARD and TMARD. The percent secure does not change from OMARD to TMARD for Hellroaring/Bear #1 (Table 3.10.25). Hellroaring/Bear #1 differs only slightly among the alternatives. Alternative 7M has a higher percent secure than Alternatives 1 and 2. Hellroaring/Bear #2 is almost totally within the Absaroka Beartooth Wilderness, and therefore, it is almost totally secure under all alternatives except for some changes in roads in the Passage Creek area of Mill Creek that influence this subunit.

Madison #2 has OMARD and TMARD percentages for road densities that are fairly similar (Table 3.10.25). This subunit has almost no secure habitat on the National Forest. There are many private dwellings and attractants in this subunit. It appears there is little potential to increase secure habitat, and this is a subunit where grizzly bears face a higher risk of conflict with humans than in many other subunits (Gunther et al. 2004). Gunther et al. (2004) studied grizzly bear/human conflicts from 1992 to 2000, and found several clusters of conflicts on the Gallatin National Forest. One is in the Madison #2 subunit, another is in the Hilgard subunits (Taylor Fork), and the third is in Gallatin #3 (near Gardiner). In a review of the conflicts and mortalities since 2000 for Madison #2, there continue to be 2-4 conflicts reported each year in this subunit tied to attractants such as garbage and pet or livestock food. There have also been a number of mortalities on both private and public land in the Madison #2 vicinity (ICST Annual Reports 2000-2003). Although all of the action alternatives increase secure habitat, it is in very small pieces surrounded by motorized access routes. The largest piece of secure habitat created is less than about 200 acres. It does not appear to be logical to use scarce resources to improve this subunit given its inherent low habitat value, the attractants available and mortality risk to bears in this area. In Alternatives 1-6, the Rendezvous Ski Trail routes were accidentally omitted as administrative routes. These routes are maintained infrequently in the summer by motorized vehicles to remove downfall and trim trees growing into the trails. This was corrected for Alternative 7M, and is the same across all alternatives. This means that all action alternatives have 71.8% secure habitat, but Alternatives 1-6 were not re-run.

A small portion (about 15%) of the Plateau #1 subunit lies on the Gallatin National Forest. Most of this subunit is in the Caribou-Targhee National Forest and Yellowstone Park. The portion in the Park is almost entirely secure habitat, and the portion on the Caribou-Targhee has several pieces of

secure habitat. The percentages given are somewhat misleading because they are for the entire subunit but omit motorized routes in the Park and on the Caribou-Targhee National Forest. There is no difference between secure habitat percentages under all the action alternatives (Alternatives 2 - 7M) indicating that there are not a lot of options to improve this area (Table 3.10.25).

Henrys Lake #2 subunit is shared between the Gallatin and Caribou-Targhee National Forests, and is one of the subunits designated "in need of improvement" by the Grizzly Bear Conservation Strategy (ICST 2003). This subunit is heavily motorized on the east side.

Alternative 7M lies somewhere in between Alternatives 3-4 and 5-6 (Table 3.10.25). In all cases 7M is at least equal to if not an improvement over Alternatives 1 and 2 for secure habitat and road densities. This alternative would include new programmatic direction and would include the direction provided in the Grizzly Bear Conservation Strategy (2003) according to the MOU (2003) stating that the Forests should implement the Strategy as well and the FWS BO (1996) that directed the Gallatin National Forest to adopt GYA access standards when they became available. This Alternative includes the programmatic direction in the Travel Plan. This alterative would also designate routes. In almost all subunits, the impacts of Alternative 7M are in between those of Alternatives 3 and 4 and those of Alternatives 5 and 6. Thus secure habitat is higher than Alternatives 3 and 4 and route densities are lower than in 7M. Secure habitat is lower than in Alternatives 5 and 6 and the route densities are higher than in 7M. This alternative is compatible with grizzly bears and recovery, and has met the Conservation Strategy (2003) standard of increasing secure habitat and decreasing route densities in the 3 subunits in need of improvement on the Forest (Gallatin #3, Madison #2, and Henry's Lake #2) as well as maintaining or improving secure habitat percentages in other subunits and maintaining or improving route densities. This Alternative has met the intent of the Conservation Strategy.

For Gallatin #3, one of the "subunits in need of improvement", Alternative 7M is a substantial improvement over the current condition in all categories (Table 3.10.25). The main change is the removal of motorized use from the southern part of the subunit and the reduction in motorized use on the east side of the Gallatin Crest. This creates two fairly large pieces of secure habitat. Gallatin #3 is one the subunits designated "in need of improvement" according to the Grizzly Bear Conservation Strategy (ICST 2003). Alternative 7M improves this subunit to 70.2% secure habitat over the current at 54.4% for Alternative 1 and 59.4% for Alternative 2. Because there are project roads, this area improves with the implementation of Alternative 2. TMARD and OMARD are slightly different, but they both show a decline in route densities in their highest categories from the current condition to Alternative 7M.

Only a small portion of the Lamar #1 subunit is on the Gallatin National Forest, however, it includes Cooke City and a fairly highly motorized area to the north of Cooke City. Alternative 7M is very similar to the current condition with an improvement over Alternative 1 and the same amount of secure habitat as Alternative 2 (Table 3.10.25). The main difference occurs in the northwest part of the subunit where an area becomes part of the higher route density category. Since there are no project roads in this subunit, OMARD and TMARD have the same values.

Hilgard #1 and #2 subunits lie on the west side of the Forest and both contain some of the Lee Metcalf Wilderness. Hilgard #1 secure habitat is 81.1% under Alternative 7M (Table 3.10.25).

TMARD and OMARD differ somewhat. Alternative 7M decreases in the higher motorized route density categories and increases secure habitat. Hilgard # 2 is 83.1% secure in Alternative 7M. Road densities also decrease in the higher road density categories.

Madison subunits #1 and #2 are shared with Yellowstone National Park, and Madison #2 is one of the subunits that the Grizzly Bear Conservation Strategy designates as "in need of improvement." For Madison #1, Alternative 7M also shows a decrease in the higher motorized route densities categories in TMARD and OMARD (Table 3.10.xx). Madison #2 shows Alternative 7M with 71.8% secure which is the same as most action alternatives showing that there is little option for improvement.

Plateau #1 shows a slight improvement in the higher motorized route densities from Alternative 1 to Alternative 7M (Table 3.10.25).

Henrys Lake #2 subunit Alternative 7M at 62.5% secure is an improvement over both Alternatives 1 and 2 (52.7% and 57.7% secure, respectively), those alternatives closest to the current condition (Table 3.10.25). It improves the subunit over the current level of secure habitat mostly on the west side of the subunit.

Sheep and Mile Creek are outside of the Recovery Zone in the Henrys Mountains. This area improves to 87.7% secure habitat in Alternative 7M (Table 3.10.25). This is primarily due to the change to non-motorized use for the Sheep Creek Trail. The Absaroka Beartooth area north of the Recovery Zone and south of I-90 includes substantial Wilderness acreage. Secure improves to 78.9% under Alternative 7M. The Gallatin/Madison areas north of the Recovery Zone and south of I-90 include some of the Lee Metcalf Wilderness. Under Alternative 1 there is 49.1% secure habitat in this area, and it increases under Alternative 2 to 52.6%. Under Alternative 7M, secure habitat increases to 57.0%.

For yearlong snowmobiling, the percentage of the mountain ranges open to snowmobiling south of I-90 by Mountain range is decreased for all mountain ranges except the Henry Mountains where the percentage is increased slightly in Alternative 7M. The A/B sees little change across the alternatives and the Gallatin Range and Madison Range see a fairly large shift by an increase in acres closed to snowmobiles in Alternative 7M. Additional seasonal closures are insignificant. Although the issue of grizzly bear denning and emerging and snowmobile impacts has not been substantiated in this area, additional acreage closed to snowmobiling means that grizzly bear denning habitat is more protected from potential disturbance.

Cumulatively, management actions on the Gallatin National Forest generally improve conditions for the grizzly bear over the current condition. There are large pieces of secure habitat found in the National Parks and Forests in the Yellowstone area. The action alternatives of this travel plan, especially 5, 6 and 7M provide increased habitat security for grizzly bears. Most impacts to grizzly bears are from cumulative effects on private lands, and are not from the actions of the Forest Service or other agencies. Alternative 7M follows current direction from the Grizzly Bear Conservation Strategy (2003) and incorporates access related direction into the travel plan which is beneficial for grizzly bears. The potential future Grizzly Bear Conservation Strategy Amendment to the Forest Plans also offers protection of grizzly bear habitat.

Determination of Effect

Types of travel considered in this analysis are summer and winter travel by motorized and non-motorized means. Human access into grizzly bear habitat, no matter the means, can affect grizzly bears. The overall and long-term effects of implementation of a Travel Plan, and an Alternative like 7M, or one that increases secure habitat and decreases motorized routes from the present, is less impactive on grizzly bears, and is likely to be beneficial to bears in the long-term. Alternative 7M reduces motorized routes in many locations on the Forest, does not increase motorized access route densities in any bear subunit, and makes improvements in the three subunits on the Gallatin National Forest "in need of improvement" (Gallatin #3, Madison #2, and Henry's Lake #2) according to the Conservation Strategy (2003) . Alternative 7M also reduces the amount of acreage open to snowmobiling, thus protecting more potential denning habitat for grizzly bears. The 2002 Biological Assessment on the effects of snowmobiles on grizzly bears in on five National Forests in the Yellowstone area determined that snowmobiles had the potential to affect grizzly bears, especially sows with cubs-of-the-year. Although such effects have not been found after monitoring of dens and emerging bears in the spring, the potential to affect grizzly bears still exists. The 2004 Biological Assessment on the Gallatin National Forest on Bears outside of the Recovery Zone also made a "may affect, likely to adversely affect" determination. This was because human use allowed by the National Forest may impact individual grizzly bears, especially those uses related to motorized access, food storage, and livestock. The grizzly bear in the Yellowstone Area has met recovery criteria. It is likely that this species will be removed from protection of the Endangered Species Act in the future. Although this Travel Plan will be a large improvement for grizzly bears over the baseline condition for motorized access on the Gallatin National Forest in reducing motorized route densities in many areas, and there are large completely non-motorized areas, there are also some areas of relatively high motorized route density, thus the effect of travel management on the grizzly bear is "may affect, likely to adversely affect."

Coordination Measures

Motorized access route density analyses hinge on the statement that project roads will go out of use over time. Some of these are already impassible. Monitoring these routes to assure that they are not being used by wheeled motorized vehicles is important to assure that they truly do not affect the grizzly bear. Monitoring of project road use, and taking action to close project routes that are being used by summer motorized vehicles is essential to assure that grizzly bear effects are those displayed in this analysis.

Monitoring administrative routes to assure that they are gated to the public and use is carefully permitted is also important for this effects analysis. Assuring that these routes are gated, and that use is limited to Forest employees, permittees or contractors is essential.

Continue monitoring spring snowmobile use and known den sites to assure that if conflict among snowmobile use and grizzly bears occur that the agency can take appropriate action.

Enforcement of the travel plan is important and should be monitored to assure that if illegal use is occurring on undesignated routes that appropriate management actions are taken.

The Travel Plan should be the new baseline for secure habitat percentages for the bear management subunits and parts of the Gallatin National Forest south of I-90 where bears occur.

The Biological Opinion on this Travel Plan should supercede direction from all previous access or travel management related BOs.

Expected Future status of the Yellowstone Grizzly Bear

The grizzly bear in the Yellowstone Area has met the recovery criteria in the Recovery Plan. The population has risen from approximately 200 or so 25 years ago to approximately 500 today. Grizzly bears are expanded their range and being seen in places they have not been seen for many years. The population is at the beginning of the delisting process, however, litigation is very likely to slow the process. Many protections are in place on public lands and efforts are being made on private land in the Yellowstone Area. This population should continue to reach recovery criteria in the future, and should be delisted in the next few years.

CANADA LYNX

INTRODUCTION

The Canada lynx was listed as a threatened species under the Endangered Species Act in March 2000. Lynx have been documented, historically and currently, throughout the Rocky Mountains of Montana from the Canadian border through the Yellowstone area. Lynx generally occur in moist subalpine fir habitats, above the dry ponderosa pine and Douglas fir habitat types, and below the alpine zones. Primary lynx habitat in Montana east of the Continental Divide consists of subalpine fir forests as the primary vegetation, intermixed Engelmann spruce and lodgepole pine. On the east side of the Continental Divide, elevation ranges of subalpine fir forests range from 5,500 to 8,000 feet (Ruediger et al. 2000, Claar et al. 1999). The effects to lynx has been identified as an issue as it relates to the existing transportation plan and proposed Travel Plan alternatives. Research suggests that the presence of roads can negatively affect lynx and lynx habitat, directly and indirectly.

Lynx are a prey specialist, largely dependent on snowshoe hares, and usually occur in the habitats where snowshoe hares are most abundant (Claar et al. 1999). Lynx are specially adapted to survival in deep soft snow regions, such as the higher elevations in the northern Rocky Mountains. Physical adaptations to deep snow give lynx a competitive advantage over other predators, which includes the coyote, bobcat, and cougar. Outside of deep snow areas, these generalist predators are believed to exclude lynx through effective competition for food resources. There is a concern that compacted snow routes allow these other predators access up into areas that are normally the exclusive winter range of the lynx.

Directions for evaluating federal actions relative to lynx habitat are provided in the Canada Lynx Conservation Assessment and Strategy (LCAS) (Ruediger et al. 2000). A Forest-wide lynx habitat analysis conducted in 2000 designated Lynx Analysis Units (LAUs), which are intended to provide the appropriate scale to begin evaluation of the effects of management actions on lynx habitat. The

configuration of LAUs was modified in 2005 based on recommendations from the Lynx Biology Team (Claar and others 2005).

STATUS, HABITAT USE, AND BEHAVIOR

Lynx habitat can be generally described as boreal forests that have cold winters with deep snow and that provide a snowshoe hare prey base (USDI 2003). Most lynx occurrences in the western United States are associated with Rocky Mountain conifer forest. On the Gallatin National Forest, this elevation range is between 6,000 and 8,800 feet. Primary vegetation that contributes to lynx habitat is lodgepole pine, subalpine fir and Engelmann spruce. Secondary vegetation, that when interspersed within subalpine forests may also contribute to lynx habitat, includes cool, moist Douglas fir and aspen forests. Dry forest types (e.g., ponderosa pine, climax lodgepole pine) do not provide lynx habitat. According to the U.S. Fish and Wildlife Service (FWS) (USDI 2003), lynx populations are sustained by cyclic influx from lynx populations in Canada.

Lynx need mature forest with a dense understory cover from large woody debris and saplings for denning (Claar et al. 1999). Mature conifer forest with thick deadfall provides denning sites, security, and thermal cover for kittens. The integral component for all lynx den sites appears to be the amount of downed, woody debris present, not the age of the forest stand (USDI 2003). Early successional forests are required for hunting (Koehler and Brittell 1990) although denning habitat with dead and down material and structural layers composed of seedlings and saplings also provide foraging habitat. In general, habitats that favor snowshoe hare will provide optimal foraging habitat. Generally, earlier successional forest stages have greater understory structure than do mature forests and, therefore, support higher hare densities (USDI 2003).

