



Forest Service  
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# Final Environmental Impact Statement for the Land Management Plan

## Custer Gallatin National Forest

Volume 4: Appendix G—Response to Comments on the Draft  
Environmental Impact Statement and Draft Revised Forest  
Plan



Custer Gallatin National Forest Title Page: Photo Credit Top left to right – Custer Gallatin National Forest Title Page: Photo Credit – Mariah Leuschen-Lonergan. Top left, going clockwise – Coneflower, Echinacea, native wildflowers, Sioux Ranger District; American Flag and U.S. Forest Service Flag displayed in winter on the Hebgen Lake Ranger District; Packing trip in the Absaroka-Beartooth Wilderness, Yellowstone, Gardiner and Beartooth Ranger Districts, photo by Terry Jones; Elk grazing on the Gardiner Ranger District with sagebrush in background, foreground; Bison grazing in the Greater Yellowstone Ecosystem with Arrowleaf Balsamroot in background, Gardiner and Hebgen Lake Ranger Districts; Center - Close up of Indian Paintbrush, Bozeman Ranger District; View looking into the Rock Creek drainage and Absaroka-Beartooth Wilderness atop Beartooth Pass, Beartooth Ranger District; Rafting on the Gallatin Wild and Scenic River, Gallatin Canyon, Bozeman Ranger District, Calf nursing from Mother (Cow), Multiple use grazing allotments are a critical economic and social fabric of the Ashland and Sioux Ranger Districts; Holiday Christmas Tree gathering is a long-standing tradition for many Montana families, passed down from generation to generation, Bozeman Ranger District, Custer Gallatin National Forest.

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# Appendix G. Responses to Comments on the Draft Environmental Impact Statement and Draft Revised Forest Plan

## Introduction

This appendix describes the process used to analyze the comments received during the public comment period of March 1, 2019, to June 6, 2019, and includes public comments, aggregated and summarized into concern statements, and subsequent agency responses to the substantive comments received. A variety of methods were used to inform the public about the draft plan and draft environmental impact statement. These included direct notification to interested and potentially affected individuals and organizations, news releases, newsletters, social media, public meetings, webinars, podcasts, contacts with other agencies and with Tribes, publication of the Notice of Availability in the Federal Register on March 8, 2019, and website posting at <https://www.fs.usda.gov/detail/custergallatin/landmanagement/planning/?cid=fseprd482956>.

The Custer Gallatin received over 21,000 comments, including petitions, of which about 2,750 were unique. Individual letters are not included in this report but can be viewed online in the Content Analysis and Response Application (CARA) public reading room for this project. Go to <https://cara.ecosystem-management.org/Public//ReadingRoom?Project=50185>.

Changes made to this appendix subsequent to the July 2020 release of the final EIS for the 2020 Land Management Plan respond to the reviewing officers' letter to the objectors, reflect changes in response to objections, changes in plan wording, and make technical corrections.

## Content Analysis Process

Content analysis is a method commonly used by the Forest Service to gather information about comment letters. The content analysis process ensured that every comment was read, analyzed, and considered. Each unique letter was read and substantive comments were identified and coded by major topic. The substantive comments and their coding were entered into the Content Analysis and Response Application (CARA) database, which enabled reports to be run listing all substantive comments by topic. Once the unique and substantially different comments had been coded, the concerns raised by different commenters on the same subject and with the same intent were grouped by topic. Resource specialists combined similar comments into statements that captured the intent of the commenter(s). These statements are the "comments" in the response to comments section. Thus, even though not every comment is displayed in this appendix exactly as written by each respondent, each comment was considered individually.

The comment statements are followed by the responses prepared by the team. The interdisciplinary team prepared responses for each comment based on its merits, regardless of the source or whether the comment was expressed by one person or by many.

In considering the comments, it is important for readers and decision makers to understand this process makes no attempt to treat input as if it were a vote. Instead, the content analysis process focuses on the content of the comments and ensures that every comment is considered in the decision process.

This appendix documents the Forest Service responses to the substantive comments. Nonsubstantive comments are not analyzed further in this document. Nonsubstantive comments, or concerns identified from them, include those that are unrelated to the decision being made, already decided by law, regulation, or policy, beyond the scope of the proposal, conjectural in nature or not supported by scientific evidence, or general in nature or position statements.

The agency responded by:

- modifying the land management plan and alternatives;
- developing or analyzing alternatives not given detailed consideration in the draft environmental impact statement;
- supplementing, improving, or modifying the analysis that the draft environmental impact statement documented;
- making factual corrections; and
- explaining why the comments need no further agency response.

## **Concerns and Responses Organized by Topic**

Concern statements and responses are organized by topic. See the Contents section at the beginning of this document to facilitate searching for a specific topic.

### **Air Quality**

**Concern:** Comment expressed concern about air quality related to types of emissions from prescribed fire and wildfires, the human health effects of fire emissions, carbon dioxide and other greenhouse gasses emitted by forest management actions, radionuclides at abandoned uranium sites, and coordination with the Environmental Protection Agency on future oil and gas leasing decisions. Comment recommended the final plan include management measures for prescribed burning activities to minimize impacts to air quality.

**Response:** The type and scope of air quality analysis for prescribed and wildland fires are detailed in the environmental impact statement Air Quality, Regulatory Framework section under Interim Air Quality Policy of Wildland and Prescribed Fires (U.S. Environmental Protection Agency 1998). The primary goal of these regulations is to minimize visibility and adverse health effects of smoke.

Information has been added to the Air Quality Environmental Consequences to include disclosure of the types of pollutants that are common in prescribed fires or wildfires, and to summarize the potential adverse health effects of smoke emissions. Additional information notes that the Greater Yellowstone Area air quality assessment in 2005 modeled historic prescribed and wildfire emissions and acreages and found that per acre wildfire PM 2.5 (particulate) emissions were 4.4 times as high for wildfires compared to prescribed fires (Story et al. 2005). Prescribed fire projects can reduce future risk of large wildland fires, which produce large amounts of emissions. Wildfires also generally produce more per acre carbon emissions than prescribed fire and greater amounts of carbon emissions than prescribed fires

(Wiedinmyer and Hurteau 2010). However, all plan alternatives anticipate that wildfires will increase in frequency, intensity, and duration in the future with a corresponding increase in health-related smoke impacts. Since the forest plan and analysis are programmatic and not project level, specific quantification of emissions and associated health effects by alternative is not provided. Emission estimate details are more appropriate in subsequent National Environmental Policy Act analysis for individual projects.

The National Ambient Air Quality Standards directly regulate criteria pollutants, which include carbon monoxide, lead, nitrogen oxide, ozone, particulate matter, and sulfur dioxide, as detailed in the Air Quality Regulatory Framework section. This section of the final environmental impact statement has been modified to explain that Environmental Protection Agency has developed regulations for large industrial sources of greenhouse gasses, but currently no standards or regulatory tools have been developed for agricultural (including prescribed burning) sources of greenhouse gas emissions.

The plan does not provide specific reference to radionuclides at abandoned uranium sites because the issue is not related to the decision being made. The Custer Gallatin National Forest, however, has been extensively involved with the Riley Ridge project in South Dakota. The South Dakota Department of Environment and Natural Resources has a section on radionuclides. Because appropriate tools or measures may evolve over time, the plan does not prescribe specific management tools or measures. Some of these tools are outlined in the final environmental impact statement, Air Quality, Effects Common to all Alternatives section. Project-specific measures will be provided in subsequent National Environmental Policy Act analysis for individual projects. Air quality goal FW-GO-AQ-01 addresses Forest Service coordination with other agencies, such as coordination with the Environmental Protection Agency on future oil and gas analyses. In addition, clarifications and corrections were made in the final environmental impact statement as requested by some commenters.

## Alternatives

### Alternatives

**Concern:** Comment stated preferences for certain alternatives or opposition to certain alternatives. Comment expressed concern that the environmental impact statement failed to provide a "no action" alternative, should have clarified the difference between a "proposed action" and a "preferred alternative," and failed to disclose a preferred alternative. Other comment appreciated that the draft environmental impact statement did not identify a preferred alternative as it allows the Forest Service to choose from among the alternatives.

Comment stated that the environmental impact statement failed to fully consider a wide range of management alternatives, suggested a range of blended alternatives, or suggested varying alternatives regarding additional recommended wilderness, alternate approaches to ecological management, and vegetation management, among others.

**Response:** The Forest Service recognizes that there are many different ideas and opinions on how the Custer Gallatin National Forest should be managed and how the range of multiple uses of the national forest should be applied across the landscape. The environmental impact statement considered a broad range of alternatives that emphasized different combinations of uses and plan land allocations.

The no-action alternative was displayed and analyzed in the draft environmental impact statement for the draft revised plan, and was summarized in the draft environmental impact statement summary. The no-action alternative was often referred to as the "current plans" alternative, or alternative A.

The Forest Service did not identify a preferred alternative at the time of the draft environmental impact statement because it did not have a clearly identified preferred alternative. The Forest Service values the public comments received on the draft environmental impact statement alternatives in helping formulate the preferred alternative in the final environmental impact statement. A Federal agency may identify a preferred alternative in a draft environmental impact statement, but is not required to do so. 40 CFR 1502.14(e) states: "Identify the agency's preferred alternative if one or more exists, in the draft statement, and identify such alternative in the final statement unless another law prohibits the expression of such a preference." "This means that if the agency has a preferred alternative at the draft environmental impact statement stage, that alternative must be labeled or identified as such in the draft environmental impact statement. If the responsible Federal official in fact has no preferred alternative at the draft environmental impact statement stage, a preferred alternative need not be identified there. By the time the final environmental impact statement is filed, Section 1502.14(e) presumes the existence of a preferred alternative and requires its identification in the final environmental impact statement "unless another law prohibits the expression of such a preference" (The Forty Most Asked Questions Concerning Council on Environmental Quality's National Environmental Policy Act Regulations (23 March 1981), question 4b)). The Forest Service regrets the confusion between a "proposed action" and a "preferred alternative."

40 CFR section 1507.2 (d) stipulates that agencies study, develop, and describe alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources. The draft environmental impact statement alternatives vary in response to scoping issues. The draft environmental impact statement considered a broad range of alternatives that emphasized different combinations of uses and plan land allocations. The Forest Service structured the alternatives to accommodate the range of public comment on the proposed action to extent possible, while having a reasonable range of alternatives for analysis. The broad range of draft environmental impact statement alternatives gives the decision maker a wide range of options to include in the preferred alternative.

The 2012 Planning Rule requires the responsible official to use the best available scientific information to inform the development of the plan, including plan components, the monitoring program, and plan decisions. The foundation from which the plan components were developed for the forest plan was the expertise of planning team members. The resource specialists considered what is most accurate, reliable, and relevant in their use of the best available scientific information. The best available scientific information includes the publications listed in the reference sections of the Custer Gallatin National Forest's assessment and draft environmental impact statement, as well as additional information that was used in the final environmental impact statement.

The Forest Service considered the range of public comments when developing the preferred alternative. The Custer Gallatin recognizes the advantages of blending certain elements of the different alternatives. In response to public comments, alternative F has been selected as the preferred alternative, and it includes components of alternatives B, C, D, and E.



The suggested alternatives are included in the final environmental impact statement section, Alternatives Considered, but not Given Detailed Study. The Forest Service considered an alternative that would recommend as wilderness all inventoried roadless areas, and an alternative that would recommend as wilderness all lands in the wilderness inventory, which by protocol includes unroaded lands of a certain size. The Forest Service considered the suggested Ecological/Biocentric Forest Plan and the suggested watershed-based alternatives. Please refer to the final environmental impact section, Alternatives Considered, but not Given Detailed Study, for further explanation. The rationales for not analyzing alternatives in detail include, but are not limited to, inconsistencies with the 2012 Planning Rule and associated directives, or the effects of the suggested alternative is already addressed within the range of action alternatives.

### **Alternative A**

**Concern:** Comment expressed support for alternative A, stating that current management is appropriate, and alternative A would retain current uses and current recreation opportunities. Other comment opposed alternative A, because it would not change current management or could have a negative impact on the economic sustainability of the region.

**Response:** Thank you for expressing your views on alternative A, which reflects the 1986 Custer Forest Plan and the 1987 Gallatin Forest Plan, as amended, and accounts for current laws and regulations. This alternative has not been selected as the preferred alternative because substantial changes have occurred in conditions and demands since the current forest plans were developed in the 1980s. The 2012 Planning Rule (which became effective May 9, 2012) requires the inclusion of plan components, including standards or guidelines, that address social and economic sustainability, ecosystem services, and multiple uses integrated with the plan components for ecological sustainability and species diversity.

### **Alternative B**

**Concern:** Comment expressed support for alternative B as a reasonable compromise between recreation activity and recommended wilderness protection, it would not preclude allowance of existing uses within recommended wilderness, includes some backcountry and recreation emphasis areas, and because it would allow similar use as is currently permitted. Other comment opposed alternative B, stating it would not sufficiently protect low elevation roadless areas.

**Response:** Thank you for expressing your views on alternative B. Although alternative B was not selected in its entirety as the preferred alternative, components of this alternative were incorporated into the preferred alternative—alternative F. As the draft environmental impact statement proposed action, alternative B formed the basis of the majority of the plan components identified in alternative F. The following backcountry areas and associated management direction of alternative B have been incorporated into alternative F: Cook Mountain, King Mountain, Tongue River Breaks, Big Pryor, Punch Bowl, and Buffalo Horn. The Timberline (formerly termed Red Lodge Creek/Hellroaring), Lost Water Canyon (enlarged), Gallatin Crest, Sawtooth and Taylor Hilgard Recommended Wilderness Areas of alternative B have been incorporated in alternative F. As described in alternative B, in alternative F continued rental use of the Windy Pass Cabin would no longer be suitable. The preferred alternative differs from alternative B in that existing uses such as mechanized transport, winter over-snow recreation transport, and commercial communication facilities would not be suitable in recommended wilderness areas.

The Main Fork Rock Creek (enlarged), Cooke City Winter, Main Boulder, Yellowstone River, Hyalite, Gallatin River, Hebgen Lakeshore and Hebgen Winter recreation emphasis areas of alternative B have been incorporated into the preferred alternative, as has the Stillwater Complex for minerals. Key linkage areas and associated plan components are included in alternative F.

Alternative B would not allow permitted sheep and goat grazing in the Pryor Mountains, Absaroka Beartooth Mountains, and Madison, Henrys Lake, and Gallatin Mountains to help prevent disease transmission to bighorn sheep; this requirement has been incorporated into alternative F.

In every alternative, the Forest Service is required to follow the direction of the 2001 Roadless Area Conservation Rule, 36 CFR 294.13, for all inventoried roadless areas on the national forest, at every elevation.

### **Alternative C**

**Concern:** Comment expressed support for alternative C, stating that it represents a compromise between recreation activity and wilderness protection, and expressed support for the Gallatin Forest Partnership agreement as a balanced use approach to land management that was developed by a large group of local stakeholders with many diverse interests. Comment stated that while alternative C incorporates parts of the Gallatin Forest Partnership, it does not accurately reflect the partnership's recommendations, and comment provided the components to be modified in alternative C. Other comment expressed opposition to the Gallatin Forest Partnership alternative or alternative C stating that this alternative does not prioritize ecological preservation and is overly influenced by mountain bike representatives. Comment requested that the Forest Service not adopt Lionhead Recommended Wilderness Area boundaries identified under alternative C, as this plan would be inconsistent with suitability determinations and surrounding land management.

**Response:** Thank you for expressing your views of alternative C. Although alternative C was not selected as the preferred alternative, components of this alternative were incorporated into the preferred alternative—alternative F. Backcountry areas and associated management direction of alternative C incorporated into alternative F include West Pine, Bad Canyon, and portions of the Blacktail Peak and Crazy Mountain Backcountry Areas. The Buffalo Horn Backcountry Area is included in alternative F, with a boundary closer to that proposed in alternative C than to that proposed in alternative B. The South Cottonwood Backcountry Area of alternative F is a portion of the Hyalite Backcountry Area delineated in alternative C. Alternative F includes the Cowboy Heaven Recommended Wilderness Area, with a boundary closer to that proposed in alternative C than to that proposed in alternative D. The preferred alternative has not incorporated a recommended wilderness area for Lionhead; the Lionhead area is a backcountry area in the preferred alternative.

The description of alternative C in chapter 2 of the final environmental impact statement has been augmented to respond to comments submitted by the Gallatin Forest Partnership. Some requests of the Gallatin Forest Partnership proposal are reflected in forestwide plan components, such as wildlife-related plan components and forestwide backcountry area plan components. Because land management plans do not specify the development of future plans, a timeline for travel planning is not included in the revised plan.

## Alternative D

**Concern:** Comment encouraged the Forest Service to adopt alternative D, stating it would be most protective of wilderness, wildlife, and ecosystems. Other comment expressed opposition to alternative D based on the amount of recommended wilderness allocation, and the effect to many current recreational routes in the proposed recommended wilderness areas. Comment requested modified plan components for alternative D. Comment requested the Forest Service fully state all of the ecological compromises that justify not choosing alternative D.

**Response:** Thank you for expressing your views of alternative D. Although alternative D was not selected as the preferred alternative, components of this alternative were incorporated into the preferred alternative—alternative F. Bear Canyon Recommended Wilderness Area in the Pryor Mountains, and a portion of the Crazy Mountains Recommended Wilderness Area included in alternative D have been incorporated into alternative F. Uses such as motorized and mechanized transport, use of cabins as recreation rentals, and commercial communication facilities would not be suitable in recommended wilderness areas. The Chalk Buttes Backcountry Area of alternative D has been included in the preferred alternative.

All current motorized trails would continue to be suitable for motorized transport in alternative F, while 10,900 acres currently suitable for motorized over-snow transport would no longer be suitable for that use (although the mapping does not consider topography, access, or consistent snow). Twenty-four miles of trail would no longer be available for mountain bike use.

Two bison habitat management-related plan components included only in alternative D have been incorporated into alternative F:

- FW-DC-WLBI-04, expressing a desired condition for year-round bison presence with sufficient numbers and adequate distribution to provide a self-sustaining population; (in alternative F, this desired condition includes “in conjunction with Yellowstone National Park)” and
- FW-OBJ-WLBI-01 of completing three projects every three years for the purpose of creating or connecting, suitable bison habitat, one of which is a habitat improvement project.

Alternative D would not allow permitted sheep and goat grazing in the Bridger, Bangtail, and Crazy Mountains to help prevent disease transmission to bighorn sheep; this requirement has been incorporated into alternative F.

Suggested plan components for alternative D were responded to by individual topic. The final environmental impact statement discloses the trade-offs of implementing the revised plan under all alternatives, including the preferred alternative.

## Alternative E

**Concern:** Comment encouraged the Forest Service to adopt alternative E because this alternative has no recommended wilderness areas, applies a backcountry area allocation to the wilderness study area and Lionhead area, proposes the most recreation emphasis areas, continues existing motorized and mechanized recreation trails, allows for additional motorized and mechanized recreation trail opportunity if the wilderness study area were released by Congress, favors livestock in bison/livestock interaction situations, proposes the greatest volume of wood products and the most acres in the suitable timber classification, and provides the highest economic benefit.

Other comment expressed concerns that alternative E falls short of moving current conditions toward resiliency and desired future conditions, proposes an inadequate amount of forest management, reduces spending for road and trail maintenance, and uses backcountry designations. Comment expressed opposition to alternative E due to concerns regarding environmental impacts and the legal obligation of the Forest Service to recommend wilderness quality lands to Congress.

**Response:** Thank you for expressing your views of alternative E. Although alternative E was not selected as the preferred alternative, components of this alternative were incorporated into the preferred alternative—alternative F. The draft environmental impact statement alternative E did not include four recommended wilderness areas of the current plans: Mystic Lake, Line Creek, Republic Mountain, and Lionhead Recommended Wilderness Areas. These four areas are not included as recommended wilderness in alternative F. The Lionhead Backcountry Area of alternative E has been incorporated into the preferred alternative and mountain biking would continue to be a suitable use in this backcountry area. Mystic Lake, Line Creek, and Republic Mountain areas would have no additional land management plan allocation in the preferred alternative, as displayed in alternative E. Recreation emphasis areas included only in alternative E that have been incorporated into alternative F include the Storm Castle Recreation Emphasis Area and an expanded Bridger Recreation Emphasis Area.

Current motorized trails would remain suitable for that use in the preferred alternative. Based on winter recreational opportunity spectrum mapping, 10,900 acres currently suitable for motorized over-snow use would no longer be suitable for that use (although the mapping does not consider topography, access, or consistent snow). About 31 miles of trail would no longer be available for mountain bike use in the preferred alternative.

While the 2012 Planning Rule requires all land management plans undergoing a revision to conduct an inventory and evaluation, and determine if areas of the national forest should be recommended to Congress as wilderness. There is no legal obligation that the Forest Service must recommend any lands in the wilderness inventory to Congress as wilderness.

## Areas of Tribal Importance

### Areas of Tribal Importance

**Concern:** Comments state that the Forest Service should safeguard treaty rights, sacred species, sacred sites, and traditional cultural places of significance to aboriginal people. Comments requested the plan provide tribal plan components for the Crazy Mountains, Pryor Mountains, Tongue River Breaks, Chalk Buttes, Slim Buttes, and North Cave Hills. Comment requested the Forest Service support a nomination of the Crazy Mountains as a traditional cultural landscape, to work in close consultation with the Crow Nation to manage the Crazy Mountains, and to establish a plan land allocation for the Crazy Mountains to address the cultural significance for the Crow Tribe and wild character of the area.

Comments requested a more complete definition of sacred sites from Executive Order 13007 and the American Indian Religious Freedom Act and a list of relevant treaties in the Areas of Tribal Importance Regulatory Framework section of the final environmental impact statement, and additional information how treaties fit into the overall regulatory landscape.

**Response:** The suite of plan components under the Areas of Tribal Importance in the forest plan address protection of treaty rights, sacred species, sacred sites, traditional cultural properties, and tribal cultural

landscapes. These plan components are found in both the forestwide direction and in the geographic area direction for the Bridger, Bangtail, Crazy Mountains, Pryor Mountains, Ashland, and Sioux Geographic Areas. The Plan definitions for Executive Order 13007 and American Indian Religious Freedom Act have been further defined. A table of relevant treaties has been added to the final environmental impact statement, Areas of Tribal Importance Regulatory Framework, and additional narrative addresses how the treaties fit into the overall regulatory framework.

Forestwide plan components support access to and protection of sacred sites (FW-DC-TRIBAL-02 and 03, FW-GO-TRIBAL-01 and 02, FW-STD-TRIBAL-03 and 04), the availability of plant and animal habitats and access to these resources; (FW-DC-TRIBAL-02, FW-STD-TRIBAL-01); government-to-government consultation (FW-GO-TRIBAL-01); coordination on the management and maintenance of tribal cultural landscapes, sacred sites, traditional cultural properties, and areas of cultural significance (FW-GO-TRIBAL-01 and 02); and protection of the physical integrity of sacred sites (FW-STD-TRIBAL-04). Culturally significant areas and sites are acknowledged and protected under components for geographical areas.

Plan components for the Bridger, Bangtail, Crazy Mountains Geographic Area address the Apsaalooke Area of Tribal Importance. These components include the acknowledgement and protection of the tribal cultural landscape significant to the ongoing traditional cultural practices of the Crow; the honoring and protection of treaty rights, sacred site, and traditional use in the Crazy Mountains; and continued consultation with the Crow Tribe on the management of this important landscape (BC-DC-TRIBAL-01, and 03, BC-GO-TRIBAL-01). In the preferred alternative, about 10,000 acres of recommended wilderness area and about 28,000 acres of backcountry area in the Crazy Mountains further support and recognize these tribal cultural landscapes.

Pryor Mountain Geographic Area plan components address continued access for Tribal members, protection of the Tribal cultural landscape, sacred land, and traditional use; and continued consultation with the Crow Tribe, especially concerning new management activities and recreational use (PR-DC-TRIBAL-01, 02 AND 03, PR-GO-TRIBAL-01, and PR-GDL-TRIBAL-01).

An Ashland Geographic Area-wide component addresses new spring developments (AL-GDL-TRIBAL-01). Components for the Tongue River Breaks address ongoing traditional cultural practices, continued consultation with the Northern Cheyenne and accommodation of access for Tribal members (AL-DC-TRIBAL-01, AL-GO-TRIBAL-01, AL-STD-TRIBAL-01, and AL-GDL-TRIBAL-02).

Plan components address the Chalk Buttes and North Cave Hills in recognition of these tribal cultural landscapes, traditional use, and National Register Listing. The Chalk Buttes plan components address the importance of this tribal cultural landscape to ongoing traditional cultural, spiritual, ceremonial, and religious practices to the associated Tribes (SX-DC-TRIBAL-02 and SX-GDL-TRIBAL-02), and protection and honoring of the traditional use and practices of the area in consultation with the Tribes (SX-GO-TRIBAL-02.)

The North Cave Hills plan components address the tribal cultural landscapes, traditional uses and practices and the maintenance of the physical integrity of these landscapes (SX-DC-TRIBAL-01), and protection and honoring of the traditional use and practices of the area in consultation with the Tribes (SX-GO-TRIBAL-01.) A guideline states that management activities should not pose adverse effects to the National Register District or prehistoric "rock art" (SX-GDL-TRIBAL-01).

The sacred sites of the Slim Buttes and North Cave Hills are addressed under FW-DC-TRIBAL-02 and 03, FW-GO-TRIBAL-01 and 02, FW-STD-TRIBAL-03 and 04.

### **Tribal Consultation**

**Concern:** Comments encourage Forest Service consultation and plan components calling for collaboration with affected Tribes. Commenters encourage further coordination with Native American Tribes relative to the treaty obligations related to bison on the Custer Gallatin and within Yellowstone National Park, particularly within the Madison and Gallatin River regions.

**Response:** The plan addresses consultation and coordination with Native American Tribes under Areas of Tribal Importance plan components. Plan components are found in both the forestwide direction and in the geographic area direction for the Sioux, Ashland, Pryor Mountains and the Bridger, Bangtail, Crazy Mountains Geographic Areas (FW-GO-TRIBAL-01, BC-GO-TRIBAL-01, PR-GO-TRIBAL-01, AL-GO-TRIBAL-01, SX-GO-TRIBAL-01 and 02).

The Forest Service has involved 19 Tribes during the plan revision process; a list of these Tribes is found in final environmental impact statement section 3.12.2; Areas of Tribal Importance. Consultation with the Tribes began with the land management plan assessment and has continued throughout the plan revision process. Formal government-to-government consultation on the plan revision continues, and the Tribes' concerns and positions are incorporated in the final environmental impact statement and revised plan.

Tribal coordination and consultation with 19 Tribes began with the identification of what Tribes have aboriginal ties to and treaty rights on the Custer Gallatin. Contacts were made with each Tribe through informational meetings such as the Interagency Bison Management Meetings and North Dakota Office of Transportation meetings, letters, e-mails, and follow-up phone calls to determine if they were interested in participating, and face-to-face meetings on the reservation headquarters. These consultations included key stages of the revisions: the review of the plan assessment, proposed action, the draft environmental impact statement and land management plan, and the final environmental impact statement. Formal letters commenting on the draft revised plan and draft environmental impact statement were received from the Shoshone Bannock, the Nez Perce, and the Crow Nations. Face-to-face meetings at Tribal headquarters occurred with the Shoshone Bannock, Nez Perce, Umatilla, Confederated Salish and Kootenai Tribes, Blackfeet, Fort Peck Tribes, Eastern Shoshone, the Arapahoe, the Crow, and the Northern Cheyenne. Comments and concerns received from the Tribes focused on bison, bighorn sheep, treaty rights, sacred sites, traditional cultural practices, land designations, and access.

The environmental impact statement recognizes Native American Treaties, and Planning Rule requirements to consider wildlife habitat in collaboration with federally recognized Tribes, as part of the regulatory framework that influences wildlife and habitat management direction (Chapter 3. Wildlife Diversity, Regulatory Framework). The environmental impact statement also acknowledges Tribal participation in the Interagency Bison Management Plan (Chapter 3. Bison, Effects of the Revised Plan Alternatives; Cumulative Effects). The revised plan includes a goal for continued cooperative bison management through engagement with agencies, Tribes, and other willing partners (FW-GO-WLBI-01). Setting aside lands for a particular Tribe is not within the scope of a land management plan.

## Backcountry Areas

### Allocations and Uses

**Concern:** Comments provided a range of comments regarding individual backcountry areas, such as support or opposition to certain backcountry areas, the uses allowed or not allowed in certain backcountry areas and suggestions for individual backcountry area plan components.

Comment expressed concern that backcountry areas could curtail existing uses, requested ranchers be allowed to use all-terrain vehicles for essential activities, and specific trails be built or opened to mountain biking. Comment expressed concern that backcountry areas do not offer enough protection, and requested that for certain areas the plan add language to protect wildlife and wild character, that plan direction mirror the Cabin Creek Recreation and Wildlife Management Area in wildlife protection and wild character plan components, not allow timber harvest or mineral and oil and gas development, apply a primitive recreation opportunity spectrum setting, limit new trails, implement a permit system based on monitoring, and prepare area-specific management plans upon plan completion.

**Response:** Thank you for your comments about backcountry area allocations. The alternatives propose a range of backcountry areas and plan components for these areas. The preferred alternative includes 13 backcountry areas: Chalk Buttes, King Mountain, Cook Mountain, Tongue River Breaks, Punch Bowl, Big Pryor, Bad Canyon, Crazy Mountains, Blacktail Peak, West Pine, Buffalo Horn, South Cottonwood, and Lionhead.

All relevant plan components, such as forestwide wildlife components, apply to the backcountry areas, not only the plan components listed for each backcountry area. Forestwide backcountry area desired condition (FW-DC-BCA-01) states that natural processes play their role and human use leaves little permanent or long-lasting evidence. Availability for locatable minerals and for oil and gas development is not addressed in the plan; extraction of salable mineral materials is not allowed in backcountry areas (FW-STD-BCA-04). Vegetation management would be suitable for restoration, fuels reduction, wildlife enhancement, and similar reasons (FW-SUIT-BCA-01). The Forest Service would retain the ability to grant motorized access for authorized grazing permits. The preferred alternative does not apply a primitive recreation opportunity spectrum setting outside of designated wilderness.

Adding a specific trail is a project-level decision not included in the plan. Changing the travel use of specific trails is a travel plan decision made subsequent to completion of the revised plan. The plan does not commit to future planning, such as a backcountry area-specific management plan. The plan does not compel action; a guideline to implement a permitting system based on monitoring would compel action. Plan direction for the Cabin Creek Recreation and Wildlife Management Area reflects the legislation designating that area.

The customized recreation-related plan components for each backcountry area are outlined below.

**Sioux Geographic Area, Chalk Buttes Backcountry Area.** This backcountry area would be suitable for mechanized transport and for motorized transport. Motorized transport would be suitable only on system motorized routes and areas (SX-SUIT-CBBCA-01) and new motorized trails could not be designated or constructed (SX-STD-CBBCA-02). Mountain biking would be suitable only on approved system routes (SX-SUIT-CBBCA-01) and new mountain bike trails could not be constructed (SX-STD-CBBCA-03).

**Ashland Geographic Area, King Mountain, Cook Mountain, and Tongue River Breaks Backcountry Areas.** These backcountry areas would not be suitable for motorized or mechanized transport, except for use of game carts (AL-SUIT-ABCA-01). Standard AL-STD-BCA-02 would prohibit new trails in these backcountry areas.

**Pryor Mountains Geographic Area, Big Pryor and Punch Bowl Backcountry Areas.** The Big Pryor Backcountry Area would be suitable for mechanized transport and for motorized transport. Motorized transport would be suitable only on system motorized routes and areas while mountain biking would be suitable only on approved system routes (PR-SUIT-PRBCA-01). New motorized and mountain bike trails could not be constructed or designated, except for reroutes of existing trails (PR-STD-PRBCA-02).

The Punch Bowl Backcountry Area would not be suitable for summer motorized transport or for mechanized transport, except use of game carts. The backcountry area would be suitable for winter motorized over-snow transport (PR-SUIT-PBBCA-01).

**Absaroka Beartooth Mountains Geographic Area, Bad Canyon Backcountry Area.** This backcountry area would not be suitable for motorized or mechanized transport, except for use of game carts (AB-SUIT-BCBCA-01). The Bad Canyon Backcountry Area mechanized recreation suitability component for alternatives B and C have been reversed to be consistent with the themes of these alternatives; that is, mountain bike use would be suitable in alternative B, and not suitable in alternative C.

**Bridger, Bangtail, and Crazy Mountains Geographic Area, Blacktail Peak and Crazy Mountains Backcountry Areas.** The Blacktail Peak Backcountry area would not be suitable for summer motorized transport. The backcountry area would be suitable for winter motorized over-snow transport. The backcountry area would not be suitable for mechanized transport, except use of game carts (BC-SUIT-BPBCA-01). The Crazy Mountains Backcountry Area would not be suitable for motorized transport or for mechanized transport, except use of game carts (BC-SUIT-CMBCA-01).

**Madison, Henrys Lake, Gallatin Mountains Geographic Area, Buffalo Horn, West Pine, South Cottonwood, and Lionhead.** The Buffalo Horn Backcountry Area is not as large as proposed in alternative E; it does not include the Gallatin Crest. In this backcountry area, current mountain bike trails and motorized trails, summer, or winter, would remain suitable for those recreation uses, mountain biking would be suitable only on approved system routes (MG-SUIT-BHBCA-01). Trails on the Gallatin Crest are not included in the backcountry area and those trails would not be available for motorized or mechanized transport if the wilderness study area were released by Congress. New recreation events would not be allowed in this backcountry area (MG-STD-BHBCA-02).

The West Pine Backcountry Area would not be suitable for motorized transport. The backcountry area would be suitable for mechanized transport. Mountain biking would be suitable only on approved system routes (MG-SUIT-WPBCA-01). The preferred alternative includes an objective to create at least one opportunity to enhance non-motorized trail connectivity by connecting existing trails to create loop rides or to connect to other parts of the trail network (MG-OBJ-WPBCA-01). New recreation events would not be allowed in this backcountry area (MG-STD-WPBCA-02).

The South Cottonwood Backcountry Area would not be suitable for motorized transport. The backcountry area would be suitable for mechanized transport. Mountain biking would be suitable only on approved system routes (MG-SUIT-SCBCA-01).



The Lionhead Backcountry Area would not be suitable for motorized transport. The backcountry area would be suitable for mechanized transport. Mountain biking would be suitable only on approved system routes (MG-SUIT-LHBCA-01). New mountain bike trails could not be constructed or designated, except for reroutes of existing trails (MG-STD-LHBCA-02). The Lionhead Backcountry Area boundary was adjusted to coincide with the winter motorized recreation opportunity spectrum mapping, and no existing winter motorized use would be changed by the backcountry area allocation. New non-motorized, non-mountain biking trails are not prohibited in this backcountry area.

In backcountry areas (and key linkage areas) where mountain biking would be suitable only on approved system routes, site-specific analysis subsequent to plan approval would be undertaken to comply with plan suitability, and could further identify and delineate the trail opportunities and uses in these areas.

### **Environmental Impact Statement Analysis**

**Concern:** Comments requested additional environmental impact statement analysis or clarifications regarding backcountry areas, including additional cumulative effects analysis for backcountry areas, similar to the recommended wilderness area cumulative effects analysis, and alternative comparison relative to locatable minerals management in backcountry areas. Comment questioned the conclusion that backcountry areas maintain undeveloped or lightly developed characteristics, while allowing for trail construction, motorized and mechanized transport. Comment requested an assessment of actual recreation use or conditions for motorized or mechanized recreation in the Chalk Buttes, to justify a decision to allow motorized or mechanized recreation, and comment requested analysis of impacts of future new trails and increased use to the wild character of the Buffalo Horn and West Pine Backcountry Areas.

**Response:** Additional cumulative effects analysis has been added for backcountry areas, similar to the recommended wilderness area cumulative effects analysis. The alternative comparison relative to locatable minerals management is provided only for recommended wilderness areas because the recommended wilderness process outlined in FSH 1909.12 Chapter 70 requires the disclosure of legally established rights or uses.

The intent of backcountry areas is to maintain their current unroaded or lightly roaded character, while allowing some management flexibility particularly for vegetation management. The plan does so by limiting a number of new uses and facilities, while allowing vegetation management for purposes such as fuels reducing and wildlife habitat.

The Chalk Buttes currently has a road open to the public; it has no trails. New permanent roads would be not permitted (SX-STD-CBBCA-01). In the Chalk Buttes Backcountry Area, motorized recreation transport would be suitable only on existing system motorized routes and areas. Mountain biking would be suitable only on approved system routes (SX-SUIT-CBBCA-01). In effect, at present, the Chalk Buttes Backcountry Area would allow motorized and mechanized recreation on the existing road. New motorized trails could not be designated or constructed (SX-STD-CBBCA-02), while new mountain bike trails could not be constructed (SX-STD-CBBCA-03). Additional mountain biking could potentially be allowed if future public access was obtained on existing administrative roads.

## Plan Direction

**Concern:** Comments provided general support for the use of backcountry area allocations in the plan to protect lands, but still provide public access and use. Another comment expressed concern that the backcountry area allocation is too vague and flexible, and would not provide sufficient protection for National Forest System lands. Some comments preferred a recommended wilderness area allocation to a backcountry allocation in certain areas, while other comments expressed concern that backcountry areas would become recommended wilderness area in the future.

Comments requested more consistent management among backcountry areas. Comments requested more clarity regarding allowed recreation uses in backcountry areas, standards to address mountain bike use, and more flexibility in new road construction. Comments expressed concern that the backcountry area allocation would allow the continued expansion of trails by mountain bikers, and suggested that backcountry areas allow mountain bike use on existing roads and trails and allow the future development of some new trails for mountain biking within backcountry areas. Comment suggested seasonal use restrictions such as limitations on horse use during wet times of year or limitations on other uses at times critical for wildlife.

**Response:** The alternatives propose a range of backcountry areas and plan components for these areas. While the plan direction has been customized for each backcountry area, that direction is clearly stated for each backcountry area. The plan components outlined in chapter 2 apply to all backcountry areas. These plan components limit a number of new uses and facilities, while allowing flexibly for vegetation management. Additional plan components customized to each backcountry area are outlined in chapter 3.

Because the intent of backcountry areas is to maintain their current unroaded or lightly roaded character, new permanent roads are not allowed in any backcountry area. Most backcountry areas are within inventoried roadless areas, which limit both new permanent and temporary roads. The standard regarding new road construction in backcountry areas has been customized for each backcountry area, and moved from chapter 2 to chapter 3 of the plan, to more clearly display where temporary roads would or would not be allowed. Seasonal limitations on recreation use is not undertaken in the plan.

The recreation-related suitability plan components have been rewritten for each backcountry area to improve clarity. Mountain bike use is appropriately addressed in a suitability plan component, rather than as a standard. Some backcountry areas are not suitable for mountain biking. In the backcountry areas that are suitable for mountain biking, mountain biking would be suitable only on approved system routes, in effect, mountain biking would not be suitable off-trail. In alternative F, only the three backcountry areas in the Ashland Geographic Area would prohibit all new trails. New motorized trails would not be allowed in any backcountry areas (other than reroutes of existing trails), and new mechanized trails would be limited in some backcountry areas.

Changing backcountry areas to recommended wilderness area could be undertaken in a future plan revision process; as could changing a recommended wilderness area to a different plan land allocation.

## Beartooth Highway

**Concern:** Comment requested a desired condition for the Beartooth National Forest Scenic Byway that "increasing recreational use is managed sustainably and does not impact the area's scenic, natural, historical, cultural, or archaeological qualities."

**Response:** Desired condition AB-DC-NSB-01 adequately speaks to the intrinsic scenic, natural, historical, cultural, archaeological, and recreational qualities for which the Beartooth National Forest Scenic Byway was designated.

## Best Available Scientific Information General (BASI)

### Best Available Scientific Information

**Concern:** Comments state that the Forest Service must use best available scientific information in the design of plan components, formulation of alternatives, and disclosure of impacts. Commenters also requested that sources provided or cited in comments should be reviewed and considered. Comments requested that the Forest Service incorporate the Craighead study as part of the environmental impact statement and land management plan, as well as list in the literature cited. Comment requested that the Forest Service make all current and future best available scientific information documents available to the public on the website.

**Response:** Resource specialists considered what is most accurate, reliable, and relevant in their use of the best available scientific information. All references cited in the plan and final environmental impact statement are considered best available scientific information. All best available scientific information used in the land management planning process is included as part of the project record. The analysis acknowledges controversial scientific areas (such as characterizing historic fire regimes or using timber harvest as a tool for ecological restoration), discloses the limitations of models, and uses other best available scientific information when needed to reach analysis conclusions. All additional references cited by the public were reviewed and evaluated, and the results can be found in the project record. As documented in the project record, many of the citations the public supplied added value to the analysis and were, in turn, cited in the planning process as best available scientific information. Others were either not cited because they were determined to not be accurate, reliable, or relevant, or the topics and issues were covered by other best available scientific information already cited. If new best available scientific information leads to the need for a plan amendment, it would be presented as part of the plan amendment analysis and rationale. The Craighead (2015) report "Wilderness, Wildlife and Ecological Values of the Hyalite-Porcupine-Buffalo Horn Wilderness Study Area" was reviewed and carefully considered during analysis and plan development. This report represents a synthesis of existing literature and specially examines the ecology of seven species: Bighorn Sheep, Mountain Goat, Cutthroat Trout, Elk, Grizzly Bear, Wolverine, and Pika. While the EIS directly addresses individual species and many of the threats and vulnerabilities mentioned in the report, the report itself is not cited because the publication's information is consistent with the analysis and with the peer-reviewed publications that are cited. For example, the EIS recognizes the conservation value of roadless areas for wildlife (Kessler et al. 2001) as well as potential effects of recreation on wildlife including effects of mountain biking on grizzly bears (Quinn and Chernoff 2010, Fortin et al. 2016), the effects of trail-based recreation on elk (Wisdom 2018) and winter recreation on wolverines (Heinemeyer et al. 2019a, Heinemeyer et al. 2019b).

## Models

**Concern:** Comments state that the Forest Service must disclose the validity of habitat and other modeling or data sources used in land management plan development, as well as scientific justification for their use.

**Response:** The environmental impact statement discloses analysis methods and information sources, including descriptions of models used, data sources, data quality and assumptions where needed (Environmental Impact Statement, Chapter 3. Ecosystems: Air Quality, Watershed, Aquatic Species and Habitat, and Riparian Management Zones, Terrestrial Vegetation, and Wildlife Diversity; Methodology and Analysis Process, and Information Sources; Appendix B). As noted in the wildlife section of the environmental impact statement, a model used to analyze wildlife connectivity is described in detail in (Williamson et al. 2020).

The SIMPPLLE model tool has been peer-reviewed (Chew et al. 2012b) and has been used consistently in Region 1 for land management plan revisions and other broad-scale vegetation analyses. As a knowledge-based model, many calibrations can be done. The calibrations and assumptions used for the Custer Gallatin National Forest build upon other work being conducted in the region, and included input and extensive reviews from subject matter experts on the planning team, in the regional office, and at the Rocky Mountain Research Station to ensure that the assumptions and results were appropriately represented for the ecosystems on the national forest. The assumptions in the model are also based on actual data when possible. Even so, the analysis acknowledges and discloses the limitations of the model, and uses other best available scientific information when needed to reach analysis conclusions. Key assumptions and input parameters are disclosed in appendix B of the final environmental impact statement. The accuracy assessment of the R1 VMap (cited in final environmental impact statement) along with the statistical reliability of Forest Inventory and Analysis estimates (with 95-percent confidence intervals) reflect the general accuracy of the input data, because those two products were used to create the model input landscape.

The reference provided for the beaver habitat model (Great West Engineering 2016) in the environmental impact statement has information on model validation. It states the beaver habitat suitability model accuracy tested at 87 percent, which represents an increase of 13 percent over using the existing NetMap beaver habitat variable alone to predict beaver presence. The modeling report attached as appendix B contains more information about model development and validation and use of the logistic function

## Science Consistency Review

**Concern:** Comments request that the Forest Service conduct a Science Consistency Review for this land management plan revision process.

**Response:** Science reviews are discretionary and need not be performed to meet requirements of the land management planning process. Nevertheless, the planning team made great efforts to review key scientific assumptions and basis for decisions with outside experts and scientists. The results of two of these efforts are documented in Hansen et al. (2018) and Williamson et al.(2020).

## Cabin Creek Recreation and Wildlife Management Area

**Concern:** Comment requested added emphasis in the Introduction of the high wildlife value of this area, such as wolverine, and adding trapping to the list of popular activities in this area. Plan component suggestions included limiting recreation levels by adding “current” special uses to guideline MG-GDL-CCRW-01, and addressing impacts of motor vehicle use; potential snowmobiling conflict with wolverine guideline FW-GDL-WLWV-01. Comment stated revised plan suitability MG-SUIT-CCRW-01 allowing timber harvest conflicts with the statute that prohibits commercial timber harvest.

**Response:** The introduction is intended to provide the legislative context for managing this area, which was for the purposes of grizzly bears, big game, and recreation, rather than mention every use and resource value.

Desired condition MG-DC-CCRW-02 speaks to both wilderness character and recreation opportunities. Currently authorized special uses were approved consistent with the 1986 Gallatin forest plan and under site-specific National Environmental Policy Act decision-making. The revised forest plan direction will apply to project and activity decision-making subsequent to the plan record of decision. Thus, the revised plan direction will be applied during new and renewed authorization decision-making. If necessary, currently approved special uses will be modified consistent with the new plan during reauthorization.

Suitability statement MG-SUIT-CCRW-01 has been changed to indicate the area is not suitable for timber production, and is suitable for vegetation management consistent with Public Law 98-140. Current Gallatin forest plan direction (Management Area 20) states that the area is not suitable for timber production and no timber harvest is allowed, but allows habitat improvement projects and prescribed fire.

The enabling legislation allows motorized transport in this area. Standards and guidelines guide new Forest Service decisions; FW-GDL-WLWV-01 limits new special use authorizations and designations of winter routes in maternal wolverine habitat during the reproductive denning season. The guideline does not direct approved recreation uses.

## Carbon

**Concern:** Commenters have several issues with respect to disclosing the impacts of logging and thinning on carbon stocks and emissions. The first is the environmental impact statement does not quantify the effects of logging on aboveground carbon stocks, especially carbon contained in older trees, and that harvesting exacerbates climate change rather than ameliorates it by transferring carbon from trees to atmosphere. Closely tied to this issue, is that commenters want the Forest Service to explore the effects of the alternatives on carbon stocks and emissions.

**Response:** Additional analysis was added to the Carbon section of the final environmental impact statement to address these comments. The final environmental impact statement includes a qualitative and general description of the effects of logging, thinning, and hazardous fuels reduction treatments on carbon stocks and emissions based on the best available scientific information. In addition, a new analysis was completed and added to the project record, which includes an updated assessment of forest carbon in the plan areas, including its role in the global carbon cycle. It also describes qualitatively how past and current management practices and environmental factors might influence carbon stocks

and fluxes, including emissions. The final environmental impact statement has a quantification of baseline carbon stocks over a recent period from 2005 through 2013 for the Region and the Custer Gallatin National Forest.

Both of the issues raised could benefit from a better understanding of scale and considering all the components of the forest system holistically rather than piecemeal. This piecemeal perspective is not consistent with the best available scientific information, and has been a source of considerable debate and inconsistency within the scientific literature.

For example, logging does transfer carbon to the atmosphere, but also transfers carbon to harvested wood products that might store carbon for many decades. In addition, as mentioned in the final environmental impact statement and the project record, there is a potential substitution effect, whereby wood can effectively offset additional emissions by being used in place of more emissions-intensive materials, such as concrete and steel. However, carbon is expected to recover in the affected areas as trees regrow (taking up and storing carbon) and as carbon accrues in harvested wood products and landfills. With time, carbon can fully recover and even exceed the amount of carbon that can be stored in the physical forest, reducing, or eliminating any potential negative cumulative effects. The breakeven point, where carbon loss is balanced by recovery, storage, and offsets depends on expected future management and deposition of wood and fiber from harvesting, and other factors.

Timber harvesting has an initial impact on forest carbon stocks and releases carbon to the atmosphere, but that provides an incomplete picture of what is happening with carbon in the atmosphere. When considering forest carbon dynamics and the fate of wood products in aggregate, the amount of carbon the atmosphere "sees" can be less than when looking at emissions from the narrower perspective of only carbon on the Custer Gallatin. When a forest is harvested or thinned, and maintained as a forest, the forest regrows and eventually recovers the carbon that was removed during harvesting. Additionally, some carbon in harvested trees is transferred to harvested wood products, which can store carbon for months to decades and even centuries depending on the commodity produced (for example, paper, furniture, single-family home). Carbon is also stored indefinitely when these products enter landfills at the end of their usable life. Also, avoided fossil fuel emissions can be substantial where harvested wood products are used as a substitute for products that take more energy, and thus, more emissions to produce. For example, when a wood beam is used in place of a steel beam, which requires much more energy to produce. Also, wood can be used as direct substitute for fossil fuels, such as wood pellets in place of coal. With consistent harvesting over time, carbon storage in the forest and harvested wood products and avoided emissions can far exceed what can be stored physically on the forest. In some cases where wood substitution value is high, the emissions avoided can be so substantial that the atmosphere would "see" less carbon immediately when considering all the factors together than without harvesting. The magnitude and timeframe on which these carbon dynamics play out vary greatly depending on the forest attributes, disposition of harvested wood products, and environmental factors. A key assumption, however, is that the forestland will not be converted to a non-forest condition after harvesting and will remain productive. The Forest Service does not expect significant changes in land use or cover or productivity as a result of harvesting.

According to the best available scientific information cited in the final environmental impact statement and in carbon analysis in the project record, harvesting and use of harvested wood products can play an important role in reducing carbon emissions. The Forest Service does not consider carbon in isolation nor give carbon priority over the many other services that forests provide. According to the International

Panel on Climate Change, the best way to account for the impacts of forest management is to take the perspective of the atmosphere. That is, what the atmosphere actually "sees" in terms carbon entering or leaving the atmosphere. This requires looking at not only how management influences forest carbon stocks and initial emissions associated with harvesting, but where carbon in the harvested wood goes once it leaves the forest. It also considers whether there is an associated change in land use or cover that might alter the ability of the harvested area to remove and store carbon from the atmosphere. Another factor to consider with approaches to maximize carbon storage in the forest system is if there is an increased risk of carbon loss through disturbances, such as wildfires and insect epidemics. This can undercut the goal of maximizing carbon storage on forests. In some cases, reducing forest carbon stocks and moving that carbon embodied in the wood into harvested wood products streams is a more effective way to reduce carbon in the atmosphere.

The amount of carbon that is expected to be influenced by management under the proposed alternatives is very small with respect to the amount of carbon that these forests contain. This amount is likely less than 1 percent over the whole plan period, and expected emissions would be negligible with respect to both national and global greenhouse gas emissions. A more detailed carbon analysis of the alternatives would almost certainly fail to detect statistically significant differences among the alternatives as uncertainty is very high at such small scales and would not provide meaningful information to the decision, given current laws and regulations. Again, the final environmental impact statement adequately and accurately describes these potential effects and is warranted in not including a more quantitative analysis of the effects of the alternatives.

It's important to note for context that it is not Forest Service policy to maximize carbon or elevate the consideration of carbon above the many other services that National Forest System lands provide. In some instances, it is desirable to reduce carbon stocks to ensure the continued provisioning of other ecosystem services and for protecting lives and property. It is correct that hazardous fuel reduction treatments lower carbon stocks indefinitely as long as the treatments are maintained. However, any beneficial effects on carbon by avoiding a high-severity disturbance event, for example, is ancillary or a co-benefit to the primary reason fuel treatments are conducted. The contention that there is a very low probability that wildfire will occur where there is hazardous fuel reduction treatment and this can result in lower carbon stocks compared to untreated areas that do not experience wildfire is correct—there is an inherent mismatch between placement of the treatments (which lower carbon stocks) and the (relatively rare) occurrence of wildfire on a given acre. This is only problematic or inconsistent with desired conditions if the objective is to maximize carbon stocks on every acre. Again, this is irrelevant because fuels treatments are done for many other reasons, but this does not preclude the possibility that there could be a carbon benefit in some instances, even if relatively rare. This benefit might be more likely realized in some forest types, such as ponderosa pine, with relatively short fire-return intervals and areas with uncharacteristically dense vegetation.

When a forest is harvested or thinned, but maintained as a forested condition, the forest regrows and eventually recovers the carbon removed during harvesting. As forests grow, they recover the carbon transferred out of the ecosystem during harvesting. Management activities to increase forest resilience may reduce carbon stocks in the short term, but can have long-term benefits for carbon sequestration by maintaining resilient forests.

Overall, the national forests do not advocate for timber harvesting due to potential carbon benefits. Rather the Plan and the final environmental impact statement support the use of timber harvesting to

achieve desired conditions such as restoring fire-adapted and fire-resilient landscapes, managing for stand densities that are ecologically resilient and sustainable, and using timber harvesting to achieve desired vegetation conditions and socioeconomic benefits. Per the Multiple Use and Sustained Yield Act of 1960, national forests are managed for multiple uses and ecosystem services such as outdoor recreation, range, timber, watershed, and wildlife purposes. Carbon uptake and storage are just some of the benefits that national forests provide and inform management decisions.

## Climate Change

**Concern:** The Forest Service did not adequately address climate change in the environmental impact statement and the plan.

**Response:** To achieve ecological integrity, the 2012 Planning Rule emphasizes planning for resilience and managing to enhance the ability of ecosystems to adapt to change, stressors and system drivers, including climate change. The plan considers the potential impacts of climate change, to the degree that programmatic plan components and management approaches can or should incorporate concepts related to the issue. Most fundamentally, the plan sets forth desired conditions for vegetation that are designed to be resilient to future stressors, including climate change. The Custer Gallatin is basing many ecological desired conditions on an analysis of the natural range of variation for key ecosystem characteristics (such as tree size class, forest density, cover type, and species presence). The natural range of variation was estimated using the state-and-transition simulation model SIMulating Patterns and Processes at Landscape ScaLEs (SIMPPLLE; see appendix B of the environmental impact statement for additional detail). Focusing on the natural range of variation as a guide for desired conditions is based on two primary assumptions: (1) native biota evolved within the landscape context of a range of variability, and thus, maintaining the natural range of variation should sustain native biodiversity; and (2) natural range of variation conditions will be resilient to many of the stressors associated with climate change including increased intensity and frequency of disturbance.

The Plan assumes that the natural range of variation represents, at minimum, a useful waypoint to manage for resilient ecological systems under a rapidly changing climate. Notably, this fundamental assumption was scrutinized in a series of workshops in 2018, with partners from other Federal agencies, universities, and non-governmental organizations. At these workshops, attendees used best available scientific information to assess the vulnerability of potential vegetation types and cover types to projected climate change, and identified and evaluated management options aimed at achieving or maintaining ecological integrity. Results of this effort were used to inform and refine the development of desired conditions as well as provide important strategies and tactics, many of which are reflected in the Management Approaches (plan appendix A). Results of the workshops are discussed in the final environmental impact statement and are documented in Hansen et al (Hansen et al. 2018).

The strategies for the plan integrate the management approaches of promoting *resilience* to change, creating *resistance* to change, and enabling forests to *respond* to change (Millar et al. 2007). The Northern Rockies Adaptation Partnership publication by Halofsky et al. (2018a;b) is the main source of information on possible strategies and approaches. Initiated in 2013, this is a science-management partnership of multiple agencies, organizations, and stakeholders who worked together for 2 years to identify issues relevant to resource management in the Northern Rocky Mountains, and to find practical solutions that can make ecosystems adaptable to the effects of a changing climate.



Conclusions from this science synthesis led to plan components that anticipate the influence of climate change on vegetation composition and structures; promoting retention and development of large and very large trees of species resilient and resistant to disturbance; promoting site-adapted species; promoting diversity of species, at stand level and landscape level; focusing on species best adapted to potential changes in climate and disturbances (such as drought, increased fire frequency and severity, and increased insect populations); promoting diversity of forest structures at landscape level; protecting old-growth forest and promoting its development; promoting restoration of native species that have been diminished due to human influences (for example, exotic disease, land conversion, fire suppression); promoting diversity of forest densities and reducing densities where appropriate using a variety of tools; and maintaining the reduced forest densities over time. This plan direction reflects best available scientific information related to climate change adaptation and preparedness.

The plan does not preclude the use of assisted migration (for species such as bur oak), but detailed projections relevant at the scale of the Custer Gallatin National Forest are unavailable in terms of introducing novel species. The Forest Service would follow regional seedling transfer guidelines that are continually assessed for climate adaptability. The Custer Gallatin may adopt a strategy of assisted migration if and when there is sufficient information to guide this activity.

Climate change is recognized as a potential stressor and is integrated into the discussion of affected environment and environmental consequences in the final environmental impact statement. Specifically, the section "Climate Change Considerations and Assumptions" in the Terrestrial Vegetation section of the environmental impact statement explains, in detail, the major anticipated effects of climate change as well as the best available scientific information used to inform the analysis process. Vegetative modeling incorporated future climate scenarios that reflected best estimates of climatic trends over the next five decades. Most notably, modeling of future vegetation dynamics includes a doubling in the amount of wildfire expected to occur (Erdody and Carnwath 2018). In addition, the effects of climate change on regeneration in dry forest ecosystems was accounted for (including regeneration challenges in dry forest ecosystems). Further detail on how climate change was incorporated in landscape dynamic simulation models is provided in appendix B of the environmental impact statement.

As noted in the environmental impact statement, another key plan component that is critical in the context of future climate change is the establishment of a monitoring plan to inform an adaptive management approach. This enables the intentional use of monitoring to evaluate effectiveness of our plan direction and resulting management actions. For example, monitoring tree regeneration (MON-VEGF-01) will provide critical information on possible climate change effects to this vulnerable life stage that commenters expressed concern about. In addition, in response to commenters' concerns about the potential for regeneration failures linked to climate change, an additional monitoring component was added to the final plan (MON-VEGF-03). This will ensure monitoring and reporting on the success (or failure) of planting activities associated with all reforestation efforts.

Finally, the environmental impact statement addresses uncertainties associated with future conditions, including how they relate to the natural range of variation, and the potential for changes to occur on the landscape due to climate change and large disturbances. In response, an additional goal was added to the final plan. Recognizing that climate change poses a great deal of uncertainty regarding the future trajectory of ecological components, the intent of this new goal (FW-GO-CARB-01) is to proactively promote research and monitoring that will further assist in the adaptive management process.

## Continental Divide National Scenic Trail

**Concern:** Comment requested additional or modified plan direction to protect scenic, natural, cultural, and historic resources, such as changing desired conditions and guidelines to standards, adding objectives to complete the trail and use volunteers, establishing and mapping a 1-mile minimum Continental Divide National Scenic Trail management area corridor, assigning primitive or semi-primitive nonmotorized recreation opportunity spectrum settings, making motorized transport non-suitable, allowing mountain bike use only where consistent with the direction described in Forest Service Manual (FSM) 2353.44b (10), addressing the Northern Rockies Lynx Management Direction and wildlife linkage. Comment also requested that the trail corridor be suitable for timber production, varying plan components by alternative, revising management approaches, and establishing trail monitoring.

Comment favored or opposed mechanized and motorized transport on the portion of the trail in the Lionhead Area; favored or opposed a recommended wilderness allocation for the Lionhead portion of the trail; and stated that the Forest Service should prohibit mechanized or motorized travel on the Continental Divide National Scenic Trail when the trail is within a recommended wilderness area.

Comment related to the draft environmental impact statement stated the organization of regulatory guidance is confusing, additional guidance should be cited from the 2009 Continental Divide National Scenic Trail Comprehensive Plan, amendments and final directives, the phrase “trail buffer” should be replaced with “trail corridor,” and the analysis of cumulative effects and of uses along the Continental Divide National Scenic Trail corridor are inadequate.

**Response:** The Custer Gallatin National Forest manages approximately 31.6 miles (1 percent) of the Continental Divide National Scenic Trail. Plan components closely follow those suggested in the November 16, 2017, Continental Divide National Scenic Trail Recommended Forest Plan Components, which incorporated information included in the 2009 Comprehensive Plan. As that document states “Individual units may develop additional plan components, remove those that are not applicable, adjust them to respond to local conditions and public input, and edit to suit different writing styles. Any resulting variation must be consistent with the legislation and policy for managing the CDT.” The introduction to the Continental Divide National Scenic Trail section has been revised in the final plan to add “The 2009 Comprehensive Plan provides this statement ‘The nature and purposes of the Continental Divide National Scenic Trail are to provide for high-quality scenery, primitive hiking, and horseback riding opportunities, and to conserve natural, historic, and cultural resources along the Continental Divide National Scenic Trail corridor.’”

As stated in section 3.21.12, plan components were formulated to provide for maintaining the scenic quality of the Continental Divide National Scenic Trail by assigning a scenic integrity objective of High, providing hiking and horseback trail opportunities, as well as mountain biking and snowmobiling, and with multiple components which address the cultural and natural resources found along the trail. As stated in the Continental Divide National Scenic Trail Comprehensive Plan (as amended), while the trail is designed for the hiker and horseman, it is compatible with other land uses, such as mountain biking.

Plan components provide for the trail corridor to maintain the nature and purposes of the trail and are compatible with other agency direction for the Continental Divide National Scenic Trail. Components are both forestwide and trail corridor-specific for the Continental Divide National Scenic Trail. When forestwide plan components are combined with components for the trail corridor, the wide variety of

protections are accomplished by this plan. The requested objectives were not necessary as the trail construction is complete on the 31-mile segment of the trail on the Custer Gallatin. Working with trail volunteers is an established practice on the national forest, and plan goals encourage the ongoing relationships (FW-GO-REC-02).

Some of the suggested components are not consistent with plan component requirements, for example, forest plans do not specify the development of tactical plans or set a deadline for future plans. Some of the suggested components are not addressed in the plan, for instance oil and gas availability. Plan components for the Continental Divide National Scenic Trail corridor use coordinated components that assure continuity across multiple forests for management of activities on the trail. Comments provided no rationale why the Continental Divide National Scenic Trail guidelines should be standards, or desired conditions should be standards. The Custer Gallatin used inter-regional guidance for standards and guidelines. Altering wording, such as by having guidelines become standards, would have a discontinuity of coordinated management for the short 31-mile segment on the Custer Gallatin, compared to all the national forests where the Continental Divide National Scenic Trail passes.

The boundary of the Continental Divide National Scenic Trail corridor is described in the comprehensive plan as one-half mile on each side of the trail. The Continental Divide National Scenic Trail is essentially a management area, even though the revised plan is using the terms “Designated Areas” and “Plan Land Allocations.” The corridor has been added to the Designated Areas and Land Allocations map for the Madison, Henrys Lake and Gallatin Geographic Area in plan appendix B and final EIS appendix A.

The Continental Divide National Scenic Trail recreation opportunity spectrum classifications follow the various settings that it crosses. As stated in the Continental Divide National Scenic Trail Comprehensive Plan, *“where possible, locate the CDNST in primitive or semi-primitive non-motorized ROS classes, provided that the CDNST may have to traverse intermittently through more developed ROS classes to provide for continuous travel.”* The comprehensive plan wording *“to retain or promote the character for which the trail was designated, new or relocated trail segments should be located primarily within settings consistent with or complementing primitive or semi-primitive non-motorized recreation opportunity spectrum classes”* is specific to new sections of trails, not the established existing routes.

Since the Continental Divide National Scenic Trail route is already constructed on the Custer Gallatin, guidance promoting a preferred selection of trail locations to focus on semi-primitive non-motorized and primitive recreation opportunity spectrum is not applicable. Continental Divide National Scenic Trail direction acknowledges that as the trail crosses various national forests, there will be road crossings and segments that include recreation opportunity spectrum classifications other than the more primitive end of the spectrum. The trail will not be relocated because it passes through various recreation opportunity spectrum classifications on the ground. The revised plan includes forestwide plan components for each recreation opportunity spectrum class.

The use of winter snowmobiling was pre-existing the trail’s designation and acknowledged as an allowed use in the designation of this segment. The Continental Divide National Scenic Trail is snow-covered and not discernable in the winter in the area where snowmobiling occurs. The revised plan was edited to include the wording *“The Continental Divide National Scenic Trail is suitable for mountain biking, as long as such use does not substantially interfere with the nature and purpose of the trail.”*

Scenery is addressed within the desired condition statement “Viewsheds from the Continental Divide National Scenic Trail have high scenic values. The foreground as viewed from the trail is predominately naturally appearing. The potential to view wildlife is high, and evidence of ecological processes such as fire, insects, and diseases exist.” However, scenery management direction is within its own section’s heading. Scenery management objective for the Continental Divide National Scenic Trail is either high or very high, depending on alternative (see Scenery section of the plan). The scenery management system adequately protects the values of the Continental Divide National Scenic Trail.

The Continental Divide National Scenic Trail (on the Custer Gallatin National Forest) passes through lynx habitat, but is not located in “designated critical habitat” for lynx (a USFWS designation). The trail is not in plan key linkage areas.

In keeping with the desired conditions for the trail, the Continental Divide National Scenic Trail corridor would not be suitable for timber production. Vegetation management, including timber harvest, would be suitable for purposes such as fuels reduction or restoration.

It is not necessary for all plan components to vary by alternative. Plan land allocations varied for the Lionhead portion of the Continental Divide National Scenic Trail, as did suitability of mechanized and motorized transport in recommended wilderness in the Lionhead area.

The management approach stating that establishment of a carry capacity was not needed for this short 31-mile segment of trail was removed. The plan’s Continental Divide National Scenic Trail introduction acknowledges Forest Service cooperation with other agencies and partners in managing the trail. Techniques for trail protection and restoration are established practices within the agency.

Monitoring suggestions such as number of water sources and the number of signs were not added to the monitoring plan because these items are not plan objectives. Monitoring the general trail conditions will be part of routine trail inventory for maintenance needs, which occurs as a normal component within the national forest’s trail maintenance program.

Whether the Continental Divide National Scenic Trail is within recommended wilderness area varies by alternative as does the suitability of mechanized and motorized transport in recommended wilderness areas. The Lionhead portion of the Continental Divide National Scenic Trail is within recommended wilderness in alternatives A and D. Mechanized transport on the Continental Divide National Scenic Trail within recommended wilderness would continue to be suitable in alternative A. Neither mechanized nor motorized transport on the portion of Continental Divide National Scenic Trail within recommended wilderness would be suitable in alternative D. In alternative F, the preferred alternative, none of the Continental Divide National Scenic Trail is within recommended wilderness area. The Lionhead area would be within a backcountry area where mechanized transport on the Continental Divide National Scenic Trail would continue to be suitable.

In the environmental impact statement, all regulatory guidance for designated areas is organized in one section. The final environmental impact statement cites additional guidance in the designated areas regulatory framework, including the 2009 amendments. Existing agency-wide policy and direction will be followed even when not cited in plan components.

Edits to change wording to the Continental Divide National Scenic Trail corridor appear in the revised plan and final environmental impact statement. A cumulative effects analysis for a programmatic land

management plan considers uses on surrounding lands under other jurisdictions; it does not analyze the effects of potential future site-specific projects. The cumulative effects narrative places the Custer Gallatin portion of the Continental Divide National Scenic Trail in the context of the entire trail. The analysis is appropriate to a programmatic plan.

## Cultural and Historical Resources

**Concern:** Comment requested acknowledgement of the forest's ranching and mining history, plan direction for submitting a historic site designation for the historic former Ranger Station, CC camp site, and historic bridge at the Shenango site, and that public education materials be crafted from an indigenous lens and address the disturbance of cultural practices and use of culturally significant sites by recreational users in the national forest. Comment requested a desired condition to the effect that historic travel routes are accessible to a variety of travel modes, allowing a wide range of modern visitors to experience routes and sites of cultural significance in a wide array of manners. Where possible, some historic travel routes should be maintained in a historic status but allow for motorized travel.

**Response:** The ranching and mining cultural landscapes would fit under Cultural and Historic Resources desired conditions FW-DC-CR-01 and 02, which address cultural landscapes and interpretation of these resources for the public benefit. The Cultural and Historical Resources and Uses Report for the Forest Plan Revision Assessment describes the importance and contributions of mining to the history of the Custer Gallatin National Forest and surrounding communities. The mining history, which continues, is acknowledged in the historic themes and associated site types in the assessment, showing the efforts to preserve these historic properties.

Shenango is recognized as one of the national forest's priority assets, and the Custer Gallatin staff is currently working on the nomination to the National Register of Historic Places.

Cultural and Historic Resources desired condition FW-DC-CR-02 calls for interpretation of cultural resources for public benefit that would enhance the understanding and appreciation of the forest prehistory and history. Indigenous interpretations would be included. Public education materials may be one way to fulfill Areas of Tribal importance desired condition FW-DC-TRIBAL-01 that traditional religious practices and ceremonies may be practiced without interruption.

Travel planning to include the use of historic travel routes is outside the scope of plan revision, and should be considered at the project level.

## Draft Environmental Impact Statement

### Compatibility of Other Plans - Appendix E

**Concern:** The City of Bozeman, Montana, requested that the environmental impact statement 'Appendix E - Compatibility of the Revised Forest Plan with Relevant Plans of Other Public Agencies' add a compatibility review of the following plans:

- Integrated Water Resource Plan, 2013
- Water Facility Plan Update, 2017
- Bozeman Community Plan, 2009

- Bozeman Forest Management Plan, 2010

Sweet Grass County, Montana noted that as a cooperating agency, the county undertook a brief compatibility review of the County growth policy with the Draft Custer Gallatin National Forest Plan. They found the review difficult to do as the Forest goals are so broad that little guidance in a goal is given to the actual plan chosen and whether an alternative would be compatible or incompatible with the County Growth Policy. This compatibility review would be more appropriate for a specific plan or alternative.

**Response:** The final environmental impact statement appendix E has been updated to include a compatibility review of the documents requested by the City of Bozeman, Montana. Appendix E acknowledges that the compatibility review considers broader desired conditions and goals, rather than more specific standards and guidelines.

### General

**Concern:** Comment noted that the length, organization, plan component alphanumeric identifiers, and complexity of the draft revised plan and environmental impact statement make it difficult to read. Comment encouraged additional technical edits, a summary fact sheet, and maps with finer details. Comment disagreed with the base map used for the large-scale maps posted to the national forest website. Comment requested alternatives for each area of the national forest, and that the plan display the current situation when it displayed alternatives B through E. Comment requested disclosure of the effects of future projects, or requested specific actions. Comment asked for the time and budget spent on plan revision. Comments noted the assessment of forest conditions and science was located in the draft environmental impact statement, but not in the draft revised plan. Comment also expressed support for the plan and environmental impact statement's content and presentation.

**Response:** While some commenters found the documents very lengthy, other commenters requested more information in certain sections. The 16-page summary of the draft environmental impact statement was intended to provide a short synopsis of the alternatives.

The purpose of the environmental impact statement is to assess the effects of the revised plan and alternatives. It is appropriate that the assessment of forest conditions and science be located in the environmental impact statement, rather than the plan.

The draft revised plan asked readers to reference the draft environmental impact statement for maps. The draft environmental impact statement maps were augmented by larger-scale plan land allocation maps posted online. Geospatial data layers were posted online for designated areas, plan land allocations, key linkage areas, and the recreation opportunity spectrum. The final plan contains the maps relevant to the preferred alternative and the final environmental impact statement contains maps for all alternatives. Larger-scale maps are also posted online, as well as geospatial data layers. The large-scale maps use the Forest Visitor Map as a background because it shows the detail necessary to help the public understand the boundaries discussed in the plan and environmental impact statement (this is the current map sold to the public). Timber suitability maps have not been posted because while GIS analysis is needed to determine timber suitability, it is not an allocation. Timber suitability geospatial data layers were provided when requested.

The draft and final environmental impact statements portray the current situation (alternative A). The final plan now displays information only for the preferred alternative. The geographic areas essentially provide alternatives for each area of the national forest. The final environmental impact statement has added more referencing of specific plan components in the analysis. As explained in the Plan Components section of chapter 1 of the revised plan, alphanumeric identifiers were assigned to plan components for ease of referencing in the forest plan. A programmatic analysis does not estimate the potential effects of future projects because the actual location, scope, and scale of future projects is not yet determined. The plan does not specify particular projects.

Plan revision began in 2016, and has cost approximately \$1 million per year.

### **Insufficient Draft Environmental Impact Statement**

**Concern:** Comment expressed concern that the environmental impact statement provides insufficient analysis of the Proposed Action and that a "hard look" is required to comply with the National Environmental Policy Act. Commenters stated the draft environmental impact statement did not adequately address cumulative effects; form an integrated revised plan or an integrated analysis; adequately cite plan components or assess the effects of plan components; provide more than a subjective, qualitative and comparative analysis; or analyze the effects of transitioning from the existing plan to a revised plan.

**Response:** The environmental impact statement addresses cumulative effects, climate change, the planning time horizon, and planning issues; compares alternatives; and compares management under the current plans to the revised plan. The final environmental impact statement has added more referencing of specific plan components to the analysis. The Council on Environmental Quality has indicated that programmatic effects analysis must provide sufficient detail to foster informed decision-making that reflects broad environmental consequences from a wide-ranging Federal program. Site- or project-specific impacts need not be fully evaluated at the programmatic level when the decision to act on a site development or its equivalent is yet to be made (Council on Environmental Quality 2014).

### **Purpose and Need for Action**

**Concern:** Comments requested that the draft environmental impact statement Purpose and Need for Action more fully explain the need to change the current forest plans; for instance explain gaps in current planning direction, explain why replacing tactical, prescriptive language with strategic language is needed to provide more efficient project planning, mention adaptation to climate change as a changed circumstance, or how the revised plan corrects the deficiencies of the current land and resource management plans from 1986 and 1987.

**Response:** The Purpose and Need for Action in chapter 1 of the draft and final environmental impact statements provides examples of gaps in current planning direction and provides context for the statement that replacing tactical, prescriptive language with strategic language is needed to provide more efficient project planning. The draft and final environmental impact statements also reference a more comprehensive Preliminary Need to Change the Existing Custer and Gallatin Forest Plans (February 2017). While this document includes the need to address impacts reasonably expected to occur as a result of climate change; climate change has also been added to the final environmental impact statement Purpose and Need for Action.

## Fire and Fuels

### Clarify Language

**Concern:** Comments stated the Forest Service should update and clarify language in the environmental impact statement analysis, related to wilderness fire policy, climate, fire response, use of the risk assessment and fire exclusion.

**Response:** Language was clarified for wilderness policy. As stated in the Custer Forest Plan, the terms “contain, control, and confine” essentially allow all fire management options to be used, so the language was corrected in the final environmental impact statement to reflect direction from the Absaroka-Beartooth Wilderness plan to allow natural fire to play its role.

In the final environmental impact statement, no intent was made to suggest that increased precipitation could lead to longer fire seasons and more fire on the landscape. A grammatical error has been clarified to read: “Riparian, wetland, grassland, and shrubland habitat guilds may experience an increase in the rate of desiccation due to increased and prolonged summer temperatures and drought conditions, which could result in longer fire seasons and more fire on the landscape. However, the opposite could be true, and all guilds could see an increase in precipitation as projections of precipitation are highly variable and uncertain (Halofsky et al. 2018a).”

Unplanned ignition response is discussed in Management Approaches (plan appendix A) and includes that fire danger operating plans, and thus, response plans within fire danger operating plans, will guide Forest Service response to unplanned wildfire. The plan's introduction of the Fire and Fuels Management section refers to using a "coordinated risk management approach," which includes a fire risk assessment to assist with fire management planning. A fire risk assessment is in the process of being completed for the Custer Gallatin and will be used to inform the risk management approach. At this time, though, risk assessment products cannot be uploaded into the wildfire decision support system. Language regarding fire danger operating plans and response plans was added to appendix A.

The statements “there is an emerging scientific consensus that the total number of acres burned by wildfire will increase in coming decades” versus “Fire exclusion will likely continue to alter successional processes” are not contradictory. There is a scientific consensus that wildfire acres will increase in the near future (the Forest Service modeling assumed this to be double from the past 30 years). This does not mean that the entire national forest is going to have fire regimes restored over the life of the plan. In fact, a doubling of acres burned is on the low to moderate end of the natural range of variation, which means that fire exclusion will still exist somewhere on the national forest. Future wildfire locations and footprints are hard to predict because their ignitions are stochastic (randomly determined) and other fuel and weather factors drive propagation.

### Climate Change

**Concern:** Comments stated the environmental impact statement should address the effects of climate change and should explain how Climate Change Vulnerability and Adaptation in the Northern Rocky Mountains (RMSR-GTR-374) informed plan components.



**Response:** The effects of climate change and fire were discussed in the Terrestrial Vegetation and Fire and Fuels sections of the final environmental impact statement. The references mentioned in the comments were also cited as part of the discussion.

The desired conditions for fire outlined in FW-DC-FIRE-01 are closely related and integrated into the desired conditions related to vegetation conditions across the national forest. The overall desire is for vegetation conditions to contribute to forest conditions that are resistant and/or resilient to potential future disturbances such as fire (FW-DC-VEGF-01 through 09 and FW-DC-VEGNF-01 and 04). Plan components related to vegetation composition, structure, and pattern are based on the concept of managing within the natural range of variation and maintaining or enhancing forest resilience. In other words, the assumption and expectation are that by managing vegetation according to the direction within the forest plan, ecosystem functions—including the role and characteristics of fire—would be within the range of natural variation and would maintain ecosystem sustainability. This includes the effects of climate change, which is considered in the natural range of variation model (see appendix B). Strategies for adapting to climate change are also discussed in the Terrestrial Vegetation section of appendix A. Reference to the Climate Change Assumptions and Considerations section in Terrestrial Vegetation was added in the Fire and Fuels section. Reference to Terrestrial Vegetation Management Approaches was added to the Fire and Fuels Management Approaches.

RMRS-GTR-374 was referenced multiple times in the Terrestrial Vegetation section of the final environmental impact statement in regard to how climate change is impacting and will impact vegetation and fire on the national forest. This publication was also referenced to inform potential strategies to achieve desired conditions in Hansen et al. (2018) in the Terrestrial Vegetation section of plan appendix A.

### **Environmental Impact Statement Analysis**

**Concern:** Comment stated the final environmental impact statement should provide a better analysis related to fire regimes, wildland fire, restoration, suppression and treatments (including past treatments). Comment questioned how the best available scientific information was used to inform the plan. Comment expressed concern that the plan is too flexible, because “flexibility for fire management” is used as an analysis indicator.

**Response:** The best available scientific information used to inform the plan can be found throughout the Terrestrial Vegetation and Fire and Fuels sections of the final environmental impact statement. This best available scientific information on fire regimes, vegetation structure, fuels treatments, fire management, and risk analysis was used to inform desired conditions, objectives, standards, and guidelines. Best available scientific information regarding effects from fire and fuels to other resources can be found in those sections. Hansen et al. (2018), as mentioned in Management Approaches (plan appendix A), is suggested as a source to be used when developing site-specific treatments. Details on existing condition are found in the Forest Assessment, Fire and Fuels, and Terrestrial Vegetation specialist reports.

Fire regimes are the best available scientific information for describing fire return intervals in various vegetation types. The final environmental impact statement Terrestrial Vegetation section discusses in detail various influences on fire regimes. Fire regime condition class was not used in the analysis. Draft plan table 10 and associated desired condition (draft plan FW-DC-VEGF-06) were deleted due to confusion regarding the data. A new table was made in the land management plan (table 15) and combined with FW-DC-FIRE-01. These data are based on fire regimes and should be more

straightforward to understand. Mean fire return interval was used to acquire data on fire deficits for the analysis. Based on this data, all of the fire regimes are well below average (burned less than expected), except for fire regime V which is at average. McHugh and Finney (2019) note that from 1984 to 2016, based on median fire return interval, the Custer Gallatin is in a fire deficit of 46,500 acres per year, on average. This information was added to the Affected Environment of the Terrestrial Vegetation and Fire and Fuels sections of the final environmental impact statement. New tables (tables 51 to 57) and text were also added in the final environmental impact statement in the Affected Environment of the Fire and Fuels section that breaks these down further into geographic areas. These tables display where the deficits are in terms of geographic area and fire regime. Historic fuel and vegetation conditions and natural range of variation are also discussed in the final environmental impact statement Fire and Fuels and Terrestrial Vegetation sections.

Discussion on the importance and effects of mixed-severity fire regimes are in the Terrestrial Vegetation and Fire and Fuels sections of the final environmental impact statement. The final environmental impact statement Terrestrial Vegetation section also provides citations of published research, as well as forest-specific fire information relating to uncharacteristic fire. The final environmental impact statement discusses open conditions in ponderosa pine, but in relation to the warm dry-pine savanna only. Data from large fires in Ashland were added to the Affected Environment of the Terrestrial Vegetation section. The fact that climate is the primary driver of fire and warm/dry conditions leads to high-severity fire is discussed in the Affected Environment of the Terrestrial Vegetation section and acknowledgement that high-severity fire occurred in the warm dry-pine savanna was added to the discussion. The fire and fuels analysis also supports evidence for fire exclusion in the drier forest types, while also noting that this is less pronounced in higher elevation, stand-replacing fire regimes, as noted in the citations provided. All of the fires being suppressed for the last century has led to many opportunities lost for natural fire to have an effect on the landscape, even if few would ever burn at the landscape scale. Less-pronounced fire exclusion effects in higher-elevation forests are discussed in the Affected Environment of the Terrestrial Vegetation section of the final environmental impact statement, and the Schoennagel et al. (2004) reference was added.

As stated in Management Approaches (plan appendix A), wildfire management strategy, including using unplanned wildfire as the primary means of achieving desired conditions, is incident-specific and dependent upon many factors and conditions. Achievement of desired conditions in cold and cool moist potential vegetation types are no different than other potential vegetation types. Based on the fire regime tables in the final environmental impact statement, there is an obvious deficit in the high-frequency fire regimes (akin to warm dry-pine savanna). FW-DC-FIRE-01 identifies the desire to allow fire to play its ecological function. FW-DC-FIRE-01 and 02 also provide the guidance for follow-up treatments and creating conditions for natural fire to take its ecological role in maintaining the ecosystem.

Compared to wildfire, prescribed fire and other fuels treatments will have less effect on ecosystems and the national forest as a whole, but can be tailored to achieve desired conditions at a local scale. There is nothing in the plan about a massive, prescribed burning program. When using the scale of the entire Custer Gallatin, wildfires will have the greatest effect, and along with prescribed fire, will be achieving desired conditions over multiple scales. Ecosystem restoration at landscape scales is analyzed in the final environmental impact statement and is supported by plan components FW-DC-FIRE-01, FW-OBJ-FIRE-02, and FW-GDL-FIRE-01. Prescribed fire will contribute to achieving desired conditions, but it is mentioned

many times in the final environmental impact statement that wildfire will be the primary contributor to achieving desired conditions and restoring fire regimes. As stated in the final environmental impact statement, "wildfires are expected to be the most significant factor influencing ecological structure, function and processes over the coming decades," and will continue to a similar degree under all alternatives, which will meet the purpose and need. And, as analyzed in the final environmental impact statement, allowing fire to play its natural role on the landscape restores, enhances, and improves wildlife habitat by creating heterogeneous landscapes of variable stand ages. After all, wildlife evolved with fire in these fire-adapted ecosystems.

Fire suppression is analyzed throughout the final environmental impact statement within many of the specific resource areas including Aquatic Ecosystems, At-Risk Plant Species, Terrestrial Vegetation, Invasive Species, Wildlife, and Designated Areas such as wilderness. Additional effects of fire suppression were added to the Affected Environment of the Fire and Fuels section.

The influence of past activities is reflected in the current condition of forest vegetation, see the final environmental impact statement Terrestrial Vegetation section. Vegetation changes after treatments was modeled to assess changes to vegetation over time. Additional discussion on effects of fuels treatments on fire severity and beneficial effects of fuels treatments relating to changing fire behavior under extreme weather were added to the Fire and Fuels section of the final environmental impact statement.

The term flexibility, as stated in the Key Indicators and Measures in the Fire and Fuels section of the final environmental impact statement, is used as "the acres of plan land allocations that influence the flexibility to carry out mechanical and prescribed fire treatments and manage unplanned natural ignitions." This means that each alternative has a different amount of plan land allocations that can dictate where the Forest Service can and cannot use certain treatments. This further affects where unplanned natural fire may be used to achieve desired conditions. The plan direction is not flexible but is conditional. A one-size-fits-all approach to wildland fire does not work because of the many variables (fuels, weather, topography, seasonality, values at risk) are not conducive to constraint within a forest plan. Plan appendix A, Management Approaches, contains information on how the Forest Service uses current and forecasted conditions to manage fire and fuels.

## **Monitoring**

**Concern:** Comments stated the Forest Service should monitor activities and treatments.

**Response:** There are no proposed specific activities in the forest plan, only objectives. Based on FW-OBJ-FIRE-01, with a minimum of 6,000 acres per year of hazardous fuels reduction, a minimum of 12,000 acres for 2 years, 30,000 acres for 5 years, 60,000 acres for 10 years, and 120,000 acres for 20 years could be expected. This does not include acres where unplanned natural wildfires will contribute to meeting desired conditions. Actual efficacy for reducing wildfire risk and severity cannot be measured before an action has taken place and can only occur if a wildfire interacts with a treatment area. Because location and timing of wildfires are difficult to predict, the Forest Service relies on post-fire data, through the Fuels Treatment Effectiveness Monitoring system, to measure treatment effectiveness (see MON-FIRE-02). Fire behavior modeling, using pre- and post-treatment fuels, can be assessed at the project level, but since it is not known where these treatments will be at this point, treatment effectiveness cannot be accurately disclosed until project-specific planning is conducted. The plan also does not state that monitoring of fuels treatments will be a proxy for wildlife. Monitoring of wildlife habitat is addressed in MON-WL-01, 02, 06, 07, 08, 09, and 10.

## No Thinning

**Concern:** Comments stated the Forest Service should not thin the forest using mechanical methods, stating that the Forest Service was replacing wildland fire with logging and burning, which do not replicate fire and cannot fireproof forests; that fuels treatments are ineffective in stopping fires under extreme weather; that treatments would reduce wildlife habitat; and that cumulative effects were not analyzed.

**Response:** Using mechanical methods for fuels treatments and restoration is a necessary tool for the Forest Service to achieve desired conditions. Prescribed fire and mechanical treatments contribute to achieving desired conditions, but it is mentioned many times in the final environmental impact statement that wildfire will be the primary contributor to achieving desired conditions and restoring fire regimes. Forestwide cumulative effects are analyzed throughout the final environmental impact statement.

Effects of thinning and subsequent wildfires under extreme fire weather are addressed in the final environmental impact statement Fire and Fuels section under Fuels Management. Beneficial effects of fuels treatments relating to changing fire behavior under extreme weather were added to the final environmental impact statement in the Fire and Fuels section.

In the final environmental impact statement, there is mention of restoring fire regimes in the Effects from Timber section, but there is no implication that mechanical treatments could replicate fire. Mechanical treatments are considered a fire surrogate, especially in the warm dry-pine savanna, and when coupled with fire treatments, could replicate fire effects to restore fire regimes. The final environmental impact statement and the revised plan do not make claims related to “fireproofing.” FW-DC-FIRE-02 identifies the need to create conditions for low-intensity fire where necessary. This does not equate to fireproofing. Fuels treatments are not designed to stop wildfires, but are conducted to reduce the intensity of fires so that they can be safely suppressed or, in the case of high-frequency, low-severity regimes, to eventually allow unplanned natural wildfires to burn within the normal range of variation.

There is no indication that fuels treatments would remove wildlife habitat because the plan components are written to enhance and restore wildlife habitat. At the project scale, analysis is conducted and best management practices are followed to ensure plan components are adhered to. In certain areas of the Custer Gallatin, it is a priority to reduce fuels (see FW-DC-FIRE-02 and FW-GDL-FIRE-02).

## Plan Components

**Concern:** Comments stated the plan should change, remove, or add fire and fuels desired conditions, goals, objectives, standards, and guidelines.

**Response:** In terms of desired conditions, a change was made to FW-DC-FIRE-01 to show the desired and existing amount and severity of wildfires in each fire regime (table 15). This replaces the old table and DC in VEGF (FW-DC-VEGF-06) that has been deleted. New tables (tables 51 to 57) and text were also added in the final environmental impact statement in the Affected Environment of the Fire and Fuels sections. These tables display where the deficits are in terms of geographic area and fire regime, enabling the forest to see where potential restoration could occur. The term “intensity” was removed from DC-FIRE-01. Frequencies are in table 159 under the definition of fire regime in the glossary. Additionally, FW-DC-FIRE-01 sets the desire to have fire—both natural and planned—across the landscape and provides

direction for fire in wilderness. Direction for fire management plans for wilderness can be found in Forest Service Manual 2320.

For FW-DC-FIRE-02, the wildland-urban interface, as developed by county wildfire protection plans, already includes municipal watersheds. The Gallatin County Wildfire Protection Plan currently includes Bozeman Creek, Hyalite Creek, Lyman Creek, and Whiskey Springs drainages. The Carbon County Wildfire Protection Plan currently includes the majority of the West Fork of Rock Creek drainage. FW-DC-FIRE-03 also minimizes impacts from fire to municipal watersheds, a highly valued asset.

In terms of goals, impacted communities are under the jurisdiction of local and State agencies, which are included in the list in FW-GO-FIRE-02. Forest Service recreationists and permittees should not be dictating how the Forest Service manages a fire, and thus, are not included in this list. See FW-GO-FIRE-01 and plan appendix A (Management Approaches) for language on working with partners. FW-GO-FIRE-01 provides direction on communicating with the public on wildfire risk and fire as an ecological process.

In terms of objectives, language was added to FW-OBJ-FIRE-01 to note that fuels objectives will contribute to FW-OBJ-VEGF-01. The fire objectives are already integrated with vegetation objectives where FW-OBJ-FIRE-01 and 02 can have fuels reduction as part of the vegetation management projects. Objectives need to be measurable and based on reasonably foreseeable budgets. FW-OBJ-FIRE-01 will contribute to desired conditions, but wildfire will be the primary means of achieving desired conditions. FW-OBJ-FIRE-02 makes it very clear that the Custer Gallatin wants to use unplanned natural ignitions to achieve and maintain desired conditions. Not all acres will be desirable, and language has been added to the Environmental Consequences of the Fire and Fuels sections of the final environmental impact statement to address this. For monitoring, MON-FIRE-04 will only count acres that achieve desired conditions.

In terms of standard FW-STD-FIRE-01, permitted stakeholders are considered a value at risk (see glossary for definition). Costs refer to the "loss" of values at risk, whether it be economic or resource based. Effects refer to fire effects to values at risk. This standard is intended to provide direction for wildfires, not projects.

In terms of guidelines, FW-GDL-FIRE-03 was changed to encompass the entire national forest: "To minimize resource damage, minimum impact suppression tactics should be used forestwide. Exceptions to this guideline may be allowed to protect human life, private property or infrastructure."

Guideline FW-GDL-FIRE-02 will not include specific tools used for fuels treatments. See plan appendix A (Management Approaches) for a non-inclusive list of potential treatment types. The suite of treatments used will be decided at the project level. However, FW-GDL-FIRE-02 does contain specific direction for reducing fuels. Removing and rearranging vegetation reduces surface, ladder, and canopy fuels. Rearranging live and dead vegetation is the fundamental part of fuel treatments, as defined in the glossary. FW-GDL-FIRE-02 applies to fuel treatments, and the Forest Service doesn't assume or plan to control vegetation conditions across the entire national forest, only where needed (see FW-DC-FIRE-02). Therefore, it is also not contradictory to FW-GDL-FIRE-01. Values at risk are defined in the glossary in the forest plan. Negative impacts, or losses, are ones that would negatively affect a value at risk due to wildland fire (for example, a structure burning down or short-term loss of wildlife habitat). Improving fire control opportunities means that the area has less fuel, and thus, fire intensity is reduced to make it easier to suppress a wildfire or to act as a holding line for prescribed fire.

The intent of FW-GDL-FIRE-01 is to use fire on the landscape to meet multiple desired conditions, meaning that it should be followed unless conditions do not permit. This makes it very clear that the national forest wants to use unplanned natural ignitions to achieve and maintain desired conditions. The constraint is on the old paradigm of fire suppression, meaning that we should be allowing fire to achieve desired conditions instead of suppressing all fires. As stated in plan appendix A (Management Approaches), wildfire management strategy is incident-specific and dependent upon many factors and conditions.

Other proposed plan components from commenters are already reflected or covered within existing fire and fuels plan components or other resource plan components (watershed, grazing, wild and scenic rivers, research natural areas, special areas, designated wilderness, and wilderness study areas). For example, timber harvest for the purposes of reducing fuel loads is prohibited in wild river segments of wild and scenic river corridors, which are most likely within wilderness. However, reduction of fuel loading is suitable within scenic and recreational river segments (see FW-SUIT-EWSR-01). Also, in response to fire and fuels analysis of grazing, a new guideline is not needed because FW-DC-GRAZ-01 promotes livestock grazing moving toward desired ecological conditions. This is also covered in plan appendix A in regard to controlling the timing, duration, and intensity of grazing to achieve and maintain desired conditions, including vegetation, where applicable.

### **Wildland-Urban Interface**

**Concern:** Comments stated the Forest Service should focus on the wildland-urban interface related to prioritizing treatments and values at risk, base priorities on county wildlife protection plans, treat more acres to reduce hazardous fuels, and work with local governments to reduce human encroachment in the wildland urban interface.

**Response:** Wildland-urban interface designation is dictated by the Healthy Forest Restoration Act 2003, which directs the forest to use community wildfire protection plans, if available. Due to the Healthy Forest Restoration Act, wildland-urban interface designations are updated more frequently than the forest plan, as they are “living” documents that counties update as necessary. Wildland-urban interface maps are not included in the forest plan nor are they classified as management areas due to the continual updating that occurs. Current wildland-urban interface maps are available from the State of Montana. As of February 14, 2020, within the Forest Service boundary, the community wildfire protection plan wildland-urban interface is 1,361,668 acres. Limitations from budget, plan land allocations, and resource concerns restrict where the Custer Gallatin can conduct treatments in the wildland-urban interface. This discussion was added to the final environmental impact statement. Based on FW-OBJ-FIRE-01, a minimum of 3,000 acres per year could be treated in the wildland-urban interface.

In terms of treatments, FW-OBJ-FIRE-01 was amended to state that fuels treatments would primarily be conducted in the wildland-urban interface. The focus on hazardous fuel treatments would occur where the values at risk are of high concern, most likely in the wildland-urban interface. Specific areas for treatment, as well as resource priorities within those areas would be identified at the project level of analysis. Language regarding the use of community wildlife protection plans for prioritizing treatments was also added to plan appendix A (Management Approaches).

As stated in the Plan Content section of the forest plan, objectives were developed based on historic and expected budget allocations. To increase treatment acres would often decrease budgets for other

programs. Six thousand acres per year is the objective for all fuels treatments, including prescribed fire and mechanical treatments. This does not refer to sizes of unplanned wildfires.

The plan addresses threat to values at risk, along with wildland-urban interface, in the plan components (FW-DC-FIRE-02 and 03, FW-STD-FIRE-01, and FW-GDL-FIRE-02) and EIS, Fire and Fuels section. FW-GO-FIRE-01 and 02 provide the basis to work with communities on addressing wildfire risk. FW-DC-FIRE-02 provides direction on fuel conditions within the wildland-urban interface and around high value resources. This addresses the need to manage lands in and around the wildland-urban interface and other areas with high value resources including government facilities. Additionally, FW-STD-FIRE-01 dictates that the forest use a risk management process. The plan allows the conditions to dictate the fire response, which is explained in plan appendix A.

The Forest Service has no authority in private land management, but strives to educate the public about wildfire risk (FW-GO-FIRE-01). The recognition that responsibility lies with the property owner is addressed under Cumulative Effects in the final environmental impact statement Fire and Fuels section. The structure ignition zone largely occurs on private lands and is the responsibility of the property owner (Reinhardt et al. 2008). Plan components under the Fire and Fuels section provide direction on managing risk and communicating with the public about wildfire risk to landowners. Additionally, the components describe the desire for natural process to function as nearly as possible.

## Forest Plan

### Plan Adjustments General

**Concern:** Comments requested the following adjustments to the revised plan: acknowledge the contribution of scenery to the economic sustainability of communities; the administrative and logistical support at the Supervisor's Office for the National Avalanche Center and the Greater Yellowstone Coordinating Committee; and the role of critical native habitats in the Greater Yellowstone Ecosystem to the forest vision statement. Keep the plan simple; a complicated plan can be hard for the general public to make sense of rules and regulations. Clarify the designated area table calculations. Editorial errors were noted.

**Response:** The forestwide Distinctive Roles and Contributions has added scenery as a contributor to the economic sustainability of communities. The administrative and logistical support for both the National Avalanche Center and the Greater Yellowstone Coordinating Committee are currently located at the Forest Supervisor's Office, but the locations could change with personnel changes. No plan changes were made based on this comment. Critical native habitats in the Greater Yellowstone Ecosystem has been added to the forest vision statement. The plan will be implemented by Forest Service staff as they undertake new projects. As stated in the plan, some designations overlap, so total percentages of all designations in a geographic area may total over 100 percent. Editorial errors were corrected.

### Plan Land Allocations New

**Concern:** Comments expressed support for plan land allocations and designations such as watershed, recreation, key linkage areas, wildlife management areas, and wild and scenic rivers. Comments requested a number of unique plan land allocations or designations for different areas, including:

a wildlife management area or a wildlife refuge (versus backcountry area) for Porcupine-Buffalo Horn area to provide stronger wildlife protection

a wildlife management area (versus backcountry area) for the Lionhead area to provide stronger wildlife protection

a special management area for the Porcupine-Buffalo Area

a special management area for the Hyalite Watershed area to protect Bozeman's water source

a special designation to protect unique plants in the alpine areas near Crazy Peak in the Crazy Mountains

National conservation areas, national recreation areas, and national protection areas to protect lands while allowing public use

corridors through wilderness or recommended wilderness to allow mountain bike use on the Gallatin Crest

**Response:** In the preferred alternative, both the Porcupine-Buffalo Horn area and the Lionhead area are backcountry areas, the Hyalite watershed is a recreation emphasis area and the high peaks of the Crazy Mountains are either recommended wilderness area or backcountry area. These plan land allocations in conjunction with forestwide plan direction provide for protection of wildlife, rare plants, and municipal water.

A forest supervisor does not have the authority to create national conservation areas, national recreation areas, and national protection areas and these designations are beyond the scope of a land management plan. Further, national conservation areas and national protection areas are used in the Department of the Interior, not the Department of Agriculture.

If Congress were to release the wilderness study area, alternative E would provide a motorized/mechanized semi-primitive motorized corridor on the Gallatin Crest. The preferred alternative does not include this motorized/mechanized semi-primitive motorized corridor on the Gallatin Crest.

### Plan Components Desired Conditions

**Concern.** Comment stated that the plan does not describe desired conditions in sufficient measurable detail or include measurable, linked specific standards and objectives to permit successful plan implementation. Comment asked how desired conditions are prioritized, and suggested that desired conditions be written as desired future dynamics to be consistent with the best available scientific information.

**Response:** While some desired conditions are quantitative and others are more qualitative, the 2012 Planning Rule does not require that the process to measure every desired condition be explained in the revised plan. The 2012 Planning Rule requires that projects do not foreclose opportunity over the long term to meet any desired conditions. The 2012 Planning Rule does not require the full suite of plan components for every topic or plan land allocation. As a whole, the combined plan components must meet the requirements of the Planning Rule. One or more desired conditions is sufficient for a topic or plan land allocation when the application of plan components in other topics is adequate to meet the



Planning Rule. Emphasis for Forest Service management may shift over time; regardless, future projects must be consistent with the plan direction. The forested vegetation desired conditions are expressed as a range, which, in effect, is describing desired future dynamics.

### Plan Components Objectives

**Concern:** Comments related to plan objectives requested additional explanation of how the objectives were derived; objectives that are more place-based and help set project priorities; that objectives tie to specific desired conditions; and additional objectives for items such as new or updated travel plans. Comment disagreed with basing objectives on current or short-term budget projections, and stated objectives should be linked to reasonably expected congressional appropriations or other funding sources. Comment expressed preferences for objectives of certain alternatives, or requested higher objectives than proposed in any alternative, for instance a larger timber objective or higher projected timber sale quantity.

**Response:** Objectives should be based on reasonably foreseeable budgets (36 Code of Federal Regulations 219.7(e)(1)(ii)). Objectives must be attainable within the fiscal capability of the unit, determined through a trend analysis of the recent past budget obligations for the unit (3 to 5 years). Other plan content may identify how the Forest Service would respond to enhanced resources or other efficiencies that would facilitate attaining desired conditions (FSH 1909.22.11). Objectives were based on the average amount of work accomplished with the Forest Service budget over the years 2014 to 2017. The objective for additional recreation facilities is dependent on competitive capital improvement project funds and external funds.

Comments on the scoping document requested that objectives for many resources be increased, such as weed treatment or trail maintenance. Given a constant budget, if some objectives increase, then other objectives would need to decrease. The alternatives vary the objectives, consistent with the theme of that alternative, while maintaining constant budget assumptions across all alternatives. Objectives are tied to other aspects of a given alternative. For instance, alternative D has the highest acreage of recommended wilderness area, and consequently, the highest amount of land in the primitive recreation opportunity spectrum. Therefore, alternative D objectives focus on eliminating identified unauthorized motorized travel incursions in the primitive recreation opportunity spectrum rather than the semi-primitive non-motorized recreation opportunity spectrum. Alternative D then has lower objectives for other topics, such as maintenance of high clearance roads.

Objectives are expected minimum achievements and could be exceeded with additional funding, additional authorities, or partnership opportunities. Objectives are not written to imply a list of specific projects, or planning to plan (for example, develop additional plans or conduct surveys) as this is not the purpose of the land management plan, which is to provide a framework for integrated resource management and for guiding project and activity decision making. The locations of projects associated with a particular objective would be determined as part of Forest Service work planning.

The projected timber sale quantity (PTSQ), like objectives reflects budgets, which is the main constraint. As discussed in the timber section of the environmental impact statement, the projected wood sale quantity (PWSQ) is the estimated output of timber and all other wood products (such as fuelwood, firewood, or biomass) expected to be sold during the planning period for any purpose (except salvage harvest or sanitation harvest) on all lands on the Custer Gallatin. The projected timber sale quantity (PTSQ) is the portion of the projected wood sale quantity that meets applicable utilization standards (the

sawlog portion of offered timber sales). As required by the Planning Rule and handbook direction, the projected timber sale quantity and projected wood sale quantity reflect currently foreseeable budget levels. The sale quantities are also estimated without a budget constraint to assess sustainable volumes under potentially higher budgets. In the revised plan alternatives, the projected timber sale quantity and projected wood sale quantity are captured in management objectives FW-OBJ-TIM-01 and FW-OBJ-TIM-02, respectively.

Plan objectives of the preferred alternative reflect a mix of resource enhancement, moving toward forested vegetation desired conditions; timber and wood products volume; hazardous fuel treatment; road, trail, and facility maintenance; and new recreation facilities.

A number of objectives have been modified to more clearly state their intent, including FW-OBJ-WTR-01, FW-OBJ-FIRE-02, FW-OBJ-CR-02, FW-OBJ-ROSP-01 and FW-OBJ-ROSSPNM-01, FW-OBJ-ROSRN-01.

### Plan Components Standards and Guidelines

**Concern:** Comment requested the Forest Service establish more standards and discouraged adopting guidelines, stating that standards are generally understood as legally enforceable, binding, and mandatory requirements, while guidelines are merely discretionary. Comment stated the draft plan is not explicit about the purpose of most guidelines. Comment requested that any changes in standards or guidelines in the plan be placed in an appendix table for reference. Each change should be shown, rationale provided, and its location in the document.

**Response:** The Forest Service has carefully considered when to develop a standard and when to develop a guideline. Guidelines are not discretionary. Per the 2012 Planning Rule, a guideline is a constraint on project and activity decision making that allows for departure from its terms, so long as the purpose of the guidelines is met. Guidelines have been revised where necessary to include a statement of intent.

As stated in final environmental impact statement section 2.5.1, Changes Between Draft and Final, a number of changes in the wording of plan components occurred between the draft plan (March 2019) and the plan. Changes in the plan components occurred for various reasons, including to improve clarity, rectify errors and in response to comments. Plan components in the plan no longer vary by alternative as was portrayed in the draft forest plan, although these variations are displayed in chapter 2 of the final environmental impact statement. Comparison of the draft plan (March 2019) with the plan is necessary for a full understanding of all modifications. Comparison of the Custer forest plan and the Gallatin forest plan with the plan is necessary for a full understanding of all changes between the existing forest plans and the revised plan.

### Plan Components Suitability

**Concern:** Comments related to suitability include:

- requests for the plan to list a number of additional activities as suitable uses; some of these requests concerned common uses of the national forest such as foot travel, rock climbing, swimming, wading, and grazing;
- requests for the plan to use standards instead of suitability statements, or use both standards and suitability statements to provide more protection;
- a concern that a statement of suitability would be taken as a promise; and

- a concern that the draft plan fails to disclose objective criteria by which the Forest Service determined suitability as per the National Forest Management Act and planning regulations.

**Response:** The identification of suitability of lands is not required for every resource or activity. If suitability of lands is identified for a resource or activity, such identification does not need to be made for every acre of the plan area (36 CFR 219.7(e)(1)(v)). The identification of suitability or nonsuitability of lands is based on the desired condition for those lands and the inherent capability of the land to support the use. The Planning Rule requires that every plan identify the lands that are not suitable for timber production. Numerous sections of chapter 3 of the final environmental impact statement provide analysis of the effects of suitability plan components, for instance, the environmental consequences of recommended wilderness, water resources, at-risk plants, invasive species, and wildlife.

It is not necessary to have both a standard and a suitability plan component to address the same use. If a plan identifies certain lands as not suitable for a use, then that use or activity may not be authorized (36 CFR 219.15 and FSH 1909.12 chapter 22.15). A plan is direction for the Forest Service and suitability plan components are an appropriate component to use when a plan is guiding what activities a national forest can or cannot authorize the public to do.

### Plan Geographic Scope

**Concern:** Concern is expressed that the plan covers too broad of a geographic area.

**Response:** The Custer and Gallatin National Forests have been combined since 2014, and the configuration of the national forest is beyond the scope of plan revision. While combination of the two forests has resulted in a large and diverse forest, the ability to plan for individual geographic areas allows the Forest Service to customize the plan direction to specific areas, where needed. In some cases, the geographic areas mirror ranger district boundaries (Ashland and Sioux), in other cases, geographic areas delineate mountain ranges (such as the Pryor Mountains).

### Plan Geographic Area Descriptions

**Concern:** Commenters stated some geographic areas are too large, or proposed to orient the plan around ranger districts. Commenters questioned how lands with no additional designation or plan land allocation would be managed. Commenters stated the Forest Service should provide more meaningful, consistent, detailed discussion of the areas in the plan to facilitate public review and understanding. Commenters requested additional information in the geographic area descriptions related to physical characteristics, cultural resources, wildlife and wildlife connectivity, rare plants, recreation, climate change, and maps.

**Response:** As stated in the Introduction to chapter 3 of the land management plan, the geographic areas define areas with unique characteristics and conditions, and that people associate with the Custer Gallatin National Forest. The geographic areas were determined using the distinct land masses of the national forest coupled with a sense of place meaningful to the public. Identifying direction for geographic areas provides a means for describing conditions and trends at a more local scale than forestwide, if appropriate. Lands that have no additional designation or plan land allocation would be managed with forestwide and geographic area direction.

The purpose of the Distinctive Roles and Contributions sections of the revised plan are to describe the Custer Gallatin's distinctive roles and contribution within the broader landscape. This description is not

meant to be exhaustive, and can provide focus or context, and aid in developing plan components. This section does not provide information regarding how resources will be managed. That information is the purpose of plan components. Requested changes were not made when the suggestion was more detailed than envisioned for this section.

Desired conditions describe the aspirations or visions of what the Custer Gallatin, or portions of the national forest, should look like in the future. Because desired conditions are found throughout the revised plan, the Custer Gallatin National Forest developed the vision statements to provide a short, succinct vision both forestwide and for each geographic area.

In response to comments and objections, the following changes were made to the Distinctive Roles and Contributions sections or to the Vision Statements:

- The Slim Buttes and South Cave Hills have been added as places of spiritual, ceremonial, and traditional cultural importance to Tribes to the Vision Statement for the Sioux Geographic Area.
- Information shared by the Crow about the importance of the Crazy Mountains has been added to the Distinctive Roles and Contributions, Cultural and Historical Characteristics for the Bridger, Bangtail and Crazy Mountains Geographic Area.
- Wildlife connectivity has been added to the Vision Statement for the Bridger, Bangtail, and Crazy Mountains Geographic Area.
- Minor changes regarding wildlife have been added to the Distinctive Roles and Contributions for the Absaroka Beartooth Mountains Geographic Area and the Madison, Henrys Lake, and Gallatin Mountains Geographic Area.

### **Plan Integration**

**Concern:** Comment requested that the revised plan incorporate direction from management plans where the intention is for the plan to adopt the management guidance; including the Gallatin and Custer National Forest Noxious Weed Management Direction, Northern Rockies Lynx Management Direction and Interagency Bison Management Plan, the Continental Divide National Scenic Trail Comprehensive Plan, and the Nez Perce National Historic Trail Plan. Comment also stated the plan failed to fully explain how previous forestwide decisions, including those made under a National Environmental Protection Act process, would integrate with the revised plan.

**Response:** The requirement for the revised plan to provide an integrated set of plan components is not the same as the plan providing one set of all applicable planning documents. It is not necessary to incorporate the entirety of these plans in the land management plan. Integration of previous forestwide decisions is explained in final environmental impact statement chapter 1, Project and Activity Consistency with the Plan.

### **Plan Insufficient**

**Concern:** Comments expressed concern that the revised plan is not sufficient or questioned aspects of the plan related to the lack of specificity of plan components and management approaches, the planning horizon, the budget basis of the plan, and the relationship between the revised plan and higher-level plans.

**Response:** The plan and environmental impact statement are being completed under the 2012 Planning Rule. The Forest Service is required to follow all of the direction it provides as well as all existing laws, regulations, and policies relating to the management of National Forest System lands. The relationship of the revised plan to other strategic guidance is explained in chapter 1 of the plan, Forest Service Planning. The 2012 Planning Rule does not require land management plans to include projected budgets. The National Forest Management Act requires national forests to develop land management plans, and to revise them every 10 to 15 years. While the planning time frame is approximately 15 years, the Forest Service recognizes it may take longer to achieve the plan's desired conditions.

While some desired conditions are quantitative and others are more qualitative, it is not necessary to specify how each desired condition is to be measured in the plan component. Guidelines include intent statements, the budget basis for the plan objectives is explained in final environmental impact statement chapter 2, Alternatives, and the plan includes multiple standards. Management approaches are not written in directive language while providing potential guidance to implement plan components. Identifying specific mitigation measures at the project level allows for consideration of site-specific conditions as well as incorporating new scientific information as it becomes available. Terms such as "short term" and "long term" are variable, depending on the activity and for different species, and it is appropriate to identify these terms at the project level.

#### **Designated Areas Nature, Purpose, Definitions**

**Concern** Comment requested that for established wilderness, wild and scenic rivers, and national trails, wilderness character, outstandingly remarkable values, and nature and purposes must be clearly defined and presented in the draft environmental impact statement to allow for an adequate effects analysis. The plan needs to be supplemented to provide for the integrated management of congressionally designated areas and to clarify and strengthen the direction. Plan components must support maintaining or achieving wilderness character, outstandingly remarkable values, and nature and purposes of designated areas.

Comment requested definitions of Continental Divide National Scenic Trail; recreation opportunity spectrum; national scenic and historic trails; and wilderness character, recreational emphasis area, and backcountry area.

**Response:** Revised plan components support maintaining or achieving wilderness character, outstandingly remarkable values, and the nature and purposes of designated areas. The final environmental impact statement introduces the existing management and character of existing allocations such as designated wilderness and wild and scenic rivers, to the extent that a reader will understand agency management of those areas and how plan components will supplement local guidance.

Continental Divide National Scenic Trail, recreation opportunity spectrum, national scenic and historic trails, and wilderness character are either defined in the glossary or described in the respective sections of the revised plan. Recreational emphasis area and backcountry area are described in the respective sections of the revised plan.

## Species of Conservation Concern Plan Components and Analysis

**Concern:** Comment stated the draft plan does not provide sufficient direction for species of conservation concern, lacks fine-filter (species-specific) direction for protecting or managing habitat of most species of conservation concern, and the environmental impact statement contained inadequate consideration of impacts to these species from different alternatives.

**Response:** As disclosed in the environmental impact statement (Chapter 3, Ecosystems, At-Risk Plant Species and Wildlife Diversity, Species of Conservation Concern – Introductions) species of conservation concern are included in “At-Risk” species that must be addressed in land management plans. The plan must include components to maintain or restore the ecological integrity and diversity of ecosystems and habitats throughout the plan area (36 CFR 219.9(a)) and provide the conditions necessary to maintain the persistence of species of conservation concern (36 CFR 219.9(b)). The plan does not include plan components for species of conservation concern as a group, because direction for species of conservation concern is included in the Planning Rule itself and associated directives for plan revision (FSH 1909.12; section 23.13 – Species-specific Plan Components for At-risk Species). Plan components should not merely repeat existing direction from laws, regulations, or directives (FSH 1909.12; section 22.1).

The Planning Rule adopts a complementary ecosystem- and species-specific approach to maintaining the persistence of native species in the plan area. Compliance with the ecosystem requirements is intended to provide the ecological conditions to both maintain the diversity of plant and animal communities and support the persistence of most native species in the plan area. If these plan components are insufficient to provide such ecological conditions, then additional species-specific plan components will be included in the plan. Appendix C of the environmental impact statement shows the plan components specific to ecological conditions that support long-term persistence of species of conservation concern.

The revised plan includes a comprehensive suite of ecosystem components to maintain or restore ecological integrity of habitats (FW-DC/GO/STD/GDL-SOIL/WTR/RMZ/VEGF/VEGNF/FIRE/INV/WL), and includes additional species-specific plan components where needed to provide further protective measures to ensure continued persistence of species of conservation concern (FW-DC/GO/STD/GDL-PRISK/WLSG/WLPD). Potential impacts to species of conservation concern from different alternatives were disclosed in the environmental impact statement (Chapter 3, Ecosystems, Watershed, Aquatic Species and Habitat; At-Risk Plant Species; and Wildlife: Greater Sage-Grouse and White-tailed Prairie Dog; Environmental Consequences).

## Infrastructure

### Airfields

**Concern:** Comments varied between requests for the plan to allow airfields and access by aircraft to those that stated airfields are not a suitable use and should not be allowed. Various plan components were suggested, some to provide additional objectives, standards, and guidelines to accompany the three draft plan airfield plan components. Some examples of suggested plan component modifications or additions included clarifying that helicopter use is appropriate for search and rescue, restrictions on aerial sightseeing tours, specific airfield design and maintenance direction, and stand-alone airfield desired conditions to guide future establishment of national forest access by aircraft. Comment also

stated that the environmental impact statement did not provide sufficient analysis of environmental impact of airfields, and recommended analysis language.

**Response:** Public airfields are an appropriate use of National Forest System lands, when consistent with plan land allocation desired conditions. The preferred alternative allows airfields in certain locations, subject to permitting by the Forest Service. Analysis of impacts of a specific airfield proposal would occur at the project level. Search and rescue helicopter operations are covered by policy and do not need to be repeated in land management plans. The Federal Aviation Administration oversees airspace. Thus, the revised plan can only address landing and take-off of aircraft on National Forest System lands; the Forest Service cannot regulate sightseeing tours over the national forest.

Some comments find the airfield section insufficient because it does not include airfield-specific desired conditions. However, the integrated plan content, as a whole, complies with the Planning Rule and adequately provides guidance for aircraft use and access on the Custer Gallatin. The Roads and Trails Introduction specifies airfields as part of the transportation system. For added clarification, the Introduction to the AIRFIELDS section was modified to refer to the desired conditions under the Roads and Trails and the General Recreation sections. Plan components for one topic can be nested under desired conditions of another topic. In addition, guidelines FW-GDL-RT-03, 06, and 10 specifically apply to airfields. Because public recreational airfields are considered part of the transportation system, plan guidance for the transportation system or infrastructure, such as FW-DC-RT-01 and 02 and FW-GDL-RT-11, also apply to new airfield proposals. Standard FW-STD-AIRFIELDS-02 was also modified in response to objections to broaden the partnership direction for potential new recreational airfields, and the standard was clarified to apply to designated aircraft landing and take-off locations.

### **Environmental Impact Statement Analysis**

**Concern:** Comment questioned the draft environmental impact statement analysis of roads and their impacts. Comment stated the draft environmental impact statement failed to include information related to cost or funding sources of maintaining the existing road system or addressing deferred maintenance backlogs, the economic and environmental impacts of the road maintenance, reconstruction, and improperly (long-term) stored roads, and the effects of water transport during storm or snowmelt events. Comment also contended the draft environmental impact statement failed to demonstrate that it implemented or applied the Travel Management Rule/Executive Orders minimization criteria in the route designation process, consistent with the objective of minimizing impacts. In addition, comment requested an alternative to reduce the national forest's road system to the point there would be no annual deferred maintenance, which would minimize ongoing watershed damage.

**Response:** The final environmental impact statement discusses the effects of roads on various resources, where applicable, throughout chapter 3, such as the Soils; Watershed, Aquatic Species and Habitat, and Riparian Ecosystems; Terrestrial Vegetation; and Wildlife sections. The Watershed, Aquatic Species and Habitat, and Riparian Ecosystems environmental consequences section of the final environmental impact statement has a revised discussion of the effectiveness of Forest Service best management practices.

The revised plan includes direction to guide management of the transportation system to avoid, reduce, or mitigate road-related risks, such as FW-DC-RT-01; FW-STD-RT-01 through 05; FW-GDL-RT-03 through 11; FW-GDL-SOIL-02 and 03; FW-GDL-RMZ-03; FW-OBJ-CWN-01; and FW-GDL-CWN-01.

The final environmental impact statement discusses road maintenance funding sources in the Infrastructure Affected Environment, Transportation, Roads section and the revised plan includes objectives, within the fiscal capability of the unit, to address maintenance needs over the life of the revised plan (FW-OBJ-RT-01 and 02). Additional work may be accomplished through added appropriated funds or shared stewardship opportunities.

An alternative to reduce the road system to the point of no deferred maintenance is not a reasonable alternative to consider. The forest transportation network provides critical infrastructure for the administration, public enjoyment, and protection of National Forest System lands. Some maintenance is not needed every year. See response to Infrastructure Maintenance regarding road maintenance scheduling.

Subparts B and C of the Travel Management Rule and the associated Executive Order 11644, Use of Off-Road Vehicles on the Public Lands, as amended by Executive Order 11989, apply to site-specific designations of motor vehicle use. The revised plan does not make any site-specific route designations or prohibitions. Plan suitability alone, does not change current travel plan decisions and public use must continue to adhere to the current motor vehicle use and over-snow vehicle use maps unless site-specific National Environmental Policy Act decisions are made.

However, the suitability plan components, together with the suite of desired conditions, standards, and guidelines that provide for ecological integrity and sustainable recreation provide the guidance that will be used when considering the effects on (with the objective of minimizing) forest resources and recreation conflicts as described at 36 CFR 212.55.

## **Maintenance**

**Concern:** Comment requested increasing road and trail maintenance, while other comment requested the Custer Gallatin discontinue trail maintenance.

**Response:** The revised plan includes objectives FW-OBJ-RT-01 through 04 to address road and trail maintenance, reflecting the fiscal capability of the unit.

Maintenance is prioritized annually to respond to emergencies, weather damage, user concerns, planned repairs, routine preventions, and so on. This will vary each year. In addition to appropriated funds, roads may also be maintained using funds that are collected from the use of roads by national forest timber sales, private timber sales, private mining activities, subdivision cost sharing, snowplowing, grants, and so on. Additional maintenance will occur as funding allows with additional appropriated funds, State grants, partnerships with user groups, and volunteers.

It is important to note that some transportation maintenance is not needed every year, rather it is cyclical in nature. Roadside brushing on this national forest may occur every 5 to 10 years. Blading of low-use roads may occur every 2 or 3 years or less. High-use roads may receive a blading two or three times per year. Trails through fire damaged areas may receive logging-out and drainage cleaning twice a year while high country trails receive the same work every 2 years. Both road and trail systems are constantly monitored by Custer Gallatin personnel and public users allowing for critical maintenance work to be addressed on a responsive basis.



Maintaining infrastructure is integral with owning infrastructure. Maintenance is necessary to preserve the integrity and investment for which it was constructed, to reduce or eliminate health and safety issues, and to minimize impacts to adjacent resources.

### Monitoring

**Concern:** Comments requested additional infrastructure monitoring questions to address the miles or percentages of unneeded roads that were decommissioned, “implementation of the minimum road system,” and miles of road maintenance or reconstruction completed that improved aquatic and watershed resource conditions.

**Response:** The monitoring program includes one or more monitoring questions addressing the eight criteria described at 36 CFR 212.12(a)(5). Monitoring questions such as MON-WTR-01, FW-DC-WLGB-01, MON-Infrastructure-01, and MON-REC-02 are sufficient to meet the monitoring needs related to the Custer Gallatin National Forest transportation system infrastructure. See response to C/R 669 for additional information related to the national forest’s work to comply with the Travel Management Rule.

### Plan Components

**Concern:** Comments requested additions or modifications to desired conditions, goals, objectives, standards, and guidelines regarding roads, trails, and facilities. Suggestions included route density thresholds or caps across the Custer Gallatin, standards requiring a certain level of road decommissioning, prioritization of road maintenance, closure of temporary roads, progress toward a “minimum road system,” to mandate culvert removal, to address long-term funding expectations, potential climate change effects, landscape connectivity, and recreation opportunity settings. Comment requested changing a number of guidelines to standards. In addition, comment requested specific terms in the infrastructure plan components be defined.

Comments also requested additional objectives or higher objectives such as objectives to track and remove temporary roads and unauthorized motorized travel routes, to decommission unneeded roads or to gate or berm existing roads rather than decommission them, and to identify and implement the “minimum road system.”

**Response:** Requests are addressed within the current set of integrated plan components throughout the revised plan. For example, FW-DC-RECDEV-09 addresses climate change-related effects; FW-OBJ-WTR-02 addresses stream crossing structures; FW-DC-WL-05 and 07, and FW-GDL-VEGF-02 address habitat connectivity; and the Recreation Opportunity Spectrum plan components (FW-DC-ROS) address the development scale of new recreation facilities. A comment also suggested there should a road network desired condition similar to that provided for the trail network at FW-DC-RT-05. However, substantial increases or decreases in the road network are not part of the proposed and possible actions over the life of this plan. As disclosed in the Soils; Watershed, Aquatic Species and Habitat, and Riparian Ecosystems; Terrestrial Vegetation; and Wildlife sections of the final environmental impact statement, the plan components are sufficient to address infrastructure-related resource risks and comply with the sustainability requirements of the Planning Rule. Therefore, most suggested plan components were not incorporated.

Specific to route density thresholds, there appears to be a misunderstanding that the Custer and Gallatin travel plans established road density caps. Commenter who requested to cap motorized route densities

based on the current Custer and Gallatin travel plans appears to assume standardized road density thresholds were used in travel plan analyses. However, the motorized and non-motorized road and trail networks were adopted following site-specific resource analysis—some using densities to model their impacts and others not. Establishing forestwide plan standards based on these site-specific decisions as a one-size-fits-all resources approach is not supported in scientific literature or information. All resource management plans, including travel plans, will be evaluated for consistency with the revised plan and updated as needed.

There seems to be a general concern that temporary roads have been or will be placed on the landscape with little regard to planning, construction, or removal. Temporary roads are typically analyzed and authorized as part of a decision to manage vegetation, mine minerals, or mining reclamation, and are for single purpose use and subsequently removed from use and restored. This is all controlled and part of a specific project decision and can be highly variable in nature. If a temporary road was to be left on the landscape, site-specific National Environmental Policy Act decision making supported by travel analysis would be needed to become a part of the permanent and minimum road system. The revised plan includes standards and guidelines to address resource risks associated with temporary roads such as FW-GDL-RT-02, 03, and 05, and those found in the vegetation, soils, riparian, wildlife, and recreation sections of the plan.

Some comments suggested the Custer Gallatin National Forest has not complied with the Travel Management Rule requirements at 36 CFR 212.5(b) to identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. The Custer and Gallatin National Forests completed comprehensive travel management planning in 2009. Consistent with the Travel Planning Rule, including subpart A, the analyses associated with these planning processes identified an appropriately sized system of roads and trails balanced with protecting resources, providing for public access, and retaining administrative access for national forest projects. The Custer and Gallatin travel plans, and other subsequent project decisions have brought forward most of the opportunities identified in those analyses for route designations, road decommissioning, and other transportation system needs. Since approval of the travel plans, 2,000 miles of road have been decommissioned, with nearly all the roads identified as unneeded. As such, additional standards and guidelines are not necessary and the objective included in the draft plan (FW-OBJ-RT-03) to remove remaining not likely needed roads, has been deleted from the revised plan. However, this does not preclude future project activity to address road-related resource effects.

Together with the assessment, the travel analysis report was used to inform the plan components such as the objectives for miles of roads and trails to be maintained (FW-OBJ-RT-01 and 02). Objectives such as these provide measurable actions the Custer Gallatin may take over the life of the plan per the findings in the travel analysis report consistent with subpart A of the Travel Management Rule.

As per suggested additional objectives to address unauthorized routes, there are objectives to remove unauthorized routes in the primitive and in the semi primitive non-motorized recreation opportunity spectrum settings (FW-OBJ-ROSP-01 and FW-OBJ-ROSSPNM-01). The Forest Service considered whether to add a more general objective that speaks to removal of unauthorized roads and trails as they arise and did not include one because objectives need to be measurable and the number of removals is unpredictable. A definition of "hydrologically stable condition" has been added to the glossary as suggested. Suggestions for plan component changes were not adopted when the revised plan already

sufficiently addressed or when the suggestions were not consistent with regulatory or handbook definitions for land management plan content.

### Road Network

**Concern:** A range of comments about the road system requested no new roads, more road decommissioning, and reducing road density. Other comments suggested increasing the number of roads for public and administrative use, including opening previously closed roads.

**Response:** The Custer and Gallatin National Forests completed comprehensive travel management planning in 2009. The analyses associated with these planning processes identified an appropriately sized system of roads and trails balanced with protecting resources, providing for public access, and retaining administrative access for national forest projects. Broad changes in land management plan suitability for motorized route or area designations were not identified as part of the need to change during the revision effort.

The revised plan does not include site-specific road closures, nor would the plan prohibit new road construction or motor vehicle designations except in areas where those activities are identified as not suitable, such as recommended wilderness. Access to the Custer Gallatin is routinely being resolved, and will continue to be resolved under the revised plan. The Gallatin Travel Plan identifies opportunities for additional or improved access that, together with other future changes to both travel plans may occur during site-specific decision-making consistent with the revised land management plan.