Snowshoe hares are the primary prey of lynx and lynx distribution is nearly the same as that of snowshoe hare (USDI 2003). Lynx diets as determined from a study in north central Washington consisted of 79% snowshoe hares and 24% red squirrels (Koehler 1988). Preferred lynx foraging habitat consists of dense conifer seedling and sapling stands that provide snowshoe hare browse and escape and thermal cover (Koehler 1990). Most research has focused on the winter diet, and diets in the summer are poorly understood throughout the range. However, indications are that the summer diet may include a greater diversity of prey species. Lynx are able to subsist on jackrabbits and other mid-sized prey in foothills and drier montane environments where competition from bobcats is not overbearing. During the cycle when hares become scarce, the proportion and importance of other prey species, especially red squirrel, increases in the diet. However, Koehler (1990) suggested that a diet of red squirrels alone might not be adequate to ensure lynx reproduction and survival of kittens. A shift to alternate food sources may not sufficiently compensate for the decrease in hares consumed to be adequate for lynx reproduction and kitten survival (USDI 2003).

As a solitary, wide-ranging predator, lynx maintain low population densities and are vulnerable to cyclic prey densities. Koehler (1988) and the US Fish and Wildlife Service (USDI 2003) suggest that the scarcity of prey (naturally lower densities of snowshoe hare), may account for the low density and low productivity of lynx in the southern part of lynx range. Similarly, home range size varies with dispersion pattern of suitable habitat and with the abundance of prey as a response to lower density snowshoe hare populations. Males generally maintain larger home ranges than females. In Montana, Brainerd (1985) reports home range sizes of about 17 and 122 sq mi for

females and males respectively. Nellis (1989) indicates that most home ranges fell between 5 to 20 sq mi. Ruediger et al. (2000) found annual home range size for females averaged 44 sq mi.

The US Fish and Wildlife Service (USDI 2003) describes a scenario wherein lynx range coincides with that of the southern margins of boreal forest where it is naturally fragmented into patches of varying size as it transitions into subalpine forest. Where boreal forest patches within the contiguous United States are large, with suitable habitat, prey, and snow conditions, resident populations of lynx are able to survive throughout the cyclic snowshoe hare populations. When there is a high in the lynx metapopulation in Canada, dispersion of individuals act like a wave radiating out to the margins of the lynx range. Lynx are able to disperse long distances, crossing unsuitable habitats, in order to colonize suitable habitats and find potential mates.

The US Fish and Wildlife Service partially bases their conclusions regarding whether lynx in a particular area are resident or dispersers on the record of reliable reports of lynx, of which the best information available on historic lynx presence is trapping data. McKelvey et al. (1999) looked at the historical distribution of lynx from the 1880s to the present. They found evidence of lynx from museum specimens collected in 1887 and reliable trapping data obtained from the Montana Department of Fish, Wildlife, and Parks (MDFWP) beginning in 1950. These data show continuous presence of lynx in Montana. The dynamics of the trapping data appear to be associated with patterns of lagged synchrony; peak harvest data correspond in time and magnitude with a two-year lag time between Montana and southwestern Canada. They concluded that lynx trapped in the twentieth century could have been produced by a local population, or be mostly immigrants or any combination of local lynx and dispersers. In summary, the range of lynx in the contiguous United States is comprised of areas supporting resident, breeding populations and areas supporting occasional dispersers. Specifically, in southwestern Montana where naturally occurring patchy and drier forest types make habitat more marginal, dispersers are supported more than resident populations. It is unclear at this time what role the Gallatin Forest and adjacent Yellowstone National Park play in the long-term survival of lynx. However, the Recovery Outline (USDI 2005) roughly identifies the Gallatin National Forest serving as ‘core’ or ‘secondary’ areas, which further implies the present or historic presence of lynx and the potential role of the Gallatin Forest in lynx recovery.

With this in mind, lynx are considered a potential and confirmed resident of occupied habitat on the Gallatin Forest. Lynx have been trapped here as recently as 1997 on the Gallatin National Forest (Giddings, personal communication). Trapping records beginning in 1978 indicate that approximately 20 individual lynx were legally trapped before MDFWP’s change in trapping regulations in the winter of 2000-2001 to exclude the capture of lynx. No incidental take of lynx has been reported since the closure. Lynx observation data from the Montana Natural Heritage Program (MNHP 2004) database include 20 observations or tracks, some of which are duplicates of the trapping record. Snow track surveys and DNA analysis have confirmed lynx presence in the Absaroka Mountains. In addition, a three-year lynx hair snare survey, following the National Lynx Detection Protocol (McKelvey 1999) began in 2002; two of the genetically analyzed collected hair samples were identified as lynx. Murphy et al. (2004) also report the presence of lynx verified by DNA analysis in Yellowstone National Park, including offspring. They suggest that, though limited to distribution, the species persists at low densities and that population persistence may be provided by reproduction of resident females.

ANALYSIS METHODOLOGY

The LCAS (Ruediger et al. 2000) is the primary basis for determining effects to lynx. There are no specific methodologies for determining effects to lynx other than guidelines and standards identified in the LCAS. A Conservation Agreement between the US Forest Service and the US Fish and Wildlife Service committed the Forest Service to use the LCAS in determining the effects of actions on lynx until the Forest Plans are amended (USDI 2003, USDA and USDI 2005). To address compliance with the Conservation Agreement and the LCAS habitat standards, effects to Canada lynx were evaluated by assessing the travel planning proposal and alternative(s) subsequent effects to those guidelines and standards that apply to these specific actions. Standards and guidelines were developed based on risk factors and credible scientific evidence. Those risk factors are described in Chapter 2 of the LCAS. Those that apply to the travel planning alternatives include those factors affecting lynx productivity (recreation, Forest/ backcountry roads and trails), factors affecting lynx mortality (legal and non-target trapping, incidental or illegal shooting, competition and predation as influenced by human activities), and other large-scale risk factors (lynx movement and dispersal across shrub-steppe habitats).

As stated above, direction for habitat management for lynx is found in the LCAS (Ruediger et al. 2000), which outlines guidelines and standards at the programmatic and project level of planning. The proportion of unsuitable lynx habitat and lynx denning (and foraging) habitat would not be changed with any of the travel planning alternatives as no vegetation treatment is proposed. In regards to travel management, key information is found in Conservation Measures, Chapter 7 in two sections (pages 7-8 to 7-10); Recreation Management and Forest/Backcountry Roads and Trails. Most objectives, standards and guidelines in these two sections are aimed at addressing areas of primary concern. One concern relates to landscape scale connectivity of lynx habitat. This is a basic habitat characteristic that is important to the conservation of many species, including many wide-ranging mid-size and larger carnivores. Another habitat concern is unique to lynx and revolves around potential competing predators who may utilize packed snow routes for access into areas normally only accessible to lynx. The standards and guidelines incorporate recommendations on location and use of public roads and motorized trails, particularly during periods of winter use. Table 3.13. 1 through Table 3.13. 3 below outline the conservation measures applicable to the Travel Plan alternatives and pertinent discussion relative to those conservation measures.

Table 3.13. 1 Conservation measures applicable to all programs and activities.

Programmatic Planning (7-3)	
Standards	**Discussion**
S1 - Conservation measures will generally apply only to lynx habitat on federal lands within LAUs.	Standards were only measured against existing conditions on federal lands in lynx habitat for direct and indirect effects with three exceptions: 1) summer motorized routes and over-the-snow routes were measured in total even if they transverse private lands; 2) areas of non-habitat were included in calculations of snowmobile restriction area changes on National Forest; and 3) private lands within the LAUs were qualitatively discussed in the cumulative effects section.

S2 - Lynx habitat will be mapped using criteria specific to each geographic area to identify appropriate vegetation and environmental conditions	In compliance with LCAS Project Planning Standards regarding habitat delineation, a map identifying primary lynx habitat is located in the electronic files in the Gallatin GIS library.
S3 - To facilitate project planning, delineate LAUs; LAUs should be at least the size of area used by a resident lynx and contain sufficient year-round habitat	See section below on LAUs on the Gallatin National Forest
S4 - LAU boundaries will not be adjusted for individual projects, but must remain constant	See section below on LAUs on the Gallatin National Forest

Programmatic Planning (7-3)	
Standards	**Discussion**
S5 - Limit disturbance within each LAU: if more than 30% of lynx habitat within a LAU is currently in unsuitable condition, no further reduction of suitable conditions shall occur as a result of vegetation management by Federal agencies	Baseline habitat standards will not be analyzed in detail by alternative. The proportion of unsuitable lynx habitat would not be changed with any of the travel planning alternatives as no vegetation treatment is proposed.
Project Planning (7-4)	
Standards	**Discussion**
S1 - Within each LAU, map lynx habitat; identify potential denning and foraging habitat (hares, squirrels, etc.), and topographic features important for lynx movement (major ridge systems, prominent saddles, and riparian corridors); identify non-forest vegetation (meadows, shrublands, grasslands, etc.) adjacent to and intermixed with forested lynx habitat providing habitat for alternate lynx prey species	*Not applicable for this analysis at programmatic level.* Primary lynx habitat is located in the electronic files in the Gallatin GIS library. Willow, aspen, and sagebrush habitats adjacent to conifer habitats mapped as lynx habitat have also been identified as secondary habitat. *Further NEPA analysis would be required for implementation of the selected travel plan alternative.*
S3 - Maintain habitat connectivity within and between LAUs.	It is essential that landscape connectivity between lynx habitats and populations in Canada and the contiguous United States be maintained (USDI 2003).

Table 3.13. 2 Conservation measures to address risk factors affecting lynx productivity.

Recreation Management (7-9) - Programmatic Level	
Standards and Guidelines	**Discussion**
S1 - On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and designated snowmobile play areas by LAU unless the designation serves to consolidate unregulated use and improves lynx habitat though a net reduction of compacted snow area (Ruediger et al. 2000, Mcallister 2003).	This standard was developed to meet the programmatic planning objective listed under Recreation Management (LCAS:7-8, Ruediger et al. 2000): "plan for and manage recreational activities to protect the integrity of lynx habitat." The focus is to minimize snow compaction in lynx habitat.
S2 - Map and monitor the location and intensity of snow compacting activities… that coincide with lynx habitat, to facilitate future evaluation of effects on lynx as information becomes available.	This analysis considered known over-the-snow winter recreation and identified those areas of lynx habitat accessible with over-the-snow winter recreation as it related to LCAS standards and guidelines.
G1 - Provide a landscape with interconnecting blocks of foraging habitat where snowmobile, cross-country skiing, snowshoeing, and other snow compacting activities are minimized or discouraged.	*Not applicable for this analysis* –Foraging habitat is well distributed across the Forest and generally precludes over-the-snow activities. In addition, over-the-snow activities are limited due to wilderness designation, topography, accessibility, or other restrictions.

G2 - As information becomes available on the impact of snow-compacting activities and disturbance on lynx, limit or discourage this use in areas where it is shown to compromise lynx habitat.	Existing and ongoing literature and research was used to conduct analysis.

Forest/Backcountry Roads and Trails (7-10) – Programmatic Level	
Standards and Guidelines	**Discussion**
S1 - On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU. (This standard is similar to S1 – Recreation Management.)	Plowed roads and groomed over-the-snow routes may allow competing carnivores such as coyotes and mountain lions to access lynx habitat in the winter, increasing competition for prey (Ruediger et al. 2000).
G1 - Determine where high total road densities (>2 miles per square mile) coincide with lynx habitat, and prioritize roads for seasonal restrictions or reclamation in those areas.	Further research directed at elucidating the effects of road density on lynx is needed (Ruediger et al. 2000).
G2 - Minimize roadside brushing in order to provide snowshoe hare habitat.	*Not applicable for this analysis* but may be an indirect effect of implementation of the selected travel plan alternative if it includes reconstruction, rerouting, etc. of selected roads and/or trail routes *for which further NEPA analysis would be required*.
G3 - Locate trails and roads away from forested stringers.	*Not applicable for this analysis.* See G2. Landscape connectivity may be provided by narrow forested mountain ridges, plateaus, or forest stringers that link more extensive areas of lynx habitat (Ruediger et al. 2000).
G5 - Minimize building of roads directly on ridgetops or areas identified as important for lynx habitat connectivity.	

Table 3.13. 3 Conservation measures to address mortality risk factors; movement/dispersal.

Mortality Risk Factors - Programmatic Level Standards and Guidelines (LCAS, 7-12 to 16)	
Trapping (7-12)	Discussion
G1 - Federal agencies should work cooperatively with States and Tribes to reduce incidental take of lynx related to trapping.	Lynx are known to be vulnerable to trapping. Lynx may be more vulnerable to trapping near open roads (Ruediger et al. 2000).
Shooting (7-12)	Discussion
G1 - Initiate interagency information and education efforts throughout the range of lynx in the contiguous states. Utilize trailhead posters, magazine articles, news releases state hunting and trapping regulation booklets, etc., to inform the public of the possible presence of lynx, field identification, and their status.	Lynx may be mistakenly shot by legal predator hunters seeking bobcats, or illegally by poachers. Prey species may also be affected by legal shooting (Ruediger et al. 2000).
Competition and Predation as Influenced by Human Activities (7-13)	Discussion
S1 - On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and designated snowmobile play areas by LAU unless the designation serves to consolidate unregulated use and improves lynx habitat though a net reduction of compacted snow area.	Habitat changes that benefit competitor/ predator species, including providing packed snow travel ways, may lead to increased starvation or direct mortality of lynx (Ruediger et al. 2000).
Movement and Dispersal - Programmatic Level Standards and Guidelines (LCAS, 7-12 to 16)	
Highways (7-14)	Discussion
G1 - Dirt and gravel roads traversing lynx habitat (particularly those that could become highways) should not be paved or	Highways impact lynx by fragmenting habitat and impeding movements. Special concern must be

otherwise upgraded … in a manner that is likely to lead to significant increases in traffic volumes, traffic speeds, increased width of the cleared ROW, or would foreseeably contribute to development or increases in human activity in lynx habitat.	given to the development of new highways including gravel roads being paved (Ruediger et al. 2000).

Effects Parameters

Lynx habitat components i.e., temporary unsuitable, denning, and foraging, would remain constant among all the alternatives. Therefore, only the standards and guidelines relative to recreation and road management outlined above apply, specifically as they relate to winter and summer motorized use activity, and habitat connectivity, and will be used to analyze the proposed travel plan alternatives. Parameters used to measure effects include summer motorized open road density (ORD), miles of marked or groomed (i.e., designated) over-the-snow (snowmobile and ski) routes, and acres of closed snowmobile area.

The LCAS states that conservation measures generally apply only to lynx habitat within the LAUs. However, roads used to analyze summer motorized ORD include all public and private roads and motorized trails (including closed roads open to ATVs), except project roads, which are defined in the Gallatin National Forest Travel Management Plan and Forest Plan Amendment Starting Benchmark. The area used to calculate open road density (ORD) is the gross acres (public plus private) within each LAU. This ORD value will be measured against the >2.0-mi/sq mi programmatic guideline for Forest/Backcountry Roads and Trails (G1).

Snowmobile and ski routes include total of public miles by LAU that would be marked or groomed, i.e., designated, by alternative. For the purposes of this analysis, "designated" will be defined as over-the-snow routes that are (or potentially will be based on the selected alternative) specifically marked on a map, described in the travel plan, or signed on the ground as per the LCAS - Clarifications and Revised Terminology approved glossary definition (Lynx/ Wolverine Steering Committee 2001). Over-the-snow routes determined through this travel planning effort would be signed and indicated on a visitor recreation map.