### Trail Network

**Concern:** Comments requested keeping current trails open and adding more trails, including some specific suggested routes. Other comment requested that no new trails be constructed, or that trail-less areas remain trail-less. Comments requested the Forest Service address user-created non-system trails, and in some areas, freeze the overall trail density, and where possible, remove redundant trails.

**Response:** Broad changes in trail suitability were not identified in the need to change the 1986/1987 plans. The plan decision does not include site-specific route locations or designation decisions, but will guide future decision-making regarding new trail opportunities, non-system trails, or any needs to remove redundant trails. After plan approval, the travel plans will be reviewed for consistency with the revised plan and updated through site-specific National Environmental Policy Act decision-making as needed to address revised plan land allocation suitability.

## Invasives

### Cooperation

**Concern:** Commenters would like the Custer Gallatin National Forest to work cooperatively with other weed control groups.

**Response:** The Custer Gallatin works with numerous State, county, and private entities in weed management (FW-GO-INV-03 and 04). The national forest's goals are to develop and maintain agreements and memoranda of understanding with other Federal, State, or county agencies; Tribes; non-governmental organizations; and other partner organizations address invasive species issues; foster collaborative efforts, such as, "cooperative weed management areas," "cooperative invasive species

management areas,” or similar collaborative partnerships support invasive species management across the landscape; and coordinate (internally and externally) invasive species management, awareness, and education to improve invasive species awareness. The Custer Gallatin will also seek opportunities for cooperators, organizations, and members of the public to adopt areas on the national forest for invasive species management. This would include survey, inventory, monitoring, and treatment.

### Effects in Wilderness/Recommended Wilderness

**Concern:** Commenters are concerned about introduction and spread of non-native and invasive plants that can degrade natural conditions and be difficult to control, associated with recommended wilderness designations in alternative D, and would like to more acknowledgement of invasive species effects.

**Response:** The final environmental impact statement Invasive Species section describes the amount of acres infested, by geographic area, and the effects from access and recreation management at the forest level for each alternative. This includes effects from motorized transport along designated routes, and unauthorized cross-country travel. The Pryor Mountains Geographic Area revised plan components speak to protections to sensitive plants for management actions, integrated pest management, and protection measures for sensitive plants in weed management: PR-STD-VEGNF-01, PR-GO-VEGNF-01, PR-GO-VEGNF-03, PR-DC-VGNF-01 and 02. In addition, forestwide plan components outlined in the invasive species section contribute to PR-GO-VEGNF-01, 02, and 03. The final environmental impact statement has added to the Effects of Plan Land Allocations for Designated Wilderness section: “IPM [integrated pest management] methods would be modified by restrictions on activities within designated wilderness.”

### Effects of Management Activities

**Concern:** Comment requested the land management plan environmental impact statement disclose the direct, indirect, and cumulative effects of management activities (such as road uses, construction, temporary roads, tree removal, and prescribed burns) on weed introduction, spread and persistence and on native plant communities. Comment requested an alternative that eliminates prescribed fire in areas that have noxious weeds present. Comment asked what weed treatment methods will be used and what noxious weeds are currently and historically found on the Custer Gallatin. Comment objected to standard FW-STD-INV-01, stating it is a project design criterion, not a constraint on management. Comment requested a list of best available scientific information used in preparation of the 2005 and 2006 weed management environmental analysis decisions.

**Response:** At the land management plan level, the effects of vegetation management and timber harvest, fire and fuels management, and recreation management are addressed at the broad scale. Cumulative effects are addressed across administrative boundaries. No specific projects are proposed at the plan level, and methods, as well as direct, indirect, and cumulative effects would be addressed in project-specific planning documents. The effects of management activities on invasive species are in the Invasive Species section of the final environmental impact statement. In addition, both the Terrestrial Vegetation and Species at Risk sections of the final environmental impact statement describe effects from invasive species management. These sections also describe the effects of other management activities on native plant communities and species at risk. The Final Invasive Plants Assessment Report also articulates management activities and how they relate to invasive species spread. The revised plan Invasive Species section addresses best management practices and mitigation measures in FW-STD-INV-01, 02, 03, and 04. Additional analysis can be found in the Custer National Forest Noxious Weed

Management Environmental Impact Statement and Record of Decision (2006) and the Gallatin National Forest Noxious and Invasive Weed Treatment Project Environmental Impact Statement and Record of Decision (2005).

An alternative to eliminate prescribed fire in units that have noxious weeds present on roads within logging units is not a plan level decision. Site specific analysis is conducted at the project level. Final environmental impact statement section 3.9, Invasive Species, discusses the relationship between fire treatments (both wildfire and planned ignitions) and invasive species introduction, spread, establishment, and persistence.

In addition, the environmental impact statement refers to applicable weed management plans and associated environmental impact statements for treatment details (Custer National Forest Noxious Weed Management Environmental Impact Statement and Record of Decision (2006) and the Gallatin National Forest Noxious and Invasive Weed Treatment Project Environmental Impact Statement and Record of Decision (2005)). Refer to those documents for the science used. The Invasive Plant Assessment Report addresses the increase in noxious weed acres. "Some of the increase is due to an increase in species listed as noxious by the state. In 2006 there were 27 State-listed weeds; in 2016 there are 33 noxious species plus 5 regulated species. Some of the increase is due to a revised inventory that covered more land, and some of the increase is due to more extensive infestations."

Determining risk and treatment prioritization is addressed in revised plan appendix A, Management Approaches, in the Invasive Species section. An integrated pest management approach will be implemented within wilderness areas. Areas of special concern (for example, wilderness, research natural areas, big game winter ranges, and adjacent boundaries or access with national parks), riparian corridors, or sensitive plant populations where there is a high threat to species of concern, are a high management priority (appendix B of the Final Invasive Plants Report Assessment). Treatment priority rating system and the decision tree for new weed locations (Tables 3 and 6, respectively; Record of Decision Gallatin Noxious and Invasive Weed Treatment Project (2005)) currently guide management decisions. See the Soils section, Effects of Revised Plan Alternatives for a discussion of the relationship between noxious weeds or other, non-native, undesirable plant species and soils.

Draft plan standard FW-STD-INV-01 has been omitted as it repeated policy; this policy is now referenced in the Invasive Species introduction.

### **Forage**

**Concern:** Commenters are concerned about noxious and invasive plants resulting in loss of native forage for elk and other species and that prioritization of weed treatments should occur with consideration for elk and other wildlife habitat. It is also encouraged that the weed management program use an integrated pest management approach.

**Response:** It is policy in FSM 2900 for program managers to implement an integrated pest management approach. Areas of special concern (such as wilderness, research natural areas, big game winter ranges, and adjacent boundaries or access with national parks), riparian corridors, or sensitive plant populations where there is a high threat to species of concern, are a high management priority (appendix B of the Final Invasive Plants Assessment Report). Treatment priority rating system and decision tree for new weed locations (tables 3 and 6, respectively; Record of Decision Gallatin Noxious and Invasive Weed Treatment Project (2005)) currently guide management decisions. In addition, these are spelled out in

the plan appendix A, Management Approaches in the Invasive Species section, along with several other approaches for determining risk in projects. The Terrestrial Vegetation and Wildlife sections of the final environmental impact statement describe desired conditions for habitats that support elk and other wildlife species. FW-OBJ-INV-01 outlines how noxious weed management activities will be employed and includes recognizing resource values at risk.

### Grass Species

**Concern:** The commenters requested more discussion on the threat annual and perennial invasive grass species pose to plant species diversity and fire regimes. In addition, they also provide additional literature to support discussions on climate change and increased spread of annual invasive species such as cheatgrass, and note that species such as, ventenata and medusahead, are not mentioned.

**Response:** The Terrestrial Vegetation section in chapter 3 of the final environmental impact statement discusses non-native plants. Annual grasses have the potential to alter fire regimes. In addition, annual grasses management is detailed in the Custer National Forest Noxious Weed Management Environmental Impact Statement and Record of Decision (2006) and the Gallatin National Forest Noxious and Invasive Weed Treatment Project Environmental Impact Statement and Record of Decision (2005). Ventenata and medusahead were not previously mentioned because there were no records within the forest at the time of analysis. During the public review period for the draft environmental impact statement and draft plan, ventenata was recorded on the Custer Gallatin. The final environmental impact statement was updated to include these new records. In addition, the national forest and the region work closely with their state and county partners. The Forest Service is supporting the Montana Department of Agriculture in creating an annual grasses task force.

### Historic Ranges

**Concern:** Comment requested that native species that have significantly exceeded their historic ranges and are supplanting or threatening the populations of native species within historic ranges (such as pine beetles) be considered as invasive for the purposes of the management plan.

**Response:** The definition for alien or non-native was clarified by adding it to the glossary. Non-native species (alien species) means, with respect to a particular ecosystem, an organism (including its seeds, eggs, spores, or other biological material capable of propagating the species) that occurs outside of its natural range (Executive Order 13751(2016)).

### Increase Treatment

**Concern:** The commenters state that FW-OBJ-INV--01 is inadequate and weed control within the national forest is seriously deficient, request weed treatments to increase, and state activities violate FW-DC-INV-01.

**Response:** The Custer Gallatin National Forest acknowledges a need for additional noxious weed treatments; however, objectives are designed based on reasonably foreseeable budgets. Chapter 1 of the plan, under the definition of objectives, describes that they may be exceeded or not met based upon a number of factors. FW-STD-INV-03 provides protections to prevent increase or spread of infestations and to not allow new invaders to establish. As stated in the plan's introduction for Invasive Species, Forest Service policy (FSM 2903) requires determining the risk of introducing, establishing, or spreading invasive species associated with any proposed action, as an integral component of project planning and

analysis and, where necessary, provide for alternatives or mitigation measures to reduce or eliminate that risk prior to project approval. All activities will comply with FSM 2900, National Best Management Practices for Water Quality Management on National Forest System Lands (U.S. Department of Agriculture 2012), and management actions detailed in the Custer National Forest Noxious Weed Management Environmental Impact Statement and Record of Decision (2006) and the Gallatin National Forest Noxious and Invasive Weed Treatment Project Environmental Impact Statement and Record of Decision (2005) or subsequent weed management decisions.

Plan chapter 1 defines and explains desired condition. Desired conditions are the social, economic, and ecological attributes that will be used to guide management of the land and resources of the plan area. They may apply to the entire plan area or to specific geographic or management areas. Desired conditions are not commitments or final decisions approving projects and activities. The desired condition for some resources may currently exist or may only be achievable over a long time period for other resources. The Custer Gallatin may need to adjust desired conditions if monitoring results or new scientific information indicates they are not achievable.

## Maps

**Concern:** Comment requested a map of weed infestations by species.

**Response:** Appendix B of the Final Invasive Plants Assessment Report includes 2017 infestation locations. Additional maps can be found in the Custer National Forest Noxious Weed Management Environmental Impact Statement and Record of Decision (2006) and the Gallatin National Forest Noxious and Invasive Weed Treatment Project Environmental Impact Statement and Record of Decision (2005). Development of maps by individual species at the forest scale would be possible; however, it would not provide additional information relative to the analysis at the forest scale. As individual projects are analyzed, this type of information is relevant at the site-specific scale in determining effects of project activities to known noxious weed infestations and determining mitigation measures.

## Monitoring

**Concern:** Commenters request that the Forest Service revise the plan to require that populations of invasive species and the native component be monitored both before and following control measures, show a commitment to a long-term, consistent strategy of monitoring of weed populations, prioritize invasive species monitoring and mitigation actions for areas affected by burns and other ground-disturbing activities via an additional goal, standard, or guideline.

**Response:** Monitoring is addressed in the final environmental impact statement chapter 4: MON-INV-01, MON-INV-02, and 36 CFR 219.12(a)(5) - ii outlines monitoring requirements. In addition, monitoring and adaptive management are an integral process within integrated pest management and it is described in the Invasive Species section of the plan. FW-GO-INV-01 includes supporting use of integrated pest management. Management approaches for invasive species in plan appendix A incorporate monitoring of existing populations periodically and outline the use of integrated pest management. The Custer National Forest Noxious Weed Management Environmental Impact Statement Record of Decision (2006) (page 41) and Gallatin National Forest Noxious Weed Management Environmental Impact Statement Record of Decision (2005) (pages 16–17) outline monitoring. In addition, the Custer Forest Plan monitoring report (2001), 1990–2000 describes the noxious weed monitoring item and the 10-year evaluation.

## Permitted Livestock Grazing

**Concern:** Comment stated the draft environmental impact statement "downplays the clear implication in scientific literature that livestock are a major vector for noxious weed spread."

**Response:** The Custer Gallatin National Forest does not dispute that livestock can be a vector for invasive species, as well as other multiple uses. The effects analysis and conclusion in chapter 3 final environmental impact statement Invasive Species section describes effects from livestock grazing on invasive species. The Final Invasive Plants Assessment Report acknowledges livestock as a vector as well. Please see literature cited for the Invasive Plants Assessment Report and the Invasive Species section of the final environmental impact statement for supporting science. The conclusion section of the final environmental impact statement Chapter 3, Invasive Species, acknowledges that invasive species "will continue to have a presence on the Custer Gallatin National Forest landscape, with existing infestations and continual introduction of new invaders" and multiple uses of forest resources will continue. Forest plan components combined with best management practices (FW-STD-INV-04) will be used to minimize the spread of invasive species directly related to livestock grazing activities. Best management practices documents are outlined in plan appendix A in the invasive species and permitted livestock grazing sections. In addition, National Best Management Practices for Water Quality Management on National Forest System Lands Technical Guide 1 April (2012) supplements existing national forest best management practices monitoring programs. A grazing permit is used to authorize livestock grazing on National Forest System lands. The permit delineates the area to be grazed and defines the number, kind, and class of livestock to be grazed and the season of use. The special terms and conditions in the permit contain required management practices from the project-level National Environmental Policy Act decision to avoid, minimize, or mitigate effects to water quality and other resource values. The permit and allotment management plan also include monitoring requirements to evaluate compliance with standards and determine long-term trends in range condition.

## Plan Components

**Concern:** Commenters would like to change, add, or have clarification of desired condition, goals, standards, and/or guidelines, and prioritize weed treatments in wildlife habitat. Comments were specifically related to: (1) add a goal, standard, or guideline to prioritize invasive species monitoring and mitigation actions for areas affected by burns and other ground-disturbing activities; (2) clarify language in draft plan standard FW-STD-INV-04 (now STD-INV-03); and (3) clarify language in draft plan desired condition FW-DC-DWA-14 (now DC-DWA-12).

**Response:** A new goal, standard, or guideline is not necessary to prioritize invasive species monitoring and mitigation actions for areas affected by burns and other ground-disturbing activities. As stated in the Plan's introduction for invasive species, Forest Service policy (FSM 2903) requires determining the risk of introducing, establishing, or spreading invasive species associated with any proposed action, as an integral component of project planning and analysis, and, where necessary, provide for alternatives or mitigation measures to reduce or eliminate that risk prior to project approval. FW-STD-INV-03 also requires use of best management practices and other agency requirements to minimize noxious weed establishment and spread. These all would apply to projects that include ground disturbance, wildland fire, and prescribed fire. The Invasive Species section of the final environmental impact statement acknowledges the effects from fires and fuels management and that treatment priorities could change based on certain situations. Management prioritization and species risk assessment methods are addressed in the Invasive Species section of plan appendix A, Management Approaches.



Both FW-STD-INV-03 and FW-DC-DWA-12 have been revised. Standard FW-STD-INV-03 provides additional detail, and desired condition FW-DC-DWA-12 now refers to trending toward a natural ecological state.

### **Preventative**

**Concern:** Comment requested preventative measures in the plan.

**Response:** The plan discusses preventative measures (best management practices) under FW-STD-INV-03 and 04. Preventive measures will be included in applicable project design features. FW-GO-INV-04 addresses education and outreach, which is a tool to prevent the introduction and spread of weeds. Management approaches in plan appendix A also outline some preventative measures and specific best management practices documents. In addition, prevention is one of the FSM 2900 objectives.

### **Restoration**

**Concern:** Comment requested as much emphasis as possible on restoration work in areas that have been impacted by invasive species, agree that seeding soon after weed control is essential for success, support the use of native seed in restoration, and would like the restoration guideline FW-GDL-INV-01 changed to a standard.

**Response:** FW-INV-GDL-01 is written as a guideline as the intent is for any such seeding to occur during optimal moisture conditions for germination. Optimal conditions are not always predictable and there may be some circumstances that allow for seeding at other times that would help achieve or maintain a desired condition. Individual projects would be assessed at the local scale for specific mitigations.

### **Roads and Trails**

**Concern:** Comment requested more discussion on the impacts roads have on existent noxious weed populations and what methods will be used to assure that noxious weeds are not spread into future proposed units.

**Response:** Custer Gallatin National Forest acknowledges the effects of road and trail corridors to native plant communities in the Consequences to Invasive Species section in section 3.9 of the final environmental impact statement. In particular, the effects related to roads and trails are discussed under the effects sections for Timber and Vegetation Management and Access and Recreation Management in section 3.9, Invasive Species. In addition, appendix B of the Final Invasive Plants Assessment Report analyzes the spread of infestations and provides a map of 2017 recorded noxious weed locations with an overlay of roads. Forest Service policy (FSM 2903) requires risk assessments and mitigation be conducted at project-level analysis.

### **Targeted Grazing**

**Concern:** Comment is in favor of targeted use of domestic sheep and goats for noxious weed control, with risk assessment. Some comments stated it should be part of alternative D as well. Comment requested a second guideline that would require consultation of the Montana Fish, Wildlife and Parks Bighorn Sheep Conservation Strategy (2010) prior to implementation.

**Response:** Preferred alternative retained use of this tool. Standards FW-STD-GRAZ-03 and 04 are based on recommendations from the Montana Fish, Wildlife, and Parks Bighorn Sheep Conservation Strategy (2010).

## Inventoried Roadless Areas

**Concern:** Comment supported inventoried roadless areas; proposed decreasing the acres in inventoried roadless areas; opposed motorized use in roadless areas, requested wording revisions in the inventoried roadless area introduction and requested revisions to the inventoried roadless area boundaries.

Comment requested more analysis of how the revised plan complies with 2001 Roadless Area Conservation Rule, information on what type of restoration activities may occur in inventoried roadless areas and how it was determined at this time that restoration would be needed, more analysis of the effects of logging and roading in “uninventoried” roadless areas on their characteristics vis-à-vis potential for future wilderness or inventoried roadless area designation. Commenters suggested additional or modified plan components clarifying both permanent and temporary road construction are prohibited in inventoried roadless areas, a high scenic integrity objective, a more detailed desired condition, and a guideline promoting restoration.

**Response:** The Forest Service must follow all laws, regulations, and policies related to natural resources on the Custer Gallatin National Forest, and, therefore, must follow the direction provided in the 2001 Roadless Area Conservation Rule. The forest plan cannot change the inventoried roadless areas or boundaries; this designation cannot be changed by a forest supervisor. The 2001 Roadless Rule does not prohibit motorized transport in inventoried roadless areas. In the preferred alternative, motorized transport is suitable in some inventoried roadless areas, and not suitable in others, based on plan land allocations and the recreation opportunity spectrum. The inventoried roadless area maps in the environmental impact statement show inventoried roadless areas on National Forest System lands. Requested language changes were reviewed and changed as needed.

The plan guides future Forest Service decisions, it does not predict or analyze where future projects may occur. “Uninventoried roadless areas” are not a defined or mapped allocation. The Custer Gallatin followed the wilderness inventory process outlined in Forest Service Handbook 1909.12 chapter 70. Many areas that are not inventoried roadless areas were included in the wilderness inventory. The plan wilderness process does not require that all lands in the wilderness inventory be managed to protect their wilderness characteristics, that is, be recommended wilderness areas.

In response to public comment, plan component FW-SUIT-IRA-02 has been changed to delete “permanent.” The suggested desired condition was not included because it repeats information found in the 2001 Roadless Rule. The suggested guideline was not included because it is more appropriate to project-level analysis. Except for some scenic integrity objectives that were assigned based upon an area’s designation or plan land allocations (such as recommended wilderness and existing congressionally designated wilderness), the Forest Service assigned scenic integrity objectives based upon the scenery management system process.

## Lands

### Access and Consolidation

**Concern:** Comment requested that the Forest Service ensure public access to National Forest System lands, consolidate ownership, and acquire lands for resource benefits, working with willing landowners and partners. Some comments supported keeping land in National Forest System ownership, avoiding land exchanges and pursuing purchase options; some comments endorsed land exchanges. Comment requested the Forest Service acquire additional public access, protect historic public access, ensure landowners have reasonable access to their private property (inholdings), and ensure reasonable access to State trust lands.

Comment addressed public access to the Crazy Mountains and consolidating ownership to resolve the current "checkerboard" land ownership issues. Comment requested the plan add direction to set sideboards for specific negotiations for exchange of easements or land to protect the Crazy Mountains' long-term value to the National Forest System, and recommended wilderness as a way to prevent new road construction.

**Response:** Access is addressed in the land management plan under forestwide desired conditions FW-DC-LAND-01, 03 and 04 and objective FW-OBJ-LAND-01. Longstanding Forest Service policy is to acquire and maintain permanent, full rights, road, and trail rights-of-way (access easements) to assure the protections, administration, and use of the National Forest System lands and resources. The plan does not make site-specific project commitments.

Laws, regulations, and policies allow for reasonable access to non-Federal lands when the property is surrounded by Federal lands. The Alaska National Interest Lands Conservation Act of 1980 (ANILCA), Sec. 1323(a) granted non-Federal landowners, whose ownership lies within the boundaries of the National Forest System the statutory right of access over public lands when such Federal lands are needed to provide for the reasonable use and enjoyment of non-Federal lands. However, ANILCA does not provide an unconditional right of access. The Forest Service has the discretion to determine the location, design, type, and extent of access that will be granted across Federal land, consistent with the provisions of ANILCA. In addition, the Forest Service has the authority and discretion, as provided by Federal statute and regulation, to apply the concept of reciprocity in situations where the agency determines it has a need for public or administrative access across the property of a private landowner. Regulations implementing Section 1323(a) of ANILCA are found at 36 CFR 251, Subpart D.

The plan does not set direction for non-National Forest System lands. Section 5 of the Wilderness Act and agency policy in Forest Service Manual 2326.13 direct the authorized officer to consider and adequately exhaust the alternative of acquiring, through direct purchase or land exchange, the non-Federal lands within a designated wilderness area prior to processing an application for access to such lands. Per desired condition FW-DC-RWA-01, recommended wilderness areas maintain existing wilderness characteristics, so this guidance would apply to recommended wilderness areas as well.

Guideline FW-GDL-LAND USE-01 provides for reciprocity of access if the Forest Service determines access is needed through non-National Forest System lands. It states that the Forest Service should grant qualified applicants reasonable access across National Forest System lands, contingent upon receiving reciprocal access across non-Federal land. Regulations in 36 CFR 251.114(c) and 36 CFR 251.63 address reciprocity.

The plan addresses consolidating land ownership under the forestwide desired condition FW-DC-LAND-01. In addition, goals BC-GO-LAND-01 and MG-GO-WSA-01 identify priority areas for consolidating ownership in the Crazy Mountains and in the wilderness study areas in the Gallatin Mountains.

Land adjustments, including acquisitions and exchanges, are an important tool for the Custer Gallatin. Larger land acquisitions, exchanges, and purchases are implemented based on a willing seller and public benefits. It is difficult to set objectives for projects that the Forest Service does not control.

The plan will not specify the types of land adjustment tools to be used, this is provided by the criteria in laws, regulations, and policies. There are several authorities (tools) to use in acquiring property including direct purchase, exchange, and donation. The management approaches for land status and ownership in plan appendix A include criteria to consider when evaluating lands for acquisition including lands important for wildlife connectivity and big game winter range. Not all landowners are willing to sell their properties within the national forest boundary, but may be willing to exchange parcels.

### **Plan Direction and Environmental Impact Statement Analysis**

**Concern:** Comments requested additional plan direction such as: encourage acquisition of private inholdings other than patented claims with existing rights in designated wilderness areas, land adjustments should not convey public land with outstanding resources, land uses such as energy corridors should not interfere with other forest uses or degrade scenery, monitor adjacent private land for effects to National Forest System lands, and remove unauthorized structures on National Forest System lands.

Comments requested additional environmental analysis such as density of human residences within 1.5 miles from the Custer Gallatin National Forest and how much public land in each geographic area is not accessible because of private property owners.

**Response:** Per policy, land exchanges need to show clear public benefit (36 CFR 254.3 and FSH 5409.13, 33.41b). The public interest determination must show that the resource values and the public objectives of the non-Federal lands equal or exceed the resource values and the public objectives of the Federal lands. In addition, management approaches in plan appendix A include criteria for acquiring and conveying land.

The screening criteria (36 CFR 251.54 (e)) used when considering proposals for new uses includes the following requirement "The proposed use will not unreasonably conflict or interfere with administrative use by the Forest Service, other scheduled or authorized existing uses of the NFS [National Forest System], or use of adjacent non-National Forest System lands." Another component of the screening criteria is that the use is consistent with the land management plan. If proposals for new uses do not pass the screening criteria, the proposals are rejected. In addition, goal FW-GO-LAND USE-01 and guideline FW-GDL-LAND USE-02 address limiting unreasonable impacts to scenery.

The revised plan does not address uses on non-Federal land and the Forest Service will request landowners remove encroachments.

The density of development along the national forest border is increasing. This is discussed in the Final Lands Status and Ownership, Land Uses, and Access Patterns assessment report and final environmental impact statement (section 3.23.3) as a trend. The Custer Gallatin did not create maps showing the

density of development along the national forest boundary. These data are available from other sources on the Web (for example, <http://silvis.forest.wisc.edu/maps-data/>).

The National Environmental Policy Act requires the Forest Service to analyze effects relevant to the decision to be made, in proportion to the significance of the effects caused by the action. The Administrative Procedure Act requires the Forest Service provide rationale to support the conclusions in the decision. Although the Forest Service is required to develop plan components within the fiscal capability of the unit, researching and identifying areas across the forest that are inaccessible because the Forest Service does not have access (motorized and non-motorized) through private land, does not provide additional information needed to determine the potential significance of effects of the plan, or the determination of National Forest Management Act compliance.

## Minerals, Energy and Geological Areas of Interest

### Caves and Areas of Geologic Interest

**Concern:** Comments identified a number of concerns related to the draft plan and requested the Custer Gallatin adopt a policy of not divulging the locations of caves, for the protection of bats from white-nose syndrome, and to add a standard prohibiting the use of explosives in caves. Comment requested the plan organize the Geological Areas of Interest section separately from the Energy and Minerals plan direction, and the plan add monitoring questions related to cave, karst, and paleontological resources and add monitoring questions related to geologic hazards, their threat to human safety, and appropriate mitigation.

**Response:** Regulations at 36 CFR 290.4 address confidentiality of cave location information. It is not necessary to repeat this regulation in the land management plan. 36 CFR 216.9 (i) prohibits "Excavating, damaging, or removing any cave resource from a cave without a special use authorization, or removing any cave resource for commercial purposes." It is not necessary to repeat this regulation in the forest plan. Caves and karst, paleontological and geologic hazard management is often interdisciplinary in nature. Direction for such management could be included as part of several topic areas. Including geologic areas of interest such as caves and karst, paleontological and geologic hazards as part of Energy and Minerals direction is a way to organize plan requirements. The Forest Service determined there was no uncertainty to indicate a need for monitoring the plan components for cave, karst, paleontological resources or geologic hazards in the monitoring plan.

### Environmental Impact Statement Analysis

**Concern:** Comments identified a number of concerns related to the draft environmental impact statement analysis of minerals and energy resources. Comments requested clarification related to reasonable access and support infrastructure necessary to conduct locatable mineral management activities, the activities encompassed by the term "mining," and an explanation of why the environmental impact statement states that the disposal of leasable mineral resources is discretionary.

Comment requested additional analysis of mineral potential and mineral rights for certain plan land allocations, the effects to locatable minerals management of recommended wilderness areas until Congress acts on a recommendation, and the impacts of mining on adjacent private lands. Comment also requested the plan / environmental impact statement acknowledge passage of Public Law No. 116-9, restricting mining activities on Federal lands in the Emigrant and Crevice area.

**Response:** Locatable minerals have a statutory right to access and conduct mineral activities under the Mining Law of 1872, whereas the laws governing leasable minerals allow for the authorized officer to decide whether to allow leasable mineral activities on the Custer Gallatin. Statutory rights for locatable mining activities is discussed in first the first paragraph of section 3.17.3, Environmental Consequences in the Energy, Minerals, and Geologic Areas of Interest section. A number of clarifications have been made related to locatable minerals activities such as reasonable access within certain designations, and a definition of mining activities has been added to the glossary.

The final environmental impact statement does not disclose areas of mineral potential, because applicable plan components will apply to future projects, regardless of mineral potential. Existing minerals encumbrances are disclosed for recommended wilderness in the environmental impact statement because the recommended wilderness process outlined in FSH 1909.12 Chapter 70 requires the disclosure of legally established rights or uses. The effects of the revised plan alternatives in section 3.17.3 discloses the effects of the recommended wilderness area plan land allocation to locatable minerals management. This allocation would remain in place until either Congress took action, or the allocation was changed in a plan amendment or a future forest plan revision. Analysis of any mining activities on adjacent private lands would be done at the project-specific level. The environmental impact statement acknowledges passage of Public Law No. 116-9 in Locatable Mineral Withdrawals under the Affected Environment in Energy, Minerals, and Geologic Areas of Interest.

#### Plan Direction

**Concern:** Comments identified a number of concerns related to the draft plan and requested:

- Recognition of existing rights of access and surface infrastructure, and repeated disclosure throughout the plan of the right to conduct mineral actions throughout the Custer Gallatin unless the subject Federal lands have been withdrawn from mineral entry.
- Clarification related to the grizzly bear primary conservation areas/recovery zones.
- Specific direction for the New World, Crevice and Emigrant mineral withdrawal areas that address all management activities.
- Additional information, additional or modified plan components and monitoring questions for mineral and energy development.

**Response:** Chapter 1 of the plan acknowledges that consistency with the revised forest plan is subject to valid existing or statutory rights. Further clarification has been added to the introduction to the Energy, Minerals and Geological Areas of Interest section.

The Grizzly Bear primary conservation area and the recovery zones are synonymous terms. These areas are not withdrawn from locatable minerals actions and are available for locatable minerals activities.

Forestwide plan direction applies to the New World, Crevice and Emigrant mineral withdrawal areas that address all management activities.

Direction suggested by some plan component comments is found in laws, regulations, and agency guidance, and does not need to be repeated in the forest plan. Some of the suggested plan components are appropriate at the project level, such as in a mining plan of operation, and not a land management plan. Suggested plan components that would compel action are not appropriate in a land management

plan. It is not necessary to repeat plan components in different areas of the plan. For instance, the plan's forestwide wildlife direction applies across the Custer Gallatin, and does not need to be repeated in the Energy and Minerals section. Monitoring questions, for instance Canada lynx monitoring questions, will need to be addressed across the Custer Gallatin. The plan is not undertaking an availability analysis for mineral or energy activities. No surface occupancy stipulations for leasable minerals are more appropriately determined in a site-specific analysis at the leasing decision stage including areas where mineral and energy development occur.

Plan changes in response to comments include:

- In chapter 1, energy and mining activities are added to the discussion of the suitability plan component.
- Social and economic sustainability desired condition FW-DC-SUS-02 acknowledges minerals.
- Energy and minerals desired condition FW-DC-EMIN-03 was added to acknowledge the economic contribution of energy and mineral development.
- Energy and minerals goal FW-GO-EMIN-02 was deleted because it is inapplicable to National Forest System land. Superfund designation applies to private lands.
- Backcountry areas standard FW-STD-BCA-06 wording has been clarified to allow exceptions to backcountry areas standards to provide for reasonable access and mining activities pursuant to the 1872 mining law.
- The Absaroka-Beartooth Geographic Area Distinctive Roles and Contributions acknowledges the two Sibanye Stillwater platinum and palladium mines; the only geologic structure in the United States that currently produces platinum and palladium minerals as primary products.
- Further clarification has been added to the introduction to the Energy, Minerals and Geological Areas of Interest section of the plan.
- A definition of mining activities has been added to the plan glossary.

### Prohibit Mineral and Energy Development; Mining Support

**Concern.** Comment stated that the Forest Service should ban mining and energy development (for example, mining; oil, gas, and coal exploration; fracking) on the Custer Gallatin National Forest. Comment urged restraint on renewable energy, and stated biomass can be a contributor to climate change. Other comment supported mining on the Custer Gallatin, particularly the Stillwater mines.

**Response:** Mineral and energy development is an allowed use on national forests. Mining activities follow laws, regulations, and policies as well as forest plan direction that protects other resources. See responses for Carbon comments for more information regarding biomass.

## Monitoring Program

**Concern:** Comment requested the plan's monitoring program provide additional monitoring questions and standards or metrics to determine whether outcomes are successful, and include a monitoring guide in the land management plan. Comment requested an estimate of the annual costs of the monitoring program and disclosure of how monitoring requirements would be satisfied if funding is insufficient. Comment asked how public comment will be incorporated for changes to monitoring plan aspects.

Comment expressed support for the monitoring plan and recommended that the Forest Service seek opportunities for collaborative monitoring with other private or public entities.

Comment stated that, given the uncertainties of climate change, monitoring questions for vegetation, invasive species, aquatic resources, fire, and more, the Forest Service must explicitly assess the effects of climate change and guide adaptive management. Comments expressed concern that adaptive management will not be employed successfully to respond to changing conditions. Comment noted the draft plan did not identify any specific aquatic invertebrates or land bird species and assemblages.

Comment found the following statements in the monitoring plan to be contradictory, and asked for the specific regulation or legal process related to the comment opportunity for a change to a monitoring question or an indicator.

- A change to a monitoring question or an indicator may be made administratively, but only after the public has had an opportunity to comment.
- A change to a monitoring guide or annual monitoring work plan does not require public notification. In addition, because the broader-scale monitoring strategy is comprised of questions and indicators from plan monitoring programs, a change of the broader-scale monitoring strategy questions and indicators would require a change of the relevant plan monitoring programs.

Comment requested the Forest Service disclose the Custer Gallatin National Forest's record of compliance with the monitoring requirements set forth in the forest plan, as well as previous NEPA decisions.

**Response:** The land management plan monitoring program (chapter 4 of the revised plan) addresses the most critical components for informed management of the Custer Gallatin's resources within the financial and technical capability of the agency. Every monitoring question links to one or more desired conditions, objectives, standards, or guidelines. However, not every plan component has a corresponding monitoring question. As outlined in the monitoring plan, the Custer Gallatin reviewed the plan components for inclusion in the monitoring program, and used six factors to help determine the need to track information related to the plan components. Requests to add additional monitoring items were considered. Some were added (for example MON-PRISK-02), but others were not for a variety of reasons including lack of capacity or funding. Additional questions can be added. The biennial monitoring report is intended to evaluate the plan implementation to understand the success of the outcomes and movement toward desired conditions. This information will be used to inform management and future planning within an adaptive management framework. Metrics to help evaluate those are provided as indicators in the monitoring plan. The biennial monitoring report will be available to the public.

The Forest Service used the best available scientific information in the development of the monitoring plan, giving consideration to expected budgets and agency protocols. The monitoring program budget is not provided at this time, but was designed to be cost effective and utilizes supported data sources such as Forest Inventory and Analysis and PACFISH/INFISH biological opinion (PIBO) data. The Forest Inventory and Analysis data are the most accurate, reliable, and relevant data source for monitoring terrestrial vegetation conditions, because the data follow nationwide, statistically based Forest Inventory and Analysis protocols. Similarly, PIBO data are the most accurate, reliable, and relevant data for monitoring



aquatic ecosystem conditions using a probabilistic sampling design. The program was initiated to evaluate the effect of land management activities on aquatic and riparian communities at multiple scales and to determine whether management practices are effective in maintaining or improving the structure and function of riparian and aquatic conditions.

This monitoring program is not intended to depict all monitoring, inventorying, data-gathering or enforcement activities undertaken on the Custer Gallatin, nor is it intended to limit monitoring to just the questions and indicators listed in chapter 4 of the land management plan. Consideration and coordination with broader-scale monitoring strategies adopted by the regional forester, multi-party monitoring collaboration, and cooperation with State and private forestry as well as research and development, as required by 36 CFR 219.12(a), will increase efficiencies, and help track changing conditions beyond the Forest boundaries to improve the effectiveness of the plan monitoring program. In addition, project and activity monitoring may be used to gather information for the plan monitoring program if it will provide relevant information to inform adaptive management.

As outlined in the monitoring program, one or more monitoring questions are required to address “measurable changes on the plan area related to climate change and other stressors that may be affected by the plan area.” Monitoring questions that include a notation to 36 CFR 219.12(a)(5) vi address this requirement: MON-VEG-01, MON-VEG-02, MON-VEGNF-01, and MON-REC-06.

Specific aquatic invertebrate or land bird species are not identified for focal species because the intent is to monitor a suite of species. Information about what these species assemblages can indicate about ecological conditions has been added to the monitoring program.

In the implementation stage of the plan, if a monitoring guide is needed, it would be developed then. The monitoring guide is not required land management plan content. A monitoring guide could provide more detailed information on the monitoring questions, indicators, frequency and reliability, data sources and storage, and cost. For example, the Custer Gallatin anticipates that Forest Inventory and Analysis data will be used to monitor vegetation conditions and that data will be updated about every 10 years. However, data sources and frequency of updates may change, so the specifics would be included in a monitoring guide. A monitoring report will be completed biennially, but it is important to note that not all monitoring questions are expected to be evaluated biennially.

While a change to the forest plan *monitoring plan* requires that the public has an opportunity to comment, changes to the *monitoring guide* would or annual monitoring work plan would not require public notification because these are implementation documents. The Forest Service has the discretion to determine the methods, forum, and timing of public participation opportunities (CFR219.4).

Responses to monitoring comments are also provided in other topics. A number of assessment reports used the Custer and Gallatin forest plan monitoring reports (see also responses to Grazing Monitoring.) Past forest plan monitoring reports and project implementation monitoring reports are posted to the Custer Gallatin National Forest website.

## Multiple Use

**Concern:** Comment requested the Forest Service to adopt a multiple-use management philosophy in the plan that encourages recreation and resource use on managed lands. Comments stated no alternative increases areas of multiple use, specifically that no alternative:

- increases areas of multiple use recreation for both motorized and mechanized use
- increases grazing opportunities
- increases areas for timber harvest and fuel reduction
- increases areas for mineral, oil, and gas development

**Response:** The Forest Service manages the national forests under multiple laws, and must balance uses such as logging, grazing, mining and oil and gas development, recreation uses, wilderness, wildlife, and water.

- Alternative E proposes no recommended wilderness areas, while under the current plans about 34,000 acres are recommended wilderness areas.
- Alternative E proposes a backcountry area for the wilderness study area that would provide additional land for motorized and mechanized recreation opportunity if the wilderness study area were released by Congress.
- The plan objective for alternatives B and C would make available an additional approximately 5,600 animal unit months for grazing on vacant allotments. The plan objective for alternative F would make available an additional approximately 3,500 animal unit months for grazing on some vacant allotments.
- Alternative E proposes a higher projected timber sale quantity and projected wood sale quantity (assuming reasonable, foreseeable budgets) than current plans.
- The land management plan cannot prohibit mineral, oil, and gas development that has a valid existing or statutory right, although the Forest Service can apply plan conditions to mineral, oil, and gas activities. Alternatives B, C, E, and F include a much larger area that recognizes the Stillwater complex than alternative A, the current plans.

## National Recreation and Historic Trails

**Concern:** Concern was expressed that the plan provide components to protect the nature and purpose of national scenic and historic trails, in accordance with the National Trails System Act of 1968, as amended. Comments stated the Purpose and Need For Action section of the environmental impact statement must describe the need to provide for integrated resource management of congressionally designated areas to protect or achieve the purposes for which each area was established, which includes providing for the nature and purposes and related values of national scenic and historic trails.

Concerns were expressed that national recreation trails are located in recommended wilderness areas in some alternatives; both the Bridger Foothills Trail and the Big Sky Snowmobile Trail. Concern was expressed that both access and maintenance of the Big Sky Snowmobile Trail that is part of the National Historic Register would be threatened. Comments requested that the Big Sky Snowmobile Trail be re-routed away from the backcountry area in the Porcupine-Buffalo Horn Area, and placed closer to Highway 191. The Forest Service was requested to validate mileage and changes to uses by alternative for national recreation trails.

**Response:** The plan has many components for the Continental Divide National Scenic Trail, desired conditions for both the Nez Perce National Historic Trail and National Recreation Trails, and a goal for the Nez Perce National Historic Trail. Additional plan components were not required at the forest level, as

adequate direction was provided at the national policy level. Management of these trails does not vary by alternative. The Purpose and Need for Action section of the environmental impact statement states the purpose of the revised Custer Gallatin Land Management Plan is to revise the 1986 Custer and 1987 Gallatin forest plans and to provide an integrated set of plan direction for social, economic, and ecological sustainability, and multiple uses of the Custer Gallatin lands and resources. Plan components for appropriate management of designated areas including national scenic and historic trails is a topic addressed in the revised plan. See also response to comments for the Continental Divide National Scenic Trail.

Effects to existing trails are disclosed in the alternatives. Alternative D was corrected to disclose the Big Sky Snowmobile Trail would no longer be suitable for motorized use in that alternative. The Big Sky Snowmobile Trail is a national recreation trail, rather than on the National Historic Register. Mileages have been validated and corrections made where needed. Locations of specific trails are project-level decisions; not forest plan decisions.

## Partnerships and Agency Coordination

**Concern:** Comment encouraged the Forest Service to explore opportunities for public-private partnerships, including volunteers, non-governmental organizations, and local governments. Comment encouraged the Forest Service to coordinate with other relevant Federal, State, and local agencies to ensure consistent land management. A number of comments expressed interest in interagency coordination in the Pryor Mountains.

**Response** The Custer Gallatin strongly desires to continue building their partnership and volunteer hours where possible. Goals and desired conditions throughout the forest plan include proactive language about partnerships and/or the ability to execute work through a potential partnership. Examples include FW-GO-INV-03, FW-GO-WL-04, FW-DC-RT-05 and FW-GO-RECDEV-01.

The 2012 Planning Rule requires forest planning to take an all-lands approach to ensure that ecological sustainability and contributions to social and economic sustainability are considered in the context of the larger landscape. This involves managing the plan area in partnership with both public and private landowners and stakeholders to ensure management efforts are coordinated whenever possible. Numerous plan components discuss partnerships and coordination with State, local, and Federal agencies, and Tribal governments for topics such as fire, law enforcement, wildlife habitat, and to support landscape ecological diversity and conservation values. Examples include FW-GO-FIRE-02 and FW-GO-WL-04. A number of goals in the Pryor Mountains Geographic Area focus on interagency coordination: PR-GO-REC-01, PR-GO-WHT-01 and 02, and PR-GO-VEGNF-01.

## Permitted Livestock Grazing

### Acknowledge Grazing

**Concern:** Comment supported continued permitted livestock grazing, including domestic sheep grazing for reasons such as rangeland health, fuels reduction, local economies, multiple uses, weed control, wildfire suppression, and wildlife. Comment also supported forage reserves/grassbanks. Comment stated that the environmental impact statement should include benefits of livestock grazing.

**Response:** Benefits of livestock grazing are discussed throughout the final environmental impact statement and not in any one place. Examples in the final environmental impact statement chapter 3 include:

- Invasive Species, Effects of Permitted Livestock Grazing Management: discusses how prescribed grazing can be effective in managing some large invasive plant infestations;
- Wildlife, Effects of Permitted Livestock Grazing Management: acknowledges that grazing can be beneficial to prairie dog habitats and forage;
- Fire and Fuels, Effects of Permitted Livestock Grazing Management: speaks to benefits of grazing and reduction in fuels; and
- Permitted Grazing Section Effects from Wildlife Management: speaks to prescriptive cattle grazing that can encourage or discourage where elk graze.

In addition, the plan's introduction to the permitted livestock grazing section acknowledges the social and economic contribution of permitted livestock grazing to rural communities. The Permitted Livestock Grazing Assessment Report discusses general benefits of livestock grazing under the key benefits to people section including economics, fire reduction, infrastructure, and benefits to wildlife.

Forage reserves/grassbanks are not precluded in the plan and FW-GO-GRAZ-02 acknowledges evaluating vacant allotments including use as forage reserves. FSH 2209.12, section 13.3 outlines the designation of forage reserves, which are site-specific decisions guided by plan components.

### Allotment Closure

**Concern:** Comment requested phase-out or buyout of grazing leases where they conflict with wildlife. Other comment stated that the Forest Service should not allow livestock grazing within the Custer Gallatin National Forest and requested firm direction for closure of allotments as a feature of all alternatives. Comment stated that vacant grazing allotments should be prioritized for closure and fences removed to enhance wildlife habitat, connectivity to habitat, and water quality. Comment requested an alternative be analyzed for permanent retirement of allotments voluntarily waived back.

**Response:** An alternative considered but not analyzed in detail included no permitted livestock grazing. The rationale behind why this alternative was not studied in detail can be found in Final Environmental Impact Statement Chapter 2, Alternatives Considered but not Given Detailed Study.

Based on current policy, an active, forage reserve, or vacant allotment shall only be closed through a National Environmental Policy Act decision that must look at the cumulative effects of allotment closures across the entire planning area and provide opportunity for the general public to comment on such a landscape-level proposal. Forest Service policy letter dated April 3, 2014, regarding permit buyouts by external groups and requested closure of active grazing allotments states the sole responsibility and authority for managing National Forest System lands is delegated to the Secretary of Agriculture and in turn to the Chief of the Forest Service.

The alternatives considered in detail in the final environmental impact statement considered direction that would guide use of vacant allotments as appropriate to the theme of the alternative. The alternatives' range of plan objectives for animal unit months is based on the potential future use of existing vacant allotments. Alternatives range from potential use of all vacant allotments (alternatives A,

B, and C) to potential use of some vacant allotments (alternative F), to no use of vacant allotments (alternatives D and E). (See Chapter 2, Alternatives; and Chapter 3, Permitted Livestock Grazing, Effects that Vary Among Revised Plan Alternatives.) Any future closure of vacant allotments would be subject to project-level National Environmental Policy Act analysis, with cumulative effects analyzed at the forest scale and providing opportunity for the general public to comment. When evaluating allotments for future closure, resource considerations could be based on such things as resource conflicts, conservation opportunities, or economic considerations. There is no policy for removal of infrastructure on allotments when they are closed, become vacant, or are designated as forage reserves, and a plan component requiring infrastructure removal would compel action.

### Best Available Scientific Information

**Concern:** Comment questioned the use of best available scientific information and provided additional references to consider as part of the analysis.

**Response:** All of the literature provided in comments was reviewed, and several new citations were added to support analysis in the final environmental impact statement. One citation that a commenter stated was too old has been replaced with a more recent paper that came to similar conclusions.

### Environmental Impact Statement Analysis

**Concern:** Commenters requested additional detail in the grazing analysis, including quantitative estimates of potential environmental damage caused by livestock grazing and the costs of infrastructure installation and maintenance. Commenters also requested further detail on rangeland trends and grazing suitability determinations.

**Response:** Because a programmatic National Environmental Policy Act analysis typically describes effects over a large geographic and/or time horizon, the depth and detail reflects the major broad and general impacts that might result from a programmatic decision such as adoption of a new land resource management plan. Detailed analysis of rangeland health indicators is not possible or necessary at the programmatic scale. Similarly, a quantitative analysis of potential grazing effects or the costs of rangeland infrastructure would be highly speculative. As noted in the final environmental impact statement, additional National Environmental Policy Act analysis associated with allotment management plans provides more detail based on site-specific conditions.

Rangeland condition and trend are described under Affected Environment in the Permitted Livestock Grazing section of final environmental impact statement, along with the monitoring data that support conclusions. The Final Grazing Assessment Report contains details on the grazing capability model used to approximate areas that are capable for grazing within current allotments. Mapping and acreage figures would be refined as part of site-specific analysis. FSH 2209.13 chapter 90 directs that although an area may be deemed suitable for use by livestock in a land management plan, a project-level analysis evaluating the site-specific impacts of the grazing activity, in conformance with the National Environmental Policy Act, is required to authorize livestock grazing on specific allotment(s). See FSM 1920 and FSH 1909.12 for basic direction for addressing rangeland resources in land management plans.

### Existing Infrastructure

**Concern:** Comments stated a number of recommendations for grazing infrastructure such as encouraging grazing permittees to install plastic piping for water tanks, addressing the aging

infrastructure of the water developments, and requiring existing water developments to be retrofitted to be wildlife-friendly and to facilitate animal escape.

**Response:** Guideline FW-GDL-GRAZ-08 applies to new or reconstructed water features, and does not require retrofitting existing water developments to be wildlife-friendly because plan components do not compel action. Design, location, and layout of range improvements are done at the project level, and are coordinated with the Forest Service, permittees, and State wildlife officials, as appropriate. Priorities for reconstructing range improvements are considered annually with available Range Betterment dollars, Forest Service, and permittee capacity. A management approach in plan appendix A describes the highest priority for funding of wells and pipeline infrastructure as those that provide off-site water developments for certain resource considerations. Plan appendix A also includes a management approach for retrofitting water developments to be wildlife friendly and facilitate escape.

### Monitoring

**Concern:** Comment requested additional monitoring components to track compliance with the plan and trends in rangeland condition. Comment questioned how previous monitoring results were used in the assessment and draft environmental impact statement analysis.

**Response:** Monitoring component MON-VEGNF-01 is designed to track the condition and trends in non-forested vegetation, including rangelands. Key characteristics of non-forested vegetation in the monitoring plan include percent bare ground, percent ground cover, and acres of invasive species infestation, which are indicative of rangeland health and functionality (O'Brien et al. 2003). During the life of the plan, site-specific allotment monitoring will continue and provide information on trends and conditions within specific allotments. Allotment monitoring will assess if resources are moving toward desired conditions, and inform appropriate changes in management. FSH 2209.13 requires compliance and resource monitoring as part of project-level decisions, so this direction is not repeated in the revised plan.

The Custer Forest Plan Monitoring Report (1990 to 2000) and Gallatin Monitoring Report (2007 to 2011) were reviewed, and information from these reports was evaluated in preparation of the assessments for Permitted Livestock Grazing, Terrestrial Vegetation Non-Forested, and Invasive Species as well as the final environmental impact statement and revised plan. These monitoring reports were used to help inform development of the revised plan and were indirectly referenced in the draft environmental impact statement through incorporation of both the Custer and Gallatin forest plans and as part of the "Forest Service reports" used as information sources in the Permitted Grazing Section of chapter 3. The Custer and Gallatin forest plan monitoring reports are now referenced specifically in the final environmental impact statement and are part of the bibliography.

### Plan Components

**Concern:** Comment requested changes or additions to the grazing plan components, and provided a number of specific suggestions. Some comments stated that the existing plan components needed to do more to promote ecosystem integrity and support wildlife, while others requested additional components to protect the social and economic benefits provided by livestock grazing. Comment expressed concern that grazing plan components would not be implemented because some would not take effect until individual allotment management plans are updated. Comment suggested additional monitoring.

**Response:** The revised plan includes a suite of plan components designed to promote healthy rangeland ecosystems that provide opportunities for grazing while also supporting native wildlife (FW-DC/GO/OBJ/GDL/STD-GRAZ). These include components located in other sections of the plan that are designed to minimize disease transmission between livestock and wildlife (FW-DC-WL-09, FW-DC-WLBHS-02, FW-GO-WLBHS-01), minimize the establishment and spread of noxious weeds (FW-STD-INV 04), promote native vegetation communities (FW-DC-VEGNF-04), and limit the impact of range management infrastructure on wildlife (FW-GDL-WLSG-06). The management approach section of the land management plan (appendix A) includes activities and strategies that may be used to meet desired conditions, including use of robel pole. The Permitted Livestock Grazing section in chapter 3 of the final environmental impact statement describes how these plan components support a sustainable grazing program. Additional information on how the grazing plan components promote ecosystem integrity can be found in other sections of the final environmental impact statement, including Watershed, Aquatic Species and Habitat, and Riparian Ecosystems; At-Risk Plant Species; and Terrestrial Vegetation.

All of the suggestions provided in comments were considered, and several plan components were modified to address concerns. The revised plan includes a new guideline (FW-GDL-GRAZ-10) designed to move toward desired conditions for vegetation and riparian resources through adaptive management. An objective was also added to promote conservation and restoration of non-forested vegetation types that are important to both livestock and wildlife (FW-OBJ-VEGNF-01). Language was modified in FW-DC-VEGNF-01 and desired condition table 14 of the revised plan to include “heterogeneous.”

The land management plan cannot compel action (FSH 1909.12, section 22.1), but all future projects and decisions will have to comply with the revised plan. Plan components applicable to livestock grazing can be implemented through permit modifications, reissuance of existing term permits, issuance of new term grazing permits, or as allotment management plan revisions and sufficiency reviews occur. Section 3.14.2 in the final environmental impact statement describes how the Custer Gallatin National Forest is operating under a schedule to revise and update allotment management plans tied to the Rescissions Act of 1995 (Public Law 104-19) Section 504(a). A management approach in plan appendix A under the Permitted Livestock Grazing section outlines continuing to conduct National Environmental Policy Act and sufficiency reviews for allotment management plans.

As noted in the final environmental impact statement (section 3.14.2), the Custer Gallatin already has a robust and long-standing monitoring program designed to assess different aspects of rangeland condition. This monitoring helps with site-specific environmental analysis for allotment management plans and provides information on when grazing practices may need to be adjusted. These efforts will continue, and the revised plan also includes new monitoring questions designed to assess implementation of the plan and progress toward desired conditions.

### **Vegetation Treatments**

**Concern:** Comment stated that vegetation treatments on livestock allotments would benefit livestock and requested explanation as to why livestock management is a priority over wildlife on grazing allotments.

## Preservation and Protection

**Concern:** Comment encouraged the Forest Service to adopt a preservation philosophy in the plan that encourages wildlife and ecosystem protection. Comment also supported the general preservation or protection of certain places, such as the Pryor, Crazy, and Gallatin Mountains, and the Lionhead area.

**Response:** Thank you for your comments. Desired conditions were developed with an emphasis on the natural processes that influence the vegetation on the Custer Gallatin. Plan components recognize and support the essential natural role of wildfire, insects, and diseases on the landscape, and strive to conserve key ecosystem components such as old growth, snags, and downed woody material as well as habitat and connectivity for wildlife species. The land management plan protects oils and aquatic resources, protects the values of eligible wild and scenic rivers, and is consistent with the Inventoried Roadless Area Conservation Rule. Please refer to the responses for Recommended Wilderness Areas Allocations and Uses, and for Backcountry Areas Allocations and Uses for more area-specific discussion.

## Pryor Mountains Management

**Concern:** Comment stated plan direction is needed to address the unique ecological, cultural, research and education, and recreation values of the Pryor Mountains. Comment requested Pryor's specific plan components, explicit monitoring plans for the Pryor's special plant communities, and a management plan addressing recreation in the Pryor Mountains.

**Response:** The land management plan specifically states, "The Pryor Mountains are a place of climatic, physiographic, and geologic diversity resulting in exceptional biological diversity." To address, maintain, and restore this diversity, the revised plan has two scales of plan direction: forestwide and geographic area. It is important to note that forestwide direction applies to each geographic area and the geographic area direction supplements or adds to this direction. As such, all the forestwide standards for the protection and management of ecosystems (for example, at-risk plants, riparian management zones, grazing) apply to the Pryor Mountains. Moreover, many of the forested vegetation desired conditions apply at the geographic area scale, and thus, add more specific direction for Pryors. In addition to the forestwide plan components, the revised plan contains geographic areas that specifically protect endemic and peripheral plan occurrences that occur in the Pryors (for example, PR-DC-VEGNF-01, PR-DC-VEGNF-02, PR-DC-VEGNF-03, PR-STD-VEGNF-01, PR-STD-VEGNF-02, PR-GDL-VEGNF-01, PR-GDL-VEGNF-02 and PR-GDL-VEGNF-03). The forestwide plan components (including those that apply at the scale of the geographic area) and the geographic area-specific plan components are sufficient to recognize and protect the unique ecological communities and habitats of the Pryor Mountains.

Specific plan components address areas of tribal interest in the Pryor Mountains (PR-DC-TRIBAL-01, 02 03; PR-GO TRIBAL-01; and PR-GDL-TRIBAL-01). While a land management plan does not specify the development of tactical plans, the revised plan has added a goal to coordinate visitor access to the Pryor Mountains with the Crow Tribe, Bureau of Land Management, Bureau of Indian Affairs, and National Park Service (PR-GO-REC-01). Goal PR-GO-VEGNF-02 addresses research and education in the Pryor Mountains.

Land management plan vegetation monitoring will be conducted at both the forestwide scale and the scale of broad potential vegetation types. As further discussed in the response to Monitoring Program General, the plan monitoring program (chapter 4 of the revised plan) addresses the most critical components for informed management of the Custer Gallatin's resources within the financial and



technical capability of the agency. This monitoring program is not intended to depict all monitoring, inventorying, and data-gathering activities undertaken on the Custer Gallatin National Forest, nor is it intended to limit monitoring to just the questions and indicators listed in chapter 4 of the land management plan.

## Public Involvement

**Concern:** Comment expressed that the Forest Service failed to meaningfully involve local citizens and instead prioritizes the input of special interest groups, while other comment expressed that the Forest Service should put more weight to local resident comments versus those from other locations. Respondents had difficulty submitting comments due to issues with the comment website, could not find their attachments, did not understand reCAPTCHA, or had not been contacted directly. Comment praised the public involvement process conducted for the forest plan revision.

Commenters could not see how their scoping comments were used.

**Response:** The Custer Gallatin National Forest staff strive for a robust, inclusive, and transparent public engagement process to build a plan for the next decade or more with strong public support and input. The plan revision effort has been widely publicized. Contact information is added to the distribution list once people comment or contact the Forest Service. Section 2.3 of the final environmental impact statement summarizes the public involvement efforts used in developing the land management plan.

The Custer Gallatin land management plan revision team worked to understand the role and unique contributions of the National Forest System lands within the context of lands and communities surrounding the national forest. These national public lands are held for all Americans to enjoy, and Forest Service employees consider all comments received during the forest plan revision process. The Custer Gallatin received over 20,000 comments on the draft plan and draft environmental impact statement. More than 17,000 of those were form letters, a variation of a form letter, duplicates, or petitions. When the same content is expressed in a form letter without additional rationale or reasoning, it is considered as one comment. The commenting process is not equivalent to a voting process.

In some rare case-by-case scenarios, people expressed trouble with the Comment Analysis Response Application system (referred to as CARA). When the Custer Gallatin staff was made aware of a handful of situations, they either accepted comments directly through email or spoke to the person over the phone to ensure the matter was resolved. However, if the person wishing to comment did not follow up on the problem, the Forest Service may not have been made aware of the problem until after the comment period closed. The Forest Service accepted comments submitted in the 2-hour window between 10:00 p.m. and midnight mountain time when the comment period ended, regardless of date stamp, and followed up with personal emails to those who submitted comments to ensure proper notification and submission. The comment box is monitored, but with hundreds and sometimes thousands of comments coming in a day, it is beyond the scope to follow up directly with every comment received. "reCAPTCHA" is an automated service on the platform hosting the commenting tool that protects the website from spam, robots, and abuse.

As explained in section 2.3 of the final environmental impact statement, the purpose of public scoping is to identify issues that lead to changes in the proposed action, development of alternatives, or in analysis of impacts of alternatives. Scoping comments were used to identify the issues that drove alternatives and, in many cases, plan direction was revised in response to both internal and public comment. In

developing the plan components, the Forest Service balanced various public and internal comments with Forest Service guidance for writing plan components. The Forest Service did not prepare a detailed response to comments for the proposed action, rather, the draft plan, alternatives and analysis are broadly responsive to scoping comments.

## Recommended Wilderness Areas

### Allocations and Uses

**Concern:** Comment supported recommended wilderness areas in general or for specific areas to provide wilderness and wildlife security. Other comments opposed recommended wilderness areas in general or for specific areas, citing concerns that additional restrictions are unnecessary and unneeded, would cut off access to public lands, or would not allow needed management.

Comment requested information on how the recommended wilderness area alternatives were developed and requested additions or changes to recommended wilderness area boundaries. Commenters stated grazing or cherry-stemmed roads should not disqualify lands from recommended wilderness.

Comments encouraged the Forest Service to manage recommended wilderness areas like designated wilderness and disallow any non-conforming uses such as motorized or mechanized travel. Other comments state that the Forest Service should manage recommended wilderness areas to continue to allow existing uses, including bicycles, which is consistent with the multiple-use mandate until Congress acts to change the landscapes.

Comments requested that the Forest Service allow public rental cabins in recommended wilderness areas.

**Response:** Thank you for your comments on recommended wilderness areas. The Forest Service considered a wide range of recommended wilderness areas, from no recommended wilderness areas in alternative E to over 700,000 acres of recommended wilderness areas in alternative D. Alternatives also varied in the uses that would be suitable in recommended wilderness areas (final environmental impact statement chapter 2). The preferred alternative includes the following recommended wilderness areas:

- Sioux Geographic Area: No recommended wilderness areas were proposed for the Sioux Geographic Area in any alternative. The unroaded portion of the Chalk Buttes is too small to be included in the wilderness inventory.
- Ashland Geographic Area: The preferred alternative does not include recommended wilderness areas in the Ashland Geographic Area.
- Pryor Mountains Geographic Area: The preferred alternative includes the 10,662-acre Bear Canyon Recommended Wilderness Area and the 8,168-acre Lost Water Canyon Recommended Wilderness Area.
- Absaroka Beartooth Mountains Geographic Area: The preferred alternative includes the 802-acre Timberline Recommended Wilderness Area (formerly termed Red Lodge Creek/Hell Roaring).

- Bridger, Bangtail, and Crazy Mountains Geographic Area: The preferred alternative includes the 9,619-acre South Crazy Mountains Recommended Wilderness Area.
- Madison, Henrys Lake, and Gallatin Mountains Geographic Area: The preferred alternative includes the 13,176-acre Cowboy Heaven Recommended Wilderness Area, the 78,071-acre Gallatin Crest Recommended Wilderness Area, the 14,461-acre Sawtooth Recommended Wilderness Area, and the 4,466-acre Taylor Hilgard recommended wilderness area.

The Forest Service followed its published protocol in developing the wilderness inventory. The range of alternatives respond to public comments in the scoping period. When developing the recommended wilderness area boundaries, Forest Service Handbook 1909, Chapter 70 (section 73 (2)) requires the Forest Service to identify boundaries that support management of the area for wilderness and for other adjacent uses.

In the preferred alternative, recommended wilderness areas are not suitable for motorized or mechanized transport (FW-SUIT-RWA-02). No motorized trails, summer or winter, are included in any recommended wilderness area in the preferred alternative. About 14 miles of mountain biking trails would no longer be suitable for that use—about 4 miles in the Cowboy Heaven Recommended Wilderness Area, 1.5 miles in the South Crazy Recommended Wilderness Area and almost 9 miles in the Sawtooth Recommended Wilderness Area. The Sawtooth trails either have no public access or are accessed from Yellowstone National Park, which doesn't allow mountain biking.

Based on winter recreational opportunity spectrum mapping, 10,900 acres currently suitable to motorized over-snow transport would no longer be suitable for that use in the preferred alternative (although the mapping does not consider topography, access, or consistent snow).

Rental use of one cabin would be affected in the preferred alternative. Windy Pass Cabin is located in the Gallatin Crest recommended wilderness area, and would no longer be available as a public rental cabin (FW-SUIT-RWA-06).