Conversely, "dispersed" use may be defined as recreation activity that occurs off of designated routes (which would be allowed during winter travel only where not otherwise restricted) and that occurs outside of developed areas that support concentrated use. There is an unknown amount of dispersed snowmobile and ski use that is not measured in this analysis. Most of this dispersed over-the-snow use may be accounted for in the calculation of over-the-snow area open (or closed) to snowmobiles although these areas are not closed to skiers. Snowmobile over-the-snow area is calculated as number of acres legally open within the National Forest acres portion of each LAU including non-habitat. The baseline from which to determine an increase or decrease in snowmobile and ski routes and areas will be the existing Gallatin Forest Travel Plan or Alternative 1 (Dixon 2004). Additional qualitative parameters considered to evaluate how recreation activities may affect lynx include type and quality of lynx habitat in which activity occurs, time of year and day activity occurs, type and pattern of activity, and intensity and frequency of activity (Ruediger et al. 2000).

These identified parameters will be discussed by LAU and alternative with some discussion pertinent to individual Travel Planning Areas (TPAs) when (SSs appear to approach or exceed

standards. Additional qualitative discussion may be needed at the Gallatin Forest level. Private lands within individual LAUs will be discussed in cumulative effects. For effects parameters of summer motorized ORD, open over-the-snow designated routes, and closed snowmobile areas, the number displayed to determine compliance with LCAS standards and guidelines will err conservatively, favoring the lynx, due to the inclusion of segments of routes and areas that bisect or overlap non-habitat but may be receiving some level of use. The data still provides a relative comparison by alternative and also provides some level of assessment of the habitat connectivity Project Planning Standard (S3).

Lynx Analysis Units (LAU) on the Gallatin National Forest

As part of the requirements of the LCAS, LAUs were mapped for the Gallatin National Forest in 2000. Approximately 25% of all LAUs did not meet the guideline for size and amount of lynx habitat within each LAU. Lynx Analysis Units (LAUs) were reviewed by the Lynx Biology Review Team and, based on their recommendations, LAUs were reconfigured in 2005. (See attached maps.)

LAUs should generally be 16,000 to 25,000 acres in contiguous habitat and likely should be larger in less contiguous, poorer quality, or naturally fragmented habitat. Programmatic guidelines suggest, "at least 10 sq mi of primary vegetation should be present within each LAU to support survival and reproduction" (Programmatic Planning Guideline:7-4). LAUs should approximate the size of a female's home range and encompass all seasonal habitats (Ruediger et al. 2000). LAUs on the Gallatin National Forest vary in size from 38,738 to 160,039 acres. Some LAUs include a majority of designated Wilderness acreage at elevations and in habitat types that do not constitute lynx habitat. Other LAUs possess lynx habitat in a patchy juxtaposition which may be marginal in its ability to provide lynx with habitat components essential for their adaptations due to the amount of adjacent non-habitat or private land. However, these LAUs could potentially still be used as traveling habitat by dispersing lynx. See Figure 3.13.1 that displays the LAUs on the Gallatin Forest.

Figure 3.13.1 – Gallatin National Forest Lynx Analysis Unit Index

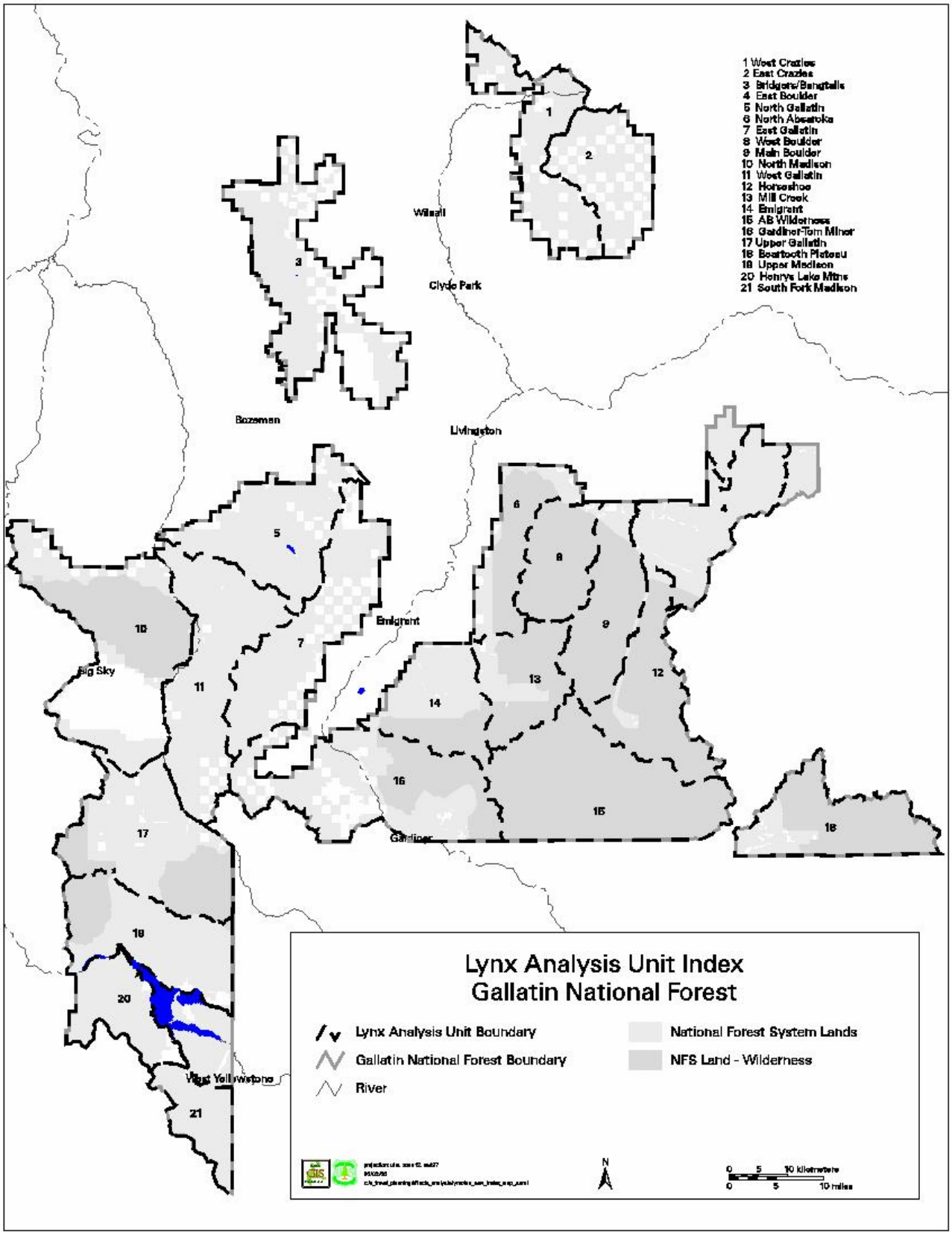


Table 3.13. 4 (below) displays all the LAUs by Ranger District on the Gallatin National Forest, ORD, miles of snowmobile and ski route, and acres closed to snowmobiles for Alternative 1 or existing condition. The snowmobile and ski route column includes all groomed and/or marked routes, which are proposed as an emphasized use. The closed snowmobile area is that area where dispersed use by snowmobiles may not occur off of designated groomed and/or marked trails. This will serve as a baseline from which to compare the Travel Plan alternatives relative to the change in snow compacted routes and areas. It will also serve as a point from which net increases and potential compensatory decreases in snowmobile area can be analyzed and discussed. Net National Forest acreages are displayed because the LCAS states *"Conservation measures will generally apply only to lynx habitat on federal lands within LAUs"* (Programmatic Planning Standard:7-3). All LAUs contain at least 10 sq mi (6,400 acres) of primary lynx habitat.

Table 3.13. 4 Gallatin Forest LAUs: summer ORD, winter miles/ acres, Alternative 1.

LAU	Total LAU Acres (FS acres only)	Acres of Lynx Habitat w/in LAU	Summer Open Road Density (mi/sq mi)	Miles of Snowmobile plus Ski Route	Snowmobile Area CLOSED (acres of LAU)
AB Wilderness	160,039	89,516	0.0	0	0
Beartooth Plateau	81,935	17,660	0.3	40	0
Bridger/Bangtails	88,786	32,518	1.9	66	4,729
East Boulder	84,764	27,973	0.9	13	0
East Crazies	47,096	19,948	0.6	0	0
East Gallatin	90,151	44,239	1.5	5	21,200
Emigrant	70,592	23,875	0.4	2	11,005
Gardiner-Tom Miner	127,408	48,088	0.8	21	31,709
Henry's Lake Mtns	48,161	29,716	1.2	5	24,725
Horseshoe	84,020	27,392	0.0	15	0
Main Boulder	72,669	26,224	0.1	6	0
Mill Creek	63,170	26,928	0.6	20	0
North Absaroka	59,673	30,608	0.2	2	1,683
North Gallatin	89,941	62,464	1.4	82	31,439
North Madison	118,727	69,649	1.1	37	452
South Fork Madison	38,738	34,158	1.6	66	4,676
Upper Gallatin	120,670	58,749	0.5	14	19,083
Upper Madison	93,028	51,328	0.6	31	5,499
West Boulder	56,236	24,535	0.1	0	0
West Crazies	68,378	44,029	1.4	23	0
West Gallatin	122,539	72,539	1.1	87	22,354
TOTAL	1,786,721	862,136	0.8	535	178,554

DIRECT AND INDIRECT EFFECTS ON LYNX

Effects Common to all Alternatives

This section addresses the potential effects that the Travel Plan alternatives may have on lynx and lynx habitat. The presence of roads and trails can directly and indirectly affect lynx and lynx habitat. Directly, road or trail building through lynx habitat can reduce the total amount of habitat available and pose a threat to mortality from vehicles. Indirectly, the impacts of roads include increased access for both legal and illegal hunters and trappers, decrease in prey habitat, increased

access during winter for competing carnivores, and disruption of lynx travel and hunting patterns, and potential avoidance of human activity areas (Koehler and Brittell 1990, Brittell et al. 1989).

Direct Effects

The mere presence of roads represents a direct loss of habitat. Generally speaking, lynx habitat and grass/shrubland or riparian habitat serving as interconnected blocks between lynx habitat would improve with the implementation of Alternatives 2-7M, due to the restriction of travel to designated routes and subsequent reduction in road and trail density. No vegetation treatment is proposed with this analysis and the habitat components of denning and foraging will not change. Any ground disturbing activities resulting from implementation of a selected Travel Plan alternative and subsequent additional environmental analysis (e.g., for trail relocation) would not be a measurable effect. Therefore, the direct effects of loss of habitat will not be discussed further. Refer also to Issue 9: General Wildlife.

Indirect Effects

Summer Motorized Use

The likelihood of lynx encountering people has dramatically increased over the last few decades because of elevated levels of human access into lynx habitat. Roads and trails, snowmobiles, off-road vehicles, and ski area developments enable human access into historically remote forests, thereby increasing the likelihood of lynx being displaced from otherwise suitable habitats and increasing the vulnerability of lynx to human-induced mortality. Roads constructed for forest management, mining or recreational purposes may increase the vulnerability of lynx to hunters and trappers (Koehler and Aubry 1994).

Elevated levels of human access into forests are a threat to Canada lynx because they increase the likelihood of lynx encountering people, which may result in displacement of lynx from their habitats and/or possible injuries or deaths by intentional or unintentional shooting, trapping and vehicle accidents (Brittell et al. 1989, Koehler and Brittell 1990, Olliff et al. 1999). Roads into areas occupied by lynx may pose a threat to lynx from incidental harvest or poaching (Koehler and Brittell 1990) and disturbance or mortality from vehicles (Aubry et al. 1999). Disturbance, as it might relate to displacement effect from either motorized or non-motorized human presence, is generally not an issue. However, Olliff et al. (1999) stated that human disturbance causes lynx to avoid habitats that are otherwise suitable and may preclude lynx from using habitat in an optimal manner. Lynx seem to not avoid roads except at high traffic volumes. However, summer use of roads and trails through denning habitat may affect lynx if kittens are moved due to associated human disturbance (Ruediger et al. 2000).

Lynx avoid open areas and use mature forest or forest with dense cover, tall shrubs, and well-vegetated riparian areas as travel corridors. Corridors may include tops of ridges and riparian zones where subalpine fir, lodgepole pine, and spruce provide greater than 30 percent canopy cover (Olliff et al. 1999). Lynx will use some types of roads for hunting and travel down old roads <50 feet wide with good cover along both edges (Koehler and Brittell 1990) and cross openings <100 meters (approximately 300 feet) in width (Koehler and Aubry 1994). However, roads may disrupt lynx

travel and hunting patterns. Koehler and Aubry (1994) concluded road construction and maintenance are important components of lynx habitat management because they both destroy and create prey habitat, but also make lynx more vulnerable to human-caused mortalities.

Brittell et al. (1989) recommend that roads be maintained to a minimum possible standard to discourage heavy public use disturbance. Koehler and Brittell (1990) also recommend that roads should be maintained to primitive standards to mitigate effects to lynx. As lynx do travel along roads with <50 feet right-of-way, they also recommend that vegetation growing along the edge of the road be maintained as cover for lynx and browse for snowshoe hare. There are no recommended thresholds for lynx in the literature in terms of open road density, however, roads may pose a risk (incidental trapping, accidental vehicle death, or illegal shooting) to the reproduction and/or survival of lynx within a particular home range. The LCAS provides a programmatic guideline for Forest backcountry roads and trails relative to road density at 2 mi/sq mi. In the recently published Federal Register (USDI 2003) that addressed potential threats to lynx, the US Fish and Wildlife Service concluded that the threat to lynx populations from high traffic volume on roads that bisect suitable lynx habitat is low.

Winter Routes

Based on knowledge of lynx natural history, the winter season is most critical due to scarce prey base and breeding biology needs. Changes in winter access affect vulnerability of this species to trapping as well as their ability to capitalize on the habitat niche for which they are adapted (deep snow, high elevations, moist habitat types). To be considered lynx habitat, an area must have the potential to sustain a lynx population over a period of time, which includes supporting the appropriate vegetation composition and structure to support adequate snowshoe hare densities and deep snow where lynx are at a competitive advantage (USDI 2003).

Deep, low-density snow allows lynx to exploit higher elevation areas during winter that typically exclude competitors such as coyotes, bobcats, and mountain lions (Claar et al. 1999). These potential competitors have considerably higher foot loading values relative to the size of the body: paw size thus giving them a lower support capacity and requiring a greater energy exertion to traverse snow. Although their diets may overlap, differences in habitat selection may minimize competition for prey resources (hares) between lynx and other predators, especially during winter. However, opportunities for resource overlap and increased competition for prey among these species may increase during winter due to increased access from plowed roads and snowmobile trails that are maintained for winter recreation, enabling coyotes and bobcats to access lynx winter habitat (Koehler and Aubry 1994).

According to Claar et al. (1999), Ruediger et al. (2000), Kolbe (2005), and Bunnell et al. (2004), packed trails created by winter use activities may negatively impact lynx populations through interference and/ or exploitation competition. Availability of compacted snowmobile trails may provide other predators, especially coyotes, access to lynx habitat during annual periods of deep snow that facilitates competition for primary prey (snowshoe hare) predation opportunities or by directly killing lynx. The subsequent decrease in snowshoe hare numbers available to lynx may negatively affect lynx distribution and abundance (Kolbe 2005).

Bunnell et al. (2004) completed research in Utah that supports the hypothesis that trails compacted by winter recreational use does break down the spatial segregation of lynx and coyote and facilitates coyotes' exploitation of areas of deeper snow. The results suggest that coyotes need the presence of a packed trail but also persistence of packed trails, i.e. the spatial arrangement of snowmobile trails and consistency of use providing a reliable source of packed trails (groomed or ungroomed) are factors that may determine coyote impacts on lynx. He suggested that their research findings of coyote use on snowmobile trails added legitimacy to management steps taken to reduce the potential impacts of coyotes on lynx conservation. However, this study area did not detect the presence of lynx so conclusions were based on potential impacts to lynx habitat was used as a surrogate when looking at coyote access to areas of during deep snow conditions. Additional research needs were noted to look at the simultaneous evaluation of sympatric coyote and lynx populations to identify and quantify the actual extent of exploitation and interference competition. However, Kolbe (2005) looked at the degree of sympatry between lynx and coyote during deep snow winter conditions, coyote behavior on compacted snowmobile trails, and coyote winter food habits near Seeley Lake, Montana. He indicated that coyotes were consistently present in deep snow areas used by lynx and his research suggests that although coyotes use packed snow corridors more than expected, the majority of coyote travel distance is on non-compacted snow. While there was no selection for compacted over non-compacted road surfaces, he found that coyotes did select for shallower and more supportive snow conditions where they naturally occurred in forested stands. Coyotes did not appear to use compacted snowmobile trails to locate or acquire food on the study area and there was only three snowshoe hare kills out of eighty-eight feed sites. Kolbe (2005) concluded that the influence of snowmobile trails on coyote movements and foraging success during winter appeared to be minimal.

Despite current research, there continues to be no solid, consistent data on the role of competition between lynx and other species. In the recently published Federal Register (USDI 2003) that addressed potential threats to lynx, the US Fish and Wildlife Service concluded: 1) There is no evidence that any competition that may exist between lynx and other species exerts a population-level impact on lynx and 2) No evidence has been provided that packed snow trails facilitate competition to a level that negatively affects lynx. Neither factor is considered a threat to lynx populations, but possibly to individuals.

Lack of research on the magnitude of disturbance or displacement of lynx by winter recreation activities makes it difficult to assess the effect. Both snowmobiling and cross country skiing tends to occur in or adjacent to lynx habitat and both require some level of infrastructure development, such as road plowing or grooming, that concentrates use in those areas and may reduce the effectiveness of lynx habitat (Olliff 1999). Snowmobiling in particular may impact lynx adversely due to the potential for disturbance to be dispersed and occur at a higher level of frequency and intensity. While both skiing and snowmobiling result in snow compaction, the density and extent of compaction created only by snowmobiles may affect predator communities (Kolbe 2005). However, lynx will tolerate moderate levels of snowmobile traffic through their home ranges Mowat et al. (1999)and may show some habituation to snowmobile activity where it is temporally and spatially consistent (Olliff et al. 1999). If non-motorized winter recreation activities are not on a groomed or marked trail that receives consistent use, they may potentially affect lynx more than motorized uses due to the dispersed and unpredictable activity (Olliff 1999). Despite the activity

that causes effects to lynx during the winter, they may cause lynx to expend energy beyond their caloric intake, decreasing natality and increasing mortality (Olliff 1999).

Winter snow tracking found that road edges and trails are often followed by lynx for considerable distances, particularly roads less than 15 m wide (Aubry et al. 1999). However, increasing human access into Canada lynx habitat has increased the vulnerability of Canada lynx to both legal and illegal harvest in areas that, historically, were relatively isolated from humans (Todd 1985). Lynx are particularly vulnerable to exploitation by trapping (Bailey et al. 1986); they are relatively easy to capture, appear to have little fear of human scent, respond to baits and lures, and can be attracted by visual attractants (Mowat et al. 1999). Therefore, trapping can be a significant source of mortality for lynx and can depress populations where exploitation is intense and recruitment is low.

Currently, MDFWP has closed the trapping season for lynx. Accidentally trapped and released lynx must be reported within five days of release if uninjured, or immediately if injured. Although travel and harvest restrictions can regulate legal harvest, incidental captures associated with bobcat and coyote trapping in lynx habitat will occur (Hash 1990) and opportunities for the illegal take of lynx will continue or increase (Brittell et al. 1989). However, precautions taken by the State to restrict lynx trapping have likely prevented and continue to prevent the over-harvest of resident lynx (USDI 2003). Giddings (2004) considers the risk of incidental take to be extremely low but cannot predict illegal activity. In the recently published Federal Register (USDI 2003) that addressed potential threats to lynx, the US Fish and Wildlife Service concluded that the threat to lynx populations from illegal harvesting is low, but individuals may be taken.

Habitat Connectivity

Animals move across landscapes to meet daily, seasonal and lifetime needs (Craighead 2002). In the Rocky Mountain/Cascades region, much of lynx habitat is naturally disjunct and habitat connectivity is required across large geographic areas to facilitate dispersal and genetic exchange. Maintenance of habitat quality requires maintenance of linkages, connectedness and interspersion over geographic areas large enough to benefit individuals and join individuals into populations. Activities that fragment, dissect and isolate habitats have undesirable effects on all forest carnivores. Fragmentation is most frequently caused by human activities including road construction (Lyon et al. 1994). Roads and trails can be over-the-snow routes, which can also contribute to loss of habitat connectivity. Maintaining travel corridors between populations may be important to ensure the long-term viability of peripheral or isolated populations in the western mountains (Koehler and Aubry 1994). In the short-term, restricted movements can have negative impacts on populations and ecosystem function. In the long-term, restricted movements can reduce gene flow and have negative impacts on metapopulations and species (Craighead 2002).

According to Craighead (2002), Koehler (1990) and Koehler and Brittell (1990), when moving between denning and foraging habitats, lynx select areas of high canopy closure and avoid open areas, which may disrupt movement patterns if greater than 100 m in width. Aubry et al. (1999) also assert that paved roads or highways were crossed less than random expectations within home ranges (Apps 1999) and may have an influence on lynx spatial organization and movements. Apps (1999) also suggested that dominant natural and human features (such as terrain and the Trans-Canada Highway) may constrain dispersal options. Conversely, Ruggiero (1999), Squires and Laurion (1999) and Aubry et al. (1999) found that lynx move across fragmented landscapes and

have documented lynx movements crossing open valley bottoms and large rivers concluding that these landscape features are not absolute barriers to dispersal.

According to the US Fish and Wildlife Service (USDI 2003), lynx are dispersers where boreal forest is isolated, patchy, or of marginal quality such that it cannot sustain a resident breeding population. Lynx that have attempted what appeared to be dispersal (movement from a place of residence to breeding site) have not been successful in southern boreal forests due to movements cut short when the animal died (trapped). Aubry et al. (1999) documented lynx making exploratory movements where they make long-distance movements beyond their normal home range boundaries and subsequently return. They speculate that the distribution of high quality habitat is patchy and fragmented due to topographic relief and variation in habitat conditions. Therefore, in montane systems with high amounts of spatial heterogeneity, exploratory movements to locate suitable habitat may enhance dispersal success. While successful dispersals can result in the colonization of unoccupied habitats and contribute to the persistence of the metapopulation, only a few areas in the contiguous United States historically supported adequate quality and quantity of habitat to support resident lynx populations over time (USDI 2003).

In the recently published Federal Register, the US Fish and Wildlife Service (USDI 2003) asserts that no information currently exists to determine the level at which traffic volume or roadway design may influence or create an impediment to lynx movement. They addressed potential threats to lynx and concluded that the threat to lynx populations from high traffic volume on roads that bisect suitable lynx habitat and associated suburban developments is low. In addition, they concluded that there is low threat to the contiguous United States lynx population to maintain connectivity between habitats in Canada and the United States. They state their belief that all historic habitats, including boreal forest that exists in patches or is of marginal quality, is still available to dispersing lynx except for areas where development has encroached on the boreal forest or is isolated from source lynx populations. The habitat connectivity considerations, and thus the LCAS direction regarding linkage areas, may also apply at a local scale. As stated above, the area closure and designated route proposal, common to all action alternatives would provide some benefit to lynx by concentrating human activity and allowing areas of seclusion outside of the travel corridors. Brittell (1989) recommends managing travel cover to allow movement of lynx within their large home ranges. Major ridges should be managed for travel cover, with emphasis on saddles and of a width $\geq$300 ft.

Activities that may impact the lynx and its habitat are typically localized, and even within a local area the impact an activity may have on lynx can vary depending on the quality and quantity of habitat in a local area or the size of the local resident population (USDI 2003).

As part of the implementation of the interagency Canada Lynx Conservation Agreements, lynx linkage areas were identified. These linkage areas are meant to aid in movement and dispersal of individuals separated by areas of non-habitat (McAllister 2003). A map displaying lynx habitat and linkage areas is available for consideration in planning efforts. They are mapped at a broad scale and need further refinement to be fully utilized. The lynx linkage areas that were identified for the Gallatin Forest include the North Bridgers to the Big Belt Mountains area, Castle Mountains to northern Crazy Mountains area, Crazy Mountains to the Absaroka Mountains area, the Crazy Mountains to Bridger Range area, the Bridger Range to Gallatin Range area (Bozeman Pass), the

Henry's Lake Mountains to Gravelly Range area (Reynolds Pass), the Gallatin Range to Absaroka Mountains area (Yankee Jim), and areas between the Cooke City to Yellowstone National Park and Custer National Forest areas. There is no specific direction of how to manage for these linkage areas relative to travel planning, habitat manipulation, or development. In addition, the North Bridgers to the Big Belt Mountains, Crazy Mountains to the Absaroka Mountains, the Crazy Mountains to Bridger Range, the Gallatin Range to Absaroka Mountains (Yankee Jim), and Cooke City linkage areas that transverse large areas of non-habitat, poor quality habitat, and private lands are influenced by many factors including highways, interstates, railroad beds, rivers, and land development of which the Gallatin Forest has no control. See Issue 3: Biological Diversity and Ecological Sustainability for a further discussion of effects on potential lynx corridors and linkages.

Effects by LAU - Summer

Table 3.10. 3 displays all the LAUs on the Gallatin National Forest and their respective summer ORD, by alternative. The LCAS provides a programmatic guideline for Forest backcountry roads and trails relative to road density of over 2 mi/ sq mi.

Table 3.13. 5 Summer motorized open road and motorized trail density (gross), by LAU, by alternative.

Lynx Analysis Unit	Summer motorized open road and motorized trail density by LAU (in mi/sq mi)						
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7M
AB Wilderness	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beartooth Plateau	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Bridger/Bangtails	1.9	1.9	2.0	1.8	1.7	1.7	1.7
East Boulder	0.9	0.9	0.8	0.6	0.5	0.4	0.4
East Crazies	0.6	0.6	0.5	0.5	0.5	0.5	0.5
East Gallatin	1.5	1.5	1.3	1.1	1.1	1.0	1.0
Emigrant	0.4	0.4	0.5	0.5	0.5	0.5	0.5
Gardiner-Tom Miner	0.8	0.8	0.7	0.7	0.7	0.7	0.7
Henry's Lake Mtns	1.2	1.2	1.2	1.2	1.0	0.9	0.9
Horseshoe	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Main Boulder	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Mill Creek	0.6	0.6	0.5	0.4	0.4	0.4	0.4
North Absaroka	0.2	0.2	0.2	0.1	0.1	0.1	0.1
North Gallatin	1.4	1.4	1.5	1.5	1.4	1.3	1.3
North Madison	1.1	1.2	1.2	1.2	1.2	1.1	1.1
South Fork Madison	1.6	1.6	1.6	1.6	1.6	1.5	1.5
Upper Gallatin	0.5	0.5	0.5	0.5	0.5	0.3	0.3
Upper Madison	0.6	0.5	0.5	0.4	0.4	0.3	0.3
West Boulder	0.1	0.1	0.0	0.0	0.0	0.0	0.0
West Crazies	1.4	1.4	1.6	1.4	1.2	1.1	1.1
West Gallatin	1.1	1.1	1.1	1.0	0.9	0.7	0.7
TOTAL	0.8	0.8	0.8	0.8	0.7	0.6	0.7

There are no LAUs that do not meet the 2 mi/ sq mi guideline in any of the alternatives. Any roads targeted for an improvement in level of construction and maintenance standard would likely

encourage a higher level of public use. However, this is probably not an issue since all LAUs have an ORD of < 2 mi/sq mi. Programmatic management objectives would serve to minimize the increased vulnerability to lynx due to improved road standards.

Effects by Alternative - Summer

With the implementation of any of the alternatives, lynx would continue to avoid open areas and use mature forest or forest with dense cover, tall shrubs, and well-vegetated riparian areas as travel corridors. Roads less than 50 feet wide with good cover along both edges openings <100 meters (approximately 300 ft) in width would still be crossed. However, lynx travel and hunting patterns may be disrupted.

Lynx potentially in and around areas frequented by humans may be displaced. This may put lynx at further risk of human-induced mortality and increase their vulnerability to hunters and trappers (incidental trapping, accidental vehicle death, or illegal shooting). Summer use of roads may also increase the vulnerability of any kittens potentially using denning habitat. However, there are no alternatives that exceed the LCAS programmatic guideline for Forest backcountry roads and trails relative to road density of 2.0 mi/ sq mi guideline for any LAUs.

Effects by LAU - Winter

Increases in either snowmobile or ski routes were analyzed in order to address the Recreation Management (S1) and Forest/ Backcountry Roads and Trails (S1) programmatic level standards and the Mortality Risk Factor programmatic level standard (S1). Any net increase in groomed or marked (and therefore "designated") over-the-snow routes must be accompanied by a consolidation of use resulting in a net reduction of compacted snow areas within the same LAU (Mcallister 2003). Therefore, a simple deduction of changes in route miles is not enough to determine if each LAU meets or does not meet this management direction. These LAUs are discussed in more detail to determine if they meet the intent of the LCAS standards and guidelines.

A few of the LAUs had no net change or net decreases in route miles of over-the-snow marked or groomed routes and also had no net change or an increase in closed snowmobile areas for all alternatives. These LAUs are within, lead to, or strongly overlap designated Wilderness areas. They appear in Table 3.13. 6 as shaded rows and include: AB Wilderness, Beartooth Plateau, East Boulder, East Crazies, Horseshoe, Main Boulder, North Absaroka, and West Boulder LAUs. These LAUs meet the Recreation Management (S1) and Forest/ Backcountry Roads and Trails (S1) programmatic level standards and the Mortality Risk Factor programmatic level standard (S1) for over-the-snow routes.

The decreases in route miles or increase in snowmobile closure area acres are due to the alternatives responding to various resource issues or concerns. The effect to lynx of decreased over-the-snow routes and increased snowmobile area closures may be a reduction in vulnerability to trapping and illegal shooting, a reduction in potential competition with other predators and an improved ability to capitalize on an undisturbed habitat niche. However, the degree to which these effects may occur depends on actual lynx presence and the confirmed evidence through research that these mortality risks pertain to the lynx population on the Gallatin Forest.

The remainder of the LAUs had an increase or a decrease in route miles and an increase in percent snowmobile closure area, which varies by alternative (only Alternative 3 in Henry's Lake Mountains LAU resulted in a decrease in snowmobile closure area). Some increases in route miles were only from ski routes, not snowmobile routes, or vice versa. It is important to note that some routes currently exist on the ground, and are receiving some level of use, but count as an increase in route miles due to the alternative proposal to mark or groom the route, i.e. "designate". Also of note is that all over-the-snow routes and areas were calculated regardless of whether they traveled through or consisted of lynx habitat. Therefore, the data is somewhat conservative in favor of lynx.