### Environmental Impact Statement Analysis

**Concern:** Comment requested additional explanation why some recommended wilderness areas are smaller in alternative D than in other alternatives, when alternative D has the most recommended wilderness acreage; an explanation of effects to minerals; a request that all areas recommended for wilderness have a suitability analysis, and a comment that the name of the Red Lodge Creek-Hellroaring Recommended Wilderness Area is misleading and should be changed.

Comment stated the effects analysis for recommended wilderness area for alternatives A, B, and D is inadequate because:

- alternative A analysis regarding mechanized transport in the existing Lionhead Recommended Wilderness Area fails to address the degradation of social wilderness characteristics due to mechanized use;
- alternative B analysis regarding mechanized and motorized transport in recommended wilderness areas is inadequate because it is limited to just three paragraphs, does not meaningfully address the degradation and potential loss of wilderness characteristics in areas that are meant to be managed for potential inclusion in the National Wilderness Preservation System, fails to analyze the ecological impacts of motorized and mechanized transport in

recommended wilderness areas, or that motorized and mechanized transport will be allowed to increase over the life of the plan; and

- alternative D analysis focuses on the displacement of motorized and mechanized recreationists from existing recommended wilderness areas, but there is no corollary analysis for the impacts of alternatives B and E for how wilderness characteristics will be displaced or lost, including the displacement of quiet recreationists and wildlife by motorized and mechanized use.

Comment requested additional information for wildlife, ecological values, and underrepresented ecosystems in environmental impact statement appendix D. Comment stated appendix D's information about grazing facilities implied opposition to an area's wilderness characteristics.

**Response:** Some small areas of recommended wilderness area in alternatives A, B, or C may be subsumed into a larger recommended wilderness area in alternative D, which may have different names (for example, Burnt Mountain Recommended Wilderness Area). The Forest Service used a standard protocol to buffer existing roads. This protocol in alternative D resulted in a smaller Cowboy Heaven Recommended Wilderness Area than alternative C, which used a polygon submitted in public comment.

Final environmental impact statement Chapter 3, Recommended Wilderness Areas, displays mineral encumbrances in recommended wilderness areas for each alternative, and provides analysis of the effects of recommended wilderness on potential future mining operations. The 2012 Planning Rule does not define a suitability study for wilderness, as it does for wild and scenic rivers. The Red Lodge Creek-Hellroaring Recommended Wilderness Area has been renamed the Timberline Recommended Wilderness Area.

The recommended wilderness effects analysis for alternatives A and B (final environmental impact statement chapter 3) discloses the effects of mechanized and motorized transport on undeveloped nature and primitive recreation. Since some proposed recommended wilderness areas in these alternatives have existing motorized and mechanized transport, quiet recreationists and existing wilderness characteristics are not "displaced;" these lands are still under consideration as recommended wilderness. In alternative B, mechanized and motorized transport is limited to existing routes and areas, and would not be suitable in new areas (draft plan FW-SUIT-RWA-02).

The Custer Gallatin followed the wilderness inventory process outlined in Forest Service Handbook 1909.12 Chapter 70. Appendix D provided information, such as grazing facilities and departure from historic vegetation conditions. Wildlife, fisheries, and other ecological information for each wilderness inventory polygon was included in the Wilderness Evaluation. Information from the evaluation has been added to final environmental impact statement appendix D, particularly for at-risk species such as grizzly bear, lynx, sage-grouse, westslope cutthroat trout, and whitebark pine. Information was also included for Yellowstone cutthroat trout and wolverine.

### Plan Components

**Concern:** Comment requested specific changes or additions to plan components for recommended wilderness areas related to no net increase in miles of system trails; trail construction in trail-less areas; recreational events; commercial filming and still photography; group size with pack animals; vacant grazing allotments, motorized vehicles, access to or development of minerals; wildlife linkage areas; and climate change.

Comment also requested a standard requiring roadless area boundaries be re-evaluated and updated during site-specific project National Environmental Policy Act analyses, using standard procedures, to evaluate unroaded areas contiguous with inventoried roadless areas, wilderness study areas, or designated wilderness for their wilderness character, and eligibility for wilderness designation.

**Response:** Desired conditions FW-DC-RWA-01, 02, and 03 address maintaining wilderness characteristics; additional standards or guidelines have not been added where these desired conditions are sufficient to maintain wilderness characteristics. A guideline of no net increase in miles of system trails within recommended wilderness has been added to alternative C for the Gallatin, Cowboy Heaven, and Taylor Hilgard Recommended Wilderness Areas; this guideline is not included in the preferred alternative. Motorized transport would not be suitable in recommended wilderness areas in the preferred alternative. Recommended wilderness areas have not been “zoned” into “trail less” zones similar to designated wilderness areas. Plan direction was not incorporated to reduce the size of groups with pack animals, or close unused grazing allotments, some of these suggestions would be more restrictive than designated wilderness plan components. Recreational events are prohibited by existing policy in designated wilderness; therefore, to manage for wilderness characteristics, new recreation events would also be prohibited in recommended wilderness areas.

Key linkage areas were carefully chosen based on a modelling analysis, rather than on plan land allocations. Forestwide plan components for wildlife connectivity would apply to recommended wilderness areas. Climate change was considered in the development of various plan components that would apply in recommended wilderness areas.

The land management plan revision process included inventorying and evaluating unroaded areas contiguous with inventoried roadless areas and wilderness for their wilderness characteristics and eligibility for wilderness designation. The revised plan would not include a standard requiring this evaluation during site-specific project National Environmental Policy Act analyses.

### **Process Inadequate**

**Concern:** Comment stated the Custer Gallatin did not properly follow Forest Service Handbook direction when preparing the plan revision wilderness inventory, did not map all unroaded area adjacent to inventoried roadless lands, or improperly excluded areas less than 5,000 acres. A commenter asked the Forest Service to manage all roadless areas to protect their wilderness characteristics.

**Response:** The Custer Gallatin followed the wilderness inventory process outlined in Forest Service Handbook 1909.12 Chapter 70. Many areas that are not inventoried roadless areas, and many areas less than 5,000 acres were included in the inventory if they were adjacent to designated wilderness or areas managed as wilderness by other agencies (such as Yellowstone National Park). The wilderness process does not require that all lands in the wilderness inventory be managed to protect their wilderness characteristics, that is, be recommended wilderness areas.

### **Restoration in Recommended Wilderness Areas/Wilderness Study Area**

**Concern:** Comment stated the plan does not sufficiently disclose what restoration activities will be allowed in wilderness study areas and recommended wilderness areas, why they are needed, where they may be planned, and the science and monitoring used to determine success of implementation.

**Response:** While the revised plan does not include specific restoration projects or their locations, the environmental impact statement recommended wilderness analysis, Effects from Vegetation Management (final environmental impact statement chapter 3) discloses that recommended wilderness areas are suitable for low-impact restoration activities that move the areas toward desired conditions (such as prescribed fires, active weed management, planting) and that protect and enhance the wilderness characteristics of these areas (FW-SUIT-RWA-03), and describes potential restoration activities.

Plan direction states the wilderness study area is not suitable for timber production or timber harvest (MG-SUIT-WSA-01). Vegetation management activities such as weed treatment could occur, subject to the requirements of the 2001 Roadless Area Conservation Rule (MG-SUIT-WSA-02). The environmental impact statement wilderness study area analysis, Effects from Fire and Fuels Management (final environmental impact statement chapter 3) discloses that fire and fuels plan direction would encourage an appropriate management response to wildfires that may occur within wilderness study areas, and provide opportunities for natural fire to promote or enhance the wilderness characteristics of these areas (FW-DC-FIRE-01, FW-OBJ-FIRE-02, FW-GDL-FIRE-01).

## Recreation

### Access for Disabled

**Concern:** Comment expressed concern that plan components limiting motorized travel discriminate against the disabled and elderly who are physically incapable of accessing the national forest by other than motorized means.

**Response:** Under the Multiple-Use Sustained-Yield Act and National Forest Management Act, the Forest Service manages recreation use to conserve and sustain National Forest System resources and provide a range of opportunities for both motorized and non-motorized uses in a manner that is ecologically sustainable over the long term. National Forest System lands are not reserved for the exclusive use of any one group, nor must every use be accommodated on every acre. It is entirely appropriate for different areas of the Custer Gallatin National Forest to provide different opportunities for recreation.

There is no legal requirement to allow people with disabilities or the elderly to use off-highway vehicles or other motor vehicles to access every acre of the Custer Gallatin. Motorized transport limitations that are applied consistently to everyone are not discriminatory.

Though some commenters believe that motorized and non-motorized forms of recreation are compatible, other commenters believe that the two forms of recreation are conflicting and incompatible. The alternatives in the final environmental impact statement disclose the trade-offs of plan land allocation for a mix of motorized and non-motorized recreation opportunities, while meeting the requirements of the planning regulations to provide for sustainable recreation.

### Avalanche Center

**Concern:** Comment supported the continued use and expansion of the National Avalanche Center to support winter backcountry users.

**Response:** Goal FW-GO-RECED-02 acknowledges the importance of the Gallatin Avalanche Center. Expanding the center or changing its name to the Custer is beyond the scope of plan revision.

## Climate Change

**Concern:** Concerns were expressed about protecting existing wilderness and recreational hubs by extensively monitoring and managing the growing impacts of recreation and climate change.

**Response:** The revised plan addresses the potential climate change effects to developed recreation sites in desired condition FW-DC-RECDEV-09, which states "Developed recreation site locations and seasons of use respond to or anticipate potential climate changes that may affect the timing, quantity, and duration of water flows, snow levels and snow elevation changes, impacts to fish and wildlife habitats, changes in vegetative conditions, and the extension of seasonal recreation use." In addition, goal FW-GO-CARB-01 promotes research and monitoring to better understand and address the effects of climate change on ecosystems and ecosystem services. See also responses to Climate Change and to Recreation Monitoring.

## Funding

**Concern:** Comment encouraged the Forest Service to find ways and partners to fund the maintenance and development of recreation opportunities in the national forest. A comment requested the Forest Service estimate additional staff and resources needs rather than rely on partnerships.

**Response:** Many plan goals support partnerships, examples include FW-GO-RECDEV-01, FW-GO-ROSRN-01, FW-GO-ROSR-01 and goals for specific recreation emphasis areas. The 2012 Planning Rule does not require budget estimates to implement the plan.

## Increase Recreation Opportunity

**Concern:** Comment requested an alternative that increases recreation facilities, roads, trails, parking and camping opportunities, including dispersed sites, and addresses the growing demand for off-highway recreation, in addition to suggesting an objective to construct or expand new recreation facilities to accommodate increasing demand. Comments requested more short trails to viewpoints, waterfalls, and remote picnic areas, loop trails rather than "out and backs," and interpretive nature trails. Commenters requested site-specific changes to current developed recreation sites and forest orders.

Comment noted that all revised plan alternatives propose removing or relocating existing recreation facilities including dispersed sites (FW-OBJ-REC-01), and that all revised plan alternatives propose closing more roads.

**Response:** New developed recreation sites, roads, and trails roads are suitable, subject to conditions, except where the revised plan specifically says they are not suitable (for instance, roads and developed recreation sites in recommended wilderness areas) or not authorized by statute (for instance, roads and developed recreation sites in designated wilderness areas). Because of the expense and funding uncertainty for new recreation facilities such as campgrounds, the plan does not have an objective to construct or expand new recreation facilities, other than conversion of unsustainable dispersed camping sites into higher-development campgrounds in the Hebgen Lakeshore, Hyalite, and Main Fork Rock Creek recreation emphasis areas (MG-OBJ-HLREA-01 and MG-OBJ-HREA-01, and AB-OBJ-RCREA-01).

Multiple forestwide plan components speak to additional recreation facility capacity or responding to increasing recreational demand: FW-DC-REC-03, FW-DC-RECDEV-02, 04, and 07. Recreation emphasis area plan components also address additional recreation facility capacity or responding to increasing recreational demand: Hyalite Recreation Emphasis Area MG-DC-HREA-01 and 04; Hebgen Lakeshore

Recreation Emphasis Area MG-DC-HLREA-04; Gallatin River Recreation Emphasis Area MG-DC-GRREA-01; Yellowstone River Recreation Emphasis Area MG-DC-YRREA-01; Bridger Recreation Emphasis Area BC-DC-BREA-01; Boulder River Recreation Emphasis Area AB-DC-BRREA-01; and Main Fork Rock Creek Recreation Emphasis Area AB-DC-RCREA-01 and 04.

The Storm Castle Recreation Emphasis Area speaks to opportunities and settings that respond to increasing motorized recreation demand (MG-DC-SCREA-01). See also response to Recreation Motorized.

The revised plan does not propose to remove or relocate all recreation facilities or campsites. Plan objective FW-OBJ-REC-01 would remove or relocate five recreation facilities over the life of the plan outside of riparian management zones, or undertake other means practicable, if they are degrading aquatic or riparian resources.

Draft plan objective FW-OBJ-RT-03 has been deleted from the revised plan. The objective proposed to remove planned unneeded system roads, and the removal of these roads is expected to be completed by the time of the plan decision.

The revised plan would allow more short trails, loop trails or interpretive nature trails, subject to conditions, unless specifically prohibited in a plan land allocation. The plan emphasizes loop trail opportunities in all recreation emphasis areas (FW-DC-REA-03) and in the Hyalite Recreation Emphasis Area (MG-OBJ-HREA-02) and West Pine Backcountry Area (MG-OBJ-WPBCA-01).

The revised plan sets direction for future decisions; specific changes to current developed recreation sites and forest orders would be the decided at a site-specific project level.

### **Maintain Recreation Opportunity**

**Concern:** Comment expressed concern that the revised plan maintain public access and recreation opportunities for all users. Many expressed opposition to an increase in wilderness or closing of road or trail opportunities affecting access. Comment expressed concern that the Gallatin Key Linkage threatens motorized summer and winter recreation or that proactive bison expansion would threaten motorized use.

**Response:** The range of alternatives propose a mix of recreation opportunity settings to provide for sustainable recreation. Recreation opportunity settings vary by alternative in conjunction with recommended wilderness and backcountry areas in each alternative. The environmental impact statement analyzed the effects to suitability of existing trails for motorized and mechanized transport and for motorized over-snow transport, based on recommended wilderness and backcountry areas in each alternative. No alternative affects currently open roads. The alternatives range from no effect to current motorized or mechanized trails in alternatives A, B, or E, to several hundred miles affected in alternative D. (See final environmental impact statement, Environmental Consequences for Recommended Wilderness Areas and for Backcountry Areas.) The key linkage areas and bison plan components do not affect the recreation opportunity settings in any alternative, nor affect suitability of motorized or mechanized transport other than mountain biking, which would be suitable only on approved system routes in key linkage areas (FW-SUIT-WL-01).

The preferred alternative would not change suitability for motorized transport on any motorized trails, either summer or winter. About 10,900 acres would no longer be suitable for motorized over-snow use;



this acreage is based on a mapping analysis that does not consider access, topography, or consistent snow. About 31 miles of trail would no longer be suitable for mountain biking. This includes about 9 miles in the Sawtooth Recommended Wilderness Area, where either there is no public access or access is from Yellowstone National Park where mountain biking is not allowed; about 2.5 miles in the Crazy Mountains Backcountry Area, again where there is no public access, about 1.5 miles in the South Crazy Mountain Recommended Wilderness Area; about 4 miles are in the Cowboy Heaven Recommended Wilderness Area; and about 14 miles in the Bad Canyon Backcountry Area. Cross-country mountain bike use would no longer be suitable in recommended wilderness areas, backcountry areas, and key linkage areas.

### **Management**

**Concern:** Comment requested a number of specific recreational related actions such as road and trailhead plowing, signage, closure orders, trail management, new parking, camping, dog waste, and leash laws.

**Response:** The requests were not incorporated into the plan, either as not appropriate in a land management plan, because the plan direction was sufficient, or it relates to a project level where specific analysis would be needed.

### **Monitoring**

**Concern:** Comment requested that the Custer Gallatin National Forest monitor the effect of recreational uses and activities on wildlife, establish baseline data about wildlife occupancy and recreational use on the national forest, and monitor changes over the life of the revised plan.

Comments requested additional monitoring questions using National Visitor Use Monitoring such as: (1) To what extent is the mode of recreational use changing across the Custer Gallatin, and (2) To what extent is the volume of recreational use changing in key habitat areas?

**Response:** The purpose of land management plan monitoring is to evaluate the effectiveness of plan direction and determine whether changes to plan components are needed (FSH 1909.12, section 30.2). There is no clear plan mechanism to monitor the impacts of public recreation on wildlife or habitat. National Visitor Use Monitoring is conducted on a 5-year basis. The statistical design of the recreation-focused survey follows agency-wide protocols. It is not designed to monitor specific locations on the Custer Gallatin, such as key habitat areas. However, it is important to understand the effects of recreation on wildlife, and to that end, the revised plan contains a goal to engage with partners to conduct ecological research, improve or coordinate inventories and monitoring, and expand data and knowledge collection where needed (FW-GO-WL-04).

### **Motorized Opportunity**

**Concern:** Concern is expressed that the plan maintain public access and recreation opportunities for motorized users. Commenters noted many specific trails and over-snow areas they request to remain open to motorized recreation use. Comments stated that the Forest Service should consider an additional alternative that increases motorized and mechanized recreation opportunities, including restoring the lands that were available prior to 2006, and allowing snowmobiles to access existing wilderness, wilderness study areas, and other areas restricted from their use. Other commenters

requested that the Forest Service disallow the use of motorized vehicles in the Custer Gallatin National Forest, either generally or for specific trails or areas.

Commenters noted winter motorized use occurs in designated wilderness, and noted a number of concerns related to motorized recreation management.

**Response:** Suitability of existing trails for motorized transport varies by alternative, from no motorized trails affected in alternatives A, B, E, or F, to over 170 miles affected in alternative D (see final environmental impact statement, Environmental Consequences for Recommended Wilderness Areas). Other than in backcountry areas, new motorized trails may be allowed, subject to site-specific analysis and decision making, in areas suitable for this use. Suitability for motorized over-snow transport also varies by alternative, with no changes to amount of land suitable for motorized over-snow transport in alternatives A, B, or E, to over 230,000 acres affected in alternative D (although the mapping does not consider topography, access, or consistent snow).

The preferred alternative would not change the suitability of any motorized trails, summer or winter. Based on winter recreational opportunity spectrum mapping, 10,900 acres currently suitable for motorized over-snow transport would no longer be suitable for that use (although the mapping does not consider topography, access, or consistent snow).

The final environmental impact statement section, Alternatives Considered, but not Given Detailed Study, includes an alternative that would make available for motorized and mechanized transport all lands that were available prior to 2006. The alternative was not analyzed in detail because broad changes in motorized transport suitability were not part of the need for change (see chapter 2, Alternatives Considered, but not Given Detailed Study). Alternative E proposes to make additional land available (above what is currently suitable) for motorized and mechanized transport in the wilderness study area if it were released by Congress. Motorized transport is not allowed in designated wilderness areas.

While day-to-day operations such as law enforcement are not part of land management plan, the revised plan has objectives to sign areas of wilderness boundaries near adjacent motorized setting to better inform visitors of motorized restrictions (FW-OBJ-ROSP-01), and to eliminate identified unauthorized motorized travel incursions in primitive and semi-primitive non-motorized recreation opportunity settings (FW-OBJ-ROSP-02 and FW-OBJ-ROSSPNM-01).

The comments concerning motorized recreation management relate to travel management, rather than plan revision.

### **Motorized Environmental Impact Statement Analysis**

**Concern:** Comment stated the draft environmental impact statement analysis related to motorized use did not: adequately disclose the miles of non-motorized and motorized trail or miles and quality of trail in wilderness areas; compare non-motorized and motorized opportunity, including the miles of trails, costs and conditions, and number of users; discuss the need and value of motorized recreation; disclose the cumulative effect of all motorized closures on the public and impacts of motorized recreation on the natural environment; and the proposed action does not include any off-highway vehicle trail opportunities, or recognize long-distance trail opportunities. A comment noted that the draft environmental impact statement identifies 2,060 acres of over-snow motorized opportunity that would

be lost in alternative C's Gallatin recommended wilderness area and recommended using the same buffers for each alternative to get the most accurate analysis of the impacts of various plan land allocations on recreation.

**Response:** The environmental impact statement discloses an adequate amount of trail information to inform the land management plan decision including trail mileage (Infrastructure Affected Environment), trail mileage in wilderness (Designated Wilderness Affected Environment), and motorized and non-motorized recreation opportunity (Recreation Opportunity Spectrum Environmental Consequences). Specific trail proposals are not included in a land management plan. The Council on Environmental Quality has indicated that programmatic effects analysis must provide sufficient detail to foster informed decision-making that reflects broad environmental consequences from a wide-ranging Federal program. Additional detail such as quantifying trail costs, conditions, number of users, or past changes in access would not provide a meaningful analysis of effects of the revised plan alternatives.

The environmental impact statement analysis related to motorized use compares the amount of motorized recreation opportunities that may be affected by each alternative. Alternative E would increase motorized recreation opportunity. No motorized trails, summer or winter, would be affected by changes in motorized suitability in the preferred alternative. Based on winter recreational opportunity spectrum mapping, about 10,900 acres currently suitable for motorized over-snow transport would no longer be suitable for that use (although the mapping does not consider topography, access, or consistent snow).

The winter recreation opportunity spectrum was the basis of the analysis for potential changes in suitability of over-snow motorized opportunities. The Forest Service used a consistent methodology for all alternatives in mapping the recreation opportunity spectrum.

### **Mountain Biking**

**Concern:** Comment requested that the plan maintain or increase mountain biking access in the Custer Gallatin National Forest. Commenters noted many specific trails they request to remain open to mountain biking. Other comment stated that the plan should not increase mountain biking trails, or the plan should reduce or eliminate mountain biking due to environmental and social concerns. Comment had a number of suggestions for management of mountain biking.

**Response:** Suitability of existing trails for mountain biking varies by alternative, from no mountain biking trails affected in alternatives A, B, or E, to several hundred miles affected in alternative D. (See Final Environmental Impact Statement Environmental Consequences for Recommended Wilderness Areas and for Backcountry Areas). New mountain bike trails could not be constructed in the Chalk Buttes Backcountry Area, or constructed or designated, other than reroutes of existing trails, in the Big Pryor and Lionhead Backcountry Areas. New mountain bike trails may be allowed, subject to site specific analysis and decision making, in other areas suitable for this use.

In the preferred alternative, about 31 miles of trail would no longer be suitable for mountain bike use. Almost 9 miles are in the Sawtooth Recommended Wilderness Area, where there is no public access from private land, or access is provided from Yellowstone National Park where mountain biking is not allowed. About 2.5 miles are in the Crazy Mountains Backcountry Area, again where there is no public access, about 1.5 miles are in the South Crazy Recommended Wilderness Area, about 4 miles are in the Cowboy Heaven Recommended Wilderness Area, and about 14 miles are in the Bad Canyon Backcountry

Area. The suitability of backcountry areas for mechanized recreation such as mountain biking is addressed individually for each backcountry area in chapter 3 of the revised plan. In the preferred alternative, mountain biking would no longer be suitable off trail in the key linkage areas and in the backcountry areas that are suitable for this use. The suggestions for mountain bike management are not included in a programmatic land management plan.

### **Outfitter Guides and Special Use Permits**

**Concern:** Comments related to plan direction and environmental analysis for outfitters and guides and special use permits requested:

- increased or reduced numbers and types of outfitter and guide special use permits; more flexibility in user days; additional fees for outfitters for trail maintenance, patrol, and weed control; banning commercial outfitters in designated wilderness areas; and stricter enforcement of outfitter camps.
- removal of guideline FW-GDL-REA-02, which emphasized outfitting and guiding for experiential education in recreation emphasis areas, and guideline FW-GDL-DWA-05, which would not increase outfitter and guide days in wilderness areas.
- plan component's language which states that the outfitter and guide identified public need is reasonable and compatible with the recreation opportunity spectrum or area management.
- removal of the suggestion in Opportunities - Recreational Special Uses Management Approaches to create an open season to resolve capacity to facilitate permits.
- disclosure of the number of outfitters using each geographic area, how many livestock permittees are also outfitters, and how many permittees and outfitters own or lease land that borders National Forest System land.

**Response:** The land management plan sets general guidance for outfitting and guiding. Decisions about fees, numbers, types, locations, and user days of outfitter and guide special use permits are made at the project level with site-specific analysis and enforcement conducted at the permit level.

In response to comments, the revised plan omits draft plan guideline FW-GDL-REA-02, and now provides outfitter and guiding direction tailored to each recreation emphasis area. Guideline FW-GDL-DWA-05 has been modified to replace language about not increasing outfitter and guide days in wilderness areas to language that would authorize new outfitter guide service days only for enhancing wilderness character.

Modifications were not made for other suggestions. Projects reviewed and approved under the revised plan need to be consistent with all land management plan direction; plan direction is not necessary in one section to require a use to be compatible with other sections of the plan. Management approaches, such as a special uses open season, are options for the Forest Service to consider implementing plan direction.

Section 3.19.6 of the final environmental impact statement (Recreation Special Uses Affected Environment) discloses information about existing outfitter guide permits and includes the number of outfitters and guides using each geographic area. The Council on Environmental Quality has indicated that programmatic effects analysis must provide sufficient detail to foster informed decision-making that reflects broad environmental consequences from a wide-ranging Federal program. Quantifying how many livestock permittees are also outfitters, and how many permittees and outfitters own or lease land

that borders National Forest System land would not contribute to a meaningful analysis of effects of the revised plan on outfitting and guiding.

### Plan Components

**Concern:** Comments requested additions or modifications to plan components related to recreation. Comment expressed concern about increasing recreational demand, public access, hunting, filming, unauthorized routes, over-snow travel, stewardship, and working with partnerships. Comment requested additional recreation plan components to address potential impacts to forest resources from recreational use.

**Response:** Changes made in response to comments include revised wording of FW-DC-REC-05 to replace facilities with recreation-related infrastructure, and addition of desired condition FW-DC-REC-06 to address recreation user experiences. Goal FW-GO-RECDISP-01 was deleted and replaced with goal FW-GO-REC-01, which focuses on partnering more broadly than with a single user community.

Other requests are addressed within the current set of integrated plan components throughout the revised plan. Desired condition FW-DC-REC-05 envisions that recreation uses and related infrastructure have minimal impacts on resources including ecological integrity and diversity, at-risk species, heritage and cultural sites, water quality, and aquatic species. Desired conditions FW-DC-RT-01 and 02 address access provided by an efficient transportation system that has minimal effects on natural resources. Goal FW-GO-WL-04 speaks to partnerships with many entities, to conduct ecological research, improve or coordinate inventories and monitoring, and expand data and knowledge collection. A number of wildlife plan components also address recreation uses, including FW-STD-WL-02, FW-GDL-WL-03, FW-GDL-WLBAT-03, FW-GDL-WLSG-04, FW-STD-WLGB-04 and 05, FW-GDL-WLWV-01). Plan components that provide for protection of ecological resources would guide project-level analysis for establishing minimum snow depths for over-snow vehicles.

Public land access is addressed in FW-DC-LAND-03 and 04. Hunting is recognized in desired condition FW-DC-SUS-04. Due to the expense and funding uncertainty for new recreation facilities such as campgrounds, the revised plan does not have an objective to construct new recreation facilities, other than conversion of unsustainable dispersed camping sites into higher development campgrounds in the Hebgen Lakeshore, Hyalite, and Main Fork Rock Creek recreation emphasis areas (MG-OBJ-HLREA-01 and MG-OBJ-HREA-01, and AB-OBJ-RCREA-01). The Custer Gallatin considered adding a more general objective that speaks to removal of unauthorized roads and trails as they arise, but did not include because objectives need to be measurable, and the number of removals is unpredictable.

See also responses to Wildlife General Recreation and Wildlife Grizzly Bear Recreation Impacts.

### Resource Protection

**Concern:** Commenters requested desired conditions to address potential impacts to forest resources from increasing recreational use and specific guidelines or standards for resource protection from recreation uses. Some commenters stated that standards are the only components that the Forest Service must comply with, and did not trust agency adherence to guidelines. Specific suggestion included:

- restrictions on recreational use such as amount of use, time of use, spatial distribution, type of use and facility enhancement

- seasonal closures to mitigate the effects of outdoor recreation on wildlife, particularly motorized and mechanized activities, and hikers with dogs during critical seasonal periods, such as winter range, migration routes, and calving areas
- keep high-intensity recreation to places such as the northern end of the Gallatin Range, outside of the wilderness study area, and the Bridger and Bangtail Mountains
- define facilities that could be closed in riparian areas

**Response:** Desired condition FW-DC-REC-05 envisions that recreation uses and related infrastructure have minimal impacts on resources including ecological integrity and diversity, at-risk species, heritage and cultural sites, water quality, and aquatic species. All plan components will apply to new proposed projects, including recreation projects. Plan components that protect soils, wildlife, riparian management zones, and so on apply to recreation projects. Guidelines are not optional direction; departures are allowed, so long as the purpose of the guideline is met.

The recreation emphasis areas are intended to recognize highly used recreation areas, while other allocations such as recommended wilderness areas, backcountry areas, and key linkage areas would limit new developed recreation sites and new roads. Types of recreation use, and therefore, spatial distribution of these uses, would be restricted in some areas, such as motorized or mechanized transport in recommended wilderness areas. Facility enhancement would be subject to guidelines FW-GDL-FAC-01, 02, and 03.

While the revised plan does not include restrictions on amount of use, time of use, or seasonal closures, these actions could be undertaken when information would lead the Forest Service to an action. See also response to Recreation Plan Components.

### Rock Collecting

**Concern:** Comment expressed concern that the plan continue to allow for recreational rock collecting and casual-use mineral, fossils, and petrified wood collecting in the Custer Gallatin National Forest. Commenters requested they not lose rock-collecting access in the Pryor Mountains.

**Response:** Desired condition FW-DC-EMIN-07 addresses availability of opportunities for rock hounding and other types of noncommercial rock and mineral collecting. Standards FW-STD-RWA-06 and MG-STD-WSA-06 specifically exempt permitted collection of petrified wood in the Gallatin Petrified Forest Special Management Zone from the prohibition on extraction of saleable mineral materials in recommended wilderness areas and the wilderness study area. In the preferred alternative, existing roads, motorized trails, and mountain bike trails in the Pryor Mountains would continue to be suitable for those uses. The two backcountry areas, Big Pryor, and Punch Bowl would not change suitability of motorized trails and mountain bike trails (see final environmental impact statement chapter 3 for recommended wilderness areas and backcountry areas). The two recommended wilderness areas, Bear Canyon and Lost Water Canyon, are roadless and trail less.

### Ski Resorts; Ski Grooming

**Concern:** Comment related to plan direction for ski resorts requested limits on ski resorts such as prohibiting new downhill ski areas, or limiting new summer events to existing ski resort footprints. Comment concerned ski resort operations, such as allowing for side-country access and open gate policy or uphill access opportunities, and support for mountain biking at ski resorts. Comment requested the

Bridger Bowl permitted ski area not overlap with proposed primitive areas. Comment requested locations or conditions for additional grooming, such as on the West Fork Rock Creek road. Comment questioned what the term ski resort includes.

**Response:** Any proposed new or expanded ski areas would receive in-depth project-level analysis to evaluate potential impacts and opportunities. A prohibition to new or expanded ski resorts in the revised plan would preclude that opportunity for analysis. Decisions about grooming, uphill access, or side-country access would be made at the project level after site-specific analysis, not in the plan. The preferred alternative does not include a recommended wilderness area or backcountry area adjacent to the Bridger Bowl permitted ski area. The boundary of the key linkage area in the preferred alternative is adjacent to, but does not overlap the Bridger Bowl permitted ski area. The term ski resort is defined in the revised plan glossary.

### Technology Drones

**Concern:** Comment stated drones are noisy and disruptive; their use should be minimized, and they should be classified as a motorized use. A drone user was concerned that fewer places allow drones.

**Response:** The revised plan limits recreational and commercial use of drones in designated wilderness, recommended wilderness areas, the wilderness study area, the Cabin Creek Recreation and Wildlife Management Area, and research natural areas. The plan does not restrict administrative use of drones.

### Technology E Bikes

**Concern:** Comment stated the plan must address electric bikes as an emerging technology. More specifically, comments state that plan suitability components should clearly state e-bikes are motorized vehicles and are only suitable on designated motorized routes and trails and/or in areas with a recreation opportunity spectrum classification that allows motorized recreation (semi-primitive motorized, roaded natural, and rural recreation).

**Response:** The Custer Gallatin National Forest will continue to follow agency-wide definitions used for E-bikes, as defined at 36 CFR 212.1. The plan includes suitability components for motorized transport consistent with desired recreation opportunity spectrum settings to provide for sustainable recreation. See the Recreation Opportunity Spectrum section of chapter 3 of the final environmental impact statement.

### Technology Plan Direction

**Concern:** Commenters appreciated the Forest Service addressing emerging recreational technologies in the revised plan and suggested additional direction address specific technologies (such as hot air balloons, hang-gliders, and so on), address recreational technology that will emerge over the plan's lifetime, and include direction to protect forest resources.

**Response:** The intent of the recreational technology plan guidance is to address emerging recreation technology broadly, rather than identify specific technologies. In response to comments, the recreational technology introduction has been modified to acknowledge that some emerging recreational products may fit within existing definitions and be manageable under current direction or with minimal adaptation.

A suggested standard to prohibit emerging technologies not specifically addressed by current direction unless explicitly integrated through a public planning process could be applied too broadly. For instance, emerging technologies could include new Global Positioning System (GPS) technology and new designs of gear and equipment for hunting, fishing, skiing, or backpacking; the suggested standard could conceivably ban these new technologies on the national forest.

A plan component mandating timely assessment of new technology would compel action; land management plan components do not compel action. It is not necessary to repeat plan direction for soils, wildlife, riparian management zones, and so on in different sections of the revised plan.

### Trapping and Target Shooting

**Concern:** Comment requested that the plan acknowledge recreational furbearer trapping and acknowledge target shooting. A comment requested regulations to help prevent hikers from accidentally getting snared, such as visible marking. A comment opposed trapping.

**Response:** The introductions to several sections of the plan and two plan components acknowledge recreational trapping as a use of the national forest—FW-DC-WLBG-01 and FW-DC-SUS-04. The introduction to the Recreation Opportunities-Dispersed Recreation (RECDISP) section of the plan acknowledges target shooting as a use of the forest. Trapping is regulated by state departments of wildlife.

### Travel Management Planning

**Concern:** Comment requested the land management plan undertake travel planning or commit to do so. Comment requested the Custer Gallatin issue an order, concurrently with the final plan and record of decision, to close areas that are no longer suitable for motorized and mechanized transport in the revised plan. Comment stated the plan is making site-specific detailed route restrictions when a plan component restricts new motorized routes in an area.

**Response:** Land management plans do not specify the development of tactical plans, such as travel management plans. As stated in chapter 1 of the final environmental impact statement, resource plans (for example, travel management plans) developed before this plan decision will be evaluated for consistency with the plan and updated, if necessary, through site-specific National Environmental Policy Act decision making. A plan component restricting new motorized routes in an area is constraining future decision making.

### User Fees

**Concern:** Comment stated that there should be various user fees charged to help pay for providing recreational opportunities.

**Response:** Existing laws, regulations, and policies direct when fees to the public may be charged. The revised plan does not provide additional direction on this topic.

## Recreation Emphasis Areas

**Concern:** Comment expressed both support for recreation emphasis areas as well as opposition to recreation emphasis areas on the Sioux District or to creating certain recreation emphasis areas, stating increased recreation pressure would conflict with other resources such as municipal watersheds,



riparian areas, and wildlife; force more users into recreation emphasis areas; and eliminate some recreation opportunities. Comment recommended the fewest recreation emphasis area acres possible, stating the allocation would unfairly promote one use of the multiple-use forest over other equally important uses. Comment proposed additional recreation emphasis areas for Mill Creek (Absaroka), South Bridgers, and an enlarged Bridger Winter.

Comment requested additional or modified plan direction including specific plan direction for each recreation emphasis area, an objective to develop plans for recreation emphasis areas, opportunities for special segments of recreation such as outfitter guides, prohibiting extraction of minerals, more restrictive management direction where recreation emphasis areas overlap key linkage areas, maintaining motorized transport, and enforcing and monitoring recreation use. Comment requested Hyalite Recreation Emphasis Area plan components that protect the municipal watershed, and that provide for a fee-based system to support maintenance and improvements. Comment requested clarification of terms such as "high density recreation development" and "alternative transportation."

**Response:** Thank you for your comments on recreation emphasis areas. The revised plan alternatives propose a range of recreation emphasis areas, from four recreation emphasis areas in alternative D to 12 recreation emphasis areas in alternative E (see final environmental impact statement chapter 2, alternatives). Ten recreation emphasis areas are included in the preferred alternative: Main Fork Rock Creek, Cooke City Winter, Boulder River, Yellowstone River Corridor, Bridger, Hyalite, Storm Castle, Gallatin River, Hebgen Winter, and Hebgen Lakeshore. Both the Main Fork Rock Creek and Bridger Recreation Emphasis Areas are larger than proposed in the draft plan. The Bridger Recreation Emphasis Area was enlarged in response to public comments to extend this recreation emphasis area north to Fairy Lake. Once the recreation emphasis area was expanded beyond the primary ski area, it was also enlarged to the south to encompass lands logical to include in a recreation emphasis area. The expanded recreation emphasis area in alternative F is named Bridger Recreation Emphasis Area, and remains as Bridger Winter Recreation Emphasis Area in alternative E. The Main Fork Rock Creek Recreation Emphasis Area was expanded south and west to manageable boundaries with the national forest boundary and the existing Absaroka-Beartooth Wilderness.

Recreation emphasis areas are envisioned as areas that offer a variety of quality recreation opportunities, are accessible to a wide range of users in several seasons, offer challenges to a wide range of skills, may be destinations, and may have a high density of human activities and associated structures (revised plan introduction to recreation emphasis areas). While recreational use may be growing in the Mill / Emigrant Creeks, East Boulder, Crazy Mountains, and South Bridger Mountains, the recreation use in these areas is not at the level envisioned for recreation emphasis areas. Recreation use on the Sioux District does not warrant a recreation emphasis area.

The proposed recreation emphasis areas already see higher recreation use, and recreation use can be expected to increase in these areas. A focus on recreation in these areas does not preclude recreation in other areas; users are not forced into recreation emphasis areas. Plan direction for recreation emphasis areas does not eliminate existing recreation opportunities, nor do plan components limit new trails, or facilities. All forestwide plan components for protecting resources such as riparian areas, municipal watersheds, and wildlife also apply to recreation emphasis areas; new recreation proposals would need to meet all applicable plan direction (see final environmental impact statement, chapter 3 wildlife analysis of recreation emphasis areas). The recreation emphasis areas do not prohibit other multiple

uses such as vegetation management, permitted livestock grazing, or extraction of saleable mineral materials; new proposals would need to meet all applicable plan direction.

The revised plan has added area-specific plan components for each recreation emphasis area, and has added definitions of high “density recreation development” and “alternative transportation” to the glossary. Where allocations overlap, such as recreation emphasis areas and key linkage areas, the more restrictive direction applies. Desired condition MG-DC-HREA-01 addresses the importance of balancing the demands of the Bozeman municipal watershed with recreation use. The recreation emphasis area plan land allocation does not change the suitability of existing motorized or mechanized transport. The recreation monitoring questions apply forestwide, including recreation emphasis areas.

Some of the suggested components are not consistent with plan component requirements, for example, land management plans do not specify the development of tactical plans; are not being addressed in the plan, for instance locatable and leasable mineral availability or law enforcement; are project-level analysis, for instance developing a fee system; or are outside Forest Service jurisdiction, such as aerial sightseeing touring. Extraction of saleable mineral materials is addressed in the plan and would be allowed in recreation emphasis areas.

## Recreation Opportunity Spectrum

### Allocations

**Concern:** Comments requested specific changes to recreation opportunity spectrum allocations. Reasons included accommodating losses of other recreation opportunity spectrum classifications, to increase semi-primitive motorized areas to reflect increasing demand, or to consider potential groomed Nordic ski areas in formulation of recreation opportunity spectrum allocations. Another comment supported the recreation opportunity spectrum mapping of various areas and alternatives.

Comment stated the recreation opportunity spectrum maps do not provide flexibility to add new motorized routes. The public is unaware of these maps because viewing technology is required and the commenter asked whether the Summer Percent of Forest column for alternatives B and E should be identical.

**Response:** The National Recreation Opportunity Spectrum Inventory Mapping Protocol, April 2018, provides guidance for not only how recreation opportunity spectrum categories are mapped but also what recreation management actions are appropriate in each recreation opportunity spectrum setting. The recreation opportunity spectrum is a way of displaying broad opportunities for recreational activities and desired settings on a landscape scale. At the highest scale, the categories are based initially on whether an area is motorized or non-motorized - initially mapped as a function of distance from roads and motorized trails. Additional classifications are then provided within those two broader categories that further reflect levels of infrastructure, type of access, or specific recreation opportunity. Mapping of recreation opportunity spectrum is based on the current situation or desired condition within specific areas like designated wilderness.

Broad changes in suitability of motorized transport was not part of the need for change (see Final Environmental Impact Statement Chapter 2, Alternatives Considered but not Given Detailed Study). The land management plan recreation opportunity spectrum classifications are based on the existing condition, and vary by alternative, largely based on plan land allocations for recommended wilderness

areas or backcountry areas. The assigned recreation opportunity spectrum class in alternative F was modified for the areas around Republic Mountain, Line Creek, and Hyalite Lake in response to objections. Small areas of additional motorized settings are provided in alternatives E for some existing recommended wilderness areas that are not proposed in that alternative (for example, Republic Mountain). In addition, alternative E proposed additional corridors of semi-primitive motorized setting in the Buffalo Horn Backcountry Area in the Gallatin Mountains, if the wilderness study area were released by Congress.

New motorized routes are possible in the motorized recreation opportunity spectrum settings. Recreation opportunity spectrum maps are available in the final environmental impact statement, and larger scale maps are available on-line. The recreation opportunity spectrum summer acreages are different for alternatives B and E, but with rounding to the nearest whole number, the percentages were the same for these two alternatives in the draft environmental impact statement. Recreation opportunity spectrum acreages in all alternatives have been recalculated and corrections made as needed. A table displaying recreation opportunity spectrum acreage by alternative is no longer in the revised plan; this information is in section 3.19.2 of the final environmental impact statement.

### Plan Components

**Concern:** Commenters appreciated the detailed plan components for each recreation opportunity spectrum setting. Comments requested new, modified, or clarified plan components related to mechanized transport in primitive and semi-primitive non-motorized recreation opportunity spectrum settings, and to address unauthorized routes, glading in non-motorized winter recreation opportunity spectrum settings, other resource management such as wildlife and timber harvest, and to define "motorized excursions."

**Response:** Changes made in response to comments include

- Desired condition FW-DC-ROS-06 was modified to be more consistent with the non-motorized summer desired condition (FW-DC-ROS-05).
- Objective FW-OBJ-ROSSPNM-01 was added to the SPNM ROS setting to eliminate five identified unauthorized motorized travel incursions per decade.
- The draft plan ROSSPNM suitability component related to mechanized travel (bicycles) suitability on designated routes in SPNM settings has been omitted. The suitability of mechanized transport (bicycles) on designated routes is now addressed for specific areas such as backcountry and key linkage areas.
- The term recreation travel was replaced with motorized transport or mechanized transport.
- A definition was added-for motorized incursion.

Per the Forest Service national protocol, mountain bikes are suitable in all recreation opportunity spectrum settings, unless those areas are specifically found not suitable due to legislative action, such as congressionally designated wilderness, or by closure order at the national forest or district levels. In the revised plan (alternative F), all primitive recreation opportunity spectrum coincides with congressionally designated wilderness, which is not suitable for mountain bikes. Glading would be addressed at the project level; land management plan-level language is not needed.

The recreation opportunity spectrum is a tool for expressing the recreation opportunities provided by an area. The recreation opportunity spectrum is not an appropriate tool to achieve management goals for other types of management, such as wildlife habitat or timber harvest limits, by declaring an area a certain recreation opportunity spectrum class.

### Winter Travel Planning

**Concern:** Comment requested that the land management plan state that recreation opportunity spectrum settings are not a substitute for travel planning decisions and include an objective to begin winter travel planning within 1 year of completing land management plan revision. Comment requested the winter recreation opportunity spectrum maps in the revised plan show desired future conditions reflecting where over-snow vehicles are ecologically, socially, and physically suitable, and not simply map where snowmobiles are currently allowed. Comment noted the Forest Service has historically conflated "suitable" with "designated" when considering areas where over-snow vehicle use is allowed; and recreation opportunity spectrum classifications cannot serve a dual purpose as off-highway vehicle or over-snow vehicle area designations. Comment noted the Forest Service failed to disclose in the draft environmental impact statement the fact that it has yet to complete winter travel planning for the Custer National Forest. Comment requested changes to specific winter recreation opportunity spectrum settings. Comment suggested new plan or modified plan direction related to over-snow vehicles, future travel planning, and to establish season dates for over-snow vehicle use and a forestwide minimum snow depth.

**Response:** Recreation opportunity spectrum mapping follows a protocol, based on existing motorized routes and areas (see response to Recreation Opportunity Spectrum Allocations). Recreation opportunity spectrum mapping represents recreation opportunity and settings; the mapping does not guarantee a recreation experience everywhere in the mapped recreation opportunity spectrum class. For instance, an area may be mapped as winter semi-primitive motorized, but the mapping does not account for topography, ease of access, or consistent snowpack, which may limit the actual locations where a motorized opportunity exists. In other instances, an area may be designated as summer semi-primitive motorized and a travel plan decision may only allow motorcycles on a designated route, seasonally or under timeshare conditions.

As stated in section 2.5.3 of the final environmental impact statement, Elements Common to all Revised Plan Alternatives, "plan direction would be consistent with the travel planning rule and the existing travel plans, except where suitability for motorized recreation and mechanized recreation varies by revised plan alternatives. Site-specific travel decisions needed to bring travel plans into compliance with the revised forest plan would occur subsequent to the revised forest plan decision." The land management plan does not make commitments to future planning efforts.

Because the revised plan is not conducting travel planning, recreation opportunity spectrum varies by alternative largely in concert with suitability of motorized transport in alternative plan land allocations. For instance, if motorized transport would no longer be suitable in an alternative in recommended wilderness areas, then the recreation opportunity spectrum class would be consistent with a non-motorized class in that alternative. In addition, the assigned recreation opportunity spectrum class was modified in alternative F for the areas around Republic Mountain, Line Creek, and Hyalite Lake in response to objections.

Recreation opportunity spectrum is not intended as a substitute for travel plan decision making. For the purposes of delineating winter recreation opportunity spectrum for the land management plan in the locations where a winter travel plan has not been completed, the mapped classes reflect existing condition and allowable use based on Custer Plan decisions. Future travel planning efforts will make specific travel decisions on specific allowable uses, trails, and areas.

In response to comments, the revised plan's introduction to the Recreation Opportunity Spectrum section added language that recreation opportunity spectrum suitability does not confer a travel management designation and that site-specific travel planning in compliance with the Travel Management Rule is required to designate routes and areas for motorized use. Changes were not made where the plan language addresses the suggested wording; over-snow vehicle season dates and minimum snow depth would be site-specific travel decisions.

## Research Natural Areas

**Concern:** Comment requested the Forest Service designate at least one research natural area to represent green ash woodlands, and create an additional research natural area for the Pryor Mountain Range to protect wilderness and research rare plant communities. Comment requested a plan component that new oil and gas leasing is not suitable within research natural areas.

**Response:** Green ash woody draws are not currently represented in the Region 1 research natural area network; however, they were identified as a high priority for inclusion in the network in eastern Montana in the 1996 Regional Research Natural Area Needs Assessment. Sites representing needed additions to the research natural area network can be evaluated throughout the life of the plan. If a suitable site for green ash woody draws is located, it may be proposed for research natural area establishment.

There currently is one established research natural area in the Pryor Mountains—Lost Water Canyon (2,809 acres). Future research natural area additions can be considered throughout the life of the plan. A potential special botanical area in the Pryor Mountains is pending further review by the national forest and regional staff. The Montana Native Plant Society designated close to 115,000 acres of National Forest System lands, Bureau of Land Management lands, and other lands as an important plant area in the southern Pryor Mountain area. Some portion of this botanically unique area may be considered as the potential special botanical area in the future.

The Custer Gallatin has a number of plan components (desired conditions, goals, and objectives) that address green ash draws (referred to as woody draws). These plan components address general management, energy and minerals exploration, and grazing management practices that ensure function and persistence of woody draws. In addition, the plan has a new restoration objective that will maintain or improve woody draw structure, composition, and function (FW-OBJ-VEGNF-01). The plan is not addressing oil and gas leasing availability.

## Scenery

**Concern:** Comment requested additional clarifying language regarding the plan's scenery direction, consistency of application of the scenic integrity objectives from critical viewing platforms, clarification of how scenic integrity objectives are to be used, and a very high scenic integrity objective be assigned to some rock features in the Slim Buttes of South Dakota.

Comment questioned the assignment and application of some scenic integrity objectives for vegetation management; an exemption to the scenic integrity objective in research natural areas that are in designated wilderness; why there are no standards for scenery, only guidelines; and the absence of specific scenery guidance for recreation emphasis areas.

**Response:** The following changes were made to the revised plan in response to these comments.

- Scenic integrity objectives are expressed as minimum scenic integrity levels in the scenery section and in the scenic integrity objective definitions.
- Scenery direction for the Continental Divide National Scenic Trail and those rivers that have been determined to be eligible for inclusion in the Wild and Scenic Rivers System with an outstandingly remarkable value of scenery is consistent with scenery direction for all critical viewing platforms forestwide.
- The plan does not exempt new activities in research natural areas that are in designated wilderness from meeting the assigned scenic integrity objective of very high.
- A scenic integrity objective of high has been applied to the Castles National Natural Landmark in the Slim Buttes of South Dakota. A scenic integrity objective of "high" sets constraints requiring that the results of any new project work should not be evident to viewers, as viewed from the critical viewing platforms and the landscape should appear intact. The scenic integrity objective of "very high," as described in the Forest Service Scenery Management System, is always assigned to congressionally designated wilderness areas. In this revised plan, recommended wilderness areas are also assigned a scenic integrity objective of very high. The Castles are a National Natural Landmark, but neither congressionally designated wilderness nor recommended wilderness.

Information added to the final environmental impact statement provides the following further clarifications for scenery comments:

A variety of forest plan components pertains to any given area of National Forest System land. Management of the scenery resource for all land within the national forest, including the land designated as recreation emphasis areas, is covered in the scenery section, along with the associated scenery management maps. Regarding "maintaining the scenic quality" of recreation emphasis areas, critical viewing platforms within those recreation emphasis areas have been identified that include specific travelways and viewpoints, as well as some of the rivers and lakes. This means that the viewsheds from those critical viewing platforms must be considered and the assigned scenic integrity objective s would have to be met by any new project work, at all viewing distances, in all viewing directions.

Most of the lands suitable for timber production across the Custer Gallatin have been assigned a scenic integrity objective of moderate or low. Lands suitable for timber do not include any areas that are within wilderness, recommended wilderness, or inventoried roadless areas. Furthermore, not all of the lands suitable for timber production, regardless of assigned scenic integrity objective, are visible from critical viewing platforms. Only a small portion of the lands suitable for timber production are assigned the scenic integrity objective of high. While it is more challenging, a scenic integrity objective of high can be met for logging operations by applying unit-specific appropriate design features in the necessary locations, for views from the applicable critical viewing platforms. In terms of the recurring activities associated with timber harvest resulting in the "endless application of the proposed five-year exemption

to meeting the desired visual conditions," most, if not all, timber harvest project activities on the national forest have fairly discreet completion times, with no subsequent timber harvest activities for another 20 to 30 years. If there are "reoccurring activities" that meet the assigned scenic integrity objective from the critical viewing platforms, then those activities would be consistent with the land management plan.

As explained in the introduction of the plan, "A guideline (GDL) is a constraint on project and activity decision-making that allows for departure from its terms, so long as the purpose of the guideline is met..." It was determined to include the scenic integrity objectives and other scenery direction as guidelines because (1) there are usually a number of ways to meet the intent of the scenic integrity objectives, with not one specific quantifiable way; and (2) in some cases, deviations to the scenic integrity objectives are allowed, such as where there are statutory reasons or valid existing rights, or for meeting the purpose of research natural areas.

Desired condition FW-DC-SCENERY-02 displays the scenic integrity objectives. Guideline FW-GDL-SCENERY-01 is a management constraint that describes the lowest allowable levels of integrity of the scenic character that the visible results of all new management actions must meet. While the scenic integrity objectives are used as constraints for new project actions, the Custer Gallatin also may seek opportunities to improve the condition of the scenery; improve resilience; or accomplish restoration, especially where the existing condition of scenery visible from critical viewing platforms is lower than assigned scenic integrity objective.

The application of the scenic integrity objective definitions is not highly subjective, as one commenter asked, but there may be some variability in interpretation. That is why the Forest Service involves landscape architects and others who are trained to integrate the "environmental design arts" in project analysis and implementation. Forest Service Manual 2380.11b directs the Forest Service to integrate "aesthetic principles and the environmental design arts..." and to "use the knowledge, skills, and abilities of landscape architects to meet the goals of aesthetics, scenery management, and environmental integrity on National Forest System lands."

## Social and Economic Sustainability

### Air and Water

**Concern:** Comment expressed that the analysis should consider values of clean air and water.

**Response:** The analysis identified clean air and water as key benefits that the Custer Gallatin National Forest provides. The effects of the revised plan and alternatives on clean air and water are included in the analysis of each alternative. While additional recommended wilderness is expected to provide additional clean water, all alternatives are expected to provide clean air and clean water at a level that provides for ecological sustainability and contributes to social and economic sustainability (Final Environmental Impact Statement Chapter 3, General Contributions to Social and Economic Sustainability).

### Economic Analysis

**Concern:** Comment stated that the market and non-market values associated with amenity and ecosystem values, resources, and multiple uses on the Custer Gallatin National Forest are critical to consider in making a plan decision. Important values have not been included, or correctly evaluated, in

the draft environmental impact statement, including but not limited to: economic benefits of tourism, mining, hunting, fishing, outfitters and guides, recreation and outdoor activities including mountain biking, motorized vehicle use, hiking, and other trail use; resources including timber and forest products; community proximity to wilderness study areas, recommended wilderness areas, and other primitive management areas; public health benefits from national forests and recreation in healthy ecosystems; and ecosystem services, in general.

**Response:** Not all human values assigned to national forest resources, ecosystems, and multiple uses can be quantitatively, or otherwise fully analyzed, for the purpose of forest planning. In the Custer Gallatin National Forest Final Environmental Impact Statement, the appropriate analysis, relevant to level of decision being made in forest planning, is provided. In the social and economic analyses, key ecosystem services and the provision of natural resources and recreation opportunities are analyzed to the extent necessary, given the uncertainty with future projects and project-level decisions that will have more direct implications for on-the-ground travel, ecosystem, and resource management.

Specifically, in the final environmental impact statement, ecosystem services are qualitatively analyzed and are limited to a list of "key" ecosystem services, those being relevant to forest planning decisions. Ecosystem services are described qualitatively in the sections titled "Benefits to People" and the decision implication for each key ecosystem service is provided in the environmental consequence subsection (Final Environmental Impact Statement Chapter 3, General Contributions to Social and Economic Sustainability).

In addition, recreation, and other multiple-use economic values, are considered and analyzed under the national forest jurisdictional perspective. For example, the economic contribution analyses for recreation on a national forest does not include spending associated with durable goods such as off-road vehicles, or mountain bikes. Instead, only spending directly linked to visitation and travel within a 50-mile radius, and for non-durable goods (for example, gasoline, hotel rooms, fishing bait) are used in estimating the economic contribution from recreation-related national forest visitation. Understandably, compared to industry or tourism agency studies, which typically include all durable goods spending, the results appear much different in terms of economic valuation. This difference does not reflect a difference in opinion of the importance of recreation economics, but rather what is being specifically accounted for in each study.

Regarding public health and health benefits associated with national forests, the final environmental impact statement analyzes key ecosystem services, or benefits to people, and specifically describes which ecosystem services are linked to providing public health benefits. Public health is highlighted and documented as part of a key benefit in nine subsections within the analysis of benefits to people.

### **Economics Amenity Values**

**Concern:** Comment stated the draft environmental impact statement does not consider or document the full extent of the role the Custer Gallatin National Forest plays in passively driving local economies through amenity-related migration, and other quality of life factors.

**Response:** National forests play a critical role in offering unique quality of life benefits as well as amenity-related economic growth and economic value. However, the environmental impact statement does not attempt to describe the total economic value or benefit of the Custer-Gallatin National Forest. In the narrowed context of this land management plan decision, it is the intent of this environmental



impact statement to determine the effects, only the proposed changes to Custer Gallatin National Forest programmatic planning would have on aspects of amenity-related economic growth, or to general quality of life in this multi-county area. The passive benefits from the Custer-Gallatin National Forest, those described within comments sharing this concern, will remain, regardless of this land management plan decision.

### **Environmental Justice**

**Concern:** Comments expressed that additional monitoring questions and plan components should be provided to address environmental justice community concerns.

**Response:** The social sustainability analysis in chapter 3 of the final environmental impact statement identifies the presence of environmental justice communities in the social analysis area and notes that these are tribal communities. No adverse effects to these communities are expected as a result of the revised plan or alternatives. Opportunities for further input and engagement with tribal communities are addressed through both formal and informal tribal consultations. Plan components related to areas of tribal importance and cultural resources were developed through consultation and engagement with members of tribal communities. For further information, please see the Areas of Tribal Importance and Cultural and Historic Resources analyses in chapter 3 of the final environmental impact statement.

### **Health**

**Concern:** Comments expressed that analysis should include more literature and discussion of the health benefits of nature and wild places.

**Response:** The Social Sustainability analysis in the final environmental impact statement addresses the full suite of health benefits national forests provide. The revised plan alternatives are not expected to adversely affect these health benefits. Health benefits are discussed in the social benefits section under Designated Areas, Recreation, and Inspiration subheadings. They are also addressed in the recreation analysis. For example, under the Designated Area benefits, the analysis states: "Extensive literature from the fields of public health, environmental sociology, and environmental psychology documents the health benefits (physical, mental, and emotional) of connecting with nature and exposure to pristine landscapes (American Public Health Association 2013, Zelenski and Nisbet 2014)," (Final Environmental Impact Statement Chapter 3, General Contributions to Social and Economic Sustainability). The literature provided by the commenters does not require further analysis, as the citations provide no additional relevant, substantive information that is not already captured in the final environmental impact statement analysis.

### **Population**

**Concern:** Comments expressed that additional plan components and information should be provided in the analysis addressing the effects of increasing human population in the analysis area on forest resources.

**Response:** The social sustainability analysis in the final environmental impact statement addresses how the revised plan alternatives will affect benefits to people—the quality of life of local communities and the larger universe of forest beneficiaries. The final environmental impact statement also evaluates how expected increases in human population may effect each of the Custer Gallatin's resources, including areas of tribal significance. These analyses are located in the relevant resource sections, not the Social

Sustainability analysis. For example, the expected effects of human population increases on wildlife are discussed in the wildlife section. Plan components are designed to take the expected increases in human uses and populations into account.

## Scenery and Inspiration

**Concern:** Comment suggested that the elements of scenery and inspiration as key social benefits provided by the Custer Gallatin National Forest are subjective and should not be considered.

**Response:** In the social sustainability analysis of the final environmental impact statement, chapter 3, benefits of “inspiration” and “scenic beauty” are described. Specifically, the Inspiration section explains that *“Some stakeholders may find more inspiration in areas available for grazing or recreation emphasis areas while others may find more inspiration in recommended wilderness areas or backcountry areas.”* This section recognizes that the inspiration that people derive from landscapes undoubtedly varies, based on one’s social context and preferences. However, this section also highlights the *“extensive literature from the fields of public health, environmental sociology, and environmental psychology that document the health benefits, (physical, mental, and emotional) of connecting with nature and exposure to pristine landscapes,”* even for those who may never visit areas of wilderness. This supports the determination that alternative D may provide the most opportunities for inspiration to the broadest number of stakeholders.

The Scenery section of chapter 3 of the final environmental impact statement explains that general scenic character descriptions were developed for each geographic area as part of the plan revision process. Scenic character is defined in the glossary as a “combination of the physical, biological, and cultural images that gives an area its scenic identity and contributes to its sense of place.” This acknowledges that in some landscapes, there may be cultural elements that have become recognized over time as helping to define an area’s scenic identity and sense of place, including elements such as historic cabins, historic fences, corrals, water troughs, and associated herders, wranglers or livestock. The scenic integrity objectives describe the amount of allowable deviations from the scenic character and vary across alternatives, based upon the amount of recommended wilderness, of which alternative D allocates the most.

## Soils

### Environmental Impact Statement Analysis

**Concern:** Comment requested additional quantified soils effects analysis and disclosure of the scientific information used in the environmental impact statement. In addition, comment indicated the draft environmental impact statement failed to examine important ecological functions, such as microbes and fungi.

**Response:** The Council on Environmental Quality has indicated that programmatic effects analysis must provide sufficient detail to foster informed decision-making that reflects broad environmental consequences from a wide-ranging Federal program. Site- or project-specific impacts need not be fully evaluated at the programmatic level when the decision to act on a site development or its equivalent is yet to be made (Council on Environmental Quality 2014). Quantifying the current levels of detrimental soil disturbance or loss of soil productivity due to noxious weeds forestwide is neither possible given the lack of site-specific data for many areas at the forestwide scale, nor would it provide a meaningful

analysis of effects on productivity given the variations of landform, topography, soil type, and climatic conditions. Analyses of specific soil conditions and disturbance are more appropriate during implementation of the land management plan at the site-specific project level.

Quantifying site-specific levels of detrimental soil disturbance from future timber harvest is also not feasible at this point of analysis as locations, specific activities, and timing of those activities is unknown and any estimated quantification would be highly speculative and not provide meaningful information to the decisionmaker. Expected levels of detrimental soil disturbance found within treatment units vary with respect to details of the proposed treatment actions as well as past management activities that may have occurred within the boundaries of currently proposed units, and the inherent vulnerability to differing soil types to the ground-disturbance activities likely to occur.

Custer Gallatin soil monitoring conducted between 2011 and 2020 found detrimental soil disturbance levels were below 15 percent. Locations were identified where restoration methods were needed to address issues where legacy impaired soil conditions would impede soil recovery from the proposed forest treatments, thus “moving toward a net improvement in soil quality” as directed by the detrimental soil disturbance standards in the Region 1 Soils Manual. It is a common practice for projects on the Custer Gallatin National Forest to include design criteria to address site-specific limitations of soil type to maintain soil productivity beyond meeting the baseline soil quality standards, and that practice is expected to continue under the revised land management plan to continue to contribute to desired conditions.

The effectiveness of mitigation measures are not quantified in terms of disturbance for similar reasons given for not quantifying detrimental soil disturbance. Previous disturbance estimates before routine use of these mitigation criteria showed detrimental soil disturbance over 30 percent of the unit (Klock 1975). Monitoring of Custer Gallatin National Forest post-activity disturbance finds disturbance less than 15 percent detrimental soil disturbance. Remediation that does occur post-harvest typically occurs at landing piles and along major skid trails. The soil recovers after the soil has soil drainage restored from ripping or reshaping to natural contour. Soil biology recovers more slowly over time as organic matter rebuilds in step with soil physical and biochemical attributes. Guideline FW-GDL-SOIL-03 addresses soil impairment associated with log landings, temporary roads, and decommissioning system roads. Application of the guideline will vary according to the growing environment and soil type. See Management Approaches for more detailed remediation strategies.