There is no measure of the level of use each of these designated routes receives. An assumption made is that the closer proximity to high population centers (Bozeman) or high quality snowmobiling (Cooke City and West Yellowstone), the more accessible and, therefore, more use occurs. A higher frequency of use may also equate to a pattern of activity such that consistent compaction occurs in those areas. This may or may not translate to a true biological effect if the use is already occurring on a particular route and the only difference is by virtue of the designation. The variations of these qualitative parameters are discussed by LAU and by alternative.

Table 3.13. 6 and Table 3.13. 7 display all the LAUs on the Gallatin National Forest and their respective total miles of designated over-the-snow marked or groomed routes and acres and percent of closed snowmobile area, by alternative.

Table 3.13. 6 Miles of designated over-the-snow routes, and acres and percent of closed snowmobile area, by alternative by LAU.

LYNX ANALYSIS UNIT	Miles of snowmobile/ski routes, Acres and percent closed snowmobile area																				
	Alt. 1			Alt. 2			Alt. 3			Alt. 4			Alt. 5			Alt. 6			Alt. 7M		
	Mi	Acres	%	Mi	Acres	%	Mi	Acres	%	Mi	Acres	%	Mi	Acres	%	Mi	Acres	%	Mi	Acres	%
AB Wilderness	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beartooth Plateau	40	0	0	40	0	0	40	0	0	39	3764	5	39	3764	5	39	3764	5	39	1028	1
Bridger/Bangtails	66	4729	5	79	6752	8	99	24578	28	99	24578	28	70	44500	50	82	24578	28	69	19280	22
East Boulder	13	0	0	6	0	0	6	1564	2	6	1564	2	6	1564	2	6	1564	2	2	0	0
East Crazies	0	0	0	0	0	0	0	46918	100	0	46918	100	0	46949	100	0	46918	100	0	46938	100
East Gallatin	5	21200	24	12	21200	24	12	37857	42	12	63291	70	7	74595	83	11	72966	81	6	76552	85
Emigrant	2	11005	16	2	11029	16	8	11968	17	8	11968	17	2	11970	17	2	11968	17	8	19531	28
Gardiner-Tom Miner	21	31709	25	21	31709	25	23	61778	48	23	61778	48	21	68378	54	23	67259	53	22	66838	53
Henry's Lake Mtns	5	24725	51	5	24725	51	20	22254	46	5	24918	52	5	25116	52	5	25116	52	5	28225	59
Horseshoe	15	0	0	15	0	0	15	2396	3	15	2396	3	15	2740	3	15	2396	3	15	0	0
Main Boulder	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0
Mill Creek	20	0	0	20	3525	6	26	3525	6	28	3525	6	20	6441	10	17	3525	6	29	5044	8
North Absaroka	2	1683	3	2	1683	3	2	6136	10	2	6136	10	2	16709	28	2	6136	10	2	2849	5
North Gallatin	82	31439	35	78	31439	35	103	52338	58	99	69616	77	86	69617	77	93	69617	77	90	62060	69
North Madison	37	452	<1	37	452	<1	40	31839	27	40	34939	29	38	34939	29	40	34939	29	38	32652	28
South Fork Madison	66	4676	12	66	4676	12	82	4676	12	74	4676	12	66	4710	12	74	11964	31	71	4864	13
Upper Gallatin	14	19083	16	14	19083	16	37	23903	20	14	23903	20	14	26347	22	14	64345	53	25	45478	38
Upper Madison	31	5499	6	31	5499	6	31	14449	16	31	14449	16	31	15606	17	28	72078	77	37	8076	9
West Boulder	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
West Crazies	23	0	0	23	0	0	33	94	<1	37	94	<1	30	32957	48	32	94	<1	40	22594	33
West Gallatin	87	22354	18	87	22354	18	116	29853	24	116	32253	26	89	47837	39	95	58977	48	106	54972	45
TOTAL	535	178554	10	544	184126	10	699	376126	21	654	430766	26	547	534739	30	584	578204	32	610	496981	28

The remainder of the LAUs indicated an increase or no net change in snowmobile or ski route miles, with three exceptions. North Gallatin, Mill Creek, and Upper Madison LAUs showed a decrease in over-the-snow route miles in Alternative 2, 6, and 6 respectively. Table 3.13. 7 summarizes the degree of increase or decrease of route miles and snowmobile closure area of each LAU, by alternative. Decreases in miles by LAU, by alternative are displayed in parentheses () to indicate a decrease.

Table 3.13. 7 LAUs/ alternatives with increase or (decrease) above baseline of over-the-snow routes and acres of snowmobile area closure.

Lynx Analysis Unit	Miles of increase or (decrease) over baseline											
	Alt. 2		Alt. 3		Alt. 4		Alt. 5		Alt. 6		Alt. 7M	
	Net ↑	Acres of ↑	Net ↑	Acres of ↑	Net ↑	Acres of ↑	Net ↑	Acres of ↑	Net ↑	Acres of ↑	Net ↑	Acres of ↑
Bridger/ Bangtails	13	2023	33	19849	33	19849	4	39771	16	19849	3	14551
East Gallatin	7	0	7	16657	7	42091	2	53395	6	51766	1	55352
Emigrant	0	24	6	963	6	963	0	965	0	963	6	8526
Gardiner-Tom Miner	0	0	2	30069	2	30069	0	36669	2	35550	1	35129
Henry's Lake Mtns	0	0	15	-2471	0	193	0	391	0	1636	0	3500
Mill Creek	0	3525	6	3525	8	3525	0	6441	(3)	3525	9	5044
North Gallatin	(4)	0	21	20899	17	38177	4	38178	11	38178	8	30621
North Madison	0	0	3	31387	3	34487	1	34487	3	34487	1	32200
South Fork Madison	0	0	16	0	8	0	0	34	8	7288	5	188
Upper Gallatin	0	0	23	4820	0	4820	0	7264	0	45262	11	26395
Upper Madison	0	0	0	8950	0	8950	0	10107	(3)	66579	6	2577
West Crazies	0	0	10	94	14	94	7	32957	9	94	17	22594
West Gallatin	0	0	29	7499	29	9899	2	25483	8	36623	19	32618

The LAUs displayed in Table 3.13. 7 would only meet the Recreation Management (S1) and Forest/ Backcountry Roads and Trails (S1) programmatic level standards or the Mortality Risk Factor programmatic level standard (S1) for the alternative(s) shown if the designation resulted in a net reduction of area open to snowmobiles or skiing through a consolidation of unregulated use (per Mcallister 2003). It is assumed that for those LAUs and alternatives that show a combination of an increase in over-the-snow routes and a corresponding increase in areas closed to snowmobiles, some level of compensation may be occurring such that they would be in compliance with LCAS management direction. LCAS management direction for a specific LAU would be met if it showed a decrease in route miles or no increase, i.e., zero. These data are generated from the proposed travel plan GIS maps and do not necessarily represent a true biological effect of increased snow compaction. These numbers were further examined route by route to determine if the route was already receiving some level of use, if the route was within or adjacent to lynx habitat, and if the amount, location, and habitat quality of snowmobile closure areas served to consolidate use within the LAU.

As discussed in the direct and indirect effects section above, increases in over-the-snow compaction (by either routes or areas) may have detrimental effects to lynx habitat and lynx populations. Snowmobile trails maintained for winter recreation may increase lynx vulnerability to trapping and enable coyotes and bobcats to access lynx winter habitat. Access to other predators may facilitate

competition by killing hares (resource overlap) or by directly killing lynx. However, moderate levels of snowmobile traffic may be tolerated, particularly when forest edges are available or the trails are narrow. There is no differentiation between snowmobile routes or ski routes relative to effect on lynx. However, it is somewhat intuitive that snowmobiles produce greater compaction than skis simply due to the pressure per surface area caused by machines vs. a human. Generally, snowmobile routes are also wider, especially if groomed, and produce noise that can carry long distances depending on the terrain.

Both snowmobiles and skiing can produce compacted areas off-trail that could enable competing predators access into areas not normally traveled during the winter. This may be important when considering the effect of snowmobile areas closed to use; skiing may still be occurring and providing some level of compaction thus limiting the compensatory benefit of the closure.

For LAUs that indicate an increase in over-the-snow routes and a corresponding increase in snowmobile closure area, additional information is presented below by alternative. There may be new areas of compaction due to summer routes identified as connectors that would be constructed through forested areas currently now accessible to snowmobilers or skiers. These would not be marked or groomed but if they occur within an area open to snowmobiles, additional compaction may occur. Additional qualitative parameters are considered to evaluate if the net increase in route miles and corresponding area closure does equate to an overall decrease in snow compaction.

Bridger / Bangtails

The Bridger/ Bangtails LAU on the Bozeman Ranger District indicates a net increase of over-the-snow routes under all alternatives. The amount of area closed to snowmobiles varies by alternative. This LAU is close to Bozeman and receives regular snowfall which makes these routes relatively more accessible and likely to receive relatively more use than other LAUs. The intensity and frequency of snowmobile and ski activity produces fairly consistent snow compaction. Bridger Bowl Ski Area and Bohart Ranch Cross-country Ski Center are existing sources of snow compaction within and adjacent to ski area boundaries. Summer connectors proposed in this LAU would not receive additional use or have an effect on lynx due to the routes not being in lynx habitat, located in areas of poor snow quality, or in open terrain that would not require tree removal.

Where the routes designated as marked or groomed currently receive some level of dispersed snowmobile and/ or ski use, the newly designated routes would not substantially add new areas of consistent snow compaction to the LAU. Area closures to snowmobiles increase above baseline in all alternatives and serves to provide some level of compensation for the increase in marked and groomed routes. This is especially true in the Bridger range where the lynx habitat is of a higher quality than the Bangtails. The amount of snowmobile area closure acres Areas proposed for closure are considered rideable snowmobile terrain and contain quality lynx habitat. However, some of this benefit may not be realized where skiers venture into the backcountry and compact snow in those areas closed to snowmobiles.

Alternative 7M indicates a net increase of only 3 miles due to the currently designated ski routes in the Bangtails being dropped from the system. This is more realistic due to marginal snow conditions and lack of use but would not realize any benefits to lynx as the area would still be open to snowmobiles and receive dispersed use and consistent compaction. Alternative 7M would

maintain the southwest side as open to snowmobiles, much of which is not capable and is poor quality lynx habitat. This alternative would allow snowmobile use in the Fairy Lake area which would still receive heavy use and compaction by backcountry skiers if it were closed to snowmobiles. It would further restrict snowmobile use on the northwest side of the Bridger ridge which is less accessible to backcountry skiers, considered rideable snowmobile terrain, and contains approximately the same amount of lynx habitat as the Fairy Lake area where snowmobiling would be allowed. While this may appear to break up the connectivity north to south, it would still serve to concentrate use on marked and groomed routes and reduce overall compaction across the landscape, thus meeting the intent of the LCAS.

East Gallatin

The East Gallatin LAU on the Livingston Ranger District indicates net increases in over-the-snow route miles above baseline in all alternatives. Many of the route mile increases on the north end of the LAU are shared trails and/ or close to the Bozeman area, currently receiving use by both snowmobiles and skiers. In Alternative 7M there are large blocks of closure within the Wilderness Study Area that are serving to consolidate use on designated routes, approximately ½ of which is mapped lynx habitat. While much of these closure areas are not necessarily rideable terrain, there is high quality habitat within the closure areas that would remain inaccessible and uncompacted. Alternative 7M meets the intent of the LCAS due no additional compaction and the high quantity and quality of lynx habitat within large closure areas.

Emigrant

The Emigrant LAU on the Livingston Ranger District indicates a net increase of 6 mi of over-the-snow routes under Alternative 7M. These routes are within what is considered rideable snowmobile terrain although access and snow quality can be poor. The majority of proposed route length increase is not in lynx habitat. Snowmobile closure area acres increase in all alternatives over the baseline. The additional snowmobile closure area in Alternative 7M would serve to consolidate use and reduce compaction although some of this compensation may be negated by occasional backcountry skier use. Alternative 7M would meet the LCAS due to no additional compaction in lynx habitat, route mile increase occurs in areas already receiving snowmobile use, majority of route not in lynx habitat and/ or sufficient snowmobile area closure.

Gardiner-Tom Miner

The Gardiner-Tom Miner LAU on the Gardiner District indicates a net change in over-the-snow route miles of 1 mile net increase in Alternative 7M. These routes are already being used by snowmobilers and skiers so there would be no additional snow compaction than what is already occurring. Although only approximately ¼ of the additional closure area acres are lynx habitat, use would be consolidated to those areas where snowmobile use is allowed. All alternatives would meet the intent of the LCAS.

Henry's Lake Mountains

The Henry's Lake Mountains LAU on the Hebgen Lake Ranger District indicates no net change for Alternative 7M. Alternative 7M does meet the LCAS since there was no change to the amount of over-the-snow route miles.

Mill Creek

Alternative 7M has an increase in over-the-snow in route miles of 9 miles and an increase in snowmobile closure area acres. Approximately ½ of the increase is on a route that already currently receives heavy ski use and is consistently compacted. The route increase is for ski use only within a snowmobile closure area where use would be concentrated on trails as minimal backcountry use opportunities exist. The proposed snowmobile closure area includes lynx habitat and some rideable snowmobile terrain that would eliminate snowmobiles where dispersed use currently occurs and concentrate use in the mainstem of Mill Creek. The Mill Creek area is close to Livingston and currently receives heavy use during winter by snowmobilers, skiers, dog-sledders, and family sledding. None of the alternatives would increase the level of snow compaction above that which already exists and therefore the alternatives meet the LCAS.

North Gallatin

The North Gallatin LAU on the Bozeman Ranger District indicates a net increase in all the alternatives except Alternative 2. Many of these routes are existing roads or open areas that currently receive some level of dispersed use. These alternatives also indicate an increase in snowmobile closure area acres. The proposed snowmobile closure areas include rideable snowmobile terrain within or adjacent to quality lynx habitat. Summer connectors proposed in this LAU may require tree canopy removal on portions of the identified routes, potentially increasing accessibility and additional use but there is heavy snowmobile and/ or ski use immediately adjacent to these areas and/ or the routes are not in lynx habitat so the effect would be minimal.

All of the drainages within this LAU (Little Bear, Cottonwood, Hyalite, and Bozeman Creek) receive heavy use of allowable activities and are managed to create a separation of uses between drainages. If Hyalite Creek road would be plowed to allow better winter access, this would further increase accessibility and intensity creating areas of consistent snow compaction. Thus, the lower the ratio of route miles to snowmobile closure area acres, the closer to meeting the intent of consolidation of use resulting in a net reduction of compacted snow areas within the same LAU.

Alternative 7M plows the Hyalite road while at the same time allowing snowmobiles access to both lower and upper (high elevation basins) portions of the Hyalite drainage. This potentially reduces the overall benefit of attempted consolidation of compaction. However, across the entire LAU, Alternative 7M closes approximately twice as much area to snowmobiles as is closed currently, ½ of which is lynx habitat, thus meeting the intent of the LCAS.

North Madison

The North Madison LAU on the Bozeman Ranger District indicates an increase in over-the-snow route miles for Alternative 7M. The routes to be designated already receive heavy skier use. Summer connectors proposed in this LAU would go through stringers of forested areas with open areas in between which may increase localized accessibility but heavy snowmobiling use occurs in the basins immediately above these connectors.

These alternatives also indicate substantial snowmobile area closures but would result in little benefit to lynx. While mapped as lynx habitat, the proposed closures adjacent to the Lee Metcalf

Wilderness are not considered rideable terrain and receive intermittent snowmobile use. However, any snowmobile activity that does occur would be restricted resulting in an overall net reduction in compaction. Big Sky, Moonlight, and Yellowstone Club ski areas are privately owned acres within this LAU and vastly contribute to a level of snow compaction.