For timber, FW-STD-TIM-02 directs “Timber shall not be harvested on lands where soil, slope or other watershed conditions may be irreversibly damaged by harvest activities, as identified in project specific findings.” Similarly, soils effects including cumulative effects, would be factored during allotment renewal analysis; these analyses involve calculations of forage capacity. Revised plan desired conditions factor in soil stability and organic matter in the Grassland desired conditions (FW-DC-VEGNF). The final environmental impact statement analysis (see Permitted Livestock section in Environmental Consequences) shows a decrease in animal unit months of 23 to 43 percent over the last forest plan periods for both the Custer and Gallatin National Forests, with a general improvement trend for uplands. These trend analyses consider soil cover and stability. Trend for riparian condition is generally up, but some areas need improvement. The final environmental impact statement was updated to address the prescriptions associated with rehabilitation measures for guideline FW-GDL-SOIL-03. The final environmental impact statement and revised plan have updated and clarified language on FW-GDL-SOIL-04 and 08 about the intent of scarification.

The Forest Service initiated the Long-Term Soil Productivity experiment to investigate the linkage between pulse soil disturbance and forest productivity as a research response to the National Forest Management Act 1976 to manage forests in a manner that protected the productivity of the land. Results of the study were meant to validate operational standards used by the national forests to monitor soil quality (Powers et al. 1998). The study is in its 25th year, although results were collectively last published for the 10-year readings in 2005. Many published works have resulted from this large-scale study (Page-Dumroese 2010) that give insight on below ground effects from compaction and organic matter removal. Study findings underscore the differences in response, based on site and soil type (Powers et al. 2005, Siegel-Issem et al. 2005, Page-Dumroese et al. 2010). For example, organic matter removal can have more profound impacts on poor, infertile soils such as granitic soils. The Region 1 Soil Quality Standards represent a conservative baseline for preserving soil functions on a site. Beyond these baseline standards, the revised plan addresses the needs for managing organic matter including coarse woody debris as desired conditions. In addition, the policy in the Region 1 Forest Service Manual is to design and implement management practices that maintain or improve soil quality.

In addition to the Long-Term Soil Productivity experiment, effectiveness monitoring across the region over the last two decades elucidates knowledge of specific soil type risk to management impacts and soil recovery with internal reports (USFS-FNF (2010), USFS-BNF (2019), USFS-LNF (2019) and published works (Reeves et al. 2011, Gier et al. 2018)). On the Gallatin portion of the national forest, soil staff have augmented the Forest Soil Disturbance Monitoring Protocol with standard, soil survey techniques and observable field attributes in surface and upper subsoil horizons as well as observations of the native plant community response to consistently identify detrimental soil disturbance at sample locations since 2011. These expanded monitoring efforts tie together the local soil resource, soil productivity and soil health conditions to better assess if the proposed treatments will maintain or improve soil productivity (U.S. Department of Agriculture 2014a).

Soil quality standards do have inherent assumptions and flaws; however, they present a consistent approach for assessing and quantifying management activity impacts on soil. As indicated by the monitoring described in the preceding paragraphs and the effects disclosed in the final environmental impact statement, soils environmental consequences, the Forest Service has determined the 15 percent detrimental soil disturbance standard is a valuable tool to help soil scientists limit the extent and severity of soil disturbance created in activity areas. Ultimately, project-level soils analysis will consider site constraints consistent with revised plan direction to interpret long-term impacts to soil productivity.

Ectomycorrhizal activity in forest soils is important to nutrient and water uptake by conifers, conifer health, and forest resiliency. Optimal levels of coarse woody debris for soil productivity in the Northern Rocky Mountains were derived using ectomycorrhizal fungi propagules as a bioindicator (Graham et al. 1994). Research in the Pacific Northwest and British Columbia recommends leaving stumps and downed wood for biological legacy, which includes ectomycorrhizae, for reforestation after forest timber harvest (Wiensczyk et al. 2002, Molina et al. 2011). The revised plan establishes coarse woody debris requirements for vegetation management activities (FW-GDL-SOIL-07) based on Region 1 primary, potential vegetation types that align with optimum ranges of coarse woody debris for providing acceptable risks of fire hazard and fire severity while providing desirable quantities for soil productivity, soil protection and wildlife needs presented by Brown et al. (2003) (see Final Environmental Impact Statement, Soils, Coarse Woody Debris Environmental Consequences section). This guideline is not subject to the “where available” clause used in the Wildlife Snag Amendment to the current Gallatin

National Forest Plan. Desired condition FW-DC-SOIL-03 emphasizes retaining organic matter including coarse woody debris. Ectomycorrhizae rely on organic matter in the rhizosphere to hold and fuel the exchange of nutrients and water. Heavy disturbance site preparatory methods that once cleared all wood material including stumps are no longer used. Guideline FW-GDL-SOIL-04 would avoid detrimental soil displacement from site preparation.

## General

**Concern.** Comment expressed concern that the Forest Service must enable soil health to be a fully functioning ecosystem in critical habitat and riparian areas by following best practices using the latest research. A comment stated that the Custer Gallatin National Forest needs to ensure that the Clean Air Act and the Clean Water Act of 1977 are followed, to assist the soil carbon sponge to provide a fully functioning ecosystem. A comment stated that soil species of conservation concern for the Custer Gallatin shall be identified at the regional level.

**Response:** The land management plan components are intended to ensure soil health. Soil health is defined by the Natural Resources Conservation Service as continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. DeLuca et al. (2019) discuss how soil health can be ambiguous but important to biological function, and explain how this concept applies in the forest environment. Some of the underpinnings are the management of the soil environment sustains the mosaic of biological organisms that ultimately produce the nutrients to sustain plants. The final environmental impact statement Soils Environmental Consequences section discusses this in terms of carbon, coarse wood, and ectomycorrhizae.

To the Natural Resources Conservation Service, soil health is synonymous to soil quality, which is the terminology the Forest Service uses to address desired conditions and management in the Region 1 Soil Manual (U.S. Department of Agriculture 2014c). Soil quality is maintained when erosion, compaction, displacement, rutting, burning, and loss of organic matter are maintained within defined soil quality standards. The final environmental impact statement Soil Environmental Consequences section discusses how the plan components, which include the adoption of the Region 1 Soil Manual standards, work to limit long-term soil impairment using soil quality criteria. Thus, the revised plan is using aspects of soil health. Similarly, the new plan components have contributions to rangeland health for managing permitted grazing (see Final Environmental Impact Statement Permitted Grazing Environmental Consequences). The soils plan components are based on best available scientific information as documented in the environmental impact statement bibliography. The Forest Service reviewed the science provided by the commenter. The regional forester has not determined there are any soil species of conservation concern for the Custer Gallatin.

## Monitoring

**Concern.** Comment expressed concern that monitoring needs to be a requirement in the yearly schedules of trained Forest Service personnel until the soil carbon sponge is fully functioning. A comment stated that neither the assessment nor the draft environmental impact statement cite the results of land management plan implementation monitoring to verify a central draft revised plan assumption—that the soil quality standards would adequately limit soil damage.

**Response:** The soil carbon sponge is a great metaphor for functioning soil. As carbon is the currency for soil microbes to function and produce nutritional byproducts that plants rely for survival. Carbon is also

recognized in Forest Service national soil direction (U.S. Department of Agriculture 2010b) that the Region 1 Soil Manual tiers, as one of six indicators for soil function. The land management plan components address carbon sources integral for sustaining soil function with desired conditions for sufficient organic substrates, including coarse woody debris (FW-DC-SOIL-02, 03) along with guidelines to bracket how to achieve the coarse wood levels (FW-GDL-SOIL-07). See the Soils Environmental Consequences section along with the Soils Management Approaches. The land management plan monitoring program (chapter 4 of the revised plan) includes soils monitoring questions related to detrimental soil disturbance and coarse woody debris. Planned monitoring of vegetation management projects include effectiveness monitoring to evaluate compliance and efficacy of operations for limiting soil damage. The monitoring found that in most cases, projects were within standards, and thus, maintaining long-term soil productivity. Past efficacy monitoring has focused on prescribed burning. Reports on Picket Pin (2014b), Dry Fork (2010a), and Lower Big Creek (2009) prescribed burns did not note conditions that would exceed soil quality standards. The Soap Springs prescribed burn report and a fuels project in the (FY) fiscal year 2016 East Zone Review (Efta 2017) had mixed results on soils and found more coordination is needed between district and supervisory staff to ensure meeting standards.

Post-project monitoring on timber harvest is available on the Custer National Forest from a study that evaluated detrimental disturbance on several Region 1 forests (Reeves et al. 2011). Fourteen timber units were monitored, of which two were winter harvested and rest during summer. The average detrimental soil disturbance was 5 percent for areal extent, and therefore, within Regional Soil Quality Standards; there was no statistical difference between seasons logged. The study was not conducted on the Gallatin National Forest.

In 2010, the soil quality criteria used on the Gallatin National Forest was modified to use a more standardized soil survey-based approach for identifying and documenting detrimental soil disturbance in the field, using well-established soil survey procedures methods to observe and describe changes in surface and near-surface soil properties. This approach also uses often subtle, but readily observable changes in native vegetation performance within the area surrounding each sample point as part of the process, and requires digging sample pits at many (60 to 80 percent) of the point sample locations along transects or traverses to ensure accurate determinations are made. Point sample data collected includes standard site and plant community data used to interpret field results within a landscape perspective along with the detrimental soil disturbance data. Using this more standardized, field-sampling approach, we have been able to achieve very reproducible results among different soil scientists, provided they each have been sufficiently trained in field sampling techniques. Standardized field identification criteria combined with the right type of soil scientist training and field experience results in quality results. Some of the concepts adopted for assessing detrimental soil disturbance levels have since been included in the 2014 Region One Supplement to the Forest Service Manual.

The revised plan would improve monitoring because the land management plan cements the merging of the management of Custer and Gallatin National Forests. As highlighted in the FY 2016 East Zone Review, (Efta 2017) more coordination is needed. Through these assessments, the Custer Gallatin National Forest has identified issues to remedy future efforts. As indicated in chapter 4 of the revised plan, effectiveness monitoring for soils would be analyzed every two years to address what extent vegetation activities meet the detrimental soil standards. The monitoring will focus on vegetation management areas recently completed that had high rates of prior disturbance. These areas have the highest risk for long-term soil productivity issues.

## Plan Components

**Concern:** Comment suggested adding or modifying plan components to better address soil productivity. Some comments found the draft plan components too vaguely worded to meet requirements to conserve soil resources and not allow significant or permanent impairment of the productivity of the land, particularly as it relates to the effects of timber harvest. Comment questioned the need for site preparation in pine savanna ecosystems where ponderosa pine is easily established. Comments expressed concern that soil components appear to be exclusively focused on forested soils and effects of timber harvest activities, and suggested the plan incorporate soil health attributes and indicators as part of an integrated approach to managing for functioning grassland and shrubland ecosystems too. Comments suggested changes to address reducing noxious weeds, defining how the area of allowed detrimental soil disturbance is measured; integrating coarse woody debris; and providing for rangeland health, biological crusts, and recreation impacts.

**Response:** The National Forest Management Act of 1976 requires the Forest Service to “develop a management program based on multiple-use, sustained-yield principles,” while at the same time, “the Forest Service has the responsibility and opportunity to assure a national natural resource conservation posture that will meet our citizens’ needs in perpetuity.” Multiple use includes timber harvesting and cattle grazing as well as recreation, fisheries, wildlife, etc. Inherent in some of the activities, allowed by law, is the creation of some ground disturbance. The 15 percent maximum detrimental soil disturbance level in “activity areas” is an acknowledgement that there will be some unavoidable ground disturbance associated with providing goods and services to the American public. A maximum allowable level of detrimental soil disturbance set at 15 percent is not a “watering down” of the statutory requirement, but is part of the balancing required to meet the combined statutory requirements of providing goods and services for the American public while preserving the productive capacity of the soil resource. The concept of detrimental soil disturbance is based on persistent soil disturbance that in most instances will disappear over time. Only in rare cases does the level of detrimental soil disturbance within an activity area represent what might be called permanent land degradation, where targeted land remediation actions need to be taken to restore both land productivity and soil health.

Desired conditions set the expectation for management actions, including timber harvest, grazing, and recreation. FW-DC-SOIL-01, 02, and 03 represent the desired condition to be achieved while conducting all management activities. They complement other plan direction found in the forested and non-forest sections of the plan to provide integrated direction to maintain or restore the long-term productivity of forested, grassland and shrubland ecosystems. For example, FW-DC-SOIL-01 states “the inherent productivity of soil resources sustains native plant communities...” Desired conditions FW-DC-SOIL-02 and 03 include the desire to manage for organic matter with emphasis on ensuring adequate coarse woody debris to maintain soil productivity.

Guidelines are included to address potential effects of timber harvest. These management sideboards include FW-GDL-01 that limits mechanic equipment operation on steep slopes, FW-GDL-SOIL-02 that addresses potential topsoil losses associated with temporary road construction during timber harvest, and FW-GDL-SOIL-03 that addresses reclamation of timber harvest disturbed areas from temporary roads, skid trails, landings, and burn pile scars.

Some changes were made in response to comments, including clarifying FW-STD-SOIL-01 to match the language in Region 1 Soil Manual (U.S. Department of Agriculture 2014c). Important details on the

application of this standard have been added to the Management Approaches, appendix A to the revised plan, including a summary of various soil-monitoring strategies and considerations for determining appropriate methods to assess levels of detrimental soil disturbance within a new activity area. FW-STD-SOIL-02 was removed, based on redundancy with plan riparian protections.

Regarding concerns of unnecessary scarification, FW-GDL-SOIL-04 only applies to instances when the silvicultural prescription might require scarification for conifer re-establishment. The guideline would not apply if scarification is not needed, such as areas where ponderosa pine is easily established.

To address comments regarding coarse woody debris, desired ranges for broad potential vegetation types were added to the stated desire that coarse woody debris contribute to “forest structural diversity, soil ecological function and wildlife habitat” into FW-DC-SOIL-03. This functions together with FW-GDL-SOIL-07, which sets minimum expected coarse woody debris tons per acre. Additional information was added in the final environmental impact statement and plan appendix A Management Approaches on the reasons to manage for coarse wood to ensure during project planning the interdisciplinary teams would have sufficient information to achieve the conditions. Further clarification in the final environmental impact statement Environmental Consequences section and plan appendix A Management Approaches explains the application of soil monitoring methods and evaluating compliance.

Details of the size of material and how it is distributed will depend on stand conditions prior to timber harvesting or other vegetation management activities. The revised plan has removed the 60 percent distribution requirement from guideline FW-GDL-SOIL-07. The plan has eliminated the “where available” phrase that existed in the Wildlife Snag Amendment to the current Gallatin forest plan. Meeting the minimum coarse woody debris levels based on Region 1 primary potential vegetation types now will be required and met either because coarse woody debris will already be present, or by adjusting the silvicultural prescription to plan future recruitment of large wood material from standing dead trees. Only the minimum amount of coarse woody debris is dictated by land management plan direction. Greater amounts of coarse woody debris can be left on the ground, however, based on availability and the project purpose and need.

The revised plan provides for larger contributions to rangeland health, including the use of rangeland health indicators (see Final Environmental Impact Statement Permitted Grazing and Comment Response in Permitted Livestock Grazing). This includes applying detrimental soil disturbance standards to new permitted livestock grazing activities. The detrimental soil disturbance standard has several parameters from rangeland health that includes soil stability and observations of the plant community cover and composition (see Keck (2012) and Management Approaches for FW-STD-SOIL-01). This soil-monitoring protocol can be and has been applied on the Custer Gallatin National Forest to assess soil health over a number of applications beyond timber harvesting. Among those applications as well as minerals exploration areas. The main limitations with respect to using the preferred rangeland health approach is the almost total lack of available ecological site descriptions covering the range of soil and vegetation conditions on the national forest. Desired conditions are outlined for grasslands in the revised plan section FW-DC-VEGNF.

Please refer to the Effects Common to the Revised Plan Alternatives, Noxious Weed Control section in the Soils Environment Consequences section in the final environmental impact statement for discussion on the potential impacts from the alternatives on soil impacts related to the spread of invasive plants.



The revised plan provides similar protections for invasive species treatment as the current plans. The Custer and Gallatin National Forests have noxious weed management plans that may be livestock bedding areas, livestock supplement/mineral locations, and areas of concentrated livestock use established in 2005 and 2006, respectively, that address the site-specific treatment of noxious weeds. These will be reviewed for consistency with the revised plan after approval, and updated if needed, but would continue to be used to contribute to the achievement of desired conditions related to invasive species.

Biological soil crusts are part of the soil biome that includes above- and below-ground microbes, invertebrates, algae, liverworts, bryophytes, and assorted living forms that thrive on the soil surface and within the rhizosphere. The revised plan acknowledges the importance of organic substrate and soil medium where these vital soil lifeforms grow with the FW-DC-SOIL-02 desired condition of organic substrates in sufficient amounts to support fertility and ecological functions. Similarly, FW-DC-SOIL-01 provides for inherent soil productivity. Desired conditions for xeric and mesic grasslands, and xeric shrublands also recognize soil crusts (FW-DC-VEGNF-04). Biological soil crusts are known to stabilize soil, fix nitrogen that is often scarce in savannah and forest environments, retain water, and overall, contribute fertility (Belnap et al. 2001, Marsh et al. 2006). By providing for the litter, conserving the soil, and managing for the desired vegetation, the Custer Gallatin National Forest is contributing toward sustaining biological soil crusts.

A summary description of criteria used to identify landslide-prone areas on the Custer Gallatin National Forest at a project level has been added to plan appendix A, Management Approaches to address concerns regarding implementation of FW-GDL-SOIL-05.

## Special Areas

**Concern.** Comments suggested adding plan components indicating that new oil and gas leasing is not suitable within special areas, and withdrawing special areas from mineral entry. Comments supported identifying Black Sand Springs as eligible for wild and scenic river, or additional plan components to protect the springs from water withdrawals and other threats. Comments expressed concern that the Pryor Mountains Terrestrial Vegetation plan components might apply only to a portion of the Pryor Mountains, or might not apply if a botanical special area is not established.

Comments recommended a special botanical area for:

- a portion of the Pryor Mountains that supports special plant communities, such as *Shoshonea pulvinata* and *Penstemon caryi*.
- *Castilleja puberula*, which occurs in the Mount Jefferson area
- portions of Absaroka Beartooth Mountains that support *Ranunculus sulphureus*
- the Crazy Mountains

**Response:** A special area can be recommended, but not designated, in a land management plan; the forest supervisor does not have the authority to make this designation. The plan includes plan components for two established special areas—the Black Sand Springs Special Area and the Bangtail Special Area. The plan includes plan components to help maintain or restore resilient ecosystems for the biological diversity and conservation values of the Pryor Mountains into the future and not to foreclose options for future special area designation (Pryor Mountains Terrestrial Vegetation plan components). The plan is not addressing oil and gas availability or the withdrawal of lands from the mining law.

The revised plan includes components that support long-term protection of the Black Sands Spring for scientific research opportunities on high-quality wetlands, riparian, associated upland communities and aquatic ecosystems, and its geologically unique spring source origin. Plan components have been added to the plan: a goal for the Forest Service to pursue instream water rights for Black Sand Springs (MG-GO-BSSSA-01) and a standard to not authorize new special use permits that withdraw water, reduce water quantity, or adversely impact water quality of the spring (MG-STD-BSSSA-05). All named streams on the national forest, including Black Sand Springs, were included in the wild and scenic river eligibility analysis. Black Sand Springs was not determined to be an eligible wild and scenic river.

The Pryor Mountains Terrestrial Vegetation plan components apply to the Pryor Mountains; they do not apply to a subset of the Pryor Mountains. As stated in the introduction to the Pryor Mountains Terrestrial Vegetation plan components, a potential special botanical area for an undetermined location and acreage is pending further review by the national forest and regional staff. A botanical special area for the Custer Gallatin National Forest portion of the Montana Native Plant Society's Important Plant Area, along with the remaining National Forest System lands in the Pryor Mountains, would require future evaluation and collaboration with adjacent lands managed by the Bureau of Land Management and National Park Service prior to any designation as a proposed or established special botanical area.

*Castilleja puberula* is not currently known to occur in the plan area. Additional information is needed regarding *Ranunculus sulphureus* populations before botanical special area designation could be recommended, and to determine whether some populations are protected in the Absaroka-Beartooth Wilderness Area. Additional information is also needed prior to recommending botanical special area designation in the Crazy Mountains and determining which portions of the range may be suitable for such designation. Special areas may be established at any time during the life of the plan, pending additional information review and field evaluation.

## Stillwater Complex

**Concern:** Comment expressed support for the Stillwater Complex plan land allocation. Some comments opposed the Stillwater Complex plan land allocation, expansion of the Stillwater mines, or mining in this area. Commenters were unclear on the purpose of the Stillwater Complex plan land allocation, in part because plan direction for the allocation consists of only two desired conditions. Comments stated the allocation is not clearly defined as an administrative management allocation in the draft plan or the draft environmental impact statement. Comments requested additional description in the introduction related to wildlife and additional plan components and monitoring questions for issues such as wildlife and recreation, and offered suggestions for specific plan components. Commenters requested that the regulatory framework for locatable minerals be fully disclosed throughout the overall plan.

Comments identified a number of concerns related to the draft environmental impact statement analysis of the Stillwater Complex plan land allocation, such as whether mining in this area could continue in the various alternatives, more detailed analysis of the impacts of mining in the Stillwater Complex plan land allocation, acknowledgement of current plan minerals management areas within the Complex, that the Wilderness Analysis appendix recognize other ongoing mineral activities within the Stillwater Complex, and that over 100,000 acres is a vast area to set aside for mining.

**Response:** The intention of the Stillwater Complex plan land allocation is to identify this as an area where mining activities would occur. The Stillwater Complex was delineated to encompass mineralized areas, as well as follow manageable boundaries such as ridge lines.

The Stillwater Complex plan land allocation is included in alternatives B, C, E, and F; it is not included in alternative D. The Stillwater Complex plan land allocation is included in the preferred alternative, and the preferred alternative does not include any recommended wilderness areas within the Stillwater Complex. Environmental impact statement Section 3.17.3, Energy and Minerals, Effects of the Revised Plan Alternatives, acknowledges that even though the Stillwater Complex is not included in alternative D, the effects to mining are the same as the alternatives that include the allocation, that is, mining can continue. Because some of the area is in recommended wilderness in alternative D, there could be an increase in the amount of time, cost, and additional mitigation measures under this alternative, but mining is not prohibited. The Wilderness Analysis appendix (final environmental impact statement appendix D) discloses current uses in areas proposed for recommended wilderness in the alternatives. There are no ongoing active mining activities on National Forest System land in the East Rosebud to Stillwater Recommended Wilderness Area proposed in alternative D. Environmental impact statement section 3.17.3, Energy and Mineral, Energy Management Direction under the Current Plans, acknowledges the current plans have plan land allocations for minerals activity. These allocations are different than the Stillwater Complex plan land allocation, so they are not listed under alternative A in the summary tables in chapter 2 of the environmental impact statement.

The revised forest plan uses the term " plan land allocation" for the Stillwater Complex as well as backcountry areas, recreation emphasis areas, recommended wilderness areas, and eligible wild and scenic rivers. The 2012 Planning Rule does not require the full suite of plan components for every topic or plan land allocation. As a whole, the combined plan components must meet the requirements of the Planning Rule. One or more desired conditions is sufficient for a topic or plan land allocation when the application of plan components in other topics are adequate to meet the Planning Rule. The introduction to the Stillwater Complex plan land allocation focuses on its unique mineral role. Chapter 1 of the forest plan acknowledges that consistency with the revised forest plan is subject to valid existing or statutory rights.

Environmental analysis of proposed mining activities would be conducted in a project specific analysis. Every future mineral operation undertaken under the revised forest plan, anywhere on the forest as well as the Stillwater Complex, will need to meet all applicable forest plan guidance, subject to valid existing or statutory rights.

## Vegetation

### Analysis of Timber Harvest

**Concern:** Comments address concerns related to analysis and management of timber harvest. For example, commenters had concerns about criteria used to identify areas suitable for timber production, how timber harvest would be managed, and the basis for timber objectives.

**Response:** Appendix B of the final environmental impact statement contains detail on the suitability analysis process and the PRISM model, which was used to model timber harvest for analysis purposes. As noted in the environmental impact statement, timber harvest in certain areas, such as semi-primitive

non-motorized recreation opportunity spectrum, would require appropriate design criteria during design and implementation (FW-DC-ROS-07), but this is not necessarily incompatible with being designated as suitable for timber harvest. However, as explained in appendix B, other areas were removed from the suitable timber base to be consistent with management intent of those areas and associated plan components. For example, the Continental Divide National Scenic Trail, along with one-half mile on each side of the travel route, was identified as not being suitable for timber production (MG-SUIT-CDNST-01).

The Terrestrial Vegetation section provides numerous scientific citations that demonstrate that timber harvest can be used as a tool to contribute to ecological sustainability. Several more examples of this research, as well as research demonstrating the need for a precautionary approach when using timber harvest for ecological restoration, were added to the final environmental impact statement in the Terrestrial Vegetation section. Wherever timber harvest takes place (both within and outside areas suitable for timber production), numerous plan components limit harvest or regulate harvest in ways that will protect resources and ecological integrity. For example, FW-GDL-SOIL-01 requires that mechanical equipment should not operate on sustained grades steeper than 40 percent, while FW-STD-TIM-07 ensures that timber production shall not exceed the sustained yield limit. In addition, a new goal was added to the revised plan (FW-GOAL-CARB-01) that encourages partnerships to help the Forest Service better understand the effects of timber harvest interacting with the effects of climate change.

Timber objectives are based on reasonably foreseeable capacity and budget, not the sustained yield. As stated in the plan, FW-OBJ-TIM-02 includes material that does not meet utilization standards as well as saw logs. In other words, the saw log volume in FW-OBJ-TIM-01 is included in the total volume for FW-OBJ-TIM-02.

### **At-Risk Plant Management and Analysis**

**Concern:** Commenters were concerned about the management and analysis of at-risk and sensitive plant species. Topics include the relevant science and information regarding at-risk plants and their management, including prioritizing projects that benefit at-risk plants, as well as concerns about species that are not classified as at-risk, but are believed to warrant specific consideration.

**Response:** While there is little published information regarding many at-risk plant species, data and scientific information are available from other sources. The primary information source is the Montana Natural Heritage Program, which compiles all of the available data for plant species of concern in the state. The Montana Natural Heritage Program database includes records for all of the known populations of such species, a list of unpublished reports regarding the status of the species, and summaries of associated habitats and species-specific risk factors. These data sources represent the best available scientific information for species conservation and are routinely used in both land management planning and project analysis.

As described in the environmental impact statement, plan components in the At-Risk section of the revised plan provide protection for plant species of conservation concern. For example, FW-STD-PRISK-01 requires that management activities will avoid populations of at-risk species or mitigate any potentially adverse effects. Also, as described in the environmental impact statement, plan components in other sections of the revised plan such as FW-GO-GRAZ-01, and FW-GDL-GRAZ-04 and 05 are also expected to provide meaningful protection for at-risk species. In addition, the habitat guild of each plant species of conservation concern is listed in the environmental impact statement. The desired

conditions for these habitat types are generally contained in the non-forest vegetation section of the plan, with the exception of whitebark pine, which occurs in the Cold Broad potential vegetation type. Appendix C contains the coarse-filter (guild) affiliation of each species of conservation concern and associated plan components. This information is also included in the Northern Region Species of Conservation Concern rationale spreadsheet, which can be found at: <https://www.fs.usda.gov/detail/r1/landmanagement/planning/?cid=fseprd500402>. As outlined in the Planning Rule directives for at-risk species, relevant threats to the long-term persistence of all of the plant species of conservation concern on the Custer Gallatin were identified and documented in the species of conservation concern rationale spreadsheet on this regional website. These risk factors will be considered when determining possible restoration projects, but the decision on which projects to pursue will also depend on more detailed or site-specific analysis. Restoration projects would then be implemented in the areas where they are likely to accomplish conservation goals.

As described in the environmental impact statement, "At-Risk" species include those recognized as threatened, endangered, proposed, or candidate species under the Endangered Species Act by the U.S. Fish and Wildlife Service. Aspen and limber pine do not meet the criteria to be designated as "at-risk." However, these species are specifically called out in a desired condition (FW-DC-VEGNF-04) and an additional objective was added to the revised plan to set restoration targets for these two species (FW-OBJ-VEGNF-01). Aspen is further protected by FW-GDL-VEGNF-05, 06, and 07; FW-GDL-GRAZ-04 and 05; and FW-GO-GRAZ-01. The combined effect of these plan components will be to help restore and protect these species. Additionally, the regional forester sensitive species are addressed in the conclusion of the At-Risk Plants section of the environmental impact statement. The sensitive species are also listed in appendix C of the environmental impact statement, along with their associated habitats and relevant plan components. The effect of coarse-filter plan components on these habitats is discussed in the At-Risk Plant section of the final environmental impact statement.

### Bur Oak

**Concern:** Comments request that the land management plan and environmental impact statement acknowledge the bur oak as a drought-tolerant and fire-resistant tree that promotes forest resilience.

**Response:** The Forest Service acknowledges the natural history traits of bur oak that would confer resilience to climate change. Currently, bur oak does not occur within the plan area. Plan direction reflects best available scientific information related to climate change adaptation and preparedness. The plan does not preclude the use of assisted migration (for species such as bur oak), but detailed projections relevant at the scale of the Custer Gallatin are not available in terms of introducing novel species. The Forest Service would follow regional seedling transfer guidelines, which are continually assessed for climate adaptability. Assisted migration may be a strategy adopted by the Custer Gallatin if and when there is sufficient information to guide this activity. Also see response to Climate Change.

### Coarse Filter & Natural Range of Variation

**Concern:** The Forest Service should clarify development and use of the natural range of variation.

**Response:** It is assumed that the natural range of variation reflects the ecosystem conditions that have sustained the full suite of wildlife and plant species on the Custer Gallatin, and provides context for understanding ecological integrity, the natural diversity of the vegetation, and what processes sustain vegetation productivity and diversity (FSH 1909.12). Notably, this fundamental assumption was

scrutinized in a series of workshops in 2018, with partners from other Federal agencies, universities, and non-governmental organizations. At these workshops, attendees used best available scientific information to assess the vulnerability of potential vegetation types and cover types to projected climate change, and identified and evaluated management options aimed at achieving or maintaining ecological integrity. Results of this effort were used to inform and refine the development of desired conditions, as well as provide important strategies and tactics, many of which are reflected in the management approaches (plan appendix A). Results of the workshops are discussed in the final environmental impact statement and are documented in Hansen et al (2018). However, as commenters noted, there are important considerations and points of uncertainty that must be considered relative to the use of the natural range of variation. The final environmental impact statement was amended to better reflect this concern, including relevant best available scientific information (such as Chambers et al. (2019) in the Terrestrial Vegetation section) and point out some of the important considerations when using the natural range of variation to guide management. Appendix B of the environmental impact statement was also supplemented to give additional detail on how the natural range of variation was modeled and the underlying assumptions.

### **Environmental Impact Statement Analysis**

**Concern:** Comment requested changes or additions to the terrestrial vegetation environmental impact statement analysis, and provided a number of specific suggestions. Some comments stated that the analysis needed to clarify how plan components would promote ecosystem integrity, while others expressed that more site-specific (fine-scale) analysis was needed.

**Response:** All of the suggestions provided in comments were considered, and several aspects of the analysis were modified to address concerns. In some cases, the analysis was deemed sufficient to address the concern or the information, or analysis requested was not deemed necessary to inform the programmatic decision. The response is organized into a number of topics below.

#### Analyze environmental effects at finer scale

The land management plan is a programmatic document designed to ensure ecological integrity at the forestwide scale. Desired conditions are generally expressed at the scale of broad potential vegetation types within geographic areas. Projects and stand-level treatments within projects should be designed to maintain or move toward these broader desired conditions. Due to the high variability in stand-level conditions, it is not possible or appropriate for the land management plan to develop desired conditions at the stand level. The environmental impact statement analyzes the general effects of treating the national forest in a manner consistent with the plan components (desired conditions, objectives, and so on) set forth in the revised plan and assess the forestwide effect on key ecosystem characteristics. It is not possible to assess the effects of management actions at a finer scale, because it is not possible to know where exactly treatments will be done in the future. Also, because the land management plan does not propose or analyze a particular project, it is not possible to say which desired conditions will be targeted by a particular treatment, and it is not possible to determine how a particular mitigation will be effective. However, at the project scale, the mitigation used must be effective to be consistent with the relevant plan components (such as a standard or guideline).

Demonstrate how future projects, such as salvage, reflect best available scientific information  
The land management plan develops desired conditions based on the natural range of variation of disturbance regimes, including wildfire (for example, FW-DC-FIRE-01). The final environmental impact statement and the revised plan recognize and protect the ecological importance of wildfire disturbance and associated tree mortality and snags (FW-GDL-TIM-01, 02). Management direction to maintain recently burned ecological conditions is further supported by an objective to manage for 375,000 acres of wildfire a decade (FW-OBJ-FIRE-02). The land management plan cannot compel action (FSH 1909.12, section 22.1), but all future projects and decisions will have to comply with the revised plan. Consistency of any particular project, salvage or otherwise, with best available scientific information or the revised plan must be assessed at the project-level.

#### Heterogeneity in non-forest vegetation

Desired condition FW-DC-VEGNF-04 is based on broad potential vegetation types and describes desired conditions for non-forested vegetation, including heterogeneity within and among types. Appendix A of the revised plan further presents key characteristics of resiliency in these systems, and how project-specific desired conditions for resilience can be developed through use of habitat types, ecological site description, etc., when available. FW-DC-VEGNF-01 also describes a mosaic of diverse seral stages, life forms, and age classes. Additional information or direction was added between the draft and revised plan to underscore the importance of heterogeneity. For example, FW-DC-VEGNF-01 was amended to include heterogeneity, structure, and mix of plant species. FW-GDL-VEGNF-01 also promotes habitat heterogeneity through prescribed fire. Finally, the desire for heterogeneity was added to the desired condition for xeric grasslands for clarity (FW-DC-VEGNF-04).

#### Regeneration failure

The Terrestrial Vegetation section of the environmental impact statement acknowledges science that has shown regeneration failure in the West. As the comment(s) note, most document lack of natural regeneration after large, severe wildfires, not planned management activities. As described in appendix B of the environmental impact statement, harvest activities on the Custer Gallatin National Forest typically generate a natural regeneration certification need on approximately 20 percent of the acres harvested and on 10 percent of the acres harvested, a planting need is generated. Most of the recent harvest activities on the Custer Gallatin are predominantly intermediate treatments, which retain minimum or greater tree stocking requirements following harvest. As noted in the revised plan, restocking level is prescribed in a site-specific silvicultural prescription for a treatment unit and is determined to be adequate depending on the objectives and desired conditions for the plan area. For management activity such as timber sales, managers will be required to assure full stocking following management activity (FW-STD-TIM-11). Further, MON-VEGF-01 requires monitoring of development of all size classes, including seedling/sapling. The Davis et al. paper the commenter submitted was added to several places in environmental impact statement including Climate Change Considerations and Assumptions.

#### Quantify future vegetation conditions, projects, and monitoring

Whenever possible, the Terrestrial Vegetation section of the environmental impact statement disclosed the trajectory of key ecosystem characteristics, relative to desired conditions, in a quantified manner. If it was not possible to quantify the trajectory of a given characteristic due to limitations in the capability of the quantitative models, expected trajectories were discussed qualitatively. Objectives for forest

management are clear that treatments should move vegetation toward desired conditions and this intent was, therefore, incorporated into the models. For example, objectives are specified for a minimum number of acres to be treated for moving toward desired vegetation conditions. Departure from desired conditions informed the model about which acres to “treat” while achieving these objectives. The environmental impact statement discloses amounts of various types of treatments that the PRISM model scheduled, based on plan objectives and the assumption that treatments will be designed to move toward desired conditions for vegetation (consistent with FW-OBJ-VEGF-01). Timber harvest is not suitable in recommended wilderness areas and was not modeled in PRISM, but other types of active management are suitable as described in FW-SUIT-RWA-03. In addition, references to particular plan components were added to the effects analysis in the final environmental impact statement and a table was added to the Terrestrial Vegetation Section of the final environmental impact statement to summarize effects of plan components.

The revised plan provides desired conditions for species composition (in terms of dominance and species presence) and forest structure (size class and density distributions). The combination of desired conditions and objectives provides sufficient direction to ensure that the full range of naturally occurring forest conditions will be managed for. The environmental impact statement disclosed the effects of these treatments at a programmatic scale by showing the trajectory of key ecosystem characteristics over time for broad potential vegetation types at a forestwide scale. The revised plan sets objectives for treatment, but does not predict the exact location or types of treatment that will be implemented. More detailed effects of any particular treatment at local scales must be assessed at the project level and is beyond the scope of this analysis.

The Planning Rule does not require project-level monitoring. Where project-level monitoring may inform larger-scale change monitoring or the understanding of management effects, these monitoring results will be considered. An example of forest-level monitoring for forested vegetation is use of Forest Inventory and Analysis data. The revised plan and environmental impact statement disclose when Forest Inventory and Analysis data are used to assess existing conditions. Appendix B of the final environmental impact statement clearly explains what Forest Inventory and Analysis data are and gives additional citations for further, more detailed information on the Forest Inventory and Analysis program and appropriate use of the data. While the Forest Service considered monitoring for At-Risk species, in the past, mitigation (buffers, avoidance) has been shown to be effective. The monitoring program is designed to help overall adaptive management efforts. Information from the biennial monitoring evaluation reports inform how to monitor, coarse correction/adaptive management, inform recommendations where changes may be warranted in management actions, monitoring programs, assessments, and plan components. There are national and regional templates that guide the program manager to make recommendations for change.

Specific resource concerns such as the Pryor Mountains, coarse woody debris, and large trees. In some cases, the environmental impact statement, the revised plan, or both already addressed commenters’ concerns. For example, habitat types and the use of the potential vegetation concept is used as a foundation of the revised plan and analysis. Emerald ash borer, another concern of commenters, is addressed in the Invasive Species and Terrestrial Vegetation sections and plan appendix A and analyzed in the Invasive Species section of the environmental impact statement. Coarse woody debris is addressed in the Soils section of the revised plan, specifically, FW-DC-SOIL-03 and FW-GDL-SOIL-07. Coarse wood estimates are derived from a body of work initially published by Brown and See (1981)



and finally compiled more explicitly by (Brown et al. 2003). This work is largely consistent with (Graham et al. 1994) which derived optimal rates of coarse wood for Rocky Mountain habitats based on the highest prevalence of ectomycorrhizae fungi. Ectomycorrhizae were selected as a bio-indicator due to their key role in extending coniferous plants roots to obtain water and nutrients in surrounding soil. Samples in the study were in minimally disturbed forests. Though not technically natural range of variation considering how fire suppression has impacted these forests, the coarse wood rates represent a measure for maintaining ecosystem function.

The revised plan section titled "Distinctive Roles and Contributions" addresses both unique ecosystem characteristics and notable species-specific distributions. In addition, the following plan components also address the ecosystem approach and unique aspects of the Pryors: PR-DC-VEGNF-01, 02 (resilient ecosystems); PR-GO-VEGNF-03 (integrated pest management to address invasive plants); PR-GDL-VEGNF-01, 02, 03; PR-STD-VEGNF-01, 02 (protection). Analysis in the final environmental impact statement describes how these plan components support the unique plant communities in the Pryor Mountains. Please see also the response to Pryor Mountains Management.

Other resource concerns were also addressed in the revised plan, the environmental impact statement, or both. For example, firewood collection is not suitable in the inner riparian management zones (FW-SUIT-RMZ-02), which should protect most hardwoods from loss due to firewood. Loss of juniper and hardwoods to firewood cutting has not been identified as a threat to these species, so no additional standards were needed. The revised plan would also promote large trees through several plan components related to the large and very large size classes; large-tree structure; and retention of large trees within treatment units (FW-DC-VEGF-03, FW-DC-VEGF-07, and FW-GDL-VEGF-05). The guideline applies as an average across treatment units to allow for flexibility at project level, but this flexibility is not expected to compromise the effectiveness of the guideline. Monitoring of the large size classes and large-tree structure would also occur over time to ensure desired conditions are being achieved and the guideline is effective (MON-VEGF-01).

In other places, the revised plan or analysis was amended to address concerns about clarity. For example, the final environmental impact statement was amended in numerous places within the Terrestrial Vegetation section to refer to the specific plan components being evaluated. Also, the revised plan was amended to clarify that the desired patch size distribution was based on an analysis of the natural range of variation using the SIMPPLLE model. This was clarified with a footnote to the table in the revised plan. Additional information was added to the final environmental impact statement appendix B on the patch analysis.

### **Hardwoods, Aspen and Ash**

**Concern:** The Forest Service should address the analysis and management of hardwoods.

**Response:** Commenters expressed concern about conservation and management of hardwood and woody draw ecosystems (such as aspens and green ash). As noted in the introduction to the Terrestrial Vegetation section, the Custer Gallatin National Forest shares this concern. As such, numerous plan components address these ecosystems including the desired conditions (FW-DC-VEGNF-04, FW-DC-GRAZ-03) their protection (FW-GDL-EMIN-02, FW-GDL-VEGNF-05, FW-GDL-VEGNF-06, FW-GDL-VEGNF-07, FW-GDL-GRAZ-04, FW-GDL-GRAZ-05), and ensure their long-term persistence through management actions (FW-GO-VEGNF-03, FW-GO-GRAZ-01).

Several of these plan components were updated between the draft and final plan to clarify intent and generally increase protection of these areas. For example, FW-GDL-VEGNF-05 was amended to include riparian areas (and associated hardwood species) and to clarify that new water developments should be located away from hardwoods and new fences should not funnel or congregate livestock into hardwoods. FW-GDL-VEGNF-07 was amended to specify that if road construction is necessary, roads should be designed to minimize impacts on aspen stands and woody draws. Finally, a new objective (FW-OBJ-VEGNF-01) was added to the revised plan to explicitly create a management objective that would support restoration and conservation of these ecosystems. Plan components do not direct which project-level, specific management actions should be required or prohibited. Instead, these decisions will be made at the site-specific level based on best available scientific information and in accordance with plan components to maintain and restore the hardwood and woody draw ecosystems.

### Management of Riparian Areas and Hardwoods

**Concern:** Commenters raised concerns related to the analysis and management of hardwoods and riparian areas. Specifically, comments addressed the effects of plan components on riparian resources, current science regarding riparian management, the management and restoration of riparian and hardwood areas, and conservation of riparian-associated species such as aspen and willow.

**Response:** In addition to the Riparian Management Zone plan components, numerous plan components address these systems including the desired conditions (FW-DC-VEGNF-04, FW-DC-GRAZ-03), their protection (FW-GDL-EMIN-02; FW-GDL-VEGNF-05, 06, 07, and 08; and FW-GDL-GRAZ-04, and 05) and ensure their long-term persistence through management actions (FW-GO-VEGNF-03, FW-GO-GRAZ-01).

As described in the Terrestrial Vegetation section of the environmental impact statement, the plan is designed to maintain ecological integrity and restore ecological processes and functions that have led to departure from desired conditions. The final environmental impact statement was amended throughout to include reference to specific plan components that will affect riparian areas and help achieve these goals. The Terrestrial Vegetation section has been amended to include additional science describing the effects and key concerns regarding active riparian management, such as Boyer et al.(2003), Beechie et al. (2010), Dwire et al. (2016), Roper et al. (2019). The plan does not direct any specific project-level activity. The merits of any activity, including harvesting trees out of ecotones, must be assessed at the project level. However, in regard to the concern about clearcutting in riparian areas, FW-GDL-RMZ-07 states that clear-cut harvest should not occur in the riparian management zone.

Certain riparian-associated species such as aspen and willow are addressed in the Riparian Ecosystems section. Aspen is further addressed in mesic deciduous woodlands section of environmental impact statement. Willow would generally be protected from management actions though plan components related to riparian management zones. As a species of conservation concern, Barratt's willow would also be protected by plan components related to at-risk species. Given where it occurs, aspen is often protected by Riparian Management Zone plan components as well as addressed by several specific plan components (for example, FW-OBJ-VEGNF-01, FW-GO-VEGNF-01, FW-GDL-VEGNF-05, FW-GDL-VEGNF-06, and FW-GDL-VEGNF-07). See also response to Watershed - Riparian Management Zones Vegetation Management.

## Old Growth

**Concern:** The Forest Service failed to address concerns related to old growth including protection of old growth, how old growth is defined, current conditions of old growth, desired conditions of old growth, and effects of harvest and management in old growth.

**Response:** The revised plan defines the term "old growth" in the glossary.

The final part of this definition, "or updates to these definitions based on more current scientific information," was added between draft and final to reflect that science and classification tools are constantly evolving, and if new scientific information becomes available to better define old growth, these definitions could be adopted in the future. This ensures that old growth is managed using the best scientific information available and acknowledges that this may change in the future if new research is published. A forest plan amendment would not be needed to incorporate new best available scientific information. At the time of analysis, however, the minimum criteria presented in Old Growth Forest Types of the Northern Region (Green et al. 2011) were considered the best available scientific information, and these criteria were used as the basis for plan components and analysis.

Because the definition of old growth requires such fine-scale data, it was not possible to accurately model either the natural range of variation or future trajectory of old growth. Additional explanation and a table were added to the final environmental impact statement, showing the amount of old growth within the broad, average stand-level size classes that SIMPPLLE can output. The table demonstrates how old growth can occur in multiple size classes (for example, 30 percent of the 10- to 15-inch size class contains old-growth forest). As described in the environmental impact statement, the only way to determine if any given stand meets the old growth definition is with tree-level data that are collected at the project level, specifically to identify old growth.

For other key ecosystem characteristics (such as tree size and density) the natural range of variation serves as the basis of the desired condition. Given the lack of a quantifiable natural range of variation for old growth, the plan sets forth a desired condition for old growth (FW-DC-VEGF-09) that articulates an affirmative desire to maintain or increase the amount of old growth across the Custer Gallatin relative to existing conditions. In other words, the plan is clear that management actions should be directed to protect and promote old growth. This represents a conservative approach to managing old growth that assumes it should be protected and promoted.

This desired condition is coupled with two strong guidelines. The first guideline (FW-GDL-VEGF-01) requires that management activities in old growth retain old-growth characteristics to the extent possible and that any management in old growth (with the exception of lodgepole pine) can only be done to either maintain or restore old-growth habitat characteristics and ecosystem or to increase resilience to disturbances or stressors that may negatively impact old-growth characteristics or abundance at stand or landscape scales. The second guideline (FW-GDL-VEGF-02) further requires that road construction (permanent or temporary) or other developments be avoided in old growth. In response to comments, the second guideline was amended to include the phrase "and there are no feasible alternative road locations" to provide further clarity and direction to protect old growth.

As explained in the environmental impact statement, the combined effect of these three plan components (FW-DC-VEGF-09, FW-GDL-VEGF-01, and FW-GDL-VEGF-02) is to recognize the ecological importance of old growth and provide the requisite protection and management direction. In short, the

desired condition will guide management efforts to maintain or increase old growth forestwide, while these guidelines limit any treatment in old growth to actions with the express purpose of restoring or maintaining old growth.

The analysis in the final environmental impact statement was also updated to recognize literature that commenters provided acknowledging that harvest to increase reliance in mature forests, including old growth, is controversial, while also acknowledging substantial scientific information suggesting that timber harvest can indeed be a useful tool to restore and maintain resilient forests. Ultimately, the effects of any particular treatment in old growth must be assessed at the project level. However, based on plan components cited above, all such potential treatments must be done with the express purpose of increasing the amount and resiliency of old growth forestwide. As detailed in the environmental impact statement, based on the current literature, this appears to be a reasonable approach to maintaining resilience in old-growth ecosystems.

Green et al. (2011) does not define the minimum size area (patch size) that should be considered when mapping or defining old growth in the field or for programmatic planning purposes. The final plan also does not define a minimum size; however, the management approaches appendix to the plan (appendix A) suggests that for practical purposes, old growth could be assessed at the stand level. Notably, appendix A also notes that inclusions of old or large trees should be prioritized in forest treatments due to their ecological value. Maintaining large trees in treatment areas is also required by guideline FW-GDL-VEGF-05.

In addition to acknowledging the role of small inclusions of old or large trees within stands as important ecological legacies to be maintained, the management approaches appendix to the plan was significantly amended to specifically acknowledge the ecological importance of trees that are old (over 150 years), but not necessarily large. This is expected to further promote the retention of old trees, even if they do not meet the (Green et al. 2011) definition of old growth. While the Custer Gallatin does not have any "obligate old-growth species," additional information on wildlife species associated with old-growth habitat was added to the Unique Habitats section of the wildlife analysis in the final environmental impact statement.

Finally, as noted in the revised plan and the final environmental impact statement, while FW-DC-VEGF-09 (the desired condition to maintain or increase old growth) applies to all forest types, FW-GDL-VEGF-01 would not apply to lodgepole pine forest types. Additional information was added to the environmental impact statement that further explains why this would not be expected to detract from ecological integrity (see Old Growth- Lodgepole Pine section of final environmental impact statement).

### **Plan Components**

**Concern:** Comment requested the Forest Service modify or add plan components to address concerns about the management and protection of particular resources or stressors including pollinators, at-risk plants, and climate change. Comments also suggested developing desired conditions at finer scales in the final plan and vary these desired conditions across alternatives to provide a wider range of alternatives.

Comment also addressed concerns about grammatical errors and requested the plan better define terms or refine language that seemed confusing or ambiguous to improve clarity and readability of document.

**Response:** All suggested changes to the suite of plan components were assessed. Changes were made to several plan components to address concerns from commenters. Grammar and other errors were fixed throughout the document. In some cases, plan components or language in the final environmental impact statement were adjusted to improve clarity of intent or rationale. For example, FW-OBJ-VEGF-01, FW-DC-VEGF-09, FW-DC-TIM-01, and FW-DC-TIM-03 were edited to improve clarity.

Goal FW-GO-CARB-01 was added to the revised plan. Recognizing that climate change poses a great deal of uncertainty regarding the future trajectory of ecological components, the intent of this new goal (FW-GO-CARB-01) is to proactively promote research and monitoring that will further assist in the adaptive management process. Also, FW-GDL-VEGNF-08 from the draft plan was deleted because it was deemed redundant with FW-GDL-GRAZ-05. This guideline was amended to address commenter's concern regarding riparian resources. Similarly, FW-DC-SOIL-03 was amended to address concern about pollinators and FW-GDL-VEGNF-06 was changed to make it clear that the guideline only applies to vegetation treatments in hardwoods (not all areas). In some cases, the existing suite of plan components was deemed sufficient, and no change was made.

The range of ecological conditions necessary to ensure ecological integrity is determined by rigorous analysis of ecosystem dynamics in the context of the natural range of variation and captured in the desired conditions put forth by the revised plan. These desired conditions do not vary by alternative because the ecological conditions necessary to support ecological integrity are constant. Within the desired conditions provided by the revised plan, the Custer Gallatin has the discretion to emphasize restoration of one geographic area over another or to focus resources on particular ecosystem components or particular desired conditions. Some of these trade-offs are analyzed by varying objectives across plan alternatives. However, not specifying desired conditions at finer scales does not represent a limited set of alternatives, rather it recognizes the dynamic ecological and socio-economic environment in which forest management takes place. By not precluding options in terms of how desired conditions are achieved, the revised plan allows managers the ability to be responsive to what are often quick and unpredictable changes in this operating framework of the Forest Service, and thereby, be more effective at achieving forestwide and geographic area desired conditions.

It is not necessarily possible or desirable to paint a "granular" picture of what a stand should look like when one is standing in it. Indeed, there is no "correct" way for a stand to look. A particular forested stand could be in any seral state from grass/forb to old growth and not necessarily be good or bad ecologically. The plan is fundamentally based off the concept of natural range of variation as the underpinning for ecological integrity. One key to this concept is that there is almost infinite variability at small scales (for example, stand-level), but at larger scales the range of variation is more limited and can be defined and quantified in terms that are meaningful to managers. The best way to understand the desired state of any particular stand is to understand the desired range of variation at larger scales—a scale large enough for the full potential variability in ecological conditions to be represented. Within that context and with further detailed and site-specific information on the particular location and condition of a stand, stakeholders have sufficient information to discuss desired condition of a particular stand. The scale chosen for the forested vegetation desired condition (generally potential vegetation type within geographic area) is small enough to differentially affect project planning across the national forest (that is, not mean the same thing everywhere) but also large enough to capture the full range in ecological conditions driven by natural disturbance regimes.

Numerous places in the environmental impact statement were reworded to improve clarity and explain underlying rationale. In other cases, no changes were made because the language seemed sufficiently clear.

### PRISM/SIMPPLLE Modeling

**Concern:** The Forest Service should identify models used to inform the draft environmental impact statement and plan. Comments also asked for more explanation and details regarding the PRISM modeling.

**Response:** The revised plan and final environmental impact statement relied on two models to inform development of vegetation desired conditions and expected trends: SIMPPLLE and PRISM.

SIMPPLLE (*SIMulating Patterns and Processes at Landscape scaLEs*) version 2.5 is the best available model to analyze terrestrial vegetation for programmatic forest planning. SIMPPLLE is a spatially explicit, dynamic landscape modeling system for projecting temporal changes in the spatial distribution of vegetation in response to insects, disease, wildland fire, and other natural and management-caused disturbances (Chew et al. 2012a). SIMPPLLE is used to model:

1. Natural range of variation
2. Future vegetation conditions (draft environmental impact statement)
3. Future vegetation conditions (final environmental impact statement)

PRISM (Plan-level forest activity Scheduling Model) (Nguyen 2018) is a management scheduling tool used to estimate treatment acres and harvest volume from the forest under different alternative considerations. The PRISM model formulation is designed to answer several management questions:

1. What vegetative treatments should they be scheduled to move toward the desired conditions for vegetation, with and without budget limitations?
2. What is the PWSQ and PTSQ, with and without a budget limitation?
3. What amount of timber can be removed annually in perpetuity on a sustained-yield basis?

Appendix B of the final environmental impact statement contains details on methods and key assumptions used in the plan revision process, including how models were tailored to the Custer Gallatin, and how management area designations and plan guidance were used to inform the process. Appendix B also describes how climate change effects were anticipated in modeling environment (also see (Erdody and Carnwath 2018)). Appendix B was updated between draft and final to capture important changes and clarify key assumptions.

### Snags

**Concern:** The Forest Service should address the management and analysis of snags.

**Response:** The desired condition for snags is based on Forest Inventory Analysis data from within unroaded and wilderness areas based on the assumption that these areas have been less influenced by active management. Lacking other quantitative information, this method is consistent with the best available scientific information regarding the historical condition of snags. For additional detail on

assumptions and underlying analysis for natural range of variation or desired conditions for snags, see Bollenbacher (2008).

As described in the final environmental impact statement, a comparison of reference conditions (desired conditions) to current conditions revealed that snag conditions at a forestwide scale are similar to what might occur under natural regimes and are generally within the natural range of variation. Nevertheless, the analysis recognized best available scientific information indicating that at smaller scales of analysis (such as project level), timber harvest and human access can have substantial impacts on snag density, distribution, and longevity. Presence of localized disturbances could also have substantial influence on snag conditions at smaller scales. For this reason, several plan components were included to ensure the protection and maintenance of snags: FW-DC-VEGF-05; FW-GDL-VEGF-03 and 04; and FW-GDL-TIM-01 and 02.

The primary snag-retention guideline (FW-VEGF-GDL-03) requires that the largest snags available be retained; this would ensure that very large and large snags are the priority for retention in project areas. The intent of this guideline is that managed areas contribute toward snag desired conditions to ensure appropriate distribution across the landscape, recognizing that snags may be less common in these areas. Together with natural disturbances in unmanaged areas, maintaining this minimum level in managed areas would contribute to achieving the desired condition. The guideline allows for the use of local data to design the best retention and linkages of snags across the project area. Such information may be available from aerial detection surveys of mortality, stand examinations, and/or specific snag surveys. When such project-level data are unavailable, snags may be left explicitly within treatment units to ensure adequate snag habitat is retained. The intent of the guideline is to allow managers to design and retain the best linkages of snag habitat throughout the project area.

In summary, as described in the final environmental impact statement, the Custer Gallatin is currently within the desired conditions for snag density and distribution. In the coming decades, the primary snag-producing agents (fire and insects) are expected to increase in all alternatives, thereby increasing snag density and distribution across the landscape. In all revised plan alternatives, the number of snags required after timber harvest is higher than in the current plans. Revised plan direction for snag retention also includes a provision to maintain largest snags available in treatment areas. Moreover, in contrast to the current plans, the revised plan alternatives contain guidelines directing the retention of snags during salvage. As such, it is expected that snag density and distribution will be sustained or likely increase in the future, particularly under the revised plan alternatives. Also see response for "Wildlife General – Snag-dependent species."

### Suitable Lands for Timber

**Concern:** Comments concern the assessment of suitable lands for timber production as well as the purposes of timber harvest on lands unsuitable for production.

**Response:** As described in the final environmental impact statement (appendix B), for each alternative, a determination of "Lands Suited for Timber Production" was made according to FSH 1909.12.61. In general, the process first identifies those lands that are not suited for timber production and leaves the rest as available for timber production management. Suitability analysis follows a two-stage process described in detail below.

The first stage is to identify lands not suited for timber production based on legal, technical, and ecological context. Specifically, lands that are legally withdrawn (such as wilderness), cannot be harvested without causing irreversible damage to the land, or are not forested or not capable of re-growing trees once harvested are withdrawn at the first stage. This stage is constant and used as a basis for all alternatives and is termed "lands that may be suited for timber production."

The second stage of suitability withdraws land from "lands that may be suited for timber production" based on desired conditions of land management designations, which can vary by alternative. Alternatives can vary land management designations such as recommended wilderness, special areas, research natural areas, and so forth. Some of these land designations may have desired conditions incompatible with managing the land for timber production, in which case they are withdrawn from suitability for that alternative. For example, as stated in the environmental impact statement: Riparian management zones are areas in watersheds near surface water where riparian and riparian-associated resources, functions, goods, and service receive primary emphasis, and where management activities are accordingly subject to specific standards and guidelines. It was determined that this purpose was not compatible with regularly scheduled timber harvest.

It is also important to note that the plan may allow for timber harvest for purposes other than timber production as a tool to assist in achieving or maintaining one or more applicable desired conditions or objectives of the plan to protect other multiple-use values, and for salvage, sanitation, or public health or safety. Examples of using timber harvest to protect other multiple-use values may include improving wildlife or fish habitat, thinning to reduce fire risk, or restoring meadow or savanna ecosystems where trees have invaded. FW-GDL-TIM-03 was amended to clarify that regularly scheduled timber harvest is not suitable on lands not suitable for timber production.

Further detail on the timber suitability analysis is provided in appendix B of the final environmental impact statement.

### **Timber - Budgets**

**Concern:** The Forest Service should consider the potential for timber output without a budget constraint.

**Response:** The revised plan reflects the desire for a timber harvest level that provides local jobs and income, and generates products for local mills and other forest products businesses to improve forest health within organizational capacity and reasonably foreseeable budgets, while protecting wildlife and other resource values. Objectives are concise, measurable, and time-specific statements of a desired rate of progress toward a desired condition or conditions. As required by the 2012 Planning Rule (36 CFR 219.1(g)), objectives (including timber volumes) represent what the national forest can reasonably accomplish, given existing and projected limitations on budget and time. Budget constraints for timber sale activities are considered across all alternatives and described in appendix B of the final environmental impact statement. Land management plans do not make budget decisions. Should Congress emphasize a specific program by appropriation, a redistribution of priorities would follow, regardless of the alternative implemented. However, as noted in the final plan, if additional support to achieve desired conditions was provided through opportunities such as increased congressional allocations, stewardship contracting, or work with partners through other authorities, the potential wood and timber sale quantity could be exceeded. Conversely, if available resources, markets, or other factors are less favorable than anticipated, the potential wood and timber sale quantities identified may



not be met. While objectives were not changed (due to required budget constraints) the final plan contains estimates of timber volumes that could be accomplished with an unconstrained budget, and the final environmental impact statement was amended to include estimated effects of key forested vegetation characteristics under this unconstrained scenario.

#### Timber - Definition of Timber Harvest

**Concern:** Comment stated the Forest Service is trying to evade congressional and case law proscriptions on "timber harvest" by redefining what "timber harvest" means.

**Response:** Timber harvest: The removal of trees for wood fiber use and other multiple use purposes (36 CFR 219.19).

#### Timber - Market Considerations

**Concern:** Comment stated the Forest Service should compare the projected timber volume harvested to the mill supply need and operator capacity. The potential loss of timber industry infrastructure and resultant inability to achieve the desired future forest condition identified in the Proposed Action should be examined in the environmental analysis.

**Response:** The Timber section of the final environmental impact statement was amended to provide additional information about mill supply and operator capacity.

#### Timber - Payment to Counties

**Concern:** Comment stated the Forest Service should analyze projected payments to counties with each alternative and how revenues from management actions will contribute to economic stability or growth in counties.

**Response:** Payments to counties are difficult to project due to the lack of project geographic assignment, as well as congressional decision-making regarding land payment programs. The plan alternatives remain programmatic in nature and do not yield project-level information that could be used to determine which counties would receive more, or less, timber sale and other project related revenues. More generally, county payments, left unchanged by Congress, would provide respectively more, or less revenue, proportional to estimated sale quantities with each alternative. This change would not be expected to be constant across all counties, however.

#### Tree Species Composition

**Concern:** Comment stated the Forest Service should address plan direction for tree species composition, and suggested that finer-scale desired conditions are needed.

**Response:** Unlike other desired conditions in the Terrestrial Vegetation section, the desired condition for species compositions (expressed in terms of dominance types and presence in FW-DC-VEGF-01 and FW-DC-VEGF-02, respectively) is expressed at the forestwide scale only. This was done, in part, because the assessment did not reveal a significant concern for species composition, particularly in terms of intra-stand diversity. Unlike other forests in the region and across the country that have experienced significant shifts from shade-intolerant species to more shade-tolerant species (particularly in frequent fire ecosystems), the Custer Gallatin National Forest does not have a similar dynamic at large scales. Notably, however, there is concern about successional shift from whitebark pine to subalpine fir, and this is captured in the plan. The assessment did reveal concerns about the extent and dominance of a

couple species—ponderosa pine and whitebark pine. The desire to increase the presence and dominance of these species is reflected in the desired conditions. In short, it was not necessary to express the desired condition at the scale of individual geographic areas (or smaller scales) to inform the decision maker or to guide management activities.

### Whitebark Pine Management

**Concern:** The Forest Service did not adequately address the conservation and management of whitebark pine.

**Response:** Collectively, the plan components in the revised plan are intended to ensure ecological integrity by maintaining or restoring natural ecological conditions that promote healthy, diverse, and resilient plant communities. The Forested Vegetation and At-Risk plant species plan components are specifically designed to maintain and enhance biodiversity, maintain plant species population and distribution levels within the natural range of variation, and provide higher levels of protection and guidance for certain species including whitebark pine. The forested vegetation plan components include quantitative desired conditions for the distribution of whitebark pine, as well as quantitative and narrative descriptions of the desired compositions, structures, and landscape patterns necessary to promote resilience of cold and alpine potential vegetation types. The At-Risk Species plan components contain standards and guidelines protecting all at-risk species, including whitebark, from management activities that could adversely affect their long-term persistence. In addition, there are several plan components specific to whitebark pine, including a desired condition to maintain and restore whitebark pine ecosystems, as well as an associated guideline, treatment objectives, and a monitoring component to achieve this desired condition.

The draft plan contained four plan components specific to whitebark pine: FW-GO-PRISK-01, FW-GDL-PRISK-03 and FW-DC-VEGF-01 and 02.