South Fork Madison

The South Fork LAU on the Hebgen Lake Ranger District indicates that over-the-snow route miles and snowmobile closure area acres varies by alternative. Alternative 7M indicates a net increase of 5 route miles and a slight increase in snowmobile closure area acres. This increase is due to a route that is currently heavily used by snowmobiles and snow packed now on a regular basis. While there is no measurable compensation of area closure for net increase in designated route, this route already receives consistent compaction.

This LAU is immediately adjacent to West Yellowstone and very accessible for snowmobile opportunities close to town and Yellowstone Park. This proximity, combined with the groomed Rendezvous Ski Trail system, creates use patterns of high intensity and frequency.

Upper Gallatin

This LAU includes the Taylor Fork drainage which is a very popular recreation destination. Alternative 7M has an increase in snowmobile closure area acres which is about a 3 fold increase in high quality lynx habitat closed to snowmobiles and considered snowmobile rideable terrain, serving to concentrate use in the lower portion of Taylor Fork drainage. The 11 mile net increase in over-the-snow routes includes routes to access the Wapiti cabin from Taylor Fork Road # 134 (through a snowmobile closure area) and from the Sage Creek trailhead. These routes are currently used resulting in no net change in compaction. Alternative 7M meets the LCAS.

Upper Madison

The increase in route miles in Alternative 7M reflects the designation of two designated routes through a snowmobile area closure. The type and pattern of activity on these routes would not change with the new designation. There is also an increase in snowmobile area closure acres which is considered rideable snowmobile terrain but not considered high quality lynx habitat. The majority of the substantial snowmobile closure area acres north of Quake Lake that are included in Alternatives 3-6 were not included in Alternative 7M due to the area not considered capable for snowmobiling. This LAU is immediately adjacent to West Yellowstone and very accessible for snowmobile opportunities close to town and Yellowstone Park, creating use patterns of high intensity and frequency where snowmobiling is allowed. None of the alternatives would increase the level of snow compaction above that which currently occurs.

West Crazies

The West Crazies LAU on the Livingston Ranger District indicates a net increase in over-the-snow route miles for all alternatives except Alternative 2 which shows no net change. What differentiates these alternatives is the amount of net increase with consideration of the amount of snowmobile area closure acres. . Alternative 7M has a net increase of 17 miles but with substantial amounts of snowmobile closure area acres, approximately ½ of which is quality lynx habitat. The routes that

are proposed to be marked include ski trails joining Porcupine and Ibex Cabins. This area currently receives some dispersed snowmobile and ski use and is considered rideable terrain although weather conditions and land ownership dictate use due to marginal snow and poor public access. The proposed snowmobile closure would preclude snowmobile use in some areas currently receiving use and would serve to consolidate use to marked, groomed, or areas otherwise open to snowmobiles. Some backcountry skiing may occur within these snowmobile closure areas but overall compaction would be reduced.

This LAU is close to the communities of Wilsall and Clyde Park. The designated routes south of Ibex Cabin in Cottonwood Gulch, the Shields loop, and the Smith Creek drainage currently receive heavy snowmobile use and are part of a groomed trail system. The summer route proposed to connect two motorized trails would require tree canopy removal and would increase access to snowmobiles for dispersed use. The entire Smith Creek drainage is open to snowmobiles so there is use already occurring in the general vicinity but this new route may encourage a small amount of additional compaction. Alternative 7M would meet the intent of the LCAS due to the favorable combination of net increases in route miles and snowmobile closure area acres.

West Gallatin

The West Gallatin LAU on the Bozeman Ranger District indicates a net increase in over-the-snow route miles for all alternatives except Alternative 2 which shows no net change. There is also an increase in snowmobile closure area acres for those alternatives with net increases in route miles. The routes in Alternative 7M indicate a net increase are currently receiving use as part of existing system or are routes proposed to be marked through snowmobile closure areas. This designation would serve to concentrate use on the marked or groomed routes with large areas closed to snowmobiles, much of which is lynx habitat. This LAU is relatively close to Bozeman (and the Big Sky area) and offers adequate snow conditions for winter activities, creating a pattern of consistent snow compaction across the landscape where snowmobiles are allowed.

The following Table 3.13.X indicate which LAUs would be in compliance with the LCAS. Those LAU - alternative combinations that do not meet the LCAS are shaded for ease of viewing.

Table 3.13. X LAUs Compliance with LCAS by Alternative (Yes or No).

LAU	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7M
AB Wilderness	Y	Y	Y	Y	Y	Y	Y
Beartooth Plateau	Y	Y	Y	Y	Y	Y	Y
Bridger/Bangtails	Y	N	N	N	Y	Y	Y
East Boulder	Y	Y	Y	Y	Y	Y	Y
East Crazies	Y	Y	Y	Y	Y	Y	Y
East Gallatin	Y	N	N	Y	Y	Y	Y
Emigrant	Y	Y	N	N	Y	Y	Y
Gardiner-Tom Miner	Y	Y	Y	Y	Y	Y	Y
Henry's Lake Mtns	Y	Y	N	Y	Y	Y	Y
Horseshoe	Y	Y	Y	Y	Y	Y	Y
Main Boulder	Y	Y	Y	Y	Y	Y	Y
Mill Creek	Y	Y	Y	Y	Y	Y	Y

North Absaroka	Y	Y	Y	Y	Y	Y	Y
North Gallatin	Y	Y	N	N	Y	Y	Y
North Madison	Y	Y	Y	Y	Y	Y	Y
South Fork Madison	Y	Y	N	N	Y	Y	Y
Upper Gallatin	Y	Y	N	Y	Y	Y	Y
Upper Madison	Y	Y	Y	Y	Y	Y	Y
West Boulder	Y	Y	Y	Y	Y	Y	Y
West Crazies	Y	Y	N	N	Y	N	Y
West Gallatin	Y	Y	N	N	Y	Y	Y

Effects - Winter

Alternative 1 may add direct, indirect and cumulative effects to the existing situation. Assuming human recreational activities increase in the future, this alternative has the most potential to affect lynx long term. There is no reasonable logistical way to deter an increase in snowmobile use without designating routes with area closures as proposed in Alternatives 2-7. Snowmobile and ski accessible areas would continue to increase where land topography, snow conditions, and increased technology make it feasible. Regardless of the effects that Alternative 1 may have long-term, it is used as a baseline from which to compare all the other alternatives and measure LCAS standards and guidelines. Displaying the identified parameters (over-the-snow route miles and areas closed to snow compaction by snowmobiles) is meant to take a Forest-wide look at the effect of the Alternative route and area configuration across all LAUs.

Table 3.13. X Alternatives with increase of over-the-snow routes and acres of snowmobile area closure above baseline.

Alternative Totals for all LAUs Forest-wide	Over-the-Snow Route Miles Net Increase from Alternative 1	Acres of Snowmobile Closure Area Net Change from Alternative 1	Acres of Lynx Habitat within Snowmobile Closure Area	Alternative Meets LCAS Y/N
2	9	5,572	3,068	N
3	164	197,572	97,367	N
4	119	252,212	126,880	N
5	12	356,185	180,073	Y
6	49	400,895	220,870	N
7M	75	318,427	169,786	Y

Alternative 7M is in compliance with the LCAS due to all LAUs meeting the intent of the LCAS.

Effects on Habitat Connectivity

Proposed management direction in the form of stated Forest-wide Goals (Goal E. in the DEIS, Goal F. in the FEIS) would serve to highlight and potentially protect those areas considered important to lynx movement. It is unclear how the habitat connectivity of individual alternatives by LAU would be affected through their implementation as proposed. Linkages and opportunities for dispersion improve habitat quality for both individuals and populations. The habitat connectivity

considerations may also apply at a local scale. Lynx may obtain some benefit from the area closure and designated route proposal (both winter and summer), common but variable to Alternatives 2-7M. This would provide some benefit to lynx by concentrating human activity and allowing areas of seclusion outside of the travel corridors. According to the recently published Federal Register (USDI 2003), it is unclear what role traffic and roads play in lynx movement. Monitoring would provide long-term information regarding what areas are consistently compacted and what areas may be available for dispersal or use as a corridor (see Appendix B). Over-the-snow routes may contribute to loss of habitat connectivity. See Issue 3: Biological Diversity and Ecological Sustainability for further discussion of effects on potential lynx corridors and linkages.

Summary of Effects by LCAS Conservation Measures

Table 3.13. 8 summarizes the applicable LCAS conservation measures discussed in the Analysis Methodology section and the extent to which the action alternatives meet them.

Table 3.13. 8 Relationship of proposed alternatives to applicable conservation measures.

Project Planning (7-4)	
Standards	**Meets – Yes/ No**
S3 - Maintain habitat connectivity within and between LAUs.	**YES** for all alternatives – There are no changes to lynx habitat proposed with the Travel Plan as no vegetation treatment is proposed. All alternatives meet the guideline for < 2.0 miles/ sq mile. Also, see Forest-wide Goal for Wildlife Corridor (Goal E in the DEIS and Goal F in the FEIS).
Recreation Management (7-9) - Programmatic Level	
Standards and Guidelines	**Meets – Yes/ No**
S1 - On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and designated snowmobile play areas by LAU unless the designation serves to consolidate unregulated use and improves lynx habitat though a net reduction of compacted snow area (Ruediger et al. 2000, Mcallister 2003).	**YES and NO -** Refer to Table 3.13.X for LAUs and highlighted alternatives that indicate compliance and intent of each alternative meeting the LCAS. Some LAUs meet the LCAS for all alternatives; All LAUs meet the LCAS for only Alternative 5 and 7M.
S2 - Map and monitor the location and intensity of snow compacting activities… that coincide with lynx habitat, to facilitate future evaluation of effects on lynx as information becomes available.	**YES** for all alternatives - See Appendix B.
Forest/Backcountry Roads and Trails (7-10) – Programmatic Level	
Standards and Guidelines	**Meets – Yes/ No**
S1 - On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas by LAU.	See Recreation Management S1 above.
G1 - Determine where high total road densities (>2 mi/sq mi) coincide with lynx habitat, and prioritize roads for seasonal restrictions or reclamation in those areas.	**YES** – for all LAUs, all alternatives. Refer to Table 3.13.5 for summer motorized open road density by LAU by alternative.

Mortality Risk Factors - Programmatic Level Standards and Guidelines (LCAS, 7-12 to 16)	
Trapping (7-12)	**Meets – Yes/ No**
G1 - Federal agencies should work cooperatively with states and tribes to reduce incidental take of lynx related to trapping.	**YES** for all alternatives – On-going cooperation and communication regarding snow tracking surveys for lynx and trapping regulations. MDFWP has closed the trapping season for lynx.

Shooting (7-12)	**Meets – Yes/ No**
G1 - Initiate interagency information and education efforts throughout the range of lynx in the contiguous states. Utilize trailhead posters, magazine articles, news releases state hunting and trapping regulation booklets, etc., to inform the public of the possible presence of lynx, field identification, and their status.	**YES** for all alternatives - Upon implementation of the selected Travel Plan alternative, travel maps would be produced that clearly display areas open and closed to public access, including those routes and areas open for over-the-snow recreation. Other on-going conservation education efforts are accomplished at the programmatic level.
Competition and Predation as Influenced by Human Activities (7-13)	**Meets – Yes/ No**
S1 - On federal lands in lynx habitat, allow no net increase in groomed or designated over-the-snow routes and designated snowmobile play areas by LAU unless the designation serves to consolidate unregulated use and improves lynx habitat though a net reduction of compacted snow area.	See Recreation Management S1 above.
Movement and Dispersal - Programmatic Level Standards and Guidelines (LCAS, 7-12 to 16)	
Highways (7-14)	**Meets – Yes/ No**
G1 - Dirt and gravel roads traversing lynx habitat (particularly those that could become highways) should not be paved or otherwise upgraded … in a manner that is likely to lead to significant increases in traffic volumes, traffic speeds, increased width of the cleared ROW, or would foreseeably contribute to development or increases in human activity in lynx habitat.	**YES** for all alternatives - Additional NEPA analysis would have to be completed for any newly constructed routes or where any ground-disturbance would be required for the implementation of the selected alternative. See Issue 3: Biological Diversity and Ecological Sustainability for further discussion of effects on potential lynx corridors and linkages.

Cumulative Effects

Net Effects of Past and Present Programs and Activities

Many of the programs and activities that occur on the Gallatin National Forest have some influence on lynx or lynx habitat. Adverse or negative effects considered together have contributed to the risk factors which partially led to the listing of lynx as a threatened species under the Endangered Species Act. The risk factors include National Forest programs, practices, and activities that may directly, indirectly, or cumulatively influence lynx or lynx habitat in four major areas: 1) productivity, 2) mortality, 3) movement and dispersal, and 4) other large scale factors. In the determination to list lynx, the FWS concluded that the lack of Forest Plan guidance for lynx

conservation, as evidenced by the fact that Forest Plans allow or direct actions that may cumulatively, adversely affect lynx was a significant threat to lynx.

The combined effects of past and present activities and programs define the current baseline condition on the Gallatin Forest against which the alternatives were evaluated. Based on the past and current vegetation management of the Gallatin Forest, including timber harvest, livestock grazing, prescribed fire, invasive species program and other vegetation projects, forest vegetation conditions provide sufficient habitat for foraging, denning, and dispersal as defined in the LCAS. The effects of different types of dispersed recreation including the outfitter/ guide program, recreation residences; fire suppression; and the lands, minerals, and non-recreation special use programs on the Gallatin Forest have minor, or beneficial, impacts to lynx other than what was considered. Conversely, effects of developed ski areas and associated base area development have contributed to a direct loss or modification of habitat that may be affecting lynx denning, foraging, and diurnal security habitat to some degree. All of these activities combined currently occur and contribute to the baseline from which LCAS standards and guidelines were evaluated.

Projected Combined Effects of Reasonably Foreseeable Programs and Activities

Lynx are a wide-ranging species and do not limit their wanderings to the National Forests. It is very difficult to estimate the cumulative effect resulting from management of the National Forests along with neighboring land management and land uses in the reasonably foreseeable future. However, the fundamental aspect of a cumulative effects analysis includes an attempt to consider all the activities that may potentially affect lynx and occur within and adjacent to National Forest.

There would be no cumulative effects expected to occur from timber harvest, prescribed fire, livestock grazing, invasive species control, or other vegetation projects. The reasonably foreseeable projects for the Gallatin Forest would likely treat a variety of forest types at various scales, much of which is not in lynx habitat. Vegetation treatments with a timber harvest component include projects with variable objectives, including fire salvage, fuel reduction, and restoration of fire adapted ecosystems. Livestock grazing and the invasive species problems are expected to continue into the future and would continue irregardless of travel planning. The adaptive management policy that will be implemented as allotment plans are updated and managing noxious weeds through partnerships and noxious weed mapping and range utilization monitoring efforts will minimize habitat degradation. These efforts are consistent with conservation measures identified in the LCAS.

It is not known what wildfires may occur in the future, or how successfully they will be suppressed, creating or destroying foraging and denning habitat over time. The LCAS encourages restoring fire as an ecological process to move toward landscape patterns consistent with historical succession and disturbance regimes.