In addition to the plan components listed above, the plan added new information from Keane et al. (2017) and three additional plan components that will (1) more clearly articulate the desire to maintain resilient whitebark pine ecosystems; (2) provide treatment objectives to help achieve the desired condition; and (3) help determine monitoring to ensure that anticipated management actions are occurring. The plan includes the following new plan components: FW-DC-PRISK-02, FW-OBJ-PRISK-01, and MON-PRISK-02.

## Watershed

### Beaver

**Concern:** Comments requested the plan increase the emphasis on beavers as agents of restoration, water management, and climate change adaptation, in partnership with State agencies. Comments proposed the Custer Gallatin identify beavers as a focal species in the monitoring plan.

**Response:** The revised plan acknowledges that beavers have ecological benefits, and encourages beaver presence on the Custer Gallatin lands (FW-DC-WTR-09, FW-GDL-WTR-03, and management approaches). American beaver has not been added to the focal species list or the monitoring plan. Monitoring beaver presence or absence and manipulation of beaver populations (and wildlife populations in general) is a function of state fish and wildlife agencies.

Plan and environmental impact statement changes related to beaver in response to suggestions include:

FW-DC-WTR-09: additional specificity, including addition of “adaptation to changing climate conditions.”

FW-GDL-WTR-03: additional specificity and an added emphasis on non-lethal control.

Final environmental impact statement: additional discussion making connection between increased beavers and their potential to ameliorate climate change effects.

### Bozeman Municipal Watershed

**Concern:** Comment stated the plan should ensure that municipal watersheds are managed to protect water quality and quantity for the City of Bozeman’s drinking water supply. Comment indicated concern that the key linkage area direction would prevent the City of Bozeman from implementing additional water storage in the Sourdough municipal watershed.

Other comments indicate the land management plan should manage and place priority watershed status designations for Hyalite Creek, Sourdough Creek, and Lyman Creek municipal watersheds, and highlight the priority status of these municipal watersheds. The priority watershed designation should eclipse, yet complement, recreational emphasis area management decisions. In addition, the environmental impact statement appendix E should evaluate the consistency of the revised plan with the Bozeman Community Plan and the City’s Integrated Water Resources Plan, 2017 Water Facility Plan Update and Forest Management Plan.

**Response:** Multiple plan components recognize the importance of municipal watersheds, including FW-DC-WTR-08 and FW-STD-WTR-01. Goal MG-GO-WTR-01 specifically addresses Forest Service cooperation with the City of Bozeman in sustainable land management of the Hyalite and Bozeman Creek municipal watersheds. The revised plan provides more language and protection of municipal watersheds than the current plans. Desired Condition MG-DC-HREA-01 for the Hyalite Recreation Emphasis area envisions sustainable recreation in concert with demands on the municipal watershed.

Plan components were revised, at least in part to address concerns regarding needs for management flexibility within the Bozeman Municipal Watershed. The plan has modified the key linkage area guidelines to separate guidance for new recreation development (FW-GDL-WL-03) from other new permanent facilities and structures (FW-GDL-WL-04). Guideline FW-GDL-WL-04 allows for new permanent administrative development where needed within the key linkage area, as long as wildlife movement patterns are not permanently disrupted.

Plan appendix C lists Bozeman Creek (Sourdough Creek) and upper Hyalite Creek as priority watersheds (a watershed condition framework designation). This will result in future conservation work in these two watersheds. The Conservation Watershed Network (plan appendix C) includes the Bozeman Creek, Upper Hyalite Creek and Lower Bridger Creek (Lyman Creek) watersheds. This network is meant for long-term conservation of aquatic biota meaning high-quality habitat including sustaining water quality and quantity.

Final environmental impact statement appendix E evaluates consistency of the revised plan with the four plans requested by the City of Bozeman. See also response to DEIS Compatibility with Other Plans - Appendix E.

## Climate Change

**Concern:** Comments asked how the plan addresses the effects of climate change on the watershed, specifically in terms of water quantity and quality. Comments suggested incorporating as standards or guidelines ideas in "Water, Climate Change, and Forests: Watershed Stewardship for a Changing Climate" (United States Dept. of Agriculture, Forest Service publication, General Technical Report PNW-GTR-812 of June 2010 (Furniss et al. 2010)).

**Response:** The revised plan incorporates climate change into the plan components of numerous topics. The riparian management zone plan components are more stringent and more protective of riparian areas than the current plans, helping to buffer against potential effects of climate change. The plan envisions maintaining or increasing beaver presence and using non-lethal methods to address beavers where social or economic issues arise. Beavers will help ameliorate effects of climate change by increasing water quantity and quality on the landscape.

The Conservation Watershed Network has identified over 80 watersheds that are the most important to aquatic biota conservation and likely some of the most resilient to effects of climate change, as those within the Conservation Watershed Network are generally higher-elevation watersheds—the most important to protect from potential effects of climate change. The goal of the Conservation Watershed Network is long-term conservation of aquatic biota within those watersheds.

The final environmental impact statement analysis was expanded to include how the plan and alternatives address impacts of climate change. Suggestions from "Water, Climate Change, and Forests: Watershed Stewardship for a Changing Climate" are already incorporated into in the plan components, although worded consistent with land management plan requirements. The plan addresses future road projects, but cannot compel removal of current roads from the stream network.

## Conservation Watershed Network, Watershed Condition Framework and Priority Watersheds

**Concern:** Although comments supported the identification of the conservation watershed network, some comments requested additional plan components specific to that allocation. They expressed concern that the limited set of plan components may not provide adequate safeguards to ensure that the conservation watershed network will fulfill its intended purpose. In particular, some comments indicated guideline FW-GDL-CWN-01 direction to avoid net increases in stream crossings and road lengths is insufficient and the Forest Service should avoid stream crossings whenever possible. Other comments requested desired conditions and objectives specific to the priority watersheds identified through the watershed condition framework and requested additional analysis in the environmental impact statement to measure anticipated road density changes to improve watershed condition class scores.

**Response:** Forestwide plan components found in multiple sections of the plan, such as those for riparian management zones, watersheds, grazing, infrastructure, etc., apply to the conservation watershed network allocation. Standards and guidelines throughout those sections of the plan address management risks to all aquatic resources and will contribute to achieving the desired condition of the conservation watershed network. The effects of other designated area management direction (e.g., recommended wilderness areas or inventoried roadless areas) will also contribute to achieving the desired conditions for the conservation watershed network. See the final environmental impact

statement for a discussion of how the plan addresses the 2012 Planning Rule's requirements for maintaining and restoring ecological integrity.

As it relates to guideline FW-GDL-CWN-01 and commenters' preference for the guideline to indicate management actions should avoid any stream crossings, there are situations where removing a particularly sediment-prone road (for example), by replacing with one that is built with new engineering techniques would improve the overall riparian ecosystem with the conservation watershed network. The guideline is not a "loophole," instead it ensures that future project planners can do work that improves aquatic or riparian management zone or watershed integrity by working within the riparian management zone only when necessary and only when it maintains or improves conditions.

The plan includes direction to maintain and restore aquatic integrity and will guide site-specific projects to address priority watersheds as required by the national watershed condition framework. Objectives such as FW-OBJ-WTR-01, 02, and 03, and FW-OBJ-CWN-01 identify aquatic restoration outcomes across the national forest, including priority watersheds. Restoration of the current priority watersheds will continue to be worked on until moved to an improved condition, and new priority watersheds will be designated. Thus, priority watershed-specific objectives are not necessary.

Road densities are just one of the broad indicators considered to calculate watershed condition class scores. Recent restoration activities in priority watersheds on the Custer Gallatin have not included actions to reduce road densities. Thus, it would be highly speculative and inaccurate, at the programmatic scale to anticipate future road density reductions as a measure of potential changes in watershed condition class scores. Thus, including this analysis would not provide meaningful information for the decision make to consider.

### **Environmental Impact Statement Analysis**

**Concern:** Comments requested specific maps of Custer Gallatin water resources and an assessment of organic loading impacts to drinking water supplies associated with municipal watersheds due to beetle-killed trees. Additional comments stated the effects analysis was insufficient. Some examples of additional analysis specificity requests included expected sedimentation during and after proposed management activities and effects of horses, bison, pack animals, and big game that may be additive to grazing impacts on riparian streambank conditions.

**Response:** Some of the requested maps are included within the plan set of maps (e.g., municipal watersheds, major rivers, and streams) displaying the plan land allocations. However, the plan does not authorize any site-specific forest activities and identifying the location, time, and duration of future activities would be highly speculative. Given this programmatic nature of the final environmental impact statement, detailed maps of all aquatic resources would not provide additional meaningful information to evaluate the indirect effects of the plan.

The effect of organic loading from beetle-killed trees on water quality would be a highly speculative at the programmatic forestwide scale and would not meaningfully inform the decision to be made. The revised plan includes components to maintain or restore watershed integrity and water quality within municipal watersheds. Restoration needs may vary due to endemic or epidemic levels of insect and disease or other disturbance process such as wildfire.

Site-specific project planning will consider potential effects to water quality, and projects will be designed in compliance with plan direction to protect municipal watersheds. The local municipalities—currently cities of Bozeman, Red Lodge, and West Yellowstone—are the entities directly responsible for monitoring drinking water quality at their treatment facilities. The plan includes a goal (MG-GO-WTR-01) to cooperate with the City of Bozeman in sustainable land management of the Hyalite and Bozeman Creek municipal watersheds.

The Council on Environmental Quality has indicated that programmatic effects analysis must provide sufficient detail to foster informed decision-making that reflects broad environmental consequences from a wide-ranging Federal program. Site- or project-specific impacts need not be fully evaluated at the programmatic level when the decision to act on a site development or its equivalent is yet to be made (CEQ 2014). Although qualitative in nature, the effects analysis discloses expected outcomes from management guidance, supported by scientific information as cited in the environmental impact statement S. As disclosed in the final environmental impact statement, contributions to water resources would be similar under alternatives B, C, and F, highest under alternative D, and lowest under alternative E, due primarily to variations across alternatives in resource enhancement objectives and amount of recommended wilderness areas.

Baseline stream conditions are best explained by the watershed condition framework ratings for the Custer Gallatin and the Department of Environmental Quality 303d list described in the environmental impact statement. As the type, timing, and location of future site-specific activities is unknown, it would be highly speculative to estimate “expected sedimentation.” The plan includes standards and guidelines that will constrain management activities during site-specific project design to address risks associated with sedimentation from management activities. There are not specific proposed management activities in a land management plan.

The final environmental impact statement addresses effects of excessive grazing by both wild and domestic ungulates, dietary overlap of wildlife and livestock, effects of wildlife on riparian management zones, and herbivory effects from grazing and browsing by multiple ungulates and beaver.

## Fish

**Concern:** Comment stated that analysis is insufficient to demonstrate plan will provide the ecological conditions to support persistence of Arctic grayling, Yellowstone cutthroat, westslope cutthroat, and western pearlshell, and questioned whether analysis sufficiently analyzed or addressed climate refugia for fish. Comments request specific timing constrictions, reference to the Montana Fish, Wildlife & Parks Statewide Fisheries Program and Guide, and additional specificity in the analysis to project the future condition of the conditions that support western pearlshell.

Response: The revised plan is designed to meet the requirements of the 2012 Planning Rule’s emphasis on maintaining and restoring ecosystems. The Custer Gallatin plan components have extensive protections for the habitat of Arctic grayling, Yellowstone cutthroat, westslope cutthroat, and western pearlshell, as well as all native and desired non-native species (e.g., lake chub) throughout the plan in the watershed, riparian management zone, and conservation watershed networks sections.

Conservation watershed networks were identified and include plan components to provide long-term conservation for aquatic biota refugia. FW-GDL-WTR-02 requires project-level timing constraints, but doesn’t specify dates, so site-specific project timing can be adapted based on changing science and climatic conditions. The plan includes objectives to restore habitat for at-risk aquatic species (FW-OBJ-

WTR-03) to contribute to the species' viability across their range, and monitoring (MON-WTR-01) to determine if management and condition of habitat are contributing to physical and biological integrity. As species of conservation concern, see appendix C of the final environmental impact statement for the plan components that support westslope cutthroat trout and western pearl shell. This framework of plan components is designed to support all native species' diversity, including the Arctic grayling and Yellowstone cutthroat trout. The management approaches appendix identifies many different types of aquatic projects that could happen (constructing barriers, aquatic organism passages, habitat enhancement, etc.) to contribute to achieving objectives and making progress toward achieving desired conditions, consistent with information in Montana's fisheries guide. A reference to that document has been added.

The final environmental impact statement discloses the ecosystem and species-specific approach for providing the ecological conditions needed to support long-term persistence of these species, and the improved riparian management direction over the current plans. The desired conditions describe the ecological characteristics toward which management of the land and resources should be directed to provide habitat for all native species—Arctic grayling, Yellowstone cutthroat, westslope cutthroat, and western pearlshell. The environmental impact statement also acknowledges that not all desired conditions may be achieved over the life of the plan.

### Fish Stocking

**Concern:** Comment stated that the Forest Service should stop fish stocking in naturally fishless wilderness lakes. Comment favored continued fish stocking in mountain lakes, including lakes in wilderness areas.

**Response:** Montana Fish, Wildlife, and Parks is the agency responsible for fish stocking. The practice of stocking previously unstocked lakes, streams, and rivers for recreational angling in or out of wilderness is generally no longer occurring. Please refer to goal FW-GO-DWA-03 regarding Forest Service coordination with Montana Fish, Wildlife, and Parks on fish and wildlife management in wilderness. The Custer Gallatin will work with Montana Fish, Wildlife, and Parks at the site-specific scale on National Forest System lands to address fish stocking. Generally, this typically only occurs in waterbodies restoring native fish species.

### Monitoring

**Concern:** Comments requested additional monitoring for water resources.

**Response:** As stated in the introduction to the monitoring program (Plan chapter 4), the monitoring program addresses the most critical components for informed management of the Custer Gallatin's resources within the financial and technical capability of the agency. The monitoring program is not intended to depict all monitoring, inventorying, and data gathering activities undertaken on the Custer Gallatin. The Forest Service typically does not sample some requested monitoring items, such as bacteria. If developed, as indicated in the introduction to the monitoring program (Plan chapter 4), a monitoring guide would provide detailed information on the monitoring questions, indicators, frequency and reliability, priority, data sources and storage, and cost.

## Permitted Livestock Grazing

**Concern.** Comment expressed concern with impacts of livestock to water resources, riparian areas, riverbeds, small seeps and wetlands, aspen, water quality, and water storage capacity, and requested the plan reduce existing grazing in riparian areas or include restoration plans for the areas that grazing already affects. Comment requested the environmental impact statement analysis cite the quantitative data sources regarding livestock impacts upon which the draft environmental impact statement's analyses on riparian habitat and at-risk plant species are based, and further explain how the plan would protect riparian resources by minimizing the effects of grazing.

Comment requested that the stubble height requirement for grazing be deleted, or that it is not an appropriate measure for the Ashland and Sioux Districts. Comment suggested measures in addition to the stubble height requirement outside of salmonid riparian habitat, such as streambank alteration, stability percentages, or non-hydrophilic vegetation.

**Response.** The riparian management zone and watershed plan components, along with livestock grazing plan components (re: stubble height guideline FW-GDL-GRAZ-02) demonstrate commitment to ensuring riparian areas are maintained or enhanced. The plan's riparian management zone standards meet the 2012 planning requirement to pay special attention to the first 100 feet from waterbodies.

The final environmental impact statement water resources environmental consequences section "Effects from Permitted Livestock Grazing Management" discusses how the revised plan direction, as compared to the current plans, would decrease livestock grazing effects while not prohibiting livestock grazing use in riparian areas. Allotment plan management and measures to bring allotments into compliance, if they are not, happen at the project scale of analysis rather than at this programmatic scale.

The Council on Environmental Quality has indicated that programmatic effects analysis must provide sufficient detail to foster informed decision-making that reflects broad environmental consequences from a wide-ranging Federal program. Site- or project-specific impacts need not be fully evaluated at the programmatic level when the decision to act on a site development or its equivalent is yet to be made (CEQ 2014). Quantifying livestock impacts forestwide is neither possible given the lack of site-specific data for at-risk plant species, nor would it provide a meaningful analysis of effects on riparian areas given the variations of landform, topography, soil type, and climatic conditions. Quantitative analyses of riparian conditions and at-risk species habitat is appropriate during implementation of the plan at the allotment planning level.

The stubble height guideline (FW-GDL-GRAZ-02) provides a starting point that allows for site-specific (for example, northern Great Plains) conditions. Stubble height is well documented in the literature as a measure that can be used to assess grazing influence. The language in the plan allows for adaptive management and other measures to be used if site-specific conditions dictate. Management approaches in plan appendix A also has alternative suggestions that can be used. Also, see the response for Watershed Riparian Management Zone Plan Components.

## Pine Savanna

**Concern.** Comment stated the draft plan does not provide sufficient protection of pine savanna/Northern Great Plains riparian resources including wetlands, seasonal wetlands, ephemeral and perennial stream, seeps, and springs. Comment requested a specific plan component to protect springs,



a standard with thresholds for streambank alteration, Multiple Indicator Monitoring for non-salmonid habitats, and suggested addressing saturated soils in grazing components and explaining when revised plan guidance applies to grazing practices.

**Response.** The pine savanna riparian resources receive the same amount of protection as the montane systems. There is no distinction between the two ecoregions in terms of protection. The riparian management zone section applies to the entire national forest.

Forestwide, all springs, seeps, wet meadows, etc., fall under category 4 riparian management zone, and thus, all of these critical aquatic resources in the pine savanna have the same level of protections as the rest of the riparian management zone categories. Therefore, “seeps and springs” were not added to plan components. FW-WTR-DC-07 also addresses these specific habitat types. Please refer to the glossary where ephemeral, intermittent, and perennial streams are defined. The ephemeral streams mapped for the Custer Gallatin are not expected to express riparian vegetation. It is important to note that riparian management zone protections apply to both intermittent and perennial streams, so while only 9 percent (note: analysis was re-run and new data are provided in the final environmental impact statement) of perennial streams across the Custer Gallatin are in the pine savanna, over 43 percent of intermittent streams are in the pine savanna. In addition, fewer perennial streams are expected in the pine savanna units, because perennial streams are less common in this geographical area, especially on Custer Gallatin lands, which are situated in more headwater areas, and the pine savanna units are approximately 20 percent of the more than 3 million acres of the Custer Gallatin.

A standard with thresholds for streambank alteration is too prescriptive to be applied across the Custer Gallatin on all streams at the plan level. The riparian management zone section has many plan components that protect all riparian management zones across the entire national forest, such as the livestock grazing stubble height guideline (FW-GDL-GRAZ-02). The infrastructure, recreation, energy and minerals, and lands sections all have plan components that collectively protect all streams.

Multiple Indicator Monitoring (MIM) is discussed in plan appendix A, Management Approaches as a potential tool for evaluating pine savanna and montane streams in the future.

“Saturated soils” was added to grazing guideline FW-GDL-GRAZ-01. Plan components applicable to livestock grazing can be implemented through permit modifications, reissuance of existing term permits, issuance of new term grazing permits, or as allocation management plan revisions and sufficiency reviews occur (see response to Grazing Plan Components).

### Riparian Management Zone Plan Components

**Concern:** Comments questioned the sufficiency of riparian management zone plan components to address risks of management activities such as pesticide use, grazing, salvage, or commercial harvest. Some allege the lack of specificity and ambiguity in plan components will leave effects determinations and plan consistency interpretation to project-level planning. Other comments question use of terms such as minimize, resilience, properly functioning condition, or hydrophilic, and asked for clarification in their application. Requests were made to add specificity to the desired habitat characteristics around streams, waterbodies, seeps, and springs, particularly as it relates to addressing habitat connectivity.

Specific to grazing, some comments indicate the plan components are inadequate to protect prairie riparian habitats, while others question the application of riparian plan components at a forestwide scale.

**Response:** The final environmental impact statement acknowledges there may be localized impacts inside riparian areas from management activities; however, plan components found in the watershed, riparian management zone, roads and trails, grazing, and minerals sections address comment concerns related to management risks such as sediment delivery, loss of bank stability, habitat connectivity, providing habitat for beaver, pesticide use, etc. The plan components limit, to a practical extent, the amount of mechanized equipment or other activities allowed in the riparian management zones, while allowing management activities for restoration activities and/or to meet Forest Service obligations to provide for multiple uses such as grazing, minerals, and water-based recreation.

Future project planners will need to field verify riparian area (riparian management zone) boundaries and riparian management zone functionality, and do project level NEPA analysis. The revised plan is programmatic, providing large scale sideboards, not project level considerations.

Plan components have been modified to provide additional clarity or to remove terms such as minimize or hydrophilic to address commenters' concerns. However, in most cases, additional specificity regarding how plan consistency would be determined during project analysis was not added. As conditions vary from site to site, project to project, specific project design may vary to achieve plan consistency. Other component suggestions were not adopted as the current integrated suite of plan components addressed comment concerns.

Specific concerns were raised regarding stubble height as an appropriate indicator in guideline FW-GDL-GRAZ-02. However, it is important to note the adaptive nature of this guideline. It is written to provide for the use of varying stubble heights or other indicators based on the varying site-specific conditions across the Custer Gallatin National Forest. If the stubble height is not found to be an effective metric in the pine savanna ecosystems, the guideline allows for use of other types of indicators. While the Goss and Roper (2018) studies cited as the scientific information informing this plan component were not completed in the northern Great Plains or pine savannas of eastern Montana and western South Dakota, these authors and others in different papers have suggested it would work in sagebrush and other ecosystems. Basic stream and riparian ecology principles apply to the montane and pine savanna units of the Custer Gallatin (and beyond), despite variation in ecosystem types. The 2012 Planning Rule requires giving special attention and protection to the first 100 feet of riparian areas on all ecosystem types.

Stubble height indicator is discussed in the livestock grazing section of the environmental impact statement and clearly explains that in specific stream types; stubble height is: "(1) the effect of grazing on the physiological health of herbaceous, hydrophilic plants; and (2) the ability of the vegetation to provide streambank protection and bank building function during the following spring's peak flows. Stubble height criteria should be used where streambank stability is dependent upon herbaceous plants."

### **Riparian Management Zone Width**

**Concern.** Comments stated that riparian management zones identified in FW-STD-RMZ-01 should be wider and included suggestions such as:

- 300 feet rather than 200 feet in fish-bearing or non-fish-bearing streams,
- add 30-foot slope buffer distances to minimize increases of sediment delivery to water resources,
- an additional 150 feet on either side of the 100-year floodplain to protect bull trout habitat,
- adopt INFISH buffers; identify the best available scientific information that supports the inner and outer riparian management zones scheme,
- an outer riparian management zone for category 2

Other comments stated the determination of where riparian conditions exist should be site-specific and not prescriptive.

**Response.** The Custer Gallatin has adopted riparian management zone protections similar to INFISH. Custer Gallatin riparian management zone widths come from the literature stating that widths should be two tree lengths from water's edge (see citations in the final environmental impact statement). Distances of up to 200 feet are recommended for riparian management zones based on Custer Gallatin tree height data; Custer Gallatin's tallest trees are just under 100 feet (two tree lengths=200 feet). Thus, 200 feet is the appropriate width on Custer Gallatin streams. Roper et al. (2019) demonstrates that across the West, by using PACFISH/INFISH Biological Opinion (PIBO) data, improvements to watersheds have occurred through implementation of riparian zones termed riparian habitat conservation areas. The riparian habitat conservation areas are now being replaced by riparian management zones and expanded east of the Continental Divide. The "whichever greatest" language in riparian management zone descriptions ensures sediment delivery will be minimal. Bull trout are not present on the Custer Gallatin.

A 50-foot outer riparian management zone was added for category 2 as requested by a commenter. This will make the Custer Gallatin plan more consistent with the Helena and Lewis and Clark plan and other forests in the Forest Service Northern Region.

At the plan scale, the description of riparian management zones is appropriate for locating riparian management zones during site-specific management actions based on site conditions.

### Riparian Management Zone Vegetation Management

**Concern:** Comments indicated plan components that permit vegetation management in riparian management zones ignore and downplay the well-documented negative effects and ecological risks associated with logging within streamside corridors. Comments stated the analysis in the draft environmental impact statement is insufficient to support conclusions that the plan components will adequately address the management risks associated with vegetation management in these areas.

**Response:** The revised plan provides a suite of plan components to specifically address potential risk factors from vegetation management such as sediment delivery, streambank stability, soil productivity, hydrologic function, loss of thermal cover, and woody debris recruitment (FW-STD-RMZ-02; FW-GDL-RMZ-04, 05, 06, 07, 08; and FW-SUIT-RMZ-01). As demonstrated in the watershed analysis of the final environmental impact statement, revised plan components provide stronger protections than included in the 1980-era plans.

The revised plan embraces ecological integrity in riparian management zones as described in FW-DC-RMZ-01 and 02. There may be areas departed from desired conditions where restoration may

promote ecological integrity. Vegetation management in the inner riparian management zone can only occur if the purpose is to restore or enhance aquatic and riparian-associated resources (FW-STD-RMZ-02). For example, there may be a need to thin out conifers, by hand, to stimulate growth of hardwoods (willows, cottonwoods, or other riparian species) in the riparian management zone that would or could have a stronger root system, provide allochthonous organic matter input, and provide shade in summer months. Per guideline FW-GDL-RMZ-07, clearcutting should not occur in riparian management zones. Over the life of this plan there could be some unforeseen circumstances, such as a monoculture of an unwanted tree species that degrades riparian areas, and clearcutting is a tool that could be used only if it restores the riparian area.

The timber sections of the plan and environmental impact statement explain the difference between timber production and timber harvest for other purposes. The riparian management zones were classified not suitable for timber production to ensure riparian management zones are only maintained or enhanced (FW-SUIT-RMZ-01). Vegetation treatments that improve riparian areas could be allowed in riparian management zones (FW-STD-RMZ-02, FW-GDL-RMZ-04, and FW-SUIT-RMZ-01). See also response to Vegetation - Management of Riparian Areas and Hardwoods.

Additional comments asked how the Forest Service would limit firewood gathering in riparian management zones. It would be accomplished through firewood permit terms.

## **Sediment**

**Concern.** Comments requested clarification of how sedimentation would be measured at the project scale to demonstrate consistency with desired conditions, citing scientific literature describing the adverse effects of sediment on water quality and habitat. Other comments requested additional information about trail-use-induced sediment.

**Response.** With over a decade of consistently collected data and improvements in data analysis, PIBO data can now be used to compare managed and reference watersheds on the scale of individual national forests. PIBO monitoring provides rigorously collected local data that can be statistically compared to reference conditions in the same geophysical province. Additional reference conditions information is measured and/or modeled at the project scale. For example, current projects will often measure sediment in a neighboring watershed with no anthropogenic impacts to understand reference conditions in an adjacent project watershed. While there are no specific plan components placing a quantifiable limit on sediment increases during project activities, the management approaches in plan appendix A outlines methods to quantify sediment at the project scale to understand reference conditions. It would be impossible to have a one-size fits all approach to measuring sediment increases at the forest plan level on this ecologically and geomorphologically diverse forest, particularly because there is not sufficient local information to quantify it at this programmatic scale.

A suite of plan components (such as FW-RMZ-STD-01, FW-RMZ-STD-02; FW-RMZ-GDL-01-04, 06-08; FW-GDL-CWN-01; FW-WTR-STD-01, 03; FW-WTR-GDL-03; FW-STD-RT-03-05; FW-RT-GDL-01-11) addresses sedimentation and other desired conditions in the water quality and riparian management zone sections of the plan. Together with restoration objectives such as FW-OBJ-REC-01, the plan provides improved riparian protection more restrictive than the previous forest plans, which will help reduce sediment for streams impaired by sediment. The final environmental impact statement acknowledges there may be localized impacts and sedimentation from management activities such as those described in the scientific literature provided in comment. However, the plan components cited here are intended to

address the management activities that pose the greatest risk with site-specific constraints to minimize the risk of increasing management-induced sediment.

The watershed condition framework section of the final environmental impact statement represents the broadest watershed inventory, but does not necessarily directly measure “sediment intrusion into waterway drainages.” This type of analysis—sediment yield from management activities—occurs at the project scale when there is potential of management activities introducing sediment into waterbodies.

### Water Quality

**Concern.** Comment requested the plan include plan components to maintain or restore water quality and water resources, including public water supplies, to address road system-related impacts, and to address water quality impacts from abandoned uranium mines in South Dakota. Comment requested the environmental impact statement include water quality analysis, particularly where there could be impacts from livestock grazing, recreational emphasis areas, roadways, and trails.

**Response.** A number of plan components address water quality, including FW-DC-WTR-12, which envisions that the Custer Gallatin National Forest will meet or exceed water quality standards, including beneficial or designated uses, and FW-DC-WTR-05, which specifically addresses sedimentation in waterbodies. Plan appendix A, Management Approaches, explains several potential avenues. Numerous plan components address new or reconstructed roads and water resources: FW-GDL-RMZ-03; FW-STD-RT-01, 03, 04, 05; FW-GDL-RT-03, 04, 05, 06, 07, 08, 09, 10, 11. Objective FW-OBJ-CWN-01 proposes to reduce sediment production on 5 to 8 miles of National Forest System road annually within the conservation watershed network.

South Dakota state water quality laws are sufficient to protect water. However, the water quality in some locations at the abandoned uranium mine site may still be impaired. This legacy of mine impacts is being addressed at the project scale where settling ponds and major land rehabilitation are underway and will continue.

Please refer to the final environmental impact statement section on water quality, for the streams listed as water quality impaired by the states of Montana and South Dakota. There are 34 streams on Custer Gallatin land in Montana and none are listed in South Dakota. The majority of the reasons for listing are outside of management control of the national forest such as natural background levels of constituents or effects from lands not managed by the Forest Service. The Custer Gallatin has made major road improvements in some of these drainages, but they remain listed due to effects outside the impacts of Custer Gallatin roads. Proper functioning condition, while not a direct measure of water quality, is an index used by the Forest Service and other agencies for a qualitative assessment of stream condition. This has been used across the Custer Gallatin on many stream reaches. Finally, PIBO is a Forest Service/Bureau of Land Management large-scale, western U.S. monitoring program. Any projects to address those specific issues would occur at the project scale not the land management plan level.

### Watershed Plan Components

**Concern:** Comments asked for clarification and additional specificity in desired condition such as how intact habitat refugia referenced in FW-DC-WTR-01 are identified, how lands of specific character will be mapped, how progress toward desired conditions will be measured, and acknowledgment of the state of Montana’s Clean Water Act regulatory authority. Comments sought additional standards and

guidelines to ensure achievement of desired conditions and asked for clarification of how individual standards and guidelines relate to specific desired conditions. Additional plan components to address abandoned and inactive mine sites and aquatic invasive species were requested.

**Response:** The conservation watershed network takes a land management plan scale approach to identifying intact habitat refugia by identifying all the HUC6s on the Custer Gallatin National Forest that currently are important cutthroat habitat or might be in the future, important grayling habitat or might be in the future, important pine savanna watersheds with native fish, or are municipal watersheds.

Identifying specific areas where desired conditions for intact habitat refugia are located on the Custer Gallatin has been occurring, and should continue pending funding. One example would be the current pure cutthroat populations that exist without brook trout or rainbow trout and are behind a barrier, natural or human-made. The criteria in this example for “restored” populations in intact habitat refugia in particular include excellent habitat, macroinvertebrate and temperature data, an area or site where multiple partners would come together, as these projects typically are not feasible without multiple entities contributing; and typically, at higher elevations, which might ameliorate potential climate change effects on those populations.

In addition, primary researchers, pending their own funding strings, continue to identify intact habitat refugia. For example, work by Issac (2015) identifies aquatic habitat in the Rocky Mountains that may be able to withstand potential effects of climate change.

Plan components such as FW-STD-RMZ-01 provide sufficient detail for future project planners to identify site-specific land characteristics where the plan components would apply without needing forestwide maps that may provide an inaccurate representation. By nature, lands of specific character cannot be accurately mapped at the forestwide scale, unlike plan components that apply to specific mapped parcels of land (such as a designated area). For example, although National Hydrography Datasets estimate locations of large bodies of water and perennial streams with some degree of accuracy, they do not include all seeps, springs, and intermittent or ephemeral waterbodies. Site-specific project planning is the appropriate scale to identify the riparian management zones.

Although not all desired conditions provide quantified measures within the plan component itself, all provide sufficient detail to determine progress toward their achievement. This includes the qualitative description of reference ranges defined by agency monitoring.

Standards and guidelines throughout multiple resource areas were identified where it was determined some level of management constraint (also known as design criteria) was needed to ensure achievement of desired conditions. Not all desired conditions require a standard or guideline to address a risk from management actions, and there is not a one-to-one relationship between these varying plan components.

Abandoned and inactive mine sites do not pose substantial adverse risks to watershed, riparian, or aquatic species habitat at the land management plan scale. However, site-specific restoration may occur to achieve land management plan desired conditions if localized conditions necessitate. Guideline FW-GDL-EMIN-02 in the Energy and Mineral section of the plan addresses new mining activities in riparian areas, and speaks to bonding. Water quality monitoring for specific mining projects would be developed at the project level.

The revised plan recognizes states' authority per the Clean Water Act. For instance, FW-DC-WTR-12 acknowledges state (Montana and South Dakota) water quality standards. Some management activities have the potential to adversely affect water quality, so plan standards and guidelines such as those that address sediment delivery are included in the plan to provide appropriate constraints on those actions. In addition, some activities are designed to improve water quality. For example, a new culvert on a Forest Service administered road (with appropriate permits secured) could improve water quality or support beneficial uses by installing a device that will have less erosion. Including these plan components doesn't usurp state authority, rather it ensures the national forest complies with state requirements under the Clean Water Act. Further, the Forest Service will continue to work with local municipalities to support municipal watersheds and potentially implement projects on National Forest System lands that could benefit water quality or quantity within those municipal watersheds.

Additional changes made to plan components to address comments include removing the word sufficient from FW-DC-WTR-06, combining FW-GLD-WTR-04 with standard FW-STD-WTR-03, adding language to goal FW-GO-WTR-01 to cooperate with state agencies on conservation of existing populations of native fish, and broadening FW-STD-RT-05 to apply to all streams, fish-bearing or not.

### Watershed Protection

**Concern:** Comments express support for general watershed protection.

**Response:** The revised plan includes extensive plan components to protect watersheds, aquatic species, riparian management zones, and the waterbodies within them.

## Wild and Scenic Rivers

### Eligible List

**Concern:** Comments expressed general support for the wild and scenic designation of 30 eligible rivers proposed in the draft plan. Comments requested the plan classify most, if not all, rivers and streams for inclusion in the Wild and Scenic River System. Comments expressed concern that wild and scenic river designation could (1) interfere with public access and recreational usage and hinder agricultural operations in the Boulder River Watershed, (2) threaten existing campgrounds on the East Rosebud River, (3) restrict access and uses for adjacent public and private property, and (4) represent a conflict with the Constitution of Montana.

Comments recommended including additional specific rivers to the 30 rivers recommended as eligible for wild and scenic designation, such as, but not limited to those listed below.

- Taylor Creek, Hellroaring Creek, and the South Fork of the Madison
- Porcupine Creek, Gallatin Range
- Buffalo Creek, Absaroka Mountains
- Davis Creek, and the East Fork of the Boulder River
- Bear Creek, Absaroka Mountains
- Black Canyon Creek, Buck Creek, Cherry Creek, Hilgard/Sentinel Creek, Spanish Creek, Teepee Creek, and Tom Miner Creek

- East Fork Mill Creek
- Black Sand Springs, as well as additional plan components to protect the springs from water withdrawals and other threats.

**Response:** The 2012 Planning Rule describes the evaluation study process that rivers must go through to qualify as eligible. This process occurred and not all rivers on the Custer Gallatin qualified. Concerns about trade-offs that may accompany wild and scenic river designation would be addressed in a suitability study. A suitability study is not being undertaken with this plan revision process

Comments on specific rivers did not describe the outstandingly remarkable values or the qualities that would have determined them eligible. Under the Wild and Scenic Rivers Act, an "eligible" river must meet the definition used in the study of at least one outstandingly remarkable value. The eligibility study listed the definitions used for the Custer Gallatin study. Commenters often stated information that was not validated as qualifying under the definitions used. The interdisciplinary team evaluating eligibility for wild and scenic rivers considered Black Sand Spring and found no outstandingly remarkable values present to qualify it as eligible. This area is managed in the plan as a special area; see plan components for Black Sand Spring Special Area. Comments proposed several rivers in particular for the following outstandingly remarkable values:

**Fisheries** – No additional rivers were found eligible after public comments were reviewed

**Buffalo Creek** fisheries has been studied and determined to have been hybridized with rainbow trout and rainbow are present in the stream, so the creek does not meet the outstandingly remarkable value definition.

**South Fork Madison** is an important fishery/tributary to Hebgen Lake and beyond, the non-native rainbow and brown trout fishery does not meet the definition of the fish outstandingly remarkable value.

**Headwaters of the Taylor Fork** do not have a pure population of cutthroat trout that fits the fish outstandingly remarkable value. The larger Taylor Fork metapopulation has been identified as a cutthroat conservation population, however genetic testing indicates that cutthroat are hybridized to less than 90 percent cutthroat. Today, it is highly probable that the population is even more hybridized.

**Recreation** – No additional rivers were found eligible after public comments were reviewed. A long list of rivers were mentioned in comments seeking eligibility based on an outstandingly remarkable value for recreation. The recreational activities mentioned were all reviewed again by team members based on the outstandingly remarkable value definition used. Some activities such as snowmobiling were not river related, others failed to meet the definition's guidance within the Region of Comparison.

**Scenery** – No additional rivers were found eligible after public comments were reviewed. Scenery was proposed as an outstandingly remarkable value for a long list of rivers that should be added to the list of eligible rivers. All comments and provided information was reviewed by the specialist based on the definition used.

**Wildlife** – No additional rivers were found eligible after public comments were reviewed.



**Taylor Creek, Hellroaring Creek, South Fork of the Madison, Davis Creek, and East Fork of the Boulder River** were the most commonly mentioned. The fact that any mammals, such as moose, beaver, river otter, or grizzly bear at times use rivers and floodplain habitats is not an outstandingly remarkable value, but a part of their normal habitat. These examples did not meet the outstandingly remarkable value definition used for wildlife.

**Climate Refugia Values** – No additional rivers were found eligible after public comments were reviewed. Several commenters requested that climate refugia be added as an outstandingly remarkable value, under the heading of "Other." The fact that the Custer Gallatin National Forest is located in an area where many of the high-elevation rivers will meet the definition of climate refugia does not meet the definition of an outstandingly remarkable value, which are a river's scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values that are rare, unique, or exemplary on a regional or national scale.

### Outstandingly Remarkable Values

**Concern:** Commenters provided new or clarifying information for outstandingly remarkable values of the 30 rivers found eligible in the draft plan and requested that the Forest Service add the following additional outstandingly remarkable values to rivers already found eligible:

Cave Creek and Cave Canyon – scenery

Cabin Creek, Madison Mountains – recreation, scenery and geology outstandingly remarkable values

Hyalite – recreation outstandingly remarkable value

Sweetgrass Creek – scenery outstandingly remarkable value

Yellowstone River, Absaroka, Sawtooth, and Gallatin Mountains – fisheries and scenery outstandingly remarkable value

Big Creek, Gallatin Mountains – recreation and scenery outstandingly remarkable values

**Response:** Planners did not agree with the additional information regarding the scenery outstandingly remarkable values for Hyalite Creek, Sweetgrass Creek, Big Creek, or the Yellowstone River. Planners agreed with the additional information regarding the scenery outstandingly remarkable values for Cabin Creek and Cave Creek and added a scenery outstandingly remarkable value to the plan.

1. Cave Creek Scenery Specialist Response: As the commenter suggests, many of the scenic qualities listed for the scenery outstandingly remarkable value of Crooked Creek and Lost Water Creek also apply to Cave Creek, especially in its lowest 1 mile. In the lower portions of Cave Creek, the exposed, eroded, sharp-edged limestone buttresses and cliffs, with wind- and water-sculpted holes, and caves extend down to the bottom of the drainage. The magnitude of these features, juxtaposed against the darker conifers, meet the criteria for a scenery outstandingly remarkable value. Agree to add scenery outstandingly remarkable value for the entire length of Cave Creek Headwaters to confluence with Crooked Creek.
2. Cabin Creek Scenery Specialist Response: One of the many scarp faces that developed as a result of the 1959 earthquake, which also caused the landslide that formed Earthquake Lake, is visible in the Cabin Creek drainage. While that scarp face is geologically interesting, it does not meet

the criteria for a scenery outstandingly remarkable value. However, a bit farther upstream, Cabin Creek flows across and through a visually spectacular band of exposed limestone strata that was uplifted and tilted millions of years before the 1959 earthquake and has been eroding, forming visually striking scenery. That visually outstanding section is approximately 1 mile long and meets the criteria for a scenery outstandingly remarkable value. This recommendation has been implemented.

### Preliminary Classification

**Concern:** Comments request reclassification of the following segments:

1. Crooked Creek, Pryor Mountains – Reclassify as "wild."
2. Lost Water Creek, Pryor Mountains – Classify the upper reach as "wild."
3. Bear Creek, Pryor Mountains – Extend the reach to include the full headwaters: 7.5 miles, and change it from "scenic" to "wild."
4. West Fork of the Stillwater – End the "wild" portion of the West Fork of the Stillwater at the Absaroka-Beartooth Wilderness boundary.
5. Boulder River – End the designated portion of the Boulder River at the present existing wilderness boundary.

### Response:

1. Crooked Creek – A road is located above the creek on a rim, yet within the quarter-mile eligible river buffer. The predicament remains that if changed to a "wild" classification, the road would be located within the eligible river wild corridor and road management would be in direct constant conflict with the management of a wild river. Therefore, the classification was not changed from scenic to wild.
2. Lost Water Creek – This segment was already listed as wild.
3. Bear Creek – The segment listed as eligible is the location where the outstandingly remarkable value is located. The remainder of the river does not have conditions that qualify under the wildlife outstandingly remarkable value.
4. West Fork of the Stillwater – This segment was already listed as wild.
5. Boulder River – The recreation outstandingly remarkable value was not found in the segment above Box Canyon.

### Plan Components

**Concern:** Comment requested new or modified plan components, such as plan components that protect the specific outstandingly remarkable values and prohibit or remove nonconforming uses under the Wild and Scenic Rivers Act; revision of confusing wording regarding timber harvest; addition of the wild and scenic river summary and table for the Madison, Henrys Lake and Gallatin Mountains Geographic Area and a time-bound standard for a management plan for the East Rosebud Wild and Scenic River.

**Response:** Plan components for resource protection will apply within eligible wild and scenic river corridors, such as for soils, air, water, fish, and wildlife. Duplication of these components is not necessary.

Existing protection in laws, regulations, and policies that apply under the Wild and Scenic Rivers Act do not need to be repeated within land management plans. Desired conditions AB-DC-DWSR-01 and FW-DC-EWSR-01 state that the designated and eligible rivers retain their free-flowing condition, preliminary classification, and the outstandingly remarkable values that provide the basis for their inclusion in the system. It is not necessary to have standards and guidelines that say the same thing.

Existing uses were fully considered when the eligibility and tentative classifications of segments were determined. Those existing conditions would be part of the landscape and drive the selection of outstandingly remarkable values and tentative classification determinations that were made. Desired conditions AB-DC-DWSR-01 and FW-DC-EWSR-01 state that the designated and eligible rivers retain their free-flowing condition, preliminary classification, and the outstandingly remarkable values that provide the basis for their inclusion in the system. It is not necessary to have standards that say the same thing.

Plan components FW-SUIT-EWSR-01 and AB-SUIT-DWSR-01 have been modified to state that wild rivers are not suitable for timber production or timber harvest. The wild and scenic river summary and table was included for the Madison, Henrys Lake and Gallatin Mountains Geographic Area. Land management plans do not include requirements for additional future planning, such as a management plan for the East Rosebud Wild and Scenic River.

## Water Flow

**Concern:** Comment questioned the eligibility of the Madison River #475 (segment 2) and West Rosebud as both of these river segments are downstream of Northwestern Energy dams; Hebgen Dam on the Madison River and Mystic Dam on West Rosebud Creek, and the river flows in these segments are affected by releases from the respective dams.

**Response:** Existing policy affirms a slow flow stretch of river below a major dam may qualify as "free flowing" for purposes of evaluation of eligibility. "Free flowing" means that the river exists or flows in a natural condition without impoundment, diversion, straightening, riprapping, or other modification of the waterway (16 U.S.C. section 1286(b)). The fact that a river may flow between large impoundments will not necessarily preclude its designation. There are no specific requirements for minimum flows or temporal or spatial continuity of flows for a segment. Flows are considered sufficient for eligibility if they sustain or complement the outstandingly remarkable values for which the river would be designated (FSH 1909.12, section 82.72). A slow flow segment may still qualify if the conditions within the segment meet the criteria for eligibility (FSH 1909.12, section 82.71). When evaluating a river segment below a dam, it is important to determine an appropriate beginning point for the segment. The point should be established to exclude dam-related structures and should indicate where the river is generally natural in appearance.

## Wild Horse Territory

**Concern:** Comment disagreed that horse territory expansion is beyond the scope of plan revision. Comments encourage the Forest Service to expand the Pryor Mountain horse herd boundary to support a healthy, genetically viable wild horse population, and provided a map of a proposed expansion area as well as information they believe supports wild horse presence in the area they propose for expansion.

Comment supported removal of wild horses to prevent cultural resource and habitat impacts. Comment suggested a desired condition of "stability and resilience of this wild horse herd" and suggested modified

language for goal PR-GO-WHT-02. Comment disagreed with a recommended wilderness area allocation for the territory due to potential limitations on wild horse management.

**Response:** The Wild Free-Roaming Horses and Burros Act (1971 Act) was enacted December 15, 1971. Wild horses can only be managed on areas of National Forest System and Bureau of Land Management (BLM) lands where they were known to exist in 1971, at the time of the passage of the act. For the Forest Service, these areas are known as "territories" and for the BLM they are known as "herd areas." Under section 1339, "Limitation of Authority," the 1971 Act states "Nothing in this Act shall be construed to authorize the Secretary to relocate wild free-roaming horses or burros to areas of the public lands where they do not presently exist." Until a change in the law allows expansion of the Pryor Mountain Wild Horse Range onto additional National Forest System or BLM lands outside of the existing territory and herd area, the agencies are legally obligated to follow the law to the greatest extent possible. As noted in chapter 2 of the draft environmental impact statement in alternatives considered but not analyzed in detail: "Expansion of the Pryor Mountain Wild Horse Territory is the outside the scope of the plan revision."

Goal PR-GO-WHT-02 addresses management compatibility with wildlife habitat.). In addition, the final environmental impact statement chapter 3 Pryor Mountain Wild Horse Territory section describes how the 2009 Herd Management Area and Territory Plan and annual habitat monitoring guides management of habitat and appropriate management levels. The 2009 Herd Management Area and Territory Environmental Assessment noted that there would be no impacts to cultural resources as cultural inventories would occur prior to implementation of any proposed surface-disturbing project related to the wild horse range. If cultural resources are located during an inventory, avoidance of the site(s) is preferred. If the cultural resources cannot be avoided then impacts to the site(s) would be mitigated.

The language in PR-GO-WHT-02 in the revised plan is consistent with the goal of the (2009) Herd Management Area and Territory Plan. The Forest Plan Revision Final Pryor Mountain Wild Horse Territory Assessment Report describes this as:

"The Forest Service and BLM's goal is to maintain healthy wild horse populations on healthy public lands....To do this, the agencies work to achieve what is known as the "appropriate management level" (AML) - the point at which wild horse herd populations are consistent with the land's capacity to support them. In the context of the multiple-use mission, the appropriate management level is the level at which wild horses can thrive in balance with other public land uses and resources, including vegetation and wildlife."

Regarding the suggested desired condition of "stability and resilience of this wild horse herd," the final environmental impact statement chapter 3 Pryor Mountain Wild Horse Territory section describes how wild horses are to be managed per the Wild Free Roaming Horses and Burros Act of 1971, as amended. The desired condition (PR-DC-WHT-01) in the final environmental impact statement is in line with ensuring a thriving natural ecological balance and maintaining multiple use relationships. PR-GO-WHT-02 incorporates the appropriate management level, which is the level at which horses can thrive in balance with other public land uses and resource.

The preferred alternative does not allocate any of the wild horse territory to recommended wilderness area.

## Wilderness - Designated

### 2020 Vision

**Concern:** Comments state that wilderness areas must be managed in concordance with the 2020 Vision.

**Response:** The "2020 vision document" will not be in effect for the lifetime of the plan, so it does not lend itself to be part of a reference in the land management plan. However, much of the 2020 vision statements are addressed in the desired conditions found in the Custer Gallatin National Forest Land Management Plan. The plan does not need to repeat that the national forest will follow other directions, policies, or regulations that are part of agency-wide management direction.

### Environmental Impact Statement Analysis

**Concern:** Comments stated the draft environmental impact statement included conflicting information related to effects of increasing recreation demand on wilderness, and that the plan suggests that a wilderness designation doesn't affect mineral interests or valid existing rights, when it has affected grazing leases and outfitting leases, at least in part due to wilderness designation, grizzly bear recovery areas, and increasing bureaucracy.

**Response:** Corrections were made to the conflicting statements in final environmental impact statement section 3.21.2 Designated Wilderness Environmental Consequences. Section 3.17.3 of the final environmental impact statement includes discussion of effects of designated and recommended wilderness on energy and mineral development. Section 3.14.3 of the final environmental impact statement discusses the effects of designated and recommended wilderness on permitted livestock grazing.

### Group Size

**Concern:** Comment recommended that the plan restrict group size in the Absaroka-Beartooth and Lee Metcalf Wildernesses to fewer people and stock than proposed in the draft plan.

**Response:** The Plan includes the upper limit of party sizes for people and livestock (FW-STD-DWA-05, 06, 07). Smaller party sizes could be implemented at a site-specific project level in response to a need identified from the analysis of specific future monitoring results. See plan appendix A, Management Approaches for Designated Wilderness for more information.

### Permitted Livestock Grazing

**Concern:** Comment stated the Forest Service should withdraw all vacant grazing allotments from wilderness, move the use out of wilderness, or limit the number of cows in wilderness. Comment stated that vacant grazing allotments should be closed in wilderness, recommended wilderness, or inventoried roadless areas.

**Response:** The Wilderness Act allows grazing in wilderness areas. It is limited to the portions of wilderness where grazing was established prior to the area's wilderness designation (FW-SUIT-DWA-04). Grazing objective FW-OBJ-GRAZ-01 proposes a range of animal unit months based on potential future use of currently vacant allotments, some of which are in wilderness, recommended wilderness, or inventoried roadless areas.

## Plan Components

**Concern:** Comment appreciated the detailed plan direction for wilderness. Comment requested changes to plan components, such as additional desired conditions about values such as cultural resources, air quality, and water quality; strong standards to protect wilderness character or prohibit motorized or mechanized vehicles, logging, grazing, and recreational uses and development; and require wilderness management planning. Comment noted no wilderness standards varied by alternative in the draft plan, while plan components varied for recommended wilderness areas. Comment requested the Taylor Hilgard Wilderness be opened to snowmobilers.

**Response:** Plan direction, including multiple standards, addresses vegetation management, permitted livestock grazing, motorized and mechanized transport, new development, and recreational uses in designated wilderness areas. See the suite of designated wilderness plan components. The Wilderness Act prohibits motorized and mechanized transport. Many plan components do not vary by alternative, which complies with the Planning Rule. Forest plans do not establish requirements for subsequent planning, such as wilderness management plans.

The Custer Gallatin National Forest is choosing to rely on the National Wilderness Monitoring Protocol, which is referenced in the plan's monitoring plan (MON-DWA-01). That protocol is very similar to the long-time protocol used on wilderness on the Custer Gallatin National Forest and will be used to collect campsite information to compare against the Wilderness Character Baselines for both the Lee Metcalf and the Absaroka-Beartooth Wilderness Areas. In addition, management approaches now include, for both the Lee Metcalf and the Absaroka-Beartooth Wilderness Areas, potential strategies for evaluating encounters, campsites, and unauthorized trails as one of the tools to help manage wilderness. This methodology meets the intent of management direction for wilderness as outlined in the Chief's 2020 Challenge, and sets the stage for future wilderness managers and line officers to make management decisions at the local scale.

Plan component changes in response to comments include:

- Desired conditions FW-DC-DWA-05 and 07, and Suitability FW-SUIT-DWA-05 were revised for clarity and plan components for "Untrammled" were rewritten for each zone.
- Definitions were added to the plan glossary for wilderness character and wilderness characteristics to clarify the components' meaning.
- Wilderness monitoring suggestions are now included in the plan management approaches appendix (appendix A).

Proposed changes were not implemented because:

- It is not necessary to repeat plan components in different areas of the plan. For instance, the plan's forestwide resources direction applies across the national forest, and does not need to be repeated in the Designated Wilderness section.
- It is not necessary to have a suitability statement and a standard for the same use.
- Direction suggested by some plan component commenters is found in law, regulation, and agency guidance, and does not need to be repeated in the forest plan, such as use of a minimum tool analysis, required traditional skills and tools, or guidance for commercial video and still photography in designated wilderness.

- Some of the suggested plan components are appropriate at the project level, such as in a change in outfitter guide user days, or camping setbacks from water, and not within a forest plan.
- Suggested plan components that would compel action are not appropriate in a forest plan. An example is to require a review of structures in wilderness within two years.
- The Forest Service did not agree with the management that could result from some suggestions.

### Water Pollution

**Concern:** Comment requested the plan address the issue of human and pack animal feces contamination of lakes and streams on the Beartooth Plateau in the Absaroka-Beartooth Wilderness. Recommendations include eliminating fish stocking, reducing pack numbers, and requiring leave-no-trace practices.

**Response:** Potential impacts to water quality in wilderness areas is addressed by a number of plan components. Desired condition FW-DC-WTR-12 envisions that water quality meets or exceeds applicable State water quality standards. Standard FW-STD-DWA-03 does not allow tethering and grazing of recreational livestock within 100 feet of streams or 200 feet from lakes. Overnight camping is not suitable in areas where it causes unacceptable resource impacts such water quality degradation (FW-SUIT-DWA-05). Further action could be taken in response to campsite monitoring, as outlined in plan appendix A, Management Approaches, for designated wilderness. Suggested measures include requiring human waste to be packed out and further limits on stock use.

### Zones

**Concern:** Comment requested no trail construction or reconstruction in the currently untrammeled areas of the Absaroka-Beartooth and Lee Metcalf Wildernesses, a standard prohibiting system trails within zone 1, additional language to ensure that any management actions within zone 1 preserve the wild, untrammeled nature of the area, and that indirect management methods will predominate. Comment requested the acreage of each wilderness zone vary by alternative, and requested specific guidance for the area around Granite Peak.

**Response:** Guideline FW-GDL-DWA-01 addresses no net increase in miles of system trails within wilderness, other than re-routes. It does not benefit wilderness to prohibit reconstruction of degraded segments of existing trails. The Forest Service acknowledges that the corridors around trails will shift with realignments. Wilderness zones identified in the Plan reflect current condition; the Forest Service does not see the value of varying the acreage of wilderness zones by alternative, although acknowledges that under plan components areas may be improved—but not degraded. Zone 1 is by definition untrailed, and the addition of system trails would no longer qualify that area as zone 1. A proposed action that would require a future change to the zone map would require a plan amendment. Granite Peak is within zone 3, more specific guidance for the area around Granite Peak would be a project-level analysis.

The desired conditions for zone class 1 address preserving the wild, untrammeled nature of the area. Desired condition FW-DC-PRISTINE-04 has been changed to "Untrammeled: The zone reflects an unconstrained ecosystem, where natural processes dominate."

## Wilderness Study Area

**Concern:** Comment related to the Hyalite-Porcupine-Buffalo Horn Wilderness Study Area requested a variety of plan land allocations, and suggested that uses such as existing, additional, or historic motorized and mechanized recreation either be allowed or prohibited. Comment stated the plan alternatives treat the Hyalite-Porcupine-Buffalo Horn Wilderness Study Area differently than other designated areas, as it is singled out for analysis of various hypothetical scenarios.

Comment on the plan requested new or modified plan components related to wildlife, wilderness character, and access to and development of minerals. Comment requested the plan provide more information on future restoration activities in wilderness study areas, such as locations, methods, acreage per alternative, and the science and monitoring used to determine that current conditions are unnatural.

Comment on the draft environmental impact statement stated that section 2.5.1 Elements Common to All Alternatives, is misleading that all alternatives will treat the Hyalite-Porcupine-Buffalo Horn Wilderness Study Area the same, when alternatives propose different options. Comment related to the recommended wilderness analysis process stated the Forest Service did not disclose important information to the public by not including information about noise intrusion from low-flying aircraft in the wilderness study area in 2011. Comment noted the wilderness study area is reported as 144,000 acres, when it is 155,000 acres.

**Response:** Wilderness study areas were originally designated as an interim measure; this designation was not intended to be permanent. Wilderness study areas throughout Montana are the subject of congressional proposals. The plan alternatives provide a range of potential management options for the wilderness study area, should it be released by Congress.

A range of alternative plan land allocations and suitable uses were considered for the wilderness study area. In the preferred alternative, about 77,102 acres of the wilderness study area would be recommended wilderness area where motorized or mechanized transport would not be suitable; about 45,910 acres would be backcountry area, about 12,500 acres would be recreation emphasis area, about 1,938 acres would be within a key linkage area and about 6,614 acres would have no additional plan land allocation other than inventoried roadless area. Alternative E proposed the area as a backcountry area with opportunity for motorized and mechanized transport on additional trails than currently suitable for these uses.

Suggested plan components were not added because the wilderness study area is congressionally mandated to be managed for wilderness character and desired condition MG-DC-WSA-01 is sufficient. Forestwide desired conditions for wildlife address healthy wildlife populations and secure habitat and do not need to be repeated in the other sections of the plan. The plan guides future Forest Service decisions, it does not predict or analyze locations, methods, acreages, or conditions of future projects. Administrative use of motorized equipment is not prohibited in the wilderness study area.

The recommended wilderness inventory, evaluation, and analysis process used consistent forestwide data. This process did not use area studies that were not available forestwide such as information about noise intrusion from low-flying aircraft in the wilderness study area. The forest does not have a consistent forestwide data set for sound intrusion from low-flying aircraft, and therefore is not able to compare this information for different areas across the forest. Although it is possible that noise from



low-flying aircraft is heard in many areas of the forest and may affect characteristics such as solitude or primitive recreation, this factor by itself would not eliminate an area from being recommended as wilderness.

## Wildlife

### Wildlife – General

#### Agency Cooperation

**Concern:** Comment requested increased collaboration and coordination with State wildlife agencies.

**Response:** The cooperation between State and Federal agencies for purposes of wildlife conservation is directed through the Sikes Act. Land management plan components must be within agency authorities and are not commitments to act (FSH 1909.12, section 22.1). Therefore, plan components cannot mandate actions on the part of other agencies. However, several goals in the revised plan support collaboration and coordination with State wildlife agencies (FW-GO-PRISK-03; FW-GO-WL-02 and 04; FW-GO-WLBAT-01; FW-GO-WLBHS-01 and 02; FW-GO-WLBG-01; FW-GO-WLGB-01 and 02; FW-GO-WLPD-01; and FW-GO-WLBI-01).

#### Alternatives

**Concern:** Comment requested more clarity be provided regarding the basis for the differences between alternatives and more analysis relative to the impacts to wildlife be provided, for example relative to human disturbance, fuels, and logging.

**Response:** Final Environmental Impact Statement chapter 2 discusses how the alternatives were developed. Plan components for fire and fuels (FIRE) and timber management (TIM) do not vary by alternative. Impacts to wildlife habitat, including those from fuels management and logging, vary by alternative primarily with respect to plan land allocations such as recommended wilderness and backcountry areas that have associated restrictions on road building and use of certain types of equipment for vegetation management. Effects of land use allocations, as well as effects of fire, fuels, and timber management were addressed for wildlife (Final Environmental Impact Statement, Chapter 3. Wildlife Diversity – see individual species sections – Effects from Land Use Allocations, Effects from Fire and Fuels Management, and Effects from Timber Management).

#### Alternative Energy

**Concern:** Comment requested plan components that avoid or minimize impacts to wildlife species relative to alternative energy developments (for example, wind, solar, etc.) particularly since they have been identified as reasonably foreseeable activities.

**Response:** Several plan components were designed to avoid or minimize the impacts of wind energy on wildlife (for example, FW-DC-EMIN-02, FW-STD-EMIN-01, and FW-GDL-WL-07).

#### At-Risk and Course/Fine Filter

**Concern:** Comment expressed concern over the use of the terms at-risk species and coarse- or fine-filter, and request that they be better defined, the species they refer to be listed, and plan components intended to protect them be specifically identified in the revised plan.

**Response:** The terms 'at-risk species' and coarse filter or fine filter are defined in several parts of the environmental impact statement; for example, see the Wildlife Diversity section of chapter 3. The definition of at-risk species matches the definition in the land management planning handbook at FSH 1909.12 Ch. Zero Code section 05. Because at-risk species include all federally recognized threatened, endangered, proposed, and candidate species and species of conservation concern within a plan area, there are too many species to list each time a reference to at-risk species is made. However, a listing of the species of conservation concern, along with the plan components intended to protect them, are provided in final environmental impact statement appendix C (Volume 2: Appendices).

#### Biological Assessment Endangered Species Act

**Concern:** Comment noted the need for the Forest Service to consult with the U.S. Fish and Wildlife Service for plan revision. Some requested that the biological assessment and the Endangered Species Act section 7 process (including the biological opinion) be shared with the public, while others claimed the Forest Service violated the law for not including a biological assessment and/or biological opinion in the National Environmental Policy Act documents for public comment.

**Response:** The Endangered Species Act defines "consultation" (formal and informal) as "a process between the Service and the Federal agency" (50 CFR; 402.02). Regulations for the consultation process between the U.S. Fish and Wildlife Service and the Forest Service are found in the Code of Federal Regulations at Title 50 Part 402. These regulations do not require public review, participation, or comment in the consultation process, nor do they require consultation documents to be included in an environmental impact statement. The National Environmental Policy Act requirements for public participation contain no mandates for public participation in the Endangered Species Act consultation process (36 CFR; 219.4). The draft environmental impact statement contained the requisite effects analyses for all listed, proposed, and candidate species that may be present in the plan area (Chapter 3. Federally Listed Wildlife Species), giving the public the opportunity to comment on potential effects to listed species. The draft environmental impact statement did not identify a preferred alternative (Draft Environmental Impact Statement, Chapter 2. Alternatives). The U.S. Fish and Wildlife Service does not consult on a range of possible alternatives, but rather the consultation process considers a final proposed action. The final environmental impact statement identifies alternative F as the preferred alternative (Final Environmental Impact Statement, Chapter 2. Alternatives), which draws from the range of alternatives presented in the final environmental impact statement. A biological assessment was prepared for alternative F, and consultation was initiated with the U.S. Fish and Wildlife Service to consider potential impacts of the revised plan on listed species, designated critical habitat, and proposed species that may be present on the Custer Gallatin National Forest. Any reasonable and prudent measures, or terms and conditions issued by the Fish and Wildlife Service through consultation on the revised plan, will be clearly identified in the final record of decision.

#### Biological Evaluation

**Concern:** Comment requested that the full biological evaluation for sensitive and management indicator species with potential and/or actual habitat be disclosed.

**Response:** Current Forest Service policy requires a biological evaluation to document the effects of plan revision on sensitive species, as noted in a letter from Deputy Chief Leslie A.C. Weldon to Regional Foresters dated June 6, 2016. There is no requirement to prepare a biological evaluation for management indicator species. Effects analyses for sensitive species and/or their habitats occur

throughout the environmental impact statement (Chapter 3. Ecosystems: Watersheds, Aquatic and Riparian; Terrestrial Vegetation; and Wildlife Diversity). Appendix C of the environmental impact statement contains a list of sensitive species, relevant plan components, and biological evaluation determinations for aquatic, botanical, and terrestrial wildlife sensitive species.

#### Bird Protection Acts

**Concern:** Concern was expressed that the plan needed to demonstrate compliance with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

**Response:** Plan components may be used to carry out laws, regulations, or policies, but should not merely repeat existing direction from laws, regulations, or directives (FSH 1909.12, section 22.1). The revised plan does not repeat mandates from existing laws, but plan components developed for ecosystem integrity and diversity (FW-DC/STD/GDL-AQ/WTR/RMZ/VEGF/VEGNF) are expected to provide conditions necessary to maintain persistence of migratory birds and eagles across the Custer Gallatin National Forest. Wildlife-specific plan components require considerations to minimize disturbance from management actions near active raptor nests and fledging areas during the reproductive season, and to limit potential impacts to airborne species from wind energy development (FW-GDL-WL-06 and 07). Further, the revised plan identifies land bird species and assemblages as focal species for monitoring purposes. Land birds provide indicators of ecological condition for a wide variety of habitats. The presence, habitat affiliations, and population trends of avian species can be indicative of the health and resilience of habitats (Revised Plan, Chapter 4, Monitoring Program, Focal Species). Monitoring land bird species will help the Forest Service test relevant assumptions, track relevant changes, and measure management effectiveness to determine whether changes in plan components or other plan content that guides management of resources may be needed (36 CFR, 219.12).

#### Climate Change

**Concern:** Comment expressed concern regarding the negative impacts of climate change on wildlife populations and that the analysis in the draft environmental impact statement and direction in the draft plan don't do enough to recognize these impacts and mitigate them.

**Response:** To achieve ecological integrity and provide for the diversity of wildlife, the 2012 Planning Rule emphasizes planning for resilience and managing to enhance the ability of ecosystems to adapt to change, stressors, and system drivers, including climate change. The revised plan has taken into account the potential impacts due to climate change, to the degree that programmatic plan components and management approaches can or should incorporate concepts related to the issue. Most fundamentally, the plan sets forth desired conditions for vegetation (integral to wildlife habitats and population dynamics) that are designed to be resilient to future stressors, including climate change.

Climate change is addressed throughout the EIS, and is specifically noted in sections for those species where climate change may be most relevant.

#### Environmental Impact Statement Analysis

**Concern:** Comment requested transparency, clarity, and detail around several aspects of the wildlife effects analysis and key indicators, including how they are tied to species, and how they are used.

**Response:** Measurement indicators for factors that vary between revised plan alternatives were listed in the environmental impact statement, including number, size and restrictions associated with land management plan allocations, level of proactive management for bison, areas where permitted grazing would be authorized for domestic sheep and goats, areas where recreational use of domestic goats would be suitable, and inclusion of key linkage areas (Chapter 2. Issues that Drove Alternatives). These indicators were evaluated in each wildlife section where appropriate (Environmental Impact Statement, Chapter 3. Wildlife Diversity). Key indicators were established for measuring plan direction contributions to maintain ecological integrity for environmental characteristics such as structure, function, composition, and connectivity (Environmental Impact Statement, Chapter 3. Soils; Watershed, Aquatic and Riparian; Terrestrial Vegetation - Introduction). These factors provide the physical and biological elements of wildlife habitat, and therefore, wildlife analyses often tie to affected environment and effects analyses found in these other sections of the environmental impact statement (Environmental Impact Statement, Chapter 3. Wildlife Diversity, Introduction). Such references were cited to particular sections of the document, and references to individual plan components that contribute to key ecological factors for wildlife were identified in the effects analyses (Environmental Impact Statement, Chapter 3. Wildlife Diversity, Environmental Consequences).

#### Habitat Restoration/Old Growth

**Concern:** Comment requested that specific habitats, such as burned areas, late successional forests and others be more robustly addressed in analysis and plan components. There was also concern that habitat restoration would not be adequate.

**Response:** The revised plan contains a suite of components designed to maintain the ecological integrity of all ecosystems in the plan area, and therefore, provide the conditions within which native species evolved (for example, see Revised Plan Chapter 2, Ecosystems: Watershed, Aquatic and Riparian Ecosystems, and Terrestrial Vegetation). This approach is a major premise of the Planning Rule, and is expected to maintain the diversity of plant and animal communities and support the persistence of most native species in the plan area. Where additional plan components are needed to address at-risk species, they have been developed. The environmental impact statement addresses unique wildlife habitats, including a subset of species associated with burned areas and late successional conifer forests. Descriptions of ecosystem characteristics, structure, function, processes, existing conditions, and effects to wildlife from the various revised plan alternatives are found in this section (Chapter 3. Wildlife Diversity, Unique Wildlife Habitats).

#### Keystone Species

**Concern:** Comment expressed concern regarding the lack of recognition for keystone species within the draft environmental impact statement and draft plan and their critical role in ecosystem processes.

**Response:** There is no requirement in the 2012 Planning Rule to discuss keystone species. However, the environmental impact statement discusses at least two species (bison and whitebark pine) in this context, and a suite of components are provided for them in the revised plan.

#### Microorganisms

**Concern:** Comment expressed concern over the lack of explicit mention of bacteria, archaea, protozoa, chromista, and fungi within the definition of biodiversity in the draft plan and asked that the revised plan provide assurances that the analysis has taken the full suite of nature into consideration.

**Response:** The 2012 Planning Rule specifically limits diversity requirements to plant and animal communities (36 CFR sections 219.1(c) and 219.9).

#### Monitoring and Adaptive Management

**Comment:** Comment stated that the monitoring plan isn't sufficient, and recommended that the revised plan incorporate a monitoring program that includes an adaptive management approach to allow the plan to be a living document to better incorporate information learned through the life of the plan. Specific plan monitoring questions were recommended in these comments.

**Response:** The purpose of land management plan monitoring is to evaluate the effectiveness of plan direction and determine whether changes to plan components are needed (FSH 1909.12, section 30.2). The Planning Rule at 219.12d specifies that the monitoring evaluation report must be used to inform adaptive management of the plan area. The planning directives at 1909.12, chapter 30, section 32 describe the required elements of the plan monitoring program. The responsible official has discretion to set the scope, scale, and priorities for plan monitoring within the financial and technical capabilities of the administrative unit (FSH 1909.12, section 32.12). Monitoring questions are not required for every plan component for at-risk species, nor are species-specific monitoring questions required for every at-risk species. The information requested by commenters is not required monitoring for the eight items set out in the Planning Rule at 36 CFR 219.12(a)(5). All required elements are provided in the revised plan (Chapter 4. Monitoring Program).

#### Mountain Lion Hunting

**Concern:** Comment requested mountain lions be protected from hunting on the Custer Gallatin National Forest.

**Response:** The concern is beyond the scope of the revised plan. Land management plans do not regulate hunting. State wildlife agencies regulate hunting of mountain lions.

#### Non-Native Species

**Concern:** Comment requested that the process for determining desired non-native species be described.

**Response:** A land management plan provides an integrated set of overarching direction (components) to provide for social, economic, and ecological sustainability of the national forest's lands and resources. It does not identify specific processes for how to achieve that. However, the terms 'desired nonnative species' and 'native species' are defined in the revised plan glossary.

#### Permitted Livestock Grazing

**Concern:** Comment expressed concern about potential conflicts between livestock and wildlife, related to competition, disease, and predator control. Comment requested an additional desired condition that no new species be introduced that would negatively impact grazing allotment animal unit months. Comment requested that grazing guideline FW-GDL-GRAZ-03 be converted to a standard.

**Response:** The Multiple-Use Sustained-Yield Act of 1960 (16 U.S.C. 528–531) addresses both permitted livestock grazing and wildlife as multiple uses for which national forests are managed. All wildlands provide habitat for some combination of wildlife species, so a blanket exclusion of livestock grazing in areas where wildlife occur would altogether exclude livestock grazing, and would, therefore, violate the

Multiple-Use Sustained-Yield Act. However, where there are specific concerns about livestock-wildlife interactions, plan components have been developed to address this (FW-DC-WL-09; FW-GDL-WL-04; FW-DC-WLBHS-02; FW-GO-WLBHS-01; FW-DC-WLBI-01; FW-GO-WLBI-01 and 03; NRLMD-GRAZ; FW-GDL-WLSG-06; FW-DC-WLGB-01; FW-GO-WLGB-03; FW-STD-WLGB-06 and 07; FW-DC-GRAZ-01; FW-GO-GRAZ-01 and 02; FW-STD-GRAZ-01 through 04; FW-GDL-GRAZ-03, 04, 05, 07 and 08).

Comment requesting the additional desired condition was general and did not specify whether the concern was related to purposeful introduction of desired native species or unintentional introduction of invasive species, both of which may negatively impact grazing allotments. Desired condition FW-DC-GRAZ-01 acknowledges the value of livestock forage to local ranching operations. The environmental impact statement addresses effects of wildlife management on permitted livestock grazing (Chapter 3. Permitted Livestock Grazing, Effects from Wildlife Management). Grazing guideline FW-GDL-GRAZ-03 was retained as a guideline because the intent would remain the same. A guideline is a constraint that allows for departure from its terms only as long as the purpose of the guideline is met (§ 219.15(d)(3)).

#### Population Monitoring

**Concern:** Comment expressed concern regarding the lack of meaningful thresholds of habitat loss and that no population monitoring was included as part of the draft plan.

**Response:** The 2012 Planning Rule does not require the use of habitat thresholds, but instead requires plan components that would maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area, including plan components to maintain or restore structure, function, composition, and connectivity. This includes specific direction regarding the desired range of potential vegetation types such as tree size classes, snags, large trees, and many other characteristics important to wildlife habitats. The revised plan includes such components (FW-DC/GO/STD/GDL/SUIT-WTR/RMZ/VEGF/VEGNF/WL/WLBAT/WLGB/WLLX-NRLMD/WLGB/WLSG).

The planning directives at FSH 1909.12, chapter 30, section 32 describe the required elements of the plan monitoring program. The responsible official has discretion to choose a select set of ecological conditions to be monitored for ecosystems and at-risk species. The “select set” should be important ecological conditions, including key ecosystem characteristics that may be monitored in a direct and efficient way. Monitoring questions are not required for every plan component for at-risk species, nor are species-specific monitoring questions required for every at-risk species. All required elements are provided in the revised plan (Chapter 4. Monitoring Program).

#### Probability of Persistence

**Concern:** Comment questioned whether the Custer Gallatin National Forest has used any probability of persistence analysis as part of the planning process.

**Response:** There is no requirement in the 2012 Planning Rule or the land management planning directives that require probability analyses for species of conservation concern or other species. In fact, the Planning Rule only requires that plan components provide the ecological conditions to maintain a viable population (emphasis added), not viable populations per se. Further, the directives allow the use of qualitative methods to assess species’ status and species-specific plan components (see FSH 1909.12, chapter 10, section 12.55 and FSH 1909.12, chapter 20, section 23.13, respectively).

Provide for All Species

**Concern:** Concern was expressed that species other than at-risk species are not provided for in the plan. Several comments indicated particular species of interest that were not adequately protected by proposed plan components, or that effects analyses were inadequate for certain species. Comment claimed the analyses failed to show that plan components would ensure population viability for a number of species. Comment requested additional plan components and/or analyses for individual species such as bald and golden eagles, northern goshawk, American (pine) marten, black-backed woodpecker, and boreal toad, as well as groups of species such as raptors, amphibians, and bats. Requests for additional plan components often recommended prescriptive measure such as established buffer zones around reproductive areas or very specific timing restrictions to avoid management actions during seasons when species may be vulnerable to disturbance.

**Response:** The regulatory framework established for land management planning is outlined in the environmental impact statement (Chapter 3, Wildlife Diversity, Introduction, Regulatory Framework). A number of laws, regulations, and policies were considered in developing the plan components and associated effects analyses. The National Forest Management Act of 1976 (as amended) requires land management plans to provide for diversity of plant and animal communities. The 2012 Planning Rule requires planners to consider habitat conditions for at-risk species and wildlife commonly enjoyed and used by the public; dominant ecological processes; the ability of terrestrial and aquatic ecosystems to adapt to change; habitat connectivity; and riparian areas. While this regulatory framework clearly demonstrates the importance of wildlife and habitat resources on Federal lands, and mandates a high standard for considering these resources in coordination with other land uses, none of the applicable laws, regulations, or policies require that every possible measure be taken to optimize habitat conditions for every species that may occur within the plan area. Nor are there any requirements to include in-depth effects analyses for individual species, or demonstrate population viability for all species of interest to the public.

The 2012 Planning Rule adopts a complementary ecosystem and species-specific approach to maintaining ecosystem integrity to provide for the persistence of native species in the plan area. Ecosystem integrity is maintained if the dominant ecological characteristics remain within the natural range of variation, thus providing ecological conditions that support most native species that have evolved under those conditions. The coarse-filter ecosystem requirements are intended to provide the ecological conditions to both maintain the diversity of plant and animal communities and support the persistence of most native species in the plan area (FSH 1909.12; 23.13). These ecosystem components provide for the needs of most species, without the need for additional species-specific components (Environmental Impact Statement, Chapter 3, Wildlife, Introduction). The revised plan includes desired conditions for ecological characteristics and processes within a natural range for multiple resources including soils, water, terrestrial vegetation, fire, and wildlife (FW-DC: SOIL-03; WTR-04, 06 and 07; VEGF-01, 02, 06 and 08; FIRE-01; and WL-03). The revised plan also calls for ecological conditions that are resilient to stressors and adaptable to changing conditions (FW-DC: RMZ-01; VEGF-03, 04 and 09; VEGNF-04; FIRE-01 and 02; CARB-01; and WL-06).

In addition, the revised plan contains specific components to maintain key habitat elements for a wide range of species, including those noted as of specific concern by commenters. Such plan components address coarse woody debris (FW-DC-SOIL-02 and 03; FW-GDL-SOIL-07), water quality (FW-DC/GO/STD/GDL-WTR), riparian habitat (FW-DC/GO/STD/GDL-RMZ), snags (FW-DC-VEGF-05; FW-GDL-

VEGF-03, 04 and 05), large trees (FW-DC-VEGF-07; FW-GDL-VEGF-05), old-growth forest habitat (FW-DC-VEGF-09; FW-GDL-VEGF-01 and 02), wildfire (FW-OBJ-FIRE-02), and habitat connectivity (FW-DC-WL-05).

The revised plan includes wildlife-specific plan components that address issues mentioned for raptors (FW-GDL-WL-06 and 07). These plan components are intended to avoid disturbance in known reproductive areas and reduce potential for unintended raptor mortality due to the presence of wind energy development. Intentional removal of raptor nests is prohibited by law (Migratory Bird Treaty Act and the Bald and Golden Eagle Act), so specific plan components to prevent removal of nests were not repeated in the plan. Neither buffer zones, nor specific timing restrictions were prescribed in plan components for raptors, because the distance at which disturbance may occur varies by environmental conditions and individual bird tolerance; and reproductive seasons can vary widely between raptor species, by geographic area, and be temporally based on changing environmental conditions. These types of specific limits on management actions are better determined at the project scale. Raptor nests are often large and conspicuous, and may be defended by adult birds, making them more easily detected in project areas than nests of smaller bird species. Finally, in addition to ecosystem components for watershed, riparian, and upland habitats, the revised plan includes a guideline to protect reptile and amphibian populations (FW-GDL-WL-08), as well as a suite of plan components for bats (FW-DC/GO/STD/GDL-WLBAT).

Plan components can neither make commitments to act, nor compel management actions (FSH 1909.12, section 22.1). Therefore, requirements for systematic or mandatory surveys for specific species were not adopted as plan components. The 2012 Planning Rule found the approach of using management indicator species is no longer supported by the best available scientific information. Consequently, monitoring of management indicator species has been replaced with monitoring of focal species, which provides information regarding the effectiveness of the plan in providing ecological conditions necessary to maintain the diversity of plant and animal communities and the persistence of native species in the plan area (FR Vol. 77, No 68; 21175). Land bird species and assemblages were adopted as focal species in the Monitoring Program (Revised Plan, Chapter 4). Raptors and woodpeckers are frequently detected in land bird surveys, and nest sites may also be located during these surveys.

The environmental impact statement discloses effects of plan components on ecological integrity (Volume 1, Ecosystems; Chapter 3, Soils, Watershed and Aquatic Resources; Terrestrial Vegetation; and Wildlife). The wildlife section addresses effects on a number of different species, but also addresses effects of the revised plan alternatives on unique habitats including aquatic and riparian areas; rock, cliff, and cave habitats; recently burned forest; grasslands; shrublands; and deciduous woodlands, as well as coniferous habitats, with emphasis on mature and old-growth forest (Chapter 3, Wildlife, Unique Habitats). These analyses, combined with the ecosystem integrity analyses found in other sections of the environmental impact statement, provide sufficient detail to determine that the ecosystem and species-specific plan components will maintain or restore ecological characteristics necessary to support the long-term persistence of native species within the plan area, including those individual species noted by commenters.

#### Recreation

**Concern:** Comment expressed concern for adequacy of plan components to address impacts of recreation on wildlife. Comment provided additional references regarding the negative effects of recreational use on wildlife and habitat, recommended that adaptive management policies be put in



place based on monitoring results of impacts from conflicts between recreation activities and wildlife, and recommended seasonal closures to protect wildlife during vulnerable times.

**Response:** Plan components guide and constrain future Forest Service activity and decision making, not the public, and as such, plan components alone cannot prohibit public uses on National Forest System lands (FSH 1909.12, section 21.8). The environmental impact statement evaluated effects of recreational use on wildlife, and included references to relevant scientific literature (Chapter 3, Wildlife Diversity – see individual species sections – Effects from Recreation Management; Effects from Plan Land Allocations). Many of the recommendations for adaptive management suggested adding monitoring items and related plan components, which would trigger management actions when certain environmental thresholds were met. The purpose of land management plan monitoring is to evaluate the effectiveness of plan direction and determine whether changes to plan components are needed (FSH 1909.12, section 30.2). Since plan components alone cannot constrain public uses, there is no clear land management plan mechanism to monitor the impacts of public recreation on wildlife or habitat. Further, plan components should not compel processes such as analysis, assessment, planning, inventory, or monitoring, and are not commitments to act (FSH 1909.12, sections 22.1 and 22.13). Therefore, plan components cannot contain triggers that mandate specific management response. However, it is important to understand the effects of recreation on wildlife, and to that end, the revised plan contains a goal to engage with partners to conduct ecological research, improve or coordinate inventories and monitoring, and expand data and knowledge collection where needed (FW-GO-WL-04). The Planning Rule at section 219.12d specifies that the monitoring evaluation report must be used to inform adaptive management of the plan area.

Area closures that restrict public use (seasonal or otherwise) are implemented through a special order under 36 CFR 212.50, which is a separate management tool that is independent of the land management plan. However, the revised plan contains a number of components that recognize seasonal importance of a variety of wildlife habitats, including wintering and reproductive areas (FW-DC-WL-03, 04, 05; FW-GDL-WL-06, 08; FW-DC-WLBAT-01; FW-GDL-WLBG-02; FW-DC-WLSG-01; FW-SUIT-WLGB-01c), which would provide supporting rationale for implementing area closures under special order, should emerging use patterns demonstrate impacts on wildlife or habitats related to recreational use.

#### Sensitive Species

**Concern:** Comment questioned why the environmental impact statement discusses sensitive species, given that the 2012 Planning Rule replaces these with species of conservation concern.

**Response:** Under alternative A, the no-action alternative, the existing forest plans for the Custer and Gallatin National Forests would remain in place, as would the existing sensitive species list and associated analysis requirements. The Forest Service Manual (FSM 2670) sets policy for sensitive species. The agency must document the effects of land management plan revision on sensitive species, because the 2012 Planning Rule species of conservation concern framework is not in effect until the record of decision is final (U.S. Department of Agriculture 2016).

#### Snag Management

**Concern:** Comment expressed concern regarding a lack of a snag management strategy that is based on current science in the draft plan. Comment stated that the lack of analysis and direction related to snag management will potentially adversely impact habitat for a large variety of wildlife.

**Response:** The environmental impact statement identifies snags as a key ecological characteristic for ecosystem structure (Chapter 3, Terrestrial Vegetation, Key Indicators and Measures), describes the ecological importance and function of snags (Chapter 3, Terrestrial Vegetation, Affected Environment, Snags), and evaluates revised plan direction for snag management (Chapter 3, Terrestrial Vegetation, Environmental Consequences, Forest Structure, Snags). See response for Vegetation – Snags above. The environmental impact statement also includes evaluation of snag management direction in the revised plan for a number of wildlife species and associated habitats (Chapter 3. Wildlife Diversity: Canada Lynx, Northern Long-eared Bat; Unique Habitats: Recently Burned Forest and Conifer Forest Habitats). The vegetation specialist’s report for the 2017 Assessment that laid groundwork for the revised plan includes an extensive analysis for snags.

#### Snag-dependent Species

**Concern:** Comment requested information on the specific habitat needs of “snag-dependent wildlife,” a list of those species, and a list of relevant desired conditions.

**Response:** The Planning Rule does not require a listing of all species (snag-dependent or otherwise) alongside their specific habitat needs and the relevant desired conditions. Instead, for species not at-risk (like all snag-dependent species in the plan area), it relies on adherence to the ecosystem requirements outlined in section 219.9 to provide the ecological conditions to both maintain the diversity of plant and animal communities and support their persistence in the plan area. The Custer Gallatin based the revised plan’s snag components (FW-DC-VEGF-05 and 08; FW-GDL-VEGF-03, 04, and 05) on the natural range of variation of snag conditions on the national forest. Native snag-dependent species that evolved with these ecological conditions are expected to persist in the future when these conditions are provided.

#### Surveys

**Concern:** Comment expressed concern related to the lack of direction to survey for the presence of fish and wildlife species and denning or nesting sites.

**Response:** The Planning Rule does not require project-level monitoring. Also, land management plan components are not commitments to act (FSH 1909.12, section 22.1). Therefore, the revised plan does not require project-level surveys for fish and wildlife. For plan-level monitoring, the responsible official has discretion to set the scope, scale, and priorities within the financial and technical capabilities of the administrative unit (FSH 1909.12, section 32.12). The requested information is not required monitoring for the eight items set out in the Planning Rule at 36 CFR 219.12(a)(5).

#### Transportation

**Comment:** Comment expressed concern about a lack of mitigation measures for wildlife related to transportation management, and provided suggestions for several modifications and additions to road management plan components to provide protection for wildlife, particularly during critical seasonal ranges for some species.

**Response:** The revised plan contains forestwide direction for transportation management (FW-DC/GO/OBJ/STD/GDL-RT), plus restrictions on new road and/or trail construction in riparian areas (FW-GDL-RMZ-03), old growth (FW-GDL-VEGF 02), key linkage areas (FW-GDL-WL-03 through 05), big game habitat (FW-GDL-WLBG-03), grizzly bear habitat (FW-WL-WLG-01 through 03), near caves (FW-STD-EMIN-04), recommended wilderness areas (FW-STD-RWA-01), and backcountry areas (see individual

geographic areas). The environmental impact statement disclosed transportation management impacts for a wide range of wildlife species and habitats (Chapter 3, Wildlife Diversity: Whooping Crane, Canada Lynx, Grizzly Bear, Wolverine, Big Game, Bison, and Connectivity; Consequences from Infrastructure Management – Roads and Trails.)

#### Wilderness

**Concern:** Comment supported additional wilderness to provide key linkages and connectivity in wildlife habitat for threatened and endangered species, as well as big game species; while other comment stated that additional wilderness designations are bad for big game populations.

**Response:** The final environmental impact statement analyzes a range of alternatives around recommended wilderness, key linkage areas, and other wildlife connectivity measures. Key linkage areas were carefully chosen based on a modelling analysis, rather than on plan land allocations. Under each revised plan alternative, forestwide plan components for wildlife connectivity would apply to recommended wilderness areas, regardless of any other components specifically developed for recommended wilderness.

#### Wildlife – Bats

##### Forest Conditions

**Concern:** Comment requested that the environmental impact statement discuss how timber harvest may be beneficial to the northern long-eared bat, as well as potential negative effects of current forest conditions.

**Response:** The draft environmental impact statement (Chapter 3. Northern Long-eared Bat, Effects of the Current Plans) acknowledges that intermediate timber management prescriptions designed to create or maintain a variety of tree age classes could create gaps in even-aged canopies that could improve foraging habitat for bats. The final environmental impact statement was modified to incorporate this statement in alternatives for the revised plan as well. The environmental impact statement discloses that the pine savanna ecosystem (where northern long-eared bats could be present on the Custer Gallatin) shows departure in size class from the desired condition, largely due to recent large, high-severity wildfires, resulting in a paucity of larger size class trees (Chapter 3. Terrestrial Vegetation, Affected Environment, Forest Structure, Warm Dry Potential Vegetation Type). The environmental impact statement indicates that a vegetation management strategy to increase the relative amount of large tree size class relative to medium and small tree size classes in the warm dry forest types would contribute to ecological integrity and resilience. Intermediate timber harvest would be an appropriate tool to move warm dry forest types toward the desired conditions set forth in the revised plan (Chapter 3. Terrestrial Vegetation, Environmental Consequences, Size Class and Large Tree Structure).

##### Plan Components

**Concern:** Comment requested changes to the plan components related to bats, including additional components, modifications to existing components, or removal of certain components. Some comments indicated that existing components were inadequate to protect bat populations; others expressed concern that some proposed components were unnecessary; and others requested clarification or more detail for proposed plan components.

**Response:** The revised plan contains numerous components designed to conserve key habitat elements and minimize the risk of bat exposure to stressors such as disturbance and spread of pathogens from human activities (FW-DC/GO/STD/GDL-WLBAT). As noted in the environmental impact statement (Chapter 3. Northern Long-eared Bat, Affected Environment), white-nose syndrome has been detected in the vicinity, and parts of the Custer Gallatin National Forest are within the white-nose syndrome buffer zone established by the U.S. Fish and Wildlife Service. Plan components for bats are intended to protect a number of bat species including the federally listed northern long-eared bat, and are consistent with conservation measures established by the U.S. Fish and Wildlife Service. Specific measures that are required by existing laws, regulations, and policies, such as requiring permits for handling bats, do not need to be repeated as plan components. Plan components are not commitments to act (FSH 1909.12 section 22.1); therefore, plan components were not adopted for mandatory actions by the agency, such as retrofitting existing infrastructure or conducting systematic surveys. Revised plan components would require some new infrastructure to reduce threats to bats (FW-GDL-WL-07, FW-GDL-WLBAT-05, FW-GDL-GRAZ-08, and FW-STD-EMIN-03). The word “occupied” was added to the guideline (FW-GDL-WLBAT-02) intended to protect bats at known maternal roost sites. A goal (FW-GO-WLBAT-01) was added, along with monitoring item MON-WL-05, to support Forest Service participation in survey efforts to follow trends and progression of white-nose syndrome. Concerns that plan components were inadequate without any particular reason stated, were conjectural in nature and not supported by science. Detailed plan components that are procedural in nature or list precise dates for certain restrictions were not adopted because such specificity is too prescriptive for long-term, programmatic plan direction. These types of detail are better served at the project level where design criteria can be tailored to fit varying ecological conditions and/or specific types of activities, as well as incorporate emerging science over time. Some details requested as plan components are included in Management Approaches (plan appendix A).

#### Survey Requirements

**Concern:** Comment expressed concern that because there is no survey requirement for bats, the monitoring question about detection of the cold-loving fungus (*Pseudogymnoascus destructans* or Pd) that causes white-nose syndrome will not be implemented.

**Response:** Plan components are not commitments to act (FSH 1909.12, section 22.1). As stated in the monitoring plan, the monitoring question for bats will rely on survey data from the Montana Heritage Program, which developed the White-Nose Syndrome Surveillance Plan and Protocols (2015). This plan then provided a basis for Montana Fish Wildlife and Parks (2018a) White-Nose Syndrome Prevention and Response Guidelines. The environmental impact statement discusses how these plans provide a strategy for a continued, coordinated monitoring effort to detect white-nose syndrome (chapter 3. Northern Long-eared Bat, Cumulative Effects). A goal was added to the revised plan for the Forest Service to engage with State and Federal agencies, natural heritage programs, cavers, and other interested parties to develop, update, and implement bat monitoring protocols and white-nose syndrome prevention and response guides.

## Wildlife – Big Game

### Active Management

**Concern:** Comment supported the use of active management techniques such as prescribed burning to improve big game habitat, and recommended recent research on the benefits of actively managed landscapes be incorporated into the plan.

**Response:** The final environmental impact was updated with additional information on the impacts of actively managed lands to big game species such as elk (environmental impact statement, Chapter 3, Big Game, Effects of Fire and Fuel Management; Effects of Timber Management).

### Climate Change

**Concern:** Comment expressed concern for lack of information regarding effects of climate change on wildlife and habitat.

**Response:** The Forest Service recognizes the importance of climate change in the management and health of the ecosystem and all of its various components including temperature-sensitive species such as moose. The revised plan includes a suite of ecosystem components to maintain or restore ecological integrity and provide for resilient landscapes (FW-DC/STD/GDL-WTR/RMZ/VEGF/VEGNF/FIRE/CARB/WL), thereby providing habitat that would contribute to species persistence in the face of changing conditions. Additional wildlife plan components focus on the maintenance of seasonal habitat conditions (FW-GDL-WLBG-01 through 03) and include management approaches (plan appendix A), which would allow for flexibility in management strategies as new science is discovered.

### Elk Analysis

**Concern:** Comments expressed concern over combining big game species such as elk, moose, and deer into one category for plan components and analyses. Requests were made to treat each species individually.

**Response:** While the Custer Gallatin National Forest recognizes the unique differences between species collectively identified as "big game," the revised plan approach attempts to put the focus on habitat benefits and conditions, taking a more comprehensive approach toward ecosystem balance and stability using ecosystem and species-specific plan components. Species-specific measures and techniques are also spelled out in Management Approaches (Plan, appendix A).

### Elk Habitat Effectiveness

**Concern:** Commenters were concerned that the revised plan does not include measures of habitat effectiveness for elk.

**Response:** Revised plan alternatives include plan components for managing habitat to provide cover and security, while limiting disruptions of big game species on winter ranges and reproductive areas (FW-GDL-WLBG-01, 02, and 03). General plan components for big game species are expected to contribute to long-term persistence of species such as elk, moose, and deer, similar to conditions under the current plans. The 2012 Planning Rule requires development of plan components that provide ecological conditions to sustain ecosystems that maintain the diversity of plant and animal communities and the persistence of native species in the plan area (36 CFR 219.9). For most wildlife, including most

big game species, a coarse-filter approach that maintains or restores key ecological characteristics, such as vegetation community composition, structure, function, and connectivity of wildlife habitat, provide conditions required to support most wildlife needs.

#### Environmental Impact Statement Analysis

**Concern:** Comment stated that the effects analysis for big game was inadequate and requested additional detail about the assumptions used and the effects of plan components on specific habitats or individual species, particularly related to lack of analysis for moose, big game hiding cover, winter range, and security habitat, as well as differences between alternatives.

**Response:** The 2012 Planning Rule requires development of plan components that provide for the diversity of plant and animal communities (36 CFR 219.9), and adopts a complementary ecosystem- and species-specific approach. Ecosystem plan components are designed to maintain or restore ecological integrity, while species-specific plan components provide for additional habitat needs when those needs are not met through the ecosystem plan components. (Plan, Wildlife, Introduction). Plan components developed for ecosystem integrity and ecosystem diversity are expected to provide for ecological conditions necessary to maintain the persistence of native species within the plan area (FSH 1909.12; 23.13). The environmental impact statement (Chapter 3, Wildlife Diversity, Big Game, Environmental Consequences, Effects of the Revised Plan Alternatives) describes how a comprehensive suite of ecosystem plan components for riparian and terrestrial vegetation resources would maintain ecological conditions such as water quality, forage, and browse species, as well as security and thermal cover for a variety of big game species. Additional, wildlife-specific plan components would provide greater protection for big game seasonal habitats, address habitat connectivity, and standardize big game habitat management forestwide. The environmental impact statement concluded that revised plan components are designed to develop or maintain a diversity of vegetative communities and structure, which when combined with habitat protections imposed by species-specific components, plan land allocations, and land use restrictions, would provide better protection for, and potential improvement of, big game populations, seasonal habitats, and habitat connectivity than current plans (Environmental Impact Statement, Chapter 3, Wildlife, Big Game, Conclusion).

The draft plan included a range of alternatives in which alternative D was most responsive to the desire for more undeveloped recreation opportunities, and contains greater restrictions on management actions to provide a more prominent role for natural ecological processes in shaping big game habitat. Alternatives B, C, and F were mid-range alternatives that provided varying combinations of support for natural processes with more flexibility for active management to move toward desired conditions for big game habitat, while alternative E emphasized greater human presence and use of the Custer Gallatin by providing more recreation opportunities and resource utilization with fewer management restrictions. The environmental impact statement demonstrates that the major differences for big game habitat were driven by variations in land management plan allocations such as recommended wilderness, backcountry areas and key linkage areas by alternative (Chapter 3, Big Game, Effects of the Revised Plan Alternatives and Effects of Plan Land Allocations).

The revised plan provides programmatic direction, and does not propose, approve, authorize, or mandate projects or other site-specific management actions. In-depth analyses for potential effects to every species or habitat from every conceivable project or management action that could occur under plan direction in the future would be too speculative to provide meaningful information for the decision-

maker. The environmental impact statement used the best available scientific information in assessing the existing condition of habitats on the forest, including peer-reviewed publications based on research conducted on the Custer Gallatin and other parts of southwestern Montana, expert opinion from local wildlife biologists and managers, as well as incorporating traditional methods based on coordinated agency recommendations. Certain big game habitat elements such as secure areas, have many complexities, and consequently have been measured in a variety of ways with no universally agreed-upon methods (Chapter 3, Big Game, Affected Environment). Effects analyses were based upon environmental baselines established for existing conditions (Chapter 3, Big Game, Environmental Consequences).

Amounts and configuration of certain habitat elements such as hiding or thermal cover, winter ranges, reproductive areas, and security habitat, can change over time due to natural processes as well as management actions. Therefore, the environmental impact statement provided a description of key habitat components and their importance to big game species (chapter. 3, Big Game, Affected Environment). The revised plan includes plan components to maintain vegetation that is resilient and generally within a natural range of variation (FW-DC-VEGF-01 through 04, 06, and 08; FW-DC-VEGNF-04; FW-DC-WL-03) and to maintain functionality of key big game habitats (FW-GDL-WLBG-01, 02 and 03). Effects of adopting these plan components were disclosed in the environmental impact statement (Chapter 3, Big Game, Environmental Consequences) with sufficient detail for the forest supervisor to make an informed decision.

#### Habitat Designation

**Concern:** Comment requested the Forest Service work with Montana Fish, Wildlife, and Parks to identify and designate critical big game habitat and migration pathways using best available scientific information and data.

**Response:** The revised plan states the Custer Gallatin's intent to work collaboratively with Montana Fish, Wildlife, and Parks and other related agencies in the management and conservation of wildlife populations and habitats (FW-GO-WL-01-03; FW-GO-WLBG-01).

#### Landownership

**Concern:** Commenters requested more information to address effects of landownership on big game species distribution and population size. Concern was expressed for impacts to hunting opportunities when big game (particularly elk) are displaced from public onto private lands during hunting seasons.

**Response:** The revised plan encourages Forest Service engagement in cooperation and collaboration with State wildlife management agencies, Tribal governments, and other interested partners in the development of management strategies, including monitoring programs, to maintain suitable habitat conditions and big game populations in numbers and distribution that allow for sustainable hunting experiences on National Forest System lands. (FW-GO-WLBG-01). Forestwide plan components to provide ecological conditions that are within the natural range of variation and resilient to stressors are expected to maintain persistence of big game species on public lands within the national forest boundary (FW-DC/STD/GDL-SOIL/WTR/RMZ/VEGF/VEGNF/WL). Specific plan components were added to retain adequate cover, reduce disturbance near winter ranges and reproductive areas, and maintain secure habitat for big game species (FW-GDL-WLBG-01 through 03). Specific methods and techniques for managing habitat of big game and other species are spelled out in Management Approaches (plan

appendix A). This tactic allows for more flexible and seamless incorporation of new science into management strategies as it becomes available. Incorporation at the project-specific level enables the Forest Service to account for differences in landscape, climate, elevation, vegetation type and potential, and other ecological variables that may differ project to project.

#### Limit Use

**Concern:** Comment expressed concern that all forms of human use have impacts on wildlife. Requests were made for more restrictions to limit both management actions and public recreation, especially in certain places like the Porcupine Buffalo Horn area, or during particularly vulnerable times, such as winter and reproductive seasons for big game.

**Response:** The revised plan includes plan land allocations of recommended wilderness and backcountry area in the Porcupine Buffalo Horn area, which would add restrictions for certain types of uses, while the area would continue to be managed consistent with Wilderness Study Act 1977. Land management plans guide and constrain future Forest Service project and activity decision-making; and do not constrain public use (FSH 1909.12, section 22.1). The Forest Service has the ability to restrict public uses for the purposes of resource protection, although any such closures would require special orders to prevent public use. To avoid stressing wildlife when energy demands are high, management activities would be located and scheduled to minimize disturbance of wild ungulates on winter ranges during the winter and in known calving, fawning, lambing, or kidding areas during the reproductive season. Exceptions may occur when needed for protection of other resources as mandated by law, regulation or policy. In such cases, management actions would be concentrated in time or space to reduce impacts to native ungulates (FW-GDL-WLBG-02). Dispersed and developed recreation opportunities must respond to impacts to fish and wildlife habitat and other environmental concerns (FW-DC-RECDEV-01; FW-DC-RECDISP-01).

#### Migration and Connectivity

**Concern:** Comment stated proposed plan land allocations would not support big game migration and connectivity. Commenters cited the Montana Fish, Wildlife, and Parks State Action Plan for priority big game corridors and winter range (Montana Fish Wildlife and Parks 2018b), which identifies fragmentation caused by private land development, noxious weeds, and high-speed roads as the risks or threats to this priority area. Commenters indicated that wilderness designations would not improve or maintain priority winter range and migration areas identified by the State.

**Response:** The Forest Service is limited in its ability to address the primary issues identified in Montana FWP 2018, as the issues typically are associated with private lands in the Paradise Valley. Proposed land use allocations in the revised plan would provide for the maintenance and conservation of existing habitats adjacent to the private lands of the Paradise Valley for wildlife migration.

#### Monitoring

**Concern:** Comment questioned efficacy of the proposed monitoring plan for big game as the only monitoring item would be big game population levels at the regional level. It is unclear why this would not be done at the forest level since this is where habitat management impacts would be demonstrated.

**Response:** Recreation and visitor use, key vegetation characteristics, and Montana Fish, Wildlife, and Parks herd estimates are the indicators identified in the monitoring plan for big game. The monitoring



program is not intended to depict all monitoring, inventorying, and data-gathering activities undertaken on the Custer Gallatin. Consideration and coordination with broad-scale monitoring strategies, multi-party monitoring collaboration, and cooperation with state agencies where practicable will increase efficiencies and help track changing conditions beyond the national forest boundaries to improve the effectiveness of the plan monitoring program. In addition, project and activity monitoring may be used to gather information for the plan monitoring program if it will provide relevant information to inform adaptive management. Monitoring also provides feedback to prioritize and improve the plan monitoring program and broader-scale monitoring strategy.

#### Moose Climate Change

**Concern:** Comments expressed concern regarding effects of climate change on moose, and requested additional consideration of this topic.

**Response:** The environmental impact statement acknowledges that moose populations in Montana appear to have declined since the 1990s, based on aerial counts and hunter harvest statistics, and also notes that climate change contributes to moose population declines. Other contributing forces include hunter harvest, increased predation, vegetation changes due to large-scale disturbances and natural succession, disease, and parasite loads (environmental impact statement, Chapter 3. Big Game, Affected Environment, Populations). All revised plan alternatives include plan components limiting disruptions of big game species on winter ranges and reproductive areas (FW-GDL-WLBG-02). General plan components for big game species are expected to contribute to long-term persistence of species such as elk, moose, and deer, similar to conditions under the current plans. Population objectives and estimates are established by state (Montana and South Dakota) wildlife management agencies. The revised plan states the Custer Gallatin's intent to work collaboratively with state agencies and other cooperators in the management and conservation of wildlife populations and habitats (FW-GO-WL-01-03; FW-GO-WLBG-01). Several plan components are proposed that address habitat condition and connectedness (FW-DC-WL-04-06; FW-GDL-WL-01). The national forest recognizes the importance climate change has on the management and health of the ecosystem and all of its various components including temperature-sensitive species such as moose. The proposed wildlife plan components focus on maintaining seasonal habitat conditions and allowing for flexibility in management strategies as new science is discovered.

#### Moose Disease

**Concern:** Commenters requested additional information regarding stressors such as infectious and parasitic disease combined with changing climatic conditions, and associated impacts on moose.

**Response:** Additional discussion and analysis regarding the potential for population impacts on moose from infectious and parasitic disease, and how climate change may influence these impacts, has been included in the environmental impact statement (Chapter 3, Big Game, Affected Environment, Habitat). See also Moose Climate Change .

#### Moose Populations

**Concern:** Commenters requested additional information on population size, distribution, and genetic diversity needed to ensure population viability for moose.

**Response:** The Planning Rule defines viable population as “a population of a species that continues to persist over the long term with sufficient distribution to be resilient and adaptable to stressors and likely future environments” (36 CFR 219.9). The revised plan does not establish population size requirements with plan components. Big game population objectives are set by state wildlife management agencies. Ecosystem components for air quality, soils, water, and riparian areas, as well as forested and non-forested vegetation communities, are expected to provide conditions to maintain persistence of moose on the Custer Gallatin National Forest. Habitat management plan components focus on the conditions that provide vegetation within a natural range of variation, habitat connectivity, adequate cover, security, wintering and reproductive areas FW-DC-WL-04-06; FW-GDL-WL-01; FW-DC-WLWG-01; FW-GDL-WLWG-01 through 03). Management is designed to be flexible and incorporate the best available scientific information as it emerges over time. Accordingly, the revised plan also acknowledges the need to collaboratively improve knowledge (FW-GO-WL-04), develop management strategies, and improve monitoring for big game habitat and populations (FW-GO-WLWG-01).

#### Plan Components

**Concern:** Comment requested a variety of changes or additions to plan components to clarify proposed language and strengthen protections for big game species. Some suggested more prescriptive or proactive measures are needed, others objected to exceptions permitted for certain plan components. Comments urged stronger protection for known big game migration routes, indicated that guidelines are not sufficient to achieve desired condition, and recommended standards to replace guidelines. Other comments expressed the need for greater interagency coordination and collaboration with stakeholders.

**Response:** The revised plan recognizes the importance of big game species to ecological integrity (FW-DC-WL-01), as well as recreational pursuits and local economies (FW-DC-WLWG-01). Accordingly, the plan provides ecosystem plan components to manage vegetation within a natural range of variation to be resilient and sustainable (FW-DC-VEGF-01 through 09; FW-DC-VEGNF-04; FW-DC-WL-03), to provide habitat conditions to which species have adapted over time. In addition, species-specific plan components would maintain or restore important habitat elements for big game species, including seasonal ranges, reproductive areas and secure habitat (FW-GDL-WLWG-01 through 03). Individual migration routes can change over time in response to natural processes or human intrusion. Revised plan components provide for wildlife habitat connectivity with a holistic approach that would maintain habitats suitable for migration and movement corridors (FW-DC-WL 04-07; FW-GDL-WL-01-05). Plan land allocations such as recommended wilderness areas, backcountry areas, and key linkage areas provide additional restrictions (FW-STD/GDL-RWA/BCA) in locations with potential to benefit wildlife distribution and movement. In the case of key linkage areas, the locations and considerations are specifically designed to benefit wildlife.

Plan components must be written clearly, with clarity of purpose and without ambiguity so that project consistency can be easily determined (FSH 1909.12; 22.1). However, the broad ecological diversity on the Custer Gallatin as described in the environmental impact statement (Chapter 3, Wildlife Diversity, Introduction; and Big Game, Affected Environment) is not conducive to highly prescriptive, easily measurable plan components, because specific techniques shown to work well under certain conditions may not work well, or may not even be achievable in completely different environments. Management Approaches (plan appendix A) include a variety of proven wildlife habitat management concepts, methods, and techniques that can be considered for project design and mitigation measures to meet the intent of plan direction for big game and other species. Including the very prescriptive or area-specific

information in Management Approaches to be considered at the project level, allows flexibility to account for variation in climate, elevation, topography, vegetation communities, and different wildlife species needs across a very diverse landscape.

Plan components must be in accordance with agency authorities, and are not commitments to act or final decisions approving or mandating projects or activities (FSH 1909.12; 22.1). Guidelines place constraints on future projects and activities that allow for departure from terms only if the purpose of the guideline is met (36 CFR; 219.15(d)(3)). In other words, compliance with guidelines is not optional, and the intent of each guideline must be met at the project level. Specific management approaches and techniques for big game and other species, including appropriate scale for project-level analyses, are spelled out in Management Approaches (plan appendix A). This allows for more flexible and seamless incorporation of new science into management strategies as it becomes available. Incorporation at the project level enables the Forest Service to account for differences in landscape, climate, elevation, vegetation type and potential, and other ecological variables that may differ project to project.

The revised plan recognizes the importance of collaboration in effective wildlife and habitat management to meet the needs of agencies as well as the general public. As stated above, plan components must be within agency authority, and the Forest Service does not have the authority to mandate (through standards or guidelines) the actions of other agencies or the general public. Therefore, Forest Service commitment to cooperation and collaboration was expressed through goal statements in the revised plan. Accordingly, the revised plan includes a number of goals to work collaboratively with State and Federal agencies, Tribes, and other interested partners to develop conservation strategies, provide habitat connectivity across jurisdictional boundaries, acquire lands and conservation easements for habitat connectivity, improve knowledge, and disseminate information (FW-GO-WL-01 through 05). In addition, the revised plan contains a specific goal for cooperation and collaborative big game habitat management (FW-GO-WLBG-01) to adapt knowledge and habitat management strategies over time that will maintain suitable habitat conditions and big game populations in numbers and distribution that allow for sustainable hunting experiences on National Forest System lands. Management Approaches (plan appendix A) also note the benefits of, and include measures for, interagency coordination and working with partners.

#### Secure Habitat

**Concern:** Commenters requested more detailed information regarding management of secure habitat for big game species.

**Response:** Additional discussion and analysis regarding security habitat and the appropriate analysis area has been included in Management Approaches (plan appendix A).

#### Winter Range

**Concern:** Comments requested additional analysis on the importance of ecotones and impacts of vegetation treatments on big game winter range and secure habitat.

**Response:** The effects of vegetation management on big game winter range and secure habitat can be found in the environmental impact statement (Chapter 3, Big Game, Effects from Terrestrial Vegetation Management, Effects from fire and Fuels Management, and Effects from Timber Management). Plan components contain desired conditions for native plant communities that are resilient to sustain and

support plant and animal diversity (FW-DC-VEGNF-01 through 04). The desired condition is to maintain forest structure within the natural range of variation (FW-DC-VEGF-01 through 04, and 06; FW-DC-WL-03). This includes consideration of ecotones and the less common habitat types.

## **Wildlife – Bighorn Sheep**

### Agricultural Research Service Consultation

**Concern:** Comment stated that the Custer Gallatin National Forest must consult with the Agricultural Research Service on the issue of disease transmission to bighorn sheep.

**Response:** As noted in the environmental impact statement, chapter 2, Public Involvement, the Custer Gallatin provided numerous opportunities for public engagement, including opportunities for input from State and Federal agencies. Whether the national forest has a statutory duty to consult with any particular agency is already decided by law.

### Best Available Scientific Information

**Concern:** Comment stated that the bighorn sheep analysis and plan direction are not based on the best available scientific information. Several issues were raised: the adequacy of plan components and analysis related to viable population size, threats to the species' persistence, the analysis and plan components designed to minimize risk of disease transmission from pack goats and sheep, and uncertainty surrounding modes of disease transmission. Commenters provided additional citations to consider. Other commenters agreed with parts of the analysis and provided additional citations that support existing conclusions.

**Response:** Comments and additional science provided by the public demonstrate pack goats are used differently than domestic grazing animals raised for livestock production, which helped inform both the plan components in the plan, as well as expanded discussion of effects to bighorn sheep in the environmental impact statement (Chapter 3. Bighorn Sheep, Affected Environment and Effects of the Revised Plan Alternatives). A variety of scientific information was presented by the public regarding potential for disease transmission between domestic livestock and wildlife, with the preponderance of evidence confirming the possibility of transfer of pathogens between domestic and wild animals, although the probability of such transfer depends on a wide assortment of variables. The environmental impact statement presented a range of alternatives, which address the limits of available science, as well as considerable differences in public opinion.

### Domestic Sheep and Goats

**Concern:** Comment expressed a variety of opinions on potential uses of sheep and goats on the Custer Gallatin National Forest. Some commenters support permitted sheep and goat grazing with mitigation measures to reduce the risk of disease transmission, while others stated that sheep and goat grazing should only be permitted for weed control, or that goats should only be permitted for recreational goat packing. Other commenters stated that sheep and goat grazing should not be permitted at all within the bighorn sheep range or potential habitat. Different commenters expressed support for bighorn sheep components associated with each of the alternatives.

**Response:** The Custer Gallatin recognizes that there are many different opinions about how the national forest should provide for the persistence of bighorn sheep while balancing the desire for grazing and

recreational opportunities. The environmental impact statement considers a broad range of alternatives that vary in terms of where different uses are suitable, what restrictions could be placed on these uses, and objectives for habitat restoration. All revised plan alternatives contain provisions to limit the risk of disease transmission from domestic animals and promote healthy bighorn sheep populations, while simultaneously imposing a range of restrictions on other legitimate uses, such as livestock production, weed treatment, and recreation. The Custer Gallatin carefully considered the implications of these alternatives, as well as the numerous public comments that were received, in developing alternative F. The revised plan would not permit sheep and goat grazing for livestock production across much of the national forest, but allows for the possibility of livestock production in low-risk areas, contingent on a risk assessment and appropriate mitigation measures (FW-STD-GRAZ-02). Targeted grazing for weed control could be permitted, but only if a risk assessment indicates that mitigation can effectively minimize disease transmission to wild sheep (FW-STD-GRAZ-03). Recreational pack goat use would be suitable, but subject to restrictions in some areas, commensurate with the risk of disease transmission based on proximity to existing wild sheep herds. Restrictions identified for pack goat use in alternative F are consistent with best management practices for pack goat use established by the North American Packgoat Association, as recommended by many commenters in favor of allowing pack goat use.

The combination of uses and restrictions presented in the environmental impact statement addresses the request of many commenters to develop plan direction that takes appropriate precautions to minimize the risk of disease transmission while also providing the flexibility to allow certain uses when the most current science coupled with a site- and use-specific risk assessment indicates that the threat of disease transmission is low. The environmental impact statement concludes that the bighorn sheep direction in the revised plan (alternative F) is expected to address a primary threat to native bighorn sheep as documented by the best available scientific information, minimize the risk of disease transmission between domestic sheep and goats and wild sheep, and strike a balance between optimizing conditions for wildlife and supporting multiple uses in a responsible way. Through such balance, the revised plan is expected to maintain persistence of bighorn sheep on the Custer Gallatin National Forest.

#### Domestic Sheep and Goats Alternative D

**Concern:** Comment stated the environmental impact statement analysis for alternative D should discuss the purpose of guidance prohibiting new permits for domestic sheep and goat grazing, goat packing, and goats for weed control.

**Response:** As addressed in the Environmental Impact Statement, Chapter 3, Bighorn Sheep, Effects of the Revised Plan Alternatives, alternative D expands the prohibition of domestic sheep and goats to the entire national forest, to recognize that bighorn sheep were historically present across most of the Custer Gallatin. Bighorn sheep are capable of long-distance dispersal movements and all geographic areas of the Custer Gallatin are within possible dispersal distance of existing bighorn sheep herds. Plan restrictions on permits for domestic sheep and goat grazing, goat packing, and use for weed control are aimed at minimizing risk of exposure to disease-causing pathogens that can be carried by domestic sheep and goats and transmitted to wild sheep.

#### Environmental Impact Statement Analysis

**Concern:** Comment stated that the environmental impact statement analysis is insufficient, and suggested that it should disclose bighorn sheep population numbers, map the herd distribution, and

discuss potential effects of changes in landscape permeability due to disturbance or vegetation management. It should also discuss benefits to the public from the unique hunting opportunities on the Custer Gallatin National Forest.

**Response:** Bighorn sheep population numbers, herd distribution and landscape permeability can and do change notably over time. Trends for these factors were considered and disclosed in the environmental impact statement, based largely on current bighorn sheep data obtained from Montana Fish, Wildlife and Parks (environmental impact statement, chapter 3. Bighorn Sheep, Affected Environment). More quantitative information for bighorn sheep range relative to land management plan allocations was added to the final environmental impact. As described in the environmental impact statement (chapter 3. Bighorn Sheep, Affected Environment), high visibility is of great importance to bighorn sheep, and necessary for detection and avoidance of predators. Effects of vegetation management impacts on landscape permeability for bighorn sheep are disclosed in the environmental impact statement (chapter 3. Bighorn Sheep, Effects from Terrestrial Vegetation Management; Effects from Fire and Fuels Management). The environmental impact statement Chapter 3, Wildlife Diversity, Information Sources, disclosed that analyses were based upon extensive review of, and reference to the best available scientific information for purposes of documenting the status, habitat relationships, potential threats, and response to management activities for a variety of species. Additional information was provided by commenters, and incorporated into the final environmental impact to acknowledge variation in management of domestic sheep and goats for different purposes (for example, livestock production, weed treatment, or recreation pack animals) and subsequent influence on the potential for domestic sheep and goats to carry pathogens or come into contact with bighorn sheep. This additional information helped shape alternative F. Effects to wildlife (minimizing risk of disease transmission) were addressed in the environmental impact statement (Chapter 3. Bighorn Sheep, Effects from Recreation Management). Effects on pack goat recreationists was addressed in the environmental impact statement (Chapter 3. Consequences to Developed and Dispersed Recreation, Effects from Wildlife Management).

#### Environmental Impact Statement Analysis and Plan Direction

**Concern:** Commenters requested additional clarification in the environmental impact statement regarding existing plan direction and "current policy" (alternative A) related to bighorn sheep and pack goat use.

**Response:** As noted in the environmental impact statement, Chapter 3, Bighorn Sheep, Management Direction Under Current Plans, the Custer plan indicates that certain management activities (such as surface occupancy for mineral extraction) may be restricted to protect key values for bighorn sheep, but does not specifically address pack goats. The Gallatin plan acknowledges areas of high importance for bighorn sheep and need to manage a wild sheep lambing area. Neither current plan contains specific direction for pack goat use related to bighorn sheep.

#### Habitat Improvement

**Concern:** Comment expressed support for the wildlife objectives in alternative D and pursuit of habitat improvement projects.

**Response:** Objectives must be attainable within the fiscal capability of the unit, as determined through a trend analysis of recent past budget obligations (FSH 1909.12 section 22.12). As explained in chapter 2 of the final environmental impact, Description of the Alternatives, for Alternative F: The Custer Gallatin

National Forest would strive to complete 10 projects per decade that are designed to maintain or improve habitat for one or more terrestrial wildlife species (FW-OBJ-WL-02). Projects designed to maintain or improve habitat for bighorn sheep would meet the intent of this objective. The objective in alternative F (10 projects per decade) is slightly less than the objective in alternative D (12 projects per decade), and is more in line with budget projections and a multiple-use mandate.

#### Hunting

**Concern:** Comment requested a desired condition to maintain hunting opportunities for bighorn sheep.

**Response:** The revised plan includes a desired condition in the Big Game section (FW-DC-WLBG-01) for all wildlife species to provide hunting opportunities. This plan component also expresses a desire for wildlife abundance and distribution to support state wildlife harvest and population objectives. The plan component applies to all hunted wildlife species, including bighorn sheep. The revised plan includes a goal (FW-GO-WLBG-01) which, along with numerous plan components designed to promote high-quality habitat, and limit potential for disease transmission between domestic and wild animals, will help to support achievement of this desired condition.

#### Mining Effects

**Concern:** Comment questioned how alternative D could have fewer impacts on bighorn sheep, since mining activities would continue in the Stillwater area under all alternatives.

**Response:** The environmental impact statement addresses effects to bighorn sheep from the Stillwater mining complex, which is identified as a mining emphasis area under all revised plan alternatives except D. The analysis explained that with land management plan allocation for mining emphasis, mineral development would be expected to continue and perhaps expand in alternatives B, C, E, and F, whereas alternative D would have no mining emphasis allocation and some of the Stillwater complex area would be allocated for recommended wilderness. While mining activities would be expected to continue under all alternatives, new and expanded mining activities in alternative D would prompt additional mitigation measures within recommended wilderness to protect characteristics associated with recommended wilderness, including wildlife habitat if necessary (environmental impact statement, chapter 3. Bighorn Sheep, Effects from Energy and Minerals Management).

#### Monitor Disease

**Concern:** Comment stated the revised plan should include a monitoring component related to disease transmission from domestic sheep and goats

**Response:** The revised plan contains a monitoring item (MON-WL-04) to report the number and locations of authorizations issued for domestic sheep or goat grazing on the Custer Gallatin National Forest, which would track the Forest Service actions that could be responsible for disease transmission from domestic sheep and goats. The plan also includes goals to engage in partnerships to conduct research, inventories, monitoring, and expand data collection (FW-GO-WL-04), as well as to collaborate with State agencies, Tribes, livestock producers, and recreationists to develop protocols to minimize disease transmission (FW-GO-WLBHS-01).

#### North American Packgoat Association

**Concern:** Comment stated the Custer Gallatin should have consulted with the North American Packgoat Association before developing plan components associated with pack goat use.

**Response:** The Custer Gallatin National Forest provided numerous opportunities for public engagement (environmental impact statement, chapter 2, Public Involvement), and considered comments from the North American Packgoat Association as well as individual pack goat recreationists when developing the plan components included in alternative F. Many of the conditions stated for pack goat use in the revised plan (FW-SUIT-REC-02 and FW-STD-RECOG-02) were suggested by commenters and are consistent with best management practices recommended by the North American Packgoat Association.

#### Pack Goat Effects

**Concern:** Commenters suggested that the effects of pack goats on bighorn sheep should be analyzed separately from effects of domestic sheep and herd goats, and provided citations or anecdotes demonstrating that the risk of disease transmission differs and that the risk from pack goats is minimal

**Response:** In the final environmental impact (Chapter 3. Bighorn Sheep), the Affected Environment and Effects from Recreation Management sections were revised to address science related to disease transmission and to reflect differences in handling and management of domestic goats used as recreational pack animals compared to domestic goats used for livestock production.

#### Pack Goat Restrictions

**Concern:** Comment stated it is unclear why the restriction on pack goats varies by alternatives. If a restriction is necessary in certain areas, it should apply in all alternatives.

**Response:** As a result of public involvement leading up to and following the release of the proposed action, the Custer Gallatin National Forest identified pack goat use on the national forest and the protection of bighorn sheep as issues involving unresolved conflict (see chapter 2 of the environmental impact statement). Accordingly, alternatives were developed that vary restrictions on pack goat use based on current and historic bighorn sheep occupation, so that the difference in effects could be analyzed. This analysis helped inform the restrictions on pack goat use that were included in the preferred alternative (alternative F), and additional analysis associated with alternative F demonstrated that the final plan components would provide sufficient protection for bighorn sheep (environmental impact statement, chapter 3. Bighorn Sheep, Effects of Revised Plan Alternatives).

#### Plan Components

**Concern:** Some commenters were concerned that existing plan components are not sufficient to protect bighorn sheep and support viable populations, while others stated that plan components provided adequate protection without the need to restrict pack goat use. Comment expressed confusion over the location of bighorn sheep components in the revised plan. Comment suggested a variety of plan components related to bighorn sheep, or designed to protect bighorn sheep, while also allowing the use of recreational pack goats.

- Require permanent closure of existing allotments
- Include stricter standards for domestic sheep permitting, placing greater emphasis on protecting wild sheep populations.



- Require that pack goats be disease-free rather than prohibiting them entirely.
- Adopt a standard to not permit domestic sheep grazing in bighorn sheep range.
- Adopt best management practices developed by the North American Packgoat Association when using pack goats in bighorn sheep territory.
- Address the potential for disease transmission from connected landscapes on the Caribou Targhee and Beaverhead-Deerlodge National Forests.

**Response:** The Custer Gallatin considered all of the suggested changes to bighorn sheep plan components, and made several changes to the plan. These include varied configuration for prohibitions on grazing permits for domestic sheep and goats in certain areas (FW-STD-GRAZ-02 through 04), the addition of regulatory measures for use of domestic goats as pack animals by outfitters under special use permit, and suitability statements that would require similar mitigation measures for pack goat use by the general public in certain areas (FW-STD-RECOG-01 and 02; FW-SUIT-REC-01 and 02). Not all of the changes suggested by commenters were adopted, since some suggestions, such as requiring permanent closure of all existing grazing allotments, were inconsistent with Forest Service directives that plan components can neither make commitments to act, nor compel management actions (FSH 1909.12, section 22.1). The environmental impact statement (Chapter 3, Bighorn Sheep, Affected Environment), addresses the fact that disease risk increases at higher bighorn sheep densities and that mixing of herds (within or across national forest boundaries) can introduce disease, or augment herds with more susceptible individuals.

The environmental impact statement concludes that the suite of plan components in the preferred alternative will be sufficient to help ensure long-term persistence of bighorn sheep on the Custer Gallatin National Forest (Environmental Impact Statement, Chapter 3. Bighorn Sheep, Conclusion). In addition to the plan components in the Bighorn Sheep section of the plan, there are numerous other components that will benefit the species. These include components in the General Wildlife Section (FW-DC-WL-01, 03, 04, 05, 09; FW-GO-WL-01 through 05; FW-GDL-WL-01); Big Game section (FW-DC-WLBG-01, FW-GO-WLBG-01, and FW-GDL-WLBG-02); the Permitted Livestock Grazing section (FW-STD-GRAZ-02 through 04); the Recreational Opportunities section (FW-STD-RECOG-01, 02; FW-SUIT-REC-01 and 02); and the Vegetation section (FW-DC-VEGNF-04, FW-GO-VEGNF-01 and 02).

#### Reintroduction

**Concern:** Comment stated the plan should address the need to reintroduce bighorn sheep in suitable habitat where they have been extirpated.

**Response:** Plan components can neither make commitments to act, nor compel management actions (FSH 1909.12, section 22.1). However, the revised plan includes a goal to support establishment of bighorn sheep in suitable areas not currently occupied by wild sheep (FW-GO-WLBHS-02). In addition, the revised plan contains desired conditions for a complete suite of native species, with numbers and distribution to be adaptable to changing conditions for long-term persistence (FW-DC-WL-01); habitat conditions generally within the natural range of variation for a diverse suite of native species (FW-DC-WL-03); habitat connectivity that facilitates daily, seasonal and long-range movements of wildlife (FW-DC-WL-05); low to no risk of disease transmission between domestic animals and wildlife (FW-DC-WL-09, FW-DC-WLBHS-02); habitat conditions that support robust bighorn sheep populations that can, if necessary, serve as source populations for translocation to facilitate recolonization of wild sheep in

historic range or help augment existing populations where appropriate (FW-DC-WLBHS-01); as well as goals to coordinate with State agencies, cooperators and other landowners to improve knowledge and manage wildlife habitat consistently across administrative boundaries and jurisdictions (FW-GO-WL-02, 03, 04). Plan components restrict the presence of domestic sheep and goats for a number of purposes, in areas where bighorn sheep currently persist, as well as areas where bighorn recolonization is suitable, desirable, and feasible within the life of the plan (FW-STD-GRAZ-02, 03). Collectively, these plan components support collaborative efforts to expand distribution of bighorn sheep through natural dispersal or augmentation when and where needed and feasible.