No cumulative impacts to lynx are expected from the minerals, lands, and non-recreation special use programs. There are no mineral development projects anticipated for the Gallatin Forest other than those currently occurring and abandoned mines would continue to be closed. It is assumed that the trend toward consolidation of National Forest lands would continue to incrementally add acres of lynx habitat to the total amount of lynx habitat on the Gallatin Forest. Small scale and temporary

special uses have minor impacts individually, but together with additional permits requiring permanent human infrastructure, may contribute to large scale effects. It is unknown at this time the number and scale of any future special use permit requests so the significance of this effect is not known.

Cumulative impacts of dispersed summer and winter use along with other activities in lynx habitat such as the outfitter/ guide program and recreation residences was considered through direct and indirect effects analysis as part of the baseline. The LCAS does not recommend limits to these uses above those evaluated in the direct and indirect effects. No cumulative effect is expected.

The greater potential for cumulative adverse impacts and pressure on lynx recovery is likely to be the result of human activity on off-Forest lands. Private lands within the Forest boundary or immediately adjacent to the Gallatin Forest (including developed ski areas) continue to be developed and may be the most significant impact on lynx. Private developed ski areas would remain on the landscape and most likely increase in size and scale of human developments and populations. Permitted developed ski areas would remain on the landscape with any further development or expansion undergoing analysis relative to LCAS management direction. The USFWS Biological Opinion for the Bridger Bowl expansion project did not define any terms or conditions relative to its recent expansion. The Rendezvous Ski Trails Facility Development Master Plan preferred alternative would result in a net decrease of ski trail mileage and consolidation of groomed trails and would therefore have the lowest potential for competition among lynx and other predators. Cumulative effects to lynx are expected to be low with this project.

Trends indicate increased levels of road improvements on National Forest and road construction adjacent to National Forest on private lands at lower elevations. Recent trends to update travel plans on adjacent National Forests through designation of a route system to comply with the 2005 OHV Final Rule (Federal Register, November 9) have halted further negative effects associated with displacement, disturbance, or death caused by the presence of humans. However, construction of roads on private lands contributes to risk factors for lynx productivity, mortality, and dispersal opportunities. The continued trend of road improvements and construction would increase traffic volumes and increase speeds which would contribute to lynx mortality through vehicle collisions, incidental or illegal shooting, and providing access for trapping. Where these facilities are located in lynx habitat or non-habitat connecting patches of lynx habitat, increased fragmentation may occur and alter how lynx use the landscape. This increasing trend would continue with the selection of any proposed Travel Plan alternative. The LCAS suggests that more research is needed to determine the effects of new road construction and/ or highly roaded areas. Currently, management direction in the LCAS focuses on location of road, particularly in relation to juxtaposition with lynx habitat and areas of habitat connectivity. Incorporating these guidelines would reduce these affects long-term. Assuming that management direction for both summer and winter recreation activities in lynx habitat would be followed there would be no additional cumulative effect from the Gallatin Travel Plan.

The NRLA process underway to amend Forest Plans in the Northern Rockies will incorporate management direction for Canada lynx based on the Lynx Conservation and Assessment Strategy (Ruediger et al. 2000) and more current research. The NRLA decision is in DEIS form and likely to be finalized during 2006, however litigation is likely. The Gallatin Forest will comply with the

LCAS as directed by the Conservation Agreement (USDA and USDI 2006) until a final decision is made on the NRLA. When the final decision is made on the NRLA the Gallatin Forest Plan will follow that direction. Any changed management based on the NRLA Forest Plan amendment effort would contribute to maintaining suitable habitat conditions for lynx recovery that address productivity, mortality, and dispersal.

Cumulative Effects of Past, Present and Reasonably Foreseeable Programs and Activities with the Travel Plan Alternatives

According to the US Fish and Wildlife Service (USDI 2003), putting a local lynx population at risk of extinction would require the activity to occur over a large area of several home ranges and include three factors:

1) Cumulatively result in the conversion of lynx habitat into non-habitat.
2) Result in a homogenous forest that does not provide the various stand ages, species composition, and structure.
3) Effectively preclude dispersal.

The proposed Travel Plan would have no effect on the first two factors as no vegetation treatment is being proposed and denning, foraging, and suitability of lynx habitat will remain static before and after the implementation of any of the alternatives. If vegetation treatments (fuel reduction or timber sale projects) occur that impact these habitat features, further NEPA analysis would be required and weighed against the habitat specific programmatic and project level standards and guidelines in the LCAS or NRLA.

The third factor is discussed under Habitat Connectivity and Issue 3: Biological Diversity and Ecological Sustainability. Further cumulative effects are dependent upon activities on adjacent private or other public lands such as land development and increased roads and/or highways. Areas of non-habitat may also play a role in connectivity across landscapes with little to no vegetative cover or attributes conducive to lynx movement.

The Travel Plan alternatives varied in accordance with the emphasis for each alternative theme or resource issue it addressed. Considering the alternative totals by LAU for summer motorized open road density, none of the LAUs in any of the alternatives result in greater than 2.0 mi/sq mi and thus meet the LCAS. These totals reflect both Wilderness and non-Wilderness, and private roads within individual LAUs. The winter use identified parameters (over-the-snow route miles and snowmobile closure areas) were displayed to provide a look at the effect of each alternative's route and area configuration across all LAUs for consideration of the LCAS intent to minimize snow compaction.

Despite Alternative 1 serving as the 'baseline' for this project, it may add direct, indirect and cumulative effects to the existing situation long-term. Assuming human recreational activities increase in the future, this alternative has the most potential to affect lynx long term. Snowmobile and ski accessible areas would continue to increase where land topography, snow conditions, and increased technology make it feasible which may contribute to increased snow compaction across the landscape over time. Regardless of the effects that Alternative 1 may have long-term, it is used as a baseline from which to compare all the other alternatives and measure LCAS standards and guidelines.

Alternative 7M also indicates an increase in over-the-snow routes of 75 miles. This alternative also indicates an increase in snowmobile closure area acres of 318,427 acres. All of the LAUs in these alternatives meet the LCAS. Meeting LCAS winter use standards may ameliorate the effect of other management activities over time.

Determination of Effect

The determination for the lynx is "may affect, not likely to adversely affect." This is because all LAUs have met the intent of the LCAS under Alternative 7M. The primary potential impact to lynx from travel management is from winter use and snow compaction. In all cases, new compacted routes by any means have been balanced by increasing areas of snowmobile closures.

Coordination Measures

Continue to monitor winter use and potential effects on lynx.

Expected future status of the Lynx

The Canada lynx was listed under ESA as threatened in 2000. It is likely to maintain this status for some time into the future. Critical habitat is currently being designated for the lynx. This is a rare mammal that is rare even in the best of habitats. In this part of its range, its primary prey, snowshoe hares, are rarely abundant. In southwest Montana and vicinity, it is likely that the status of the lynx will not improve.

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Page 8: Table I-2. Total Miles figure for Pleasure Driving (Plowed Road) should read 168 rather than 167.

Page 32: Tables 3.10.3 and 3.10.4 of the BA were missing numbers for grizzly bear subunit Crandall/ Sunlight #2. Those corrected tables follow:

Table 3.10. 25 Percent of six habitat value categories in each of the grizzly bear management subunits on the Gallatin National Forest. Six categories were determined from raw CEM habitat value outputs that provide relative comparisons across seasons. They are: VL = Very Low, L = Low, LM = Low Moderate, HM = High Moderate, H= High, VH = Very High. Excerpted from p.143 of the Conservation Strategy (ICST 2003).

	Habitat Value Category Percent of Subunit							Habitat Value Category Percent of Secure Habitat						
Subunit	VL	L	LM	HM	H	VH	Subunit Area (sq mi)	VL	L	LM	HM	H	VH	Total Secure Habitat (sq mi)
Boulder Slough #1	12	1	40	45	32	0	282	13	1	42	43	2	0	272
Boulder Slough #2	9	6	33	52	1	0	232	9	6	34	50	1	0	227
Lamar #1	4	2	26	68	1	0	300	4	1	25	70	0	0	268
Crandall Sunlight #1	10	34	43	11	2	0	130	11	35	42	10	2	0	105
Crandall Sunlight #2	5	30	34	30	1	0	316	4	32	34	29	1	0	260
Hellroaring/Bear #1	17	20	12	51	0	0	185	17	15	11	57	0	0	142
Hellroaring/Bear #2	21	5	26	47	2	0	229	21	5	26	46	2	0	228
Gallatin #3	18	17	13	51	1	0	218	21	12	12	55	1	0	120
Hilgard #1	19	12	18	51	1	0	201	20	10	19	51	0	0	140
Hilgard #2	13	8	17	61	1	0	141	15	8	13	64	1	0	100
Madison #1	4	12	52	21	10	2	227	5	12	58	17	8	1	163
Madison #2	2	6	69	19	3	2	149	0	4	79	14	2	1	99
Henrys Lake #2	7	19	26	46	2	1	140	9	17	24	50	0	1	64
Plateau #1	2	29	58	11	0	0	286	1	28	58	13	0	0	197

Table 3.10. 26 Habitat effectiveness by season for subunits on the Gallatin National Forest from the Grizzly Bear Cumulative Effects Model. Subunits "in need of improvement" of secure habitat are highlighted. Excerpted from p. 141 of the Conservation Strategy (ICST 2003).

Subunit	Spring 3/1 - 5/15	Estrus 5/16 - 7/15	Early Hyperphagia 7/16 - 8/31	Late Hyperphagia 9/1 - 11/30
Boulder Slough #1	105*	105	119	853
Boulder Slough #2	123	112	111	521
Lamar #1	127	118	136	571
Crandall Sunlight #1	53	94	78	800
Crandall Sunlight #2	52	82	124	329
Hellroaring/Bear #1	85	74	95	628
Hellroaring/Bear #2	117	99	98	628
Gallatin #3	**78**	**69**	**89**	**599**
Hilgard #1	99	68	91	614
Hilgard #2	81	97	132	902

Madison #1	53	115	227	329
Madison #2	**41**	**60**	**147**	**63**
Henrys Lake #2	**41**	**41**	**33**	**614**
Plateau #1	26	49	36	109

* Numbers for habitat effectiveness by season with higher numbers equating with greater value are calculated by computer program (ICST 2003 p.140). Habitat effectiveness is a relative measure of that part potentially derived from an area that is available to bears given their responses to humans..

Page 55: Seasonal restriction dates for motorized vehicles on trails within the Hilgard #1 and Hilgard #2 BMS's as reported in the BA were incorrect. Actual seasonal restriction dates were 12/2 through 7/15 for motorize use on the Oil Well Road ATV/motorcycle trail and 11/15-7/15 for all other motorized trails, which would reduce disturbance in spring/early summer grizzly bear habitat.

Sentences 3 and 4 in paragraph 2 of the Hilgard #2 BMS discussion referenced Alternative 7 in the BA. Alternative 7 was replaced by Alternative 7M, so these statements are not accurate. To clarify, Alternative 7M is substantially different than Alternative 2 and core habitat would be increased by 2.5%. This represents an improvement over the current condition.

Page 56: The seasonal restriction dates for motorized trails in the Madison #1 BMS were incorrectly stated in the BA. Motorized use on motorcycle trails would actually be restricted from 11/15-7/15 and ATV/motorcycle trails would be restricted from 12/2-7/15 in this area, which would reduce disturbance in spring/early summer grizzly bear habitat.

Page 57: Motorized use on the Two Top Trail was reported to be restricted until 7/15 in the BA. The actual period of restriction on motorized use would be 12/2-6/30, which would still reduce disturbance within spring/early summer grizzly bear habitat. Additionally, this trail is located within the adjacent Henry's Lake #2 BMS rather than the Plateau #1 BMS.

Page 58: The seasonal restriction dates for the East Cream Creek Road #1730 and Beaver Pond Road #1723 were not reported correctly in the BA. The actual period of restriction on motorized use for these roads would be Dec 2-May1 with no resulting benefit to grizzly bears. Additionally, these roads are located within the Henry's Lake #2 BMS rather than the Plateau #1 BMS.

In the Henry's Lake #2 BMS, a restriction on motorized use until 6/16 was reported in the BA for the West Fork Denny Creek Road #1735. This road would have no seasonal restrictions on motorized use.

Page 3-67: Table 3.10.23 – in the Total row, Alt. 1 should be 50 and Alt. 5 should be 60 rather than 5 and 6, respectively

Page 3-72: The private lands subdivision along the South Fork of the Madison River is within the Henry's Lake #2 BMS rather than the Madison #2 BMS (see paragraph 7).

Page 105: The description of designated snowmobile routes for Alternative 7M in the Upper Gallatin LAU is incorrect. Under Alternative 7M, there would be no designated route from the Taylor Fork Road #134 through the snowmobile closure to Wapiti Cabin. The only access to

Wapiti Cabin would be from the Sage Creek Trailhead via Trails #71 and #68, which would also be the snowmobile closure boundary in this area.

Page 106: The description of the Upper Madison LAU for Alternative 7M indicated that there would be 2 new designated snowmobile routes through a snowmobile closure area. This is not accurate, as the 2 routes through the snowmobile closure area have been designated since 1994 and are part of the baseline for this LAU.

Travel Plan Goals, Directions, Standards and Guideline relevant to T&E species and grizzly bear appearing on pp. 13-15 of the BA were slightly modified for Alternative 7M. Rather than as stated from the bottom part of this page 13 starting with "Standard A-8" and continuing to the middle of page 15 – this should be replaced with the following which compares the alternatives. The changes to 7M are generally preferable for T&E and other wildlife species and were proposed by the wildlife and fisheries biologists.

Alternatives 2 through 7M propose a number of goals and objectives to provide for recreation opportunity, access and to improve other resource conditions that may have been adversely affected by the Forest's transportation system. Goals and objectives, by themselves, have no environmental effect because they do not constitute final agency decisions. Environmental effect under NEPA is more appropriately addressed at such time that specific actions are proposed to achieve these goals and objectives. The proposed Travel Management Plan does include the final agency decisions for management of public travel and this reflects implementation of the goals and objectives proposed for recreation opportunity (for example Forest-wide Goal A, Objective A-1, and Travel Planning Area Goals 1 and 2 and Objectives 1-1 and 2-1). The predicted direct, indirect and cumulative effects of public travel on Biodiversity, and hence the implementation of these goals and objectives are addressed earlier in this section.

Alternatives 2 through 7M also propose standards and guidelines to provide for protection of other resources during Travel Plan implementation. Standards and guidelines include protection measures within which future proposals for road and trail construction, reconstruction, maintenance and decommissioning must take place. These are considered final agency decisions because they set limitations within which future actions must take place.

The proposed goals, objectives, standards and guidelines that are relevant to the protection and improvement of Biodiversity are discussed below.

Where Alternative 7M differs from Alternatives 2-6, it is noted below in parentheses. The benefits to biodiversity accrue through the implementation of any alternative which designates routes, places the Forest under the OHV EIS and generally reduces motorized routes and protects wildlife habitat. There is a goal for wildlife corridors (Goal E in Alternatives 2-6 and Goal F in Alternative 7M) which are specifically addressed in this issue. Other items are more general but benefit biodiversity by protecting or enhancing habitat for wildlife and/or fish, protecting rare habitats or rare species, promoting connectivity, or reducing human impacts. Additional comments on how this direction affects biological diversity appear below in italics.