#### Risk Assessment

**Concern:** Comment suggested that the plan should provide more detail regarding how risk assessments associated with grazing and pack goat permits would be conducted, and on the specific mitigation measures that would be required.

**Response:** Guidelines in the plan should not direct or compel processes such as analysis, assessment, consultation, inventory, planning, or monitoring (FSH 1909.12, 22.14), so the plan components do not spell out specific requirements of a risk assessment, or require that such an assessment be conducted for a project, but rather indicate that such an assessment exists, and can demonstrate that effective mitigation can effectively minimize risk of disease transmission. Risk assessments, and potential components of them, are addressed in the Management Approaches (plan appendix A) under Bighorn Sheep. Mitigation measures are described in revised plan grazing standards (FW-STD-GRAZ-04), outfitter and guide standards (FW-STD-RECOG-01 and 02), and Suitability for General Recreation (FW-SUIT-REC-01 and 02).

#### Risk Assessment Analysis

**Concern:** Comment stated the Custer Gallatin National Forest should complete a risk assessment or analysis for bighorn sheep

**Response:** The environmental impact statement presents the requisite risk assessment and analysis for bighorn sheep in Chapter 3, Bighorn Sheep, Affected Environment and Effects of the Revised Plan Alternatives.

#### Wildlife – Bison

##### Best Available Scientific Information

**Concern:** Comment expressed concerns that the draft plan does not recognize the best available scientific information related to the genetic importance of the population and subpopulations of bison that exist on the Custer-Gallatin and in the Northern and Central Interior Herds, requesting that the bison be treated as the valuable wildlife resource that it is. Commenters suggested forestwide standards for maintaining and conserving bison viability and diversity.

**Response:** The environmental impact statement noted that the Yellowstone bison population is unique in that it is genetically pure, with no evidence of hybridization with domestic cattle (chapter 3. Bison, Introduction) and also acknowledges the genetically distinguishable northern and central herds of Yellowstone bison. However, since 2005, there has been a distinctive shift of bison from the central to the northern ranges, a process that's occurring inside Yellowstone National Park. (Chapter 3. Bison,

Affected Environment). Plan components must be written so that they are in accord with agency authorities and the inherent capability of the plan area (FSH 1909.12, section 22.1). Recommendations in comments for the Forest Service to include plan direction that would protect the genetic distinction between the Yellowstone bison herds were not adopted as it would be beyond the agency's authority to do so.

#### Brucellosis

**Concern:** Commenters provided a variety of comments about whether brucellosis can be spread from bison to domestic livestock. Concerns were expressed that regardless of the science, the threat of brucellosis impacts the livestock industry in Montana.

**Response:** The environmental impact statement states that transmission of brucellosis from bison to cattle is possible, and acknowledges that management intervention to separate the species likely has contributed to the lack of confirmed transfer of brucellosis from bison to domestic cattle in the wild (Chapter 3. Bison, Introduction and Effects from Livestock Grazing Management).

#### Connectivity

**Concern:** Comments encouraged the Custer Gallatin National Forest to maximize habitat connectivity across the national forest and across ownerships, and requested removal of barriers related to the Royal Teton Ranch, Hebgen Basin, and Yankee Jim Canyon.

**Response:** Plan components must be within agency authorities, are not commitments to act, and may not interfere with statutory rights (FSH 1909.12, section 22.1). The land management plan can neither mandate nor prohibit actions on lands outside the agency's authority. The revised plan contains a goal (FW-GO-WLBI-01) to work with partners to expand science, foster awareness, and cooperatively facilitate bison movement.

#### Free Range

**Concern:** Comment expressed that bison should be allowed to roam freely on all National Forest System lands. Some comments advocated for standards to restore connectivity and to prohibit the hazing of bison on public and private lands; while others stated there may be valid reasons to impede bison movement.

**Response:** The revised plan includes desired conditions for bison to have access to suitable habitat and that bison are present year-round in sufficient numbers and with adequate distribution to provide a self-sustaining population on the Custer Gallatin (FW-DC-WLBI-01, 04). The revised plan includes objectives and guidelines that would promote habitat connectivity and increased distribution for bison (FW-OBJ-WLBI-01, FW-GDL-WLBI-01-03). Plan components must be within agency authorities, are not commitments to act, and may not interfere with statutory rights (FSH 1909.12, section 22.1). The plan may not prohibit actions on lands outside the agency's authority.

#### Habitat Definitions

**Concern:** Comment expressed concern regarding inadequate definitions of suitable habitat and connecting corridors.

**Response:** The draft environmental impact statement explained that "potential bison habitat" on the Custer Gallatin was modeled after an exercise to map potential habitat for bison in Yellowstone National Park. The final environmental impact statement then clarified that "potential habitat" for bison is habitat that is "suitable" for bison use, but may or may not be currently occupied. The environmental impact statement discloses the parameters upon which "potential" or "suitable" bison habitat were based (chapter 3. Bison, Affected Environment). The final environmental impact statement was updated to explain the concept of "connecting corridors." The terms "bison suitable habitat" and "connecting corridors" were added to the plan glossary.

#### Habitat Expansion

**Concern:** Comment urged the Custer Gallatin National Forest to expand the habitat that the American bison inhabits on the national forest, citing ecology and social needs of the bison in support of this expansion. Some comments advocated for proactive bison management such as reintroductions and closure of livestock allotments, while other comments opposed expansion of bison habitat, stating that bison management was stretched beyond its capability at present.

**Response:** The environmental impact statement presented a range of alternatives from maintaining the status quo to proactively managing habitat to facilitate natural expansion of bison. Plan components must be within agency authorities and are not commitments to act (FSH 1909.12, section 22.1). The revised plan includes components that support bison expansion on the Custer Gallatin National Forest (FW-DC-WLBI-01, 02, and 04; FW-GO-WLBI-01; FW-GDL-WLBI-01 through 03) and includes objectives for bison habitat improvement projects (FW-OBJ-WLBI-01) that are attainable within the fiscal capability of the Custer Gallatin, based upon recent past (3 to 5 years) budget trends. The environmental impact statement acknowledges the Interagency Bison Management Plan (Interagency Bison Management Plan 2017). The Interagency Bison Management Plan is an adaptive management plan, which establishes and updates operating procedures for the management of bison. Under the guidance of this plan, the Yellowstone bison population has been managed at a relatively stable level, allowing for increased numbers and distribution of bison on the Custer Gallatin National Forest over time. This cooperative management strategy is expected to continue in a manner that would be consistent with plan components under all alternatives (Environmental impact statement, Chapter 3. Bison, Cumulative Effects).

#### Habitat Insufficient

**Concern:** Comment stated that the plan components are insufficient relative to bison habitat and suggested that acres of habitat treated and the area of expanded habitat used would be better indicators to measure and monitor progress for year-round, self-sustaining populations of American bison. In addition, comment provided recommendations to convert guidelines FW-GDL-WLBI-01 and FW-GDL-WLBI-03 to standards and to make objectives more feasible for alternative D.

**Response:** Objectives must be concise, measurable, and time-specific (FSH 1909.12, section 22.13). The plan provides programmatic direction. Objective FW-OBJ-WLBI-01 specifies the number of projects rather than acreage because the acreage treated to achieve a desired outcome could vary dramatically from project to project, based on an assortment of site-specific environmental variables. Objectives listed in the draft revised plan for alternative D were in error, and were meant to read "complete three projects every three years." This correction was carried forward in the revised plan. See also response to Plan Components Standards and Guidelines .

## Habitat Restoration

**Concern:** Comment expressed concerns that detailed strategies for plant diversity and fire ecology are needed to promote and ensure a habitat restoration program for the bison, and concern that if the appropriate strategies are not followed, livestock will be given priority over bison on the national forest. Coordination with American Indian Tribes with treaty rights and ancestral ties was encouraged to incorporate their knowledge gained over millennia into the habitat restoration work for bison. Comment noted that potential habitat improvement projects for bison were not described.

**Response:** Plan components are not commitments to act and should not direct or compel processes such as analysis, assessment, consultation, planning, inventory, or monitoring (FSH 1909.12, sections 22.1, 22.13). The revised plan includes a guideline that within bison management zones, actions taken to resolve bison-livestock conflicts should favor bison, with the intent of promoting bison expansion within management zones (FW-GDL-WLBI-01). The intent of guidelines must be met. The revised plan includes a goal to engage with State, Federal, Tribal, and other willing partners to expand the science of bison ecology, foster awareness of important cultural roles, and cooperatively develop adaptive strategies to manage bison (FW-GO-WLBI-01). The environmental impact statement included examples of beneficial vegetation treatments, such as timber harvest or prescribed fire to remove conifer encroachment from otherwise suitable bison range, increase forage production, or reduce tree density to facilitate bison movement between suitable foraging areas (Chapter 3. Bison, Effects of Revised Plan Alternatives). These, and other possible measures are outlined in Management Approaches (plan appendix A).

## Interagency Bison Management Plan

**Concern:** Comment both supported and opposed the Custer Gallatin National Forest continuing to follow the Interagency Bison Management Plan. Some commenters stated that alternative D was consistent with the Interagency Bison Management Plan, while others stated that alternative E was a better choice. Some, including the Montana Department of Livestock, Montana Farm Bureau Federation, and South Dakota Stockgrowers Association, supported alternative E because it favors livestock over bison. Concern was also expressed over the impacts that bison can have on ecosystems, given that they are harder to manage than domestic livestock and can compete with elk for the same winter range, which increases elk mortality.

**Response:** The environmental impact statement provided a wide range of alternatives from allowing bison to expand distribution within bison management zones so long as there is little interference with livestock (alternative E) to facilitating wide-spread expansion of bison to suitable habitats across the entire national forest (alternative D). The environmental impact statement notes the Forest Service as a partner in the development and implementation of the Interagency Bison Management Plan (Chapter 3. Bison, Introduction). The revised plan (alternative F) strikes balance with selected components from the entire range of alternatives, including a desired condition for a year-round self-sustaining bison population on the Custer Gallatin (FW-DC-WLBI-04) as well as a goal for continued cooperative management of bison (FW-GO-WLBI-01). Comments about bison impacts on ecosystems and elk were conjectural and not supported by science.

## Migration

**Concern:** Comment expressed concerns about bison migrating on the landscape including: that the national forest needs to provide migration corridors, statements that bison are less migratory and more nomadic animals, and statements that it would be in conflict with Planning Rule requirements to restrict

natural migration of bison. Concern was also expressed over the conflicts between livestock and bison resulting in a reduced area of free-roaming bison on the Custer Gallatin National Forest landscape.

**Response:** The revised plan acknowledges the unique position of the Custer Gallatin National Forest to facilitate migration of native bison out of Yellowstone National Park (Revised plan, Chapter 2. Bison, Introduction). The environmental impact statement notes the ecological, social, economic, cultural, and spiritual importance of bison at local, regional, national, and international scales, but also acknowledges the complexities of management related to potential for disease transmission between bison and livestock (Chapter 3. Bison, Introduction). The environmental impact statement states that bison are a native species on the Custer Gallatin, and their presence in suitable habitat is desired (Chapter 3. Bison, Analysis Area). As explained in the environmental impact statement, enabling legislation for State and Federal agencies mandates coordinated conservation of wildlife and habitat (Chapter 3. Bison, Introduction). Plan components must be within agency authorities and may not interfere with statutory rights (FSH 1909.12, section 22.1).

The revised plan includes desired conditions for bison access to suitable habitats, adequate connecting corridors between suitable habitats, educational efforts, and year-round presence of a self-sustaining bison population on the Custer Gallatin (FW-DC-WLBI-01-04), as well as goals for continued cooperative management through engagement with agencies, Tribes, and other willing partners (FW-GO-WLBI-01). Guidelines facilitate bison expansion by favoring bison within bison management zones, strategic implementation of habitat improvement projects, and minimizing barriers to bison movement (FW-GDL-WLBI-01 through 03). The revised plan establishes a proactive approach to facilitate bison expansion on the national forest while continuing to support a cooperative interagency management strategy (Environmental impact statement, Chapter 3. Bison, Conclusion).

#### Permitted Livestock Grazing in Bison Habitat

**Concern:** Comment requested a standard that would close livestock allotments and not permit grazing within bison habitat as a means of restoring habitat connectivity, and conserving the viability of the species. Others suggested a variety of guidelines to phase out allotments of willing permittees in tolerance areas as opportunities arise, modify allotment grazing schedules to reduce conflicts with bison calving, and acquire available private lands or conservation easements. Some commenters suggested "let down" fencing to improve the ability of bison to roam freely.

**Response:** Plan components are not commitments to act (FSH 1909.12, section 22.1), and therefore, could not require closure of existing livestock allotments. The revised plan includes a guideline that within bison management zones, actions taken to resolve bison-livestock conflicts should favor bison (FW-GDL-WLBI-01). Plan components should not include explanatory narrative such as how to resolve conflicts in favor of bison, but some possible measures are addressed in the Management Approaches section of the revised plan (appendix A). The revised plan contains a goal that current or future vacant livestock allotments be assessed for a variety of potential resource options, including potential to continue to serve as a livestock grazing resource, but they may also be considered for permanent closure to resolve resource conflicts, provide conservation opportunities, or for economic reasons (FW-GO-GRAZ-02). The revised plan includes a guideline that new and reconstructed fences should be located and designed to minimize collision hazards for wildlife and to prevent barriers to wildlife movement (FW-GDL-GRAZ-07).

### Self-Sustaining Population

**Concern:** Comment expressed concerns with the proposal for a year-round self-sustaining bison population on the national forest. Their concerns emphasized the intermingled ownership patterns along the Yellowstone River and Taylor's Fork area, citing potential infrastructure costs as significant barriers to the proposal. These commenters request that further evaluation be completed before such a proposal be carried forward.

**Response:** The revised plan must include plan components to maintain or restore ecological integrity and the diversity of ecosystems and habitat types (36 CFR 219.9). As noted in the environmental impact statement, bison have a key ecological role, and are considered a "keystone species" in prairie/grassland ecosystems (Chapter 3. Bison). The revised plan includes a desired condition for a self-sustaining year-round population of bison on the Custer Gallatin National Forest. However, based on comments received, a goal in the revised plan was modified to work with partners to, among other things, reduce conflict with livestock and non-National Forest System property. Social and economic impacts would be considered for future projects to meet desired conditions and goals established in the revised plan.

### Stronger Plan Components

**Concern:** Comment expressed support for alternative D, while some expressed concern that additional stronger standards and plan components are needed to ensure enforceability. Objectives for coordination with private landowners and Montana Fish, Wildlife, and Parks were suggested as improvements.

**Response:** The revised plan includes a desired condition that bison are present year-round with sufficient numbers and adequate distribution to provide a self-sustaining population on the Custer Gallatin National Forest. Based upon comments received, a goal was modified in the revised plan to work with partners to, among other things, reduce conflict with livestock and non-National Forest System property.

### Tolerance Zones

**Concern:** Comment expressed a variety of concerns related to tolerance zones:

- support of the idea of tolerance zones;
- concern that it is inappropriate for the Custer Gallatin National Forest to cede its authority to manage to the State, expressing concern over loss in population despite nominally increased available habitat;
- the proximity of the Custer Gallatin to Yellowstone National Park and the importance of the population of bison;
- more clarity in defining tolerance zones or "management" zones so that the concept of "favoring" them doesn't get watered down in future site-specific planning processes;
- greater analysis and disclosure as to how the various tolerance zones impact the national forest if adopted as forestwide standards;
- concerns that if the State of Montana changes the State plan it could result in a loss of bison habitat on the national forest, given the phraseology of "tolerance" making it seem that bison are being treated as a nuisance species to be tolerated rather than celebrated; and

- an additional goal of working with partners to identify suitable habitat and corridor areas for bison to guide habitat improvement.

**Response:** As noted in the environmental impact statement (Chapter 3. Bison), enabling legislation for State and Federal agencies mandates coordinated conservation of wildlife and habitat. As such, bison are managed under the auspices of an Interagency Bison Management Plan, developed in partnership between Yellowstone National Park, the State of Montana, USDA Forest Service and Animal and Plant Health Inspection Service. The State of Montana designated bison tolerance zones and established State management protocols for bison within and outside these zones. The State of Montana (2015) expanded the tolerance zones based on new information. The Forest Service chose to use the term "management zones" in the revised plan, to reiterate that bison are native wildlife, and their presence and long-term persistence is desirable on National Forest System lands. However, in cooperation with sister agencies, the Forest Service acknowledges that bison may be managed differently within and outside these zones (FW-GDL-WLBI-03).

Under the revised plan, habitat would be managed to encourage bison expansion into currently unoccupied areas on the Custer Gallatin Forest. The focus for habitat management (FW-GDL-WLBI-02) would be to promote bison expansion into unoccupied habitats within the bison management zones first, since these areas represent a natural and logical progression for increasing bison distribution. Habitat improvement projects could also occur outside of bison management zones, so that conditions outside the existing zones are suitable for increases in bison numbers, distribution, and time spent on the Custer Gallatin National Forest, to support potential future expansion of State-designated tolerance zones for bison (Environmental Impact Statement, Chapter 3. Bison, Effects of the revised plan alternatives). The revised plan includes a goal (FW-GO-WLBI-01) to work with partners to develop strategies to manage bison and habitat to facilitate natural movement or translocation of bison into and between suitable habitats.

#### Toxic Compounds

**Concern:** Comment requested that logging and spraying "toxic compounds" not be considered as habitat improvement projects for bison.

**Response:** While it is implied that these types of treatments would be bad for bison, the comments were not supported by scientific evidence.

#### Wildlife – Connectivity

##### Alternative Proposals

**Concern:** Comment provided alternative proposals to provide for connectivity, while also allowing limited amounts of recreation in certain areas. Some comments suggested seasonal closures or restrictions during known wildlife migration seasons as a solution that would accommodate wildlife needs for habitat connectivity and allow for continued increases in human use.

**Response:** The 2012 Planning Rule requires the land management plan to maintain or restore ecological integrity, including habitat connectivity (36 CFR 219.8). Connectivity is defined as ecological conditions at several spatial and temporal scales that permit the daily and seasonal movements of animals within home ranges, dispersal and genetic interchange between populations, and long-distance range shifts of species (36 CFR 219.19). Seasonal restrictions alone would not meet the requirements of the Planning



Rule to provide for daily, seasonal, and dispersal movements of wildlife. Further, migration periods can change from year to year, and can vary notably between species. To cover all known wildlife migration seasons would overlap with many desirable human use periods. Long-range dispersal movements of wide-ranging species, which are the focus of the key linkage areas, can happen at any time of the year, when considering the variety of species that occur on the Custer Gallatin National Forest.

#### Best Available Scientific Information

**Concern:** Comment stated that the Custer Gallatin did not use the best available scientific information in considering wildlife corridors and connectivity, and provided additional citations to consider.

**Response:** Commenters failed to provide full citations for some of the science referenced, provided references that were cited in the environmental impact statement without indications of how the science was misapplied, or failed to indicate how the science they cited was contrary to that used in the environmental impact statement or otherwise demonstrate that the science they cited contradicted conclusions made in the environmental impact statement.

#### Critical Connectivity Areas

**Concern:** Comment pointed out the Custer Gallatin National Forest plays a key role in wildlife conservation and providing habitat connectivity, and stated the national forest should establish and protect wildlife migration corridors. Some commenters praised the connectivity plan components included in alternatives B, C, and D, while others stated that the Custer Gallatin should do more to promote connectivity. Comment provided specific suggestions to enhance connectivity, or suggested specific locations thought to be important that could be considered as additional key linkage areas. Comment stated that, with the largest amount of recommended wilderness, only alternative D could maintain uninterrupted or otherwise suitable habitat corridors for wildlife. Commenters also noted the importance of maintaining connectivity between the Greater Yellowstone Ecosystem and the Northern Continental Divide Ecosystem.

**Response:** All public comments, concerns, references, and suggestions have been considered, and many contributed to formulation of plan alternatives, including the preferred alternative (F), as well as effects analyses in the draft environmental impact statement and final environmental impact statement. Public comments on the draft environmental impact statement resulted in slight boundary changes to key linkage areas in alternative C. Draft environmental impact statement comments also resulted in some changes to plan components for key linkage areas (FW-STD-WL-02; FW-GDL-WL-03, 04; FW-SUIT-WL-01).

Specific recommended plan components for key linkage areas included removing unneeded structures, removing unneeded roads and trails, eradicating invasive species, further restoring decommissioned roads, and developing action plans. While such measures could improve habitat connectivity, and would not be precluded by plan components in the revised plan, directives for the 2012 Planning Rule state that land management plan components can neither make commitments to act nor compel management actions, and should not compel processes such as planning (FSH 1909.12, section 22.1). Therefore, these suggestions were not added as plan components.

The environmental impact statement disclosed that alternative D would provide the most security in terms of least human disturbance, it also notes that management actions that could maintain or restore habitat connectivity, such as clearing of downfall after a disturbance, or building a permanent crossing

structure for wildlife, might not be possible in recommended wilderness (Environmental Impact Statement, Chapter 3. Connectivity, Effects of Revised Plan Alternatives). The notion that alternative D is the only way to maintain or restore habitat connectivity, is conjecture, and was not supported by science cited by commenters. Finally, while alternative D may, in fact, be the best at minimizing human disturbance factors for wildlife in movement corridors, the regulatory framework for forest planning does not require that conditions be optimized for any particular resource, including wildlife habitat connectivity.

The environmental impact statement (Chapter 3. Connectivity, Introduction) noted the Custer Gallatin National Forest role in wildlife conservation as part of the Greater Yellowstone Ecosystem, one of the largest intact temperate ecosystems in the world. The location of the Custer Gallatin in the Greater Yellowstone Ecosystem makes it important in terms of providing habitat connectivity to facilitate wildlife movement between the Greater Yellowstone Ecosystem and other intact ecosystems to the north and west of the Custer Gallatin (Environmental Impact Statement, Chapter 3. Grizzly Bear, Affected Environment). For these reasons, and in response to public comments as well as to meet requirements in the 2012 Planning Rule, habitat quality and connectivity were important considerations in developing the revised plan. As a result, the revised plan contains over 20 plan components that speak to the desire for managing to maintain or promote connectivity: FW-DC-WTR-02, FW-DC-WTR-10, FW-DC-VEGF-06, FW-DC-VEGF-09, FW-GDL-VEGF-02, FW-DC-VEGNF-04, FW-DC-WL-05, FW-DC-WL-07, FW-GO-WL-02, FW-GO-WL-03, FW-GO-WL-05, FW-GDL-WL-01, FW-GDL-WL-02, FW-GDL-WL-03, FW-DC-WLSG-01, FW-GO-WLSG-01, FW-DC-WLGB-02, FW-GO-WLGB-01, FW-DC-WLWV-01, FW-GDL-RT-13 and FW-DC-LAND-01. In addition, the revised plan contains desired conditions for wildlife that speak to species distribution (FW-DC-WL-01); habitat security, ability to find refuge, and freedom of movement for wildlife (FW-DC-WL-04); plus, structural, and functional diversity near national forest boundaries that facilitates wildlife movement across administrative boundaries (FW-DC-WL-06). The revised plan carries forward key linkage areas for wildlife, with associated plan components to maintain or restore wildlife habitat connectivity (FW-DC-WL-07; FW-STD-WL-02; FW-GDL-WL-03 through 05; FW-SUIT-WL-01). Finally, the revised plan carries forward a goal to work across boundaries with highway managers, landowners, and other entities to implement wildlife crossings to reduce vehicle collisions with wildlife (FW-GO-RT-03).

Commensurate with the wide variety of plan components for connectivity, effects analyses for connectivity were woven throughout the environmental impact statement (Chapter 3) in the following sections: Watershed, Aquatics, and Riparian Resources; Terrestrial Vegetation; Wildlife Diversity - Federally Listed Species: Canada Lynx, and Grizzly Bear; General Wildlife: Bighorn Sheep, Big Game (moose, elk, deer), Bison and Wolverine; as well as an entire section on habitat Connectivity. The national forest partnered with the Center for Large Landscape Conservation to evaluate habitat connectivity on the Custer Gallatin, and identify potential connectivity corridors. This effort helped inform analysis for the draft and final environmental impact statements, facilitated development of numerous plan components to maintain or restore connectivity, and helped to identify and design plan components to protect key linkage areas.

#### Environmental Impact Statement Analysis

**Concern:** Commenters requested additional detail and clarity in portions of the environmental impact statement analysis. Specific areas of concern included the potential effects of increasing recreation, effects of backcountry areas and recreation emphasis areas near key linkage areas, how other plan land

allocations could support connectivity, the adequacy of "rest periods" in vegetation management, the potential for wildlife conflicts due to grazing allotments near known wildlife corridors, and the potential for corridors to increase disease transmission in big game species. Comment also noted an apparent inconsistency in how connectivity is discussed for grizzly bears.

**Response:** Based on comments raising concern about the effects of recreation on wildlife habitat connectivity, plan components were modified to focus restrictions in key linkage areas more on limiting expanding capacity for recreation uses (FW-DC-WL-07, FW-STD-WL-02, FW-GDL-WL-03 and FW-SUIT-WL-01). The final environmental impact statement expanded analysis to cover issues raised by commenters, such as consideration for increasing recreation impacts, and juxtaposition of designated areas with plan land allocations, including key linkage areas (Chapter 3. Connectivity, Effects of Revised Plan Alternatives).

The environmental impact statement (Chapter 3. Connectivity) addresses effects of permitted livestock management on habitat connectivity. There is no evidence that grazing livestock present barriers to wildlife movement. However, the revised plan does contain components to minimize grazing impacts on important wildlife habitats such as riparian areas and winter range (FW-STD-GRAZ-01; FW-GDL-GRAZ-01 through 05), as well as guidelines for grazing infrastructure to facilitate wildlife movement (FW-GDL-GRAZ-07 and 08).

The revised plan contains a guideline to implement periods of no major activity in key linkage areas (FW-GDL-WL-05). The environmental impact statement disclosed that this plan component was based at least partially on existing land management plan timing and re-entry standards for grizzly bears and elk, citing research indicating that these species avoid areas of high disturbance, but typically return soon after management actions are complete (Chapter 3. Connectivity, Effects of Revised Plan Alternatives). The comment appreciated that the provision is based on science, but concerned that the research cited did not recommend a specific "rest regime." Custer Gallatin National Forest personnel are unaware of any science that recommends a specific "rest regime" that would accommodate any particular species, let alone multiple species, and the commenter provided no such reference.

The concern regarding how connectivity is addressed for grizzly bears appears to be unrelated to the decision being made, as neither the revised plan nor the environmental impact statement indicate or infer that ecological linkage is not important for grizzly bears. All alternatives for the revised plan include a desired condition that availability of secure habitat contributes to habitat connectivity, which facilitates grizzly bear movement between the Greater Yellowstone Area and other grizzly bear ecosystems (FW-DC-WLGB-02), along with a goal that the Forest Service works with State, Federal, Tribal, and other willing partners to address the issue of habitat connectivity between grizzly bear ecosystems, with the long-term goal of achieving successful dispersal of grizzly bears between ecosystems, and ultimately increasing the genetic diversity and long-term health of grizzly bears inhabiting the Custer Gallatin National Forest (FW-GO-WLGB-01).

The revised plan would apply a food storage order to ensure human-related attractants are not available to grizzly bears, not only in areas where grizzly bears presently occur, but also in areas where continued grizzly bear expansion would facilitate connectivity between grizzly bear ecosystems (FW-STD-WL-01). The revised plan would preclude permitted grazing of domestic sheep and goats for livestock production purposes (FW-STD-GRAZ-02), not only within the Yellowstone Grizzly Bear Recovery Zone as in existing plans, but throughout the entire montane ecosystem, which is where grizzly bears have been expanding

and are expected to continue to expand, eventually with the potential to disperse from the Greater Yellowstone Ecosystem to other ecosystems. Inside the recovery zone, standards and guidelines would help maintain secure habitat levels, limit livestock grazing use, and concentrate human uses (FW-STD-WL-01, FW-STD-WLGB-all, FW-GDL-WLGB-all) to reflect conditions that have facilitated increased numbers and distribution of grizzly bears across the Custer Gallatin over time. These conditions would facilitate continued grizzly bear expansion, which eventually could lead to successful grizzly bear dispersal between ecosystems. Finally, the revised plan includes the concept of managing parts of the national forest as key linkage areas for maintaining or restoring habitat connectivity to promote movement and dispersal of wide-ranging species such as grizzly bears (Environmental Impact Statement, Chapter 3. Grizzly Bear, Effects of Revised Plan Alternatives).

The environmental impact statement disclosed that connectivity and associated intermingling of wild animals from different herds, at least for bighorn sheep, can result in increased disease spread and/or influence herd susceptibility to disease (Environmental Impact Statement, Chapter 3. Bighorn Sheep, Affected Environment). However, mixing of herds or metapopulations is generally beneficial for genetic diversity and associated resilience of species, and plan components to maintain or restore ecological integrity including connectivity, are required under the 2012 Planning Rule (36 CFR 219.8).

#### Highway Passage

**Concern:** Comment noted that highways pose barriers to wildlife movement and requested that the Forest Service develop plan components to promote permeability of highways adjacent to the national forest. Comment suggested the revised plan include a desired condition for the Custer Gallatin to be a leader in the developing wildlife safe passages and measures on highways (including I-90) constructed in migration corridors on the national forest.

**Response:** Plan components must be within agency authorities (FSH 1909.12, section 22.1). Highways adjacent to the national forest are outside Forest Service authority. Desired conditions describe characteristics of the plan area, rather than management (FSH 1909.12, section 22.11). However, the revised plan does contain desired conditions for landscape patterns that provide habitat connectivity to facilitate daily and seasonal movement, as well as long-range dispersal of wildlife, including across administrative boundaries (FW-DC-WL-05, 06). The plan also includes goals for the Custer Gallatin to coordinate with other Federal, State, and local agencies; Tribes; and adjacent landowners to provide for habitat connectivity across administrative boundaries (FW-GO-WL-02, 03), including a specific goal to work cooperatively to implement wildlife highway crossings to reduce wildlife mortality and improve public safety (FW-GO-RT-03).

#### Key Linkage Areas

**Concern:** Comment requested additional clarity on plan direction and analysis for key linkage areas, including a note in the plan that the more restrictive direction applies, a discussion of what restrictions apply specifically to key linkage areas when they do not overlap with other land designations, discussion of what and where the key linkage areas would be, and analysis of habitat quality within key linkage areas. Comment supported alternative E, which has no key linkage areas or associated plan components and expressed concern that key linkage area is a new designation category not codified in 36 CFR part 219.

**Response:** The key linkage area concept was introduced to address the 2012 Planning Rule requirement that the land management plan must include direction to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems, including plan components to maintain or restore connectivity (36 CFR 219.8(a)). The key linkage area proposed in alternatives B, C, D, and F is, in essence, a management area, which represents the management emphasis on a landscape basis (FSH 1909.12, section 22.21). Every plan must have management areas or geographic areas or both. The plan may identify designated or recommended designated areas as management areas or geographic area (36 CFR 219.7(d)). Some commenters noted difficulty in following the effects analysis for key linkage areas given the many permutations and combinations of area designations, plan land allocations, and associated plan components for several different alternatives. The revised plan explains that more than one designation or allocation may be assigned to a particular place, and states that where plan land allocations overlap, the more restrictive guidance applies (Revised Plan, Chapter 2. Designated Areas and Plan Land Allocations). Nevertheless, the Custer Gallatin acknowledges a high level of complexity associated with explaining potential implications for multiple species over a large landscape with a variety of possible land use designations and allocations combined with varying management restrictions and allowances in portions of the key linkage areas. An attempt was made to clarify the analysis in the final environmental impact statement (Chapter 3. Connectivity, Effects of Revised Plan Alternatives), particularly for alternative F. Maps of key linkage areas are included in revised plan appendix B.

#### Modeling

**Concern:** Comment expressed concerns with the connectivity modeling, and suggested that the Custer Gallatin provide greater detail on the analysis used to assess important areas of connectivity and discuss its limitations. Comment stated that the analysis extent of 100 miles around the national forest boundary is arbitrary, which was not acknowledged in appendix B, nor was there any explanation as to why broader scales were not considered. A main concern with the connectivity modeling process used for the revised plan environmental impact statement is that the human modification index used in the computer model did not factor recreation-related infrastructure (trails and recreation sites) into the modeling parameters for core habitat values. Comment suggested that had recreation infrastructure been incorporated in the model, the key linkage area allocations may have been different than that ultimately proposed in the revised plan.

**Response:** Connectivity modeling was described in greater detail in appendix B of the environmental impact statement. Computational limitations were one reason for truncating the analysis area boundary at 100 miles from the national forest boundary. However, the selection of 100 miles was not arbitrary. As stated in the environmental impact statement, the 2012 Planning Rule (36 CFR 219.8 (a)(ii)) requires consideration of plan area contributions within the broader landscape, by considering existing conditions outside the national forest boundaries that may influence the plan area's ability to maintain or restore ecological integrity. The 100-mile radius used for the connectivity assessment was used to meet the requirements for broad-scale considerations imposed by the 2012 Planning Rule, and was based upon the average and maximum dispersal distances of wide-ranging wildlife species. This explanation was added in the final environmental impact statement (Chapter 3. Connectivity, Analysis Area). A detailed description of the modelling process used to evaluate habitat connectivity for the Custer Gallatin land management plan revision, has been published in a peer-reviewed, scientific journal (Williamson et al. 2020). This publication was not available for the draft environmental impact statement, but has been cited in the final environmental impact statement.

The human modification index in the model used to assess habitat connectivity in the environmental impact statement was consistent with habitat connectivity and wildlife corridor modeling efforts found in scientific literature (Environmental Impact Statement, Chapter 3. Connectivity, Affected Environment). Whereas major permanent developments such as paved roads, residential areas, and agricultural conversions were the basis for human modification in the habitat connectivity model, disturbance of wildlife due to human presence, such as that associated with recreation infrastructure was considered as a factor affecting wildlife behavior and movement (Environmental Impact Statement, Chapter 3. Connectivity, Environmental Consequences, Effects of Infrastructure). Based on the multitude of public comments received combined with agency expertise, consideration of human disturbance impacts associated with recreation use resulted in changes to guidelines associated with key linkage areas (FW-GDL-WL-03), along with further discussion in the final environmental impact statement (Chapter 3. Connectivity, Effects of Recreation Management). Rationale for location and configuration of key linkage areas was provided (Environmental Impact Statement, Chapter 3. Connectivity, Effects of Revised Plan Alternatives), and other important linkage areas on the Forest were acknowledged, but none have the unique ecological characteristics or management concerns as landscapes identified as key linkage areas. Therefore, adding recreation infrastructure to the connectivity modeling parameters for human modification would not change the location or overall configuration of the key linkage areas from that identified in the draft plan.

#### Monitoring and Adaptive Management

**Concern:** Comment suggested that the Custer Gallatin should monitor the efficacy of plan components in promoting connectivity and create a plan for adaptive management, particularly including monitoring items to address the impacts of recreation on wildlife habitat connectivity. Comment requested a monitoring plan establishing thresholds that trigger management adjustments.

**Response:** The purpose of land management plan monitoring is to evaluate the effectiveness of plan direction and determine whether changes to plan components are needed (FSH 1909.12, section 30.2). Land management plans guide and constrain future Forest Service project and activity decision-making; plan components alone cannot prohibit public uses on National Forest System lands (FSH 1909.12, section 21.8). Therefore, there is no clear land management plan mechanism to monitor the impacts of public recreation on wildlife or habitat connectivity. Plan components should not compel processes such as analysis, assessment, planning, inventory, or monitoring, and are not commitments to act (FSH 1909.12, sections 22.1 and 22.13). However, it is important to understand the effects of recreation on wildlife, and to that end, the revised plan contains a goal to engage with partners to conduct ecological research, improve or coordinate inventories and monitoring, and expand data and knowledge collection where needed (FW-GO-WL-04).

#### Permitted Livestock Grazing Allotments

**Concern:** Comment stated that decisions about grazing allotments should not be linked to key linkage areas, because domestic animals could be better at improving ecological conditions. Other comment expressed concern that grazing infrastructure can affect wildlife movement, and suggested the Forest Service adopt a standard for all livestock grazing permits requiring "let-down" fencing and remove barriers that impede wildlife migration

**Response:** While the revised plan would limit certain types of new recreation development, it would not prohibit management actions such as permitted livestock grazing allotments, in key linkage areas, but

rather, would require that considerations be made for maintaining or restoring wildlife habitat connectivity when planning and implementing future decisions in key linkage areas (FW-GDL-WL-04). The notion that domestic animals could be better at improving ecological conditions was not supported by scientific evidence in this comment. The revised plan contains a general guideline that management actions should not create movement barriers to wide-ranging species (FW-GDL-WL-01) and that new and reconstructed fences should be located and designed to minimize collision hazards for wildlife and to prevent barriers to wildlife movement (FW-GDL-GRAZ-07). These components show the intent to provide landscapes that are permeable to wildlife and that fences used to manage livestock grazing on the national forest do not create barriers to wildlife movement.

#### Plan Components

**Concern:** Comment stated the existing plan components are not adequate to support the desired condition for connectivity; there should be a separate connectivity section in the revised plan, including standards, guidelines, goals, and objectives; and terms such as "barrier" should be defined.

**Response:** The 2012 Planning Rule requires that land management plans be integrated, and states that the plan must contain components, including standards or guidelines, for integrated resource management to provide for ecosystem services and multiple uses in the plan area (36 CFR 219.10(a)). Connectivity is addressed in an integrated fashion in the revised plan, with complementary coarse-filter and fine-filter components, as well as resource-specific components for connectivity. Organization of the planning document has no bearing on agency requirements to follow plan direction.

Directives for implementing the 2012 Planning Rule state that desired conditions may be the same as existing conditions, so efforts to manage for the desired condition would focus on maintaining those conditions (FSH 1909.12, section 22.11). The environmental impact statement demonstrates that habitat connectivity within the national forest boundaries is generally high, based on the inherent capability of the land. For example, the montane ecosystem provides generally high-value habitat connectivity for alpine-associated species and forested habitat species, while the pine savanna ecosystem provides high habitat connectivity for grassland species and forest species. Habitat connectivity for shrubland species is generally low across the Custer Gallatin because shrub habitats typically occur as small, dense thickets, narrow bands, or irregular patches due to natural ecological conditions. Finally, habitat connectivity is high for generalist species across the entire national forest, indicating a heterogeneous landscape with a high degree of diversity. The point being that habitat connectivity within the national forest boundaries is generally high for a wide range of wildlife species (Environmental Impact Statement, Chapter 3. Connectivity, Affected Environment). Therefore, many of the desired conditions for connectivity are met by existing conditions, and no additional components are needed to effect change. Plan direction is consistent with the 2012 Planning Rule requirement to maintain or restore ecological integrity, including connectivity (section 219.8).

Plan objectives are measurable and time-specific statements of anticipated progress toward a desired condition or conditions (FSH 1909.12, section 22.12). Revised plan objectives for habitat improvement projects (FW-OBJ-WL-01, 02) could be used to maintain or restore habitat connectivity if a need is identified. At present, there are few management-related barriers to movement of wide-ranging species on National Forest System lands within the Custer Gallatin National Forest, and some of those that are present are intended to provide for public safety. Comments cited no specific locations or conditions on National Forest System lands within the national forest boundary that need management actions to

maintain or restore habitat connectivity, other than to suggest that recommended wilderness allocation is the only way to maintain habitat connectivity in some areas, which is not supported by scientific evidence. Plan components guide the development of future projects and activities, and are not commitments to act (FSH 1909.12, section 22.1), so by definition, they may not include mandates to accomplish particular actions. The plan monitoring program (Revised Plan, Chapter 4. Monitoring Program) provides the feedback for the Custer Gallatin planning cycle by testing assumptions, tracking relevant conditions over time, measuring management effectiveness, and evaluating effect of management actions. The monitoring plan is a tool by which progress toward desired conditions can be measured. Monitoring information should enable Custer Gallatin personnel to determine if a change in plan components may be needed, forming a basis for continual improvement and adaptive management.

As noted in the environmental impact statement, conditions that present habitat suitability as well as barriers to movement, vary widely between species. It follows logically that landscape connectivity also differs by individual species, based on daily, seasonal and lifetime habitat needs (Environmental Impact Statement, Chapter 3. Connectivity, Introduction). Even though plan components focus on wide-ranging species of medium to large carnivores and wild ungulates, each species still has a range of biological needs based on age, sex, time of day, time of season, density dependence, changing conditions, reason for movement, and threats or disturbances in their environment. Further, management actions that may improve habitat connectivity for one species, may reduce habitat quality and connectivity for another. Fine-filter connectivity plan components for each species on the Custer Gallatin National Forest are not required under the 2012 Planning Rule, and would not be feasible, given the complexities of animal behavior and variety of conditions that may facilitate or hinder movement. Finally, there is a lack of empirical data to derive separate plan components to meet all life cycle needs for even a few species, such as forest carnivores and wild ungulates (Environmental Impact Statement, Chapter 3. Connectivity Affected Environment). The term "barrier" is defined in the revised plan (Glossary).

## Wildlife – Greater Sage-Grouse

### Compensatory Mitigation

**Concern:** Comment recommended that the revised plan should commit to using compensatory mitigation for sage-grouse habitat management.

**Response:** The limited amount of suitable sage-grouse habitat located within the national forest boundaries greatly restricts the potential opportunities for compensatory mitigation. The revised plan direction would allow for minor impacts to sagebrush habitats with vegetation management projects, provided that the impacts could be mitigated elsewhere (for example, through habitat improvement projects), or that the short-term impacts would result in a conservation gain over time (FW-STD-WLSG-01). Additional plan components would limit impacts to sage-grouse habitat through restrictions on certain types of development in priority or general sage-grouse habitat (FW-GDL-WLSG-03, 04, 06 and 07).

### Environmental Impact Statement Analysis

**Concern:** Comments from state wildlife management agencies, private organizations, and individuals expressed concern regarding the adequacy of the environmental impact statement analyses for greater sage-grouse. Comments included recommendations for additional factors and scientific references to



consider in the analyses. Primary topics of concern included seasonal habitat needs, risk factors, and habitat fragmentation.

**Response:** In response to comments, the environmental impact statement was expanded to provide additional baseline information on basic habitat needs, summer brood-rearing habitat, and other seasonal use patterns (Chapter 3, Greater Sage-grouse, Affected Environment). Additional information was provided about threats to sage-grouse and their habitats based on more local scientific information (Chapter 3, Greater Sage-grouse, Key Stressors). Effects analyses were expanded to clarify or add more information on requested topics (Chapter 3, 3, Greater Sage-grouse, Environmental Consequences: Effects of Current Plans, Effects off Revised Plan Alternatives, Effects of Terrestrial Vegetation Management, Effects from Plan Land Allocations, and Effects from Permitted Livestock Grazing). Many of the changes in the environmental impact statement were based upon information provided in comments, including the incorporation of additional local scientific references that are pertinent to sage-grouse habitat on the Custer Gallatin National Forest. Definitions of general and priority sage-grouse habitat are contained in the plan glossary, and effects analyses were based upon these definitions.

The Planning Rule requires that the responsible official shall use the best available scientific information to inform the planning process (36 CFR 219.3). The best available scientific information including widely accepted scientific literature, local research, and expert opinion, was used to develop baseline environmental conditions as well as to evaluate potential effects of the plan alternatives (Chapter 3, Greater Sage-grouse, Affected Environment and Environmental Consequences). References were cited in text, and full citations are listed in the References Cited section (volume 2). Additional baseline data, such as improved weed inventories, or added monitoring for possible lek occupation, were not available to improve analyses between draft and final versions of the environmental impact statement. While such information would undoubtedly be useful, the 2012 Planning Rule does not require that planning develop additional scientific information, but rather should be based on scientific information that is already available. In the context of planning, “available” means that the information currently exists in a form useful for the planning process without further data collection, modification, or validation (FSH 1909.12, Chapter – Zero Code; 07.1 – Use of Best Available Scientific Information).

#### Limit Human Use

**Concern:** Comment expressed concern that human use and recreation causes disturbance to sage-grouse, and associated development (such as trails and other facilities) can impact sage-grouse through habitat fragmentation.

**Response:** The revised plan contains a number of plan components to limit the potential impact of recreation on sage-grouse. For example, to avoid adding disturbance and mortality risk of sage-grouse, new recreation facilities such as roads, fences, campgrounds, and picnic areas should not be constructed in priority or general sage-grouse habitat unless the development results in a net conservation gain to the species and its habitat (FW-GDL-WLSG-04). Dispersed opportunities are available across the Custer Gallatin for a wide variety of recreationists where compatible with environmental resources, cultural resources, recreation settings, and social interactions such as use conflicts and crowding (FW-DC-RECDISP-01). The allowance of special use permits will be determined on a site- and condition-specific basis in accordance with applicable laws and regulations.

## Monitoring Plan

**Concern:** Comment questioned efficacy of the proposed monitoring plan for sage-grouse, stating that as a monitoring requirement, the ongoing population trends of sage-grouse on the Custer Gallatin need to be provided yearly to the public, so the public can understand if claimed conservation measures are working for this species.

**Response:** There are currently no active leks on the Custer Gallatin, and there have been none for some time. Detection of active attendance could indicate an increase in population in the area. The implementation indicator for the acres of change in priority and general habitat has been updated to use: Number of acres of habitat lost through management actions in designated greater sage-grouse priority and general habitat. Monitoring data outlined in the monitoring plan for sage-grouse will be compiled and analyzed every two years.

## Permitted Livestock Grazing Management

**Concern:** Comments indicated plan components were insufficient to address impacts to sage-grouse from livestock grazing management.

**Response:** The revised plan contains a number of plan components to limit the potential impact of livestock grazing on sage-grouse. For example, vegetation management projects to improve forage for livestock could not cause a net loss of general or priority sage-grouse habitat (FW-STD-WLSG-01). New range management structures (such as fences, stock tanks, etc.) would be designed and located to be neutral or beneficial to greater sage-grouse (FW-GDL-WLSG-06). Fences would not be constructed in priority or general habitat unless it results in a net conservation gain (FW-GDL-WLSG-04). New and reconstructed fences would be located and designed to minimize collision hazards for wildlife and to prevent barriers to wildlife movement (FW-GDL-GRAZ -07). New or reconstructed water developments would be designed to be wildlife-friendly and to facilitate animal escape (FW-GDL-GRAZ-08). The revised plan allows for new livestock developments provided all of the previously listed plan components are met.

## Plan Components

**Concern:** Comments expressed concern regarding the adequacy of plan components for sage-grouse. Some comments expressed concern that proposed plan components are too vague and need clarification, while others requested additional plan components to further restrict future management actions, or to add very specific (prescriptive) measures to existing or new plan components. Comment indicated that guidelines are not adequate to protect sage-grouse habitat and should be changed to standards. Some comments supported the sage-grouse plan components.

**Response:** In response to comments, some plan components for sage-grouse were modified. The proposed standard for “no net loss” of sage-grouse habitat due to vegetation management actions (FW-STD-WLSG 01) was modified by changing the words “be beneficial” to “result in a net conservation gain.” This change was made to be more consistent with existing State and Federal management plans for sage-grouse. A description of the no-net-loss concept for this standard was added to the environmental impact statement (Chapter 3, Greater Sage-grouse, Effects of the Revised Plan Alternatives). Monitoring implementation indicators (MON-WL-09) would be used to track effectiveness of plan components and consistency of application for project implementation over time.

The proposed guideline to minimize impacts from fire management tactics and strategies (FW-GDL-WLSG-01) was modified to clarify that the guideline applies to wildfire management as opposed to prescribed fire implementation. Prescribed fire projects in general and priority sage-grouse habitat would be subject to the no net loss requirement (FW-STD-WLSG-01), whereas wildfires would be managed so as to minimize impacts to sage-grouse habitat to the extent possible, given human safety considerations. Additional analysis was provided in the environmental impact statement (Chapter 3, Greater Sage-grouse, Effects from Fire and Fuels Management).

The proposed guideline to reduce invasion of non-native cheatgrass in sage-grouse habitat (FW-GDL-WLSG-02) was modified to include all undesirable grass species, to avoid degradation of sage-grouse habitat. In addition to this modification, other plan components address the important role that weeds play in potentially reducing the functionality of sage-grouse habitat (FW-GDL-WLSG-02 and 05). The revised plan includes desired conditions for native plant species to dominate the landscape, with minimal intrusion from non-native species (FW-DC-VEGNF-02), and contains objectives for weed treatment (FW-OBJ-INV-01), with a commitment to consider the potential impacts of weed management on at-risk species (FW-STD-INV-01). Additional analysis was provided in the environmental impact statement (Chapter 3, Greater Sage-grouse, Effects from Invasive Species Management).

The proposed guideline to remove or reduce “invading conifers” in sage-grouse habitat (FW-GDL-WLSG-05) was changed to remove or reduce “conifer encroachment.” This change was made to be more consistent with terminology used in ecological sciences, where “encroachment” refers to the process of native species moving into areas in the absence of disturbance, as opposed to “invading” species, which generally refers to establishment of non-native species, typically introduced through human intervention.

Guideline FW-GDL-WLSG-07 was modified to add mineral development along with restrictions on new energy developments in priority sage-grouse habitat. This change clarifies that the guideline applies to mineral operations such as hard-rock mining, as well as to energy developments such as oil and gas leasing, subject to valid existing and statutory rights. As with other plan components restricting management actions in priority habitat, this guideline is intended to minimize habitat fragmentation due to human development as well as limit disturbance of sage-grouse at or near lek sites.

Plan components must be written clearly, with clarity of purpose, and without ambiguity so that project consistency can be easily determined. However, plan components should not include explanatory narrative (FSH 1909.12, section 22.1). A plan may include optional content, such as explanatory narrative, management approaches, etc., but such optional content must not be labeled or worded in a way that suggests it is a plan component. Further, optional content must not include, or appear to include a “to do” list of tasks or actions (FSH 1909.12, section 22.4). For these reasons, suggestions to clarify plan language with explanatory material or include mandates for future actions were not adopted. Explanations and examples of how plan components could be met are provided in Management Approaches (plan appendix A).

Recommendations to add plan components that are more restrictive or highly prescriptive, were not adopted in the revised plan for a number of reasons. As noted in the environmental impact statement, the Forest Service accounts for only about 2 percent of the land ownership of sage-grouse habitat in the vicinity, and the Custer Gallatin represents a very small portion of those National Forest System lands in occupied sage-grouse habitat (Chapter 3, Greater Sage-grouse, Affected Environment). Since habitat is so

limited on the Custer Gallatin and many risks to sage-grouse habitat occur on lands outside the national forest boundary, it is beyond the inherent capability of the land to support long-term persistence of the species on the Custer Gallatin alone (Chapter 3, Greater Sage-grouse, Conclusion). The revised plan contains integrated direction (Environmental impact statement, Volume 3, Appendix C, Species of Conservation Concern) that would maintain or restore ecological conditions on the Custer Gallatin to contribute to persistence of sage-grouse within their range, while allowing for other multiple uses. The addition of highly prescriptive plan components would unnecessarily limit other valid uses of National Forest System lands, while doing little to contribute to range-wide species conservation.

The standard for no net loss of general or priority sage-grouse habitat (FW-STD-WLSG-01) addresses most issues or concerns for which additional plan components were requested by commenters. Further information regarding potential mitigation measures and restoration methods to achieve no net loss are provided in Management Approaches (plan appendix A). Highly prescriptive plan components such as forestwide minimum sagebrush canopy cover requirements, were not adopted because ecological conditions vary across sage-grouse habitat on the Custer Gallatin, affecting the inherent capability of the area to produce sagebrush canopy cover (Environmental impact statement, Chapter 3, Greater Sage-grouse, Affected Environment). Other prescriptive measures were not adopted for similar reasons. Ecological variation limits the effectiveness of highly specific measures, and highly prescriptive components are less adaptive to changes in environmental conditions and emerging scientific information. Some of the scientific information provided in comments was included as reference material in Management Approaches for consideration in project design and implementation.

Revised plan guidelines for sage-grouse address concerns raised in comments regarding impacts from fire suppression, establishment of non-native annual grasses, powerline infrastructure, recreation facilities, conifer encroachment and invasive species, range management infrastructure, and new energy and mineral developments (FW-GDL-WLSG-01 through 07). Revised plan guidelines would restrict new infrastructure associated with powerlines, recreation, energy, and mineral developments in priority habitat, which would protect sage-grouse leks from habitat alteration, as well as noise and disturbance associated with these uses. Guidelines place constraints on future projects and activities that allow for departure from terms only if the purpose of the guideline is met (36 CFR; 219.15(d)(3)). In other words, compliance with guidelines is not optional, and the intent of each guideline must be met at the project level.

General wildlife components to protect airborne species from wind energy development (FW-GDL-WL-07) address concerns expressed for sage-grouse, and plan components for permitted livestock grazing would require considerations for wildlife that would reduce the risk of impacts to grouse from fences and livestock water developments (FW-GDL-GRAZ-07 and 08). In addition to sage-grouse-specific direction, revised plan direction for vegetation management would further address concerns expressed about habitat fragmentation (FW-GDL-VEGNF-03 and 04). Given the limited amount of priority and general habitat located on the Custer Gallatin National Forest, the collection of ecosystem- and species-specific components in the revised plan were deemed adequate to maintain or restore ecological conditions to provide for the long-term persistence of greater sage-grouse on the national forest, without adding more specific or prescriptive plan components.

#### Protection Excessive

**Concern:** Comment indicated that proposed protections are too excessive for protecting sage-grouse habitat, given that the species does not warrant protection under the Endangered Species Act.

**Response:** The Forest Service Regional Forester has identified greater sage-grouse as a Species of Conservation Concern for the Custer Gallatin National Forest, due to a determination that the best available scientific information indicates substantial concern about the species' capability to persist over the long term in the plan area (36 CFR 219.9(c)). In addition to the coarse-filter plan components, specific plan components consistent with other State and Federal land management plans for this species, have been included in the revised plan to address the conservation of the species and habitat on the Custer Gallatin (FW-DC/GO/STD/GDL-WLSG).

#### Wildlife – Grizzly Bear

For readability, a number of topics in this section are divided into sub-categories of concern and responses.

#### Food Sources

**Concern:** Commenters expressed concern about quality and availability of natural food sources for grizzly bears, including a concern that the revised plan and environmental impact statement overstate the omnivorous tendencies of grizzly bears. Commenters applauded revised plan components for whitebark pine, elk, and bison as positive steps to ensure a continued natural food supply for grizzly bears, and praised the revised plan standard for proper food and attractant storage as a way to minimize bear-human conflicts as well as promote grizzly bear use of natural foods. Others claimed revised plan components were insufficient to provide a natural food supply that could support existing or increased bear populations. Other commenters said revised plan components and associated effects analyses were based on faulty science.

**Response:** The environmental impact statement categorizes grizzly bears as omnivores, referencing well over 200 different plant, animal, and fungi food items consumed by Yellowstone grizzly bears. However, it goes on to note that even though bears exhibit a high level of dietary variation, four key food groups provide essential sources of energy and nutrients for Yellowstone grizzly bears. Of the four key food groups, only two, ungulate biomass and whitebark pine, are known to be important food sources on the Custer Gallatin (Environmental Impact Statement, Chapter 3. Grizzly Bears, Introduction).

The revised plan contains components that would help maintain or restore whitebark pine and ungulate biomass as important food sources for grizzly bears (Revised Plan, Chapter 2. At Risk Plant Species, Forested Vegetation, Big Game and Bison). The Environmental Impact Statement describes how these and other plan components would provide ecological conditions needed to maintain natural food sources for grizzly bears (Environmental Impact Statement, Chapter 3. Grizzly Bear, Effects of the Revised Plan Alternatives). The revised plan contains monitoring items that address whitebark pine and big game populations, which are the two key food items known to be of high importance to grizzly bears on the Custer Gallatin National Forest (Revised plan, Chapter 4. Monitoring Program; At-risk Plant Species, Big Game, and Bison). A goal was added for the Forest Service to cooperatively support or assist in interagency efforts to monitor key grizzly bear food items (FW-GO-WLGB-04).

## Habitat Connectivity

Many commenters emphasized the importance of habitat connectivity for grizzly bears, expressing concern for a number of reasons:

### ***a. Genetic Exchange***

**Concern:** Comment stated habitat connectivity is crucial for genetic exchange between isolated grizzly bear populations to recover the population as a whole.

**Response:** The revised plan includes a desired condition that availability of secure habitat contributes to habitat connectivity, which facilitates grizzly bear movement between the Greater Yellowstone Area and other grizzly bear ecosystems (FW-DC-WLGB-02), along with a goal that the Forest Service works with State, Federal, Tribal and other willing partners to address the issue of habitat connectivity between grizzly bear ecosystems, with the long-term goal of achieving successful dispersal of grizzly bears between ecosystems, and ultimately increasing the genetic diversity and long-term health of grizzly bears inhabiting the Custer Gallatin National Forest (FW-GO-WLGB-01). The revised plan would apply a food storage order to ensure human-related attractants are not available to grizzly bears, not only in areas where grizzly bears presently occur, but also in areas where continued grizzly bear expansion would facilitate connectivity between grizzly bear ecosystems (FW-STD-WL-01). The revised plan would preclude permitted grazing of domestic sheep and goats for livestock production purposes (FW-STD-GRAZ-02), not only within the Yellowstone Grizzly Bear Recovery Zone as in existing plans, but throughout the entire montane ecosystem, which is where grizzly bears have been expanding and are expected to continue to expand, eventually with the potential to disperse from the Greater Yellowstone Ecosystem to other ecosystems.

### ***b. Key linkage areas***

**Concern:** Key linkage area concept and associated plan components were supported by many, but some commenters requested additional area allocations as key linkage areas and/or stronger restrictions in key linkage areas identified in the revised plan. Some questioned the science behind plan components for key linkage areas.

**Response:** The revised plan includes the concept of managing parts of the Custer Gallatin National Forest as key linkage areas to maintain or restore habitat connectivity to promote movement and dispersal of wide-ranging species such as grizzly bears (Environmental Impact Statement, Chapter 3. Grizzly Bear, Effects of Revised Plan Alternatives). The rationale for location and configuration of key linkage areas was provided (Environmental Impact Statement, Chapter 3. Connectivity, Effects of Revised Plan Alternatives), and other important linkage areas on the national forest were acknowledged, but none have the unique ecological characteristics or management concerns as landscapes identified as key linkage areas. The environmental impact statement disclosed that plan components for key linkage areas were based at least partially on existing land management plan timing and re-entry standards for grizzly bears and elk, citing research that these species avoid areas of high disturbance, but typically returned soon after management actions were complete (Chapter 3. Connectivity, Effects of Revised Plan Alternatives).

### ***c. Habitat connectivity movement and occupancy***

**Concern:** Comment stated habitat connectivity for grizzly bears requires areas suitable for movement and occupancy by male and female grizzly bears.

**Response:** Since current plans were first implemented, grizzly bear distribution has expanded substantially on the Custer Gallatin, including areas both within and outside the grizzly bear recovery zone. This expansion indicates that habitat quality and connectivity are suitable to support movement and occupancy by male and female bears in the larger, contiguous geographic areas of the national forest. Smaller, more isolated ranges, such as the Bridger Mountains, are recognized as having good potential to provide habitat connectivity for grizzly bears to move between the Greater Yellowstone Ecosystem and the Northern Continental Divide Ecosystems to promote genetic diversity. While isolated ranges may provide good opportunities for grizzly bear movement, the combination of relatively small size, narrow linear shape, proximity to various levels of human development, and high levels of human use, result in low likelihood of sustaining resident grizzly bears free of conflict situations and subsequent management actions (Environmental Impact Statement, Chapter 3. Grizzly Bear, Affected Environment). Research has shown that dispersal movements may occur more quickly and through suboptimal habitat conditions compared to movement within a home range (Environmental Impact Statement, Chapter 3, Connectivity, Effects of Revised Plan Alternatives). Alternative F would maintain good habitat connectivity for both movement and occupancy of grizzly bears within the larger, contiguous geographic areas of the Custer Gallatin, while smaller, isolated ranges to provide habitat connectivity for dispersal, even though they may not be optimal for residential occupation by grizzly bears (Environmental Impact Statement, Chapter 3. Grizzly Bears, Conclusion).

***d. Private land development and highway crossings***

**Concern:** Comment stated private land development and highway crossings are obstacles to habitat connectivity for grizzly bears.

**Response:** Plan components must be within agency authority (FSH 1909.12, section 22.1). The Forest Service does not have authority over activities on private lands or State and Federal highways. However, as indicated in the environmental impact statement, the revised plan alternatives contain a suite of components to provide habitat connectivity specifically for grizzly bears, but also for wildlife in general with an emphasis on wide-ranging species. These plan components include goal statements for the Forest Service to work cooperatively with other agencies and landowners to manage wildlife habitat for connectivity across administrative boundaries, to acquire lands or manage under conservation easements, and to implement wildlife highway crossing facilities to reduce collisions with vehicles (Environmental Impact Statement, Chapter 3. Grizzly Bear, Effects of the Revised Plan Alternatives; Effects of the Revised Plan Alternatives, Habitat Connectivity).

Livestock Impacts

Comments expressed concern over livestock impacts to grizzly bears citing a variety of issues:

***a. Remove livestock; stop predator control***

**Concern:** Comment stated all livestock must be removed from National Forest Service lands and predator control must be stopped so that grizzly bears are not removed due to livestock depredations.

**Response:** As noted in the environmental impact statement, domestic livestock allotments have declined on the Custer Gallatin. While there have been a few livestock depredations attributed to grizzly bears on the national forest in recent years, they have been isolated incidents that neither led to recurring conflicts nor resulted in grizzly bear removals (Chapter 3. Grizzly Bear, Affected Environment). Plan components must be in accord with agency authorities, and can neither make commitments to act, nor compel management actions (FSH 1909.12, section 22.1), therefore, plan components cannot mandate closure of active grazing allotments. Predator control is under the authority of Wildlife Services Division of the USDA Animal and Plant Health Inspection Service, and the Forest Service works cooperatively with this agency to address wildlife conflicts with domestic livestock on National Forest Service lands.

***b. Evaluate vacant livestock allotments for closure***

**Concern:** Comment stated the revised plan should include a suitability analysis of all vacant livestock allotments where grizzly bears are known to occur and evaluate for closure based on past non-compliance with land management plan standards and chronic conflict with grizzly bears.

**Response:** Plan components should not direct or compel processes such as analysis (FSH 1909.12, sections 22.13 and 22.14). However, the revised plan includes a goal (which does not compel action) to evaluate vacant allotments for a variety of resource needs, including continued use for livestock production as well as permanent closure for other resource reasons (FW-GO-GRAZ-02). The plan will identify lands that are not suitable for uses that are not compatible with desired conditions (FSH 1909.12, section 22.15). Animal unit month objectives vary by alternative based on potential future use of currently vacant allotments. Based on current policy, a vacant allotment may only be closed through a NEPA decision that must consider the cumulative effects of allotment closures across the entire planning area. When evaluating allotments for future closure, resource considerations could be based on such things as resource conflicts, conservation opportunities, or economic consideration (Chapter 3 Permitted Grazing, Effects that Vary Among Alternatives). As noted in the environmental impact statement, chronic livestock depredations by grizzly bears have not been an issue on the Custer Gallatin in recent years (Chapter 3. Grizzly Bear, Affected Environment).

***c. Domestic sheep***

**Concern:** Comment stated domestic sheep should not be permitted on National Forest Service lands where grizzly bears occurs, or in areas where grizzly bear use is expected to expand.

**Response:** The revised plan would not allow stocking of allotments with domestic sheep or goats for livestock production in areas currently occupied by grizzly