Proposed Forest-wide Direction, Alternatives 2-6 and 7M

Standard A-6. Off-route travel. Wheeled motorized vehicle travel shall be prohibited off of designated routes with the following exceptions. (This standard and the following exceptions under Alternatives 2-6 become Standard A-8 in Alternative 7M. There are slight modifications of wording in the exceptions from Alts. 2-6 to Alt. 7M.) *This standard is beneficial to many species of plants and animals, including grizzly bears, by limiting almost all use to designated routes with minor exceptions, rather than allowing off-route use.*

GOAL C. Resources (General). Manage a system of roads and trails and associated public use that is consistent with Forest Plan goals for water quality; wildlife habitat; fish habitat; threatened and endangered species recovery; and historical resources (Note: Until Forest Plan revision refer to Forest Plan (9/87), pages II-1, II-2, and Amendment 19). (This Goal under Alternatives 2-6 becomes Goal D in Alternative 7M, and the following objectives remain the same.) *This goal is beneficial to many species and their habitats on the Forest by allowing uses consistent with water quality, wildlife habitat, fish habitat, etc.*

> **OBJ. C-1. Road Rehabilitation.** Close and rehabilitate existing roads that are in excess to administrative, recreation and access needs. (This objective becomes **Objective D-1** under Alternative 7M.) *This objective reduces the amount of roads and their effects on the landscape to grizzly bears.*
>
> **OBJ. C-2. Trail Rehabilitation.** Close and rehabilitate existing non-system trail not otherwise designated for public travel. (This objective becomes **Objective D-2** under Alternative 7M.) *This objective reduces impacts of humans to grizzly bears.*

GOAL D. Fisheries. Manage a road and trail system that fully supports the beneficial use of growth and propagation of salmonid fishes and associated aquatic life. This is followed by a number of objectives. (In Alternative 7M, Goal D becomes **Goal E. Water Quality, Riparian, Fisheries and Aquatic Life** with numerous objectives, standards, and one guideline.) *The protection of water quality, riparian habitats, fisheries and aquatic life is important for many speciesk including the grizzly bear. The language in Alternative 7M is an improvement over the language in Alts. 2-6.*

GOAL E. Wildlife Corridors. Provide for wildlife movement and genetic interaction (particularly grizzly bear and lynx) between mountain ranges at Bozeman Pass (linking the Gallatin Range to the Bridger/Bangtails); in the North Bridgers (linking the Bridger Range to the Big Belt Mountains; across highway 191 from Big Sky to it's junction with highway 287 (linking the Gallatin and Madison Mountain Ranges); the Lionhead area (linking the Henry's Lake Mountains to the Gravelly Mountains and areas west); Yankee Jim Canyon (linking the Absaroka Mountains to the Gallatin Range); and at Cooke Pass (linking the Absaroka/Beartooth Range to areas south). *This goal and TPA specific objectives help protect and allow for movement of wildlife between mountain ranges.* (Under Alternative 7M, Goal E becomes **GOAL F. Wildlife Corridors**, and it is worded differently. Provide for wildlife movement and genetic interaction (particularly for wide-ranging species) between and within mountain ranges throughout the Gallatin National Forest and connecting wildlands. **OBJ. F-1.** Provide habitat connectivity consistent with wildlife movement patterns between mountain ranges such as that at Bozeman Pass (Linking the Gallatin Range to the

Bridger/Bangtails); the North Bridgers (linking the Bridger Range to the Big Belt Mountains; the Lionhead Area (linking the Henry's Lake Mountains to the Gravelly Mountains); the Shields (Crazy Mountains to the Castle and Little Belt Mountains) and any additional linkage or wildlife movement corridors recognized by the Forest Service.) *The language change between Alts. 2-6 and 7M is an effort to move all of the direction into Forest-wide direction, and allows recognition of the potential addition of new corridors in the future. It also names the corridors that seem to be important connections among mountain ranges and deletes a few of the corridors that are currently less well documented. Corridors are recognized as essential parts of maintaining biodiversity by allowing wildlife movement and allowing wildlife populations to be as connected as they have been in the past. Corridors are important for wide ranging species such as the grizzly bear.*

GOAL F. Threatened, Endangered and Sensitive Wildlife Species. Manage human use of the Forest road and trail system that allows for the recovery of threatened and endangered species and maintains sensitive species and their habitats. (This becomes **Goal G. Threatened, Endangered and Species of Special Management Designation**. This wording change from Sensitive Species to Species of Special Management Designation allows for the potential change of designations of species that the Forest manages under the New Planning Rule such as Special of Concern.) *This goal helps protect and recover T&E species, such as the grizzly bear, and other rare species and their habitats.*

OBJ. F-1. Grizzly Bear Recovery. Within the grizzly bear recovery zone reduce total summer motorized access route density and increase core (secure) habitat, consistent with the Grizzly Bear Conservation Strategy, within subunits Gallatin #3, Henry's Lake #2 and Madison #2. Provide effective closures on access routes not designated for motorized use. (In Alts. 2-6.) (Under Alternative 7M **Objective G-1** is: Provide effective closures on access routes not designated for motorized use. Grizzly Bear subunits Gallatin #3, Henry's Lake #2, and Madison #2 and non-designated routes that are attractive to motorized use within secure grizzly bear habitat should receive high priority.) *This helps assure that priority is given to closing routes in important grizzly bear habitat.*

OBJ. F-2. Grizzly Bear Recovery. Provide for no human-grizzly bear interaction that results in personal injury or bear mortality. Provide all visitors to the trail system of the Gallatin National Forest with information on proper food storage and safe recreation use. (In Alts. 2-6.)

STANDARD F-1. Grizzly Bear Recovery. Within the grizzly bear recovery zone (as described in Gallatin Forest Plan, 9/87), any new motorized route constructed and used for administrative or other purposes will be offset by closure of another open motorized route of equal or greater length within the same bear management subunit. (This standard is applicable to alternatives 2 through 6 and is based on Amendment 19 of the 1987 Gallatin National Forest Land and Resource Management Plan (1995) that established certain requirements for the protection of the threatened grizzly bear.)

STANDARD F-2. Lynx. In accordance with the Lynx Conservation Strategy there shall be no net increase in any groomed or marked snowmobile or ski routes or designated play areas on the Gallatin National Forest. (This standard applies to alternatives 2 through 6. The standard would mean that there could not be a net increase in groomed or marked routes or play areas once the travel planning decision has been made. This standard does not exist in Alternative 7M).

Under Alternative 7M, Guidelines G-2 Species of Special Management Designation, and **Guideline G-3, Threatened and Endangered Species** are brought into the EIS. Under

G-2, new proposed routes are located to avoid important habitats of Species of special management designation, and mitigation measures are suggested. **Guideline G-3** for T&E species allows for temporary localized restrictions to prevent conflicts with T&E species.

In addition to the proposed programmatic direction, travel management under Alternative 7M would follow current direction applicable to the management of grizzly bear and lynx. At the time of this EIS publication, the applicable direction is based on Memorandums of Understanding (MOU's) and Conservation Agreements (CA) with the United States Fish and Wildlife Service (USFWS). See MOU, Conservation Strategy (ICST 2003:12-13), the USFWS Biological Opinion on Access (1995), and Canada Lynx Conservation Agreement (2005). *Alternative 7M, by following current direction for grizzly bear and lynx and by that wording allowing the Grizzly Bear Conservation Strategy for Grizzly Bears in the GYA and the Northern Rockies Lynx Amendment to become our current direction as these decisions are made, benefits these T&E species by using the best science and current information in their management.*

GOAL G. Wildlife. Provide for healthy vegetative conditions in key habitats such as willow, riparian, wetlands, whitebark pine, and potential old growth. (This becomes **Goal H. Wildlife** in Alternative 7M, and several other key habitats are enumerated.) *Maintaining key habitats, which host more species than other habitats. Some of these rare habitats such as riparian habitat and old growth are very important for grizzly bear..*

OBJ. G-1. Strive for no unclassified, undesignated roads and trails within key habitats that have been damaged or is devoid of native vegetation due to motorcycle, ATV, horse or foot use. (This Objective is dropped from Alternative 7M, and **Guidelines H-1 and H-2** are added. **H-1**. Relocate, reconstruct or take other appropriate action on system roads and trails that are found to have adverse impacts on key habitats. **H-2**, Roads and trails should be located to avoid key habitats or mitigate the impacts.) *Maintaining key habitats that are important for many wildlife species.*

GOAL H. Wildlife. Provide high quality security habitat in areas important to wildlife reproduction (e.g. calving, fawning, denning and nesting habitat). (This becomes **Goal I** in Alternative 7M.) *Protection of reproductive habitats is important for protecting and maintainingn one of the important food sources for grizzly bears.*

OBJ. H-1. Minimize stress factors from human recreation use to species of concern during calving, fawning, denning and nesting seasons in habitats used for reproduction. See specific travel management area direction. (This becomes **Guideline I-1** in Alternative 7M.)

GOAL I. Wildlife. Provide high quality security habitat on important ungulate winter range. (In Alternative 7M this was consolidated into Goal H.)

OBJ. I-1. Ungulates. Eliminate stress factors from human winter recreation use to ungulates in important winter range areas. (This Objective is part of Objective I-1 in Alternative 7M.) *Although ungulates tend to be common species, providing security on big game winter range also benefits other species that occur there. Grizzly bears often move onto ungulate winter range soon after den emergence, and protection of security of these areas benefits grizzlies.*

Guideline I-2. This is new under Alternative 7M and states that in management of winter travel should consider MFWP goals for optimal survival on big game winter ranges.

Alternatives 3 and 7M both have language regarding the consideration of backcountry airstrips. Basically, proposals for airstrips (airplane and helicopter) will be considered and must go through

NEPA analysis and would be under special use permits. Under Alternative 3, a number of airstrips are proposed, including several in the Recovery Zone. Under Alternative 7M, backcountry airstrips for public recreational use will not be considered in designated Wilderness, the Hyalite-Porcupine/Buffalo Horn Wilderness Study Area, the Cabin Creek Recreation Wildlife Management Area, the Lionhead and Republic Mountain Recommended Wilderness Areas, or within the Grizzly Bear Recovery Zone. For biodiversity, it is preferable not to allow airstrips at all, but if allowed, Alternative 7M, which restricts some areas for this activity, is preferable over Alternative 3.

In Alternatives 2-6, there were additional categories of Administrative Uses and Road and Trail Construction, Reconstruction and Maintenance for Forest Plan direction. These do not exist under Alternative7M, but are meshed with other Goals, Objectives, Standards and Guidelines.

Territory Name	Zone I	Zone II	Zone III
Horse Butte	Yes	No	Yes
Ridge	No	No	No
Narrows	No	No	No
Canyon	Yes	Yes	Yes
Halford Camp	Yes	No	No
Moonlight	Yes	Yes	Yes

Addendum

Supplemental Information for Gallatin National Forest Travel Plan Biological Assessment, Bald Eagle Analysis – July 24, 2006

Compliance with GYBEMP guidelines for winter travel

Compliance with GYBEMP guidelines for summer travel.

Territory Name	Zone I	Zone II	Zone III
Horse Butte	No	No	No
Ridge	Yes	No	No
Narrows	Yes	Yes	No
Canyon	Yes	No	No
Halford Camp	Yes	Yes	No
Moonlight	No	No	No

Baseline information on Bald Eagles for BA

Horse Butte

This territory on the Horse Butte Peninsula of Hebgen Lake was detected in 1977 and has been monitored annually since then. It has been the least productive territory in the analysis area, with young fledged only three times since 1990 even though the territory was active each year. The territory is characterized by a high level of human activity during both summer and winter. Forest Road #610, a major access route to Hebgen Lake, passes within Zones I, II and III of the nest. The Horse Butte Lookout Road is within Zone II, while several non-Forest Service roads through Zones I, II and III provide access to housing developments on private land. In winter, the groomed Horse Butte snowmobile trail passes through Zones I, II and III of the nest. Additionally, heavy off-trail snowmobile use occurs within Zones II and III of the nest. A Special Order closing an approximately 75-acre area encompassing much of Zone I of the territory from December 1 to August 15 to all human activity (including snowmobile use) has been implemented since 1994.

Ridge

This territory is also located on the Horse Butte Peninsula of Hebgen Lake, and has been monitored annually since it was first detected in 1994. This pair has successfully fledged young during 7 of the 12 years it has been monitored, and is among the least productive territories in the analysis area. A two-track administrative road that currently receives little summer use passes very close to the nest within Zone I, while Forest Road #610 is a major access route for Hebgen Lake located within Zones II and III. A groomed snowmobile trail is within Zones II and III of the nest, and heavy off-trail snowmobile use occurs within Zones I, II and III of the nest. The snowmobile trail is generally groomed from December 1 to March 31, although in some years lack of snow cover terminates snowmobile use before then, while in heavy snow years, snowmobile use may continue into early April. Evidence indicates that these birds may be sensitive to off-trail snowmobile use, although insufficient data exist to definitively identify snowmobile use as a contributing factor to its lower productivity.

Narrows

This territory, located on the Horse Butte Peninsula of Hebgen Lake, was detected in 1995 and has been monitored annually since then. It has successfully fledged young nine of the eleven years it has been monitored. An open two-track Forest Service road passes within Zones I and II of the nest, as does a groomed snowmobile trail. Zones I, II and III receive heavy off-trail snowmobile use as well. The snowmobile season is the same as was described for the Ridge nest. The Narrows territory has been highly productive despite snowmobile use on and off the groomed trail in close proximity to the nest, indicating that these birds are tolerant of human activity.

Moonlight

This territory is located near the mouth of Moonlight Creek on Hebgen Lake. Young were fledged in 15 of the 16 years it has been monitored since it was first detected in 1990. Forest Road #167, which is the major access road for the west side of Hebgen Lake, passes within Zones I, II and III of this nest. The road is open for public passenger car use in the summer and snowmobile use in the

winter. The area is open to off-designated route snowmobile use but there are no groomed trails and heavy forest cover precludes most snowmobile use off the roadway.

Canyon

This territory located on Earthquake Lake was first detected in 1990. Young were fledged from this territory during 9 of 14 years. Zone I of this territory is within Earthquake Lake, and the steep, inaccessible terrain south of the Lake and has no summer travel routes. The only summer travel routes within Zone II are associated with the Beaver Creek Campground. Zones I, II and III are open for snowmobile use, but there are no groomed trails and the area south of the nest cannot be accessed by snowmobiles. A portion of Zones II and III north of Earthquake Lake are open to snowmobiles, but receive very light use.

Halford Camp

This territory located on Earthquake Lake was detected in 2003, and has successfully fledged chicks in one of three years since then. There are no summer or winter travel routes within Zone I of the nest. The Campfire Lodge Road provides passenger car access to a popular parking and picnic area within Zone III, and an administrative road to Ghost Village that also receives heavy summer non-motorized use is located within Zones II and III. Much of Zone II is open to snowmobile use, but there are no groomed or designated trails and it receives only very light use. There is a designated ski/snowshoe trail within Zone III.

Grayling Arm

Travel planning is not issue for this nest located on the Grayling Arm of Hebgen Lake. There is only one low-standard administrative road that receives light use for power line right-of-way maintenance within Zones I, II and III of the nest. All of Zones I, II and III are open to snowmobile use, but there are no groomed trails and off-trail use is largely precluded by forest cover.

Quake Lake

Travel planning is not issue for this nest located on Earthquake Lake. U.S. Highway 287 is within Zone II of the nest, but there are no other summer or winter travel routes within Zones I, II and III. The area receives little or no winter use, either motorized or non-motorized, due to the steep and inaccessible terrain.

The following information was provided by Andy Pils of the Gallatin National Forest, Hebgen Lake Ranger District to Katrina Dixon of the USFWS on 8/8/06:
The Horse Butte bald eagle nest has been successful 11 of past 30 yrs (1977, 1978, 1980, 1984, 1985, 1986, 1987, 1989, 1992, 1999, 2004) for a nest success of 37%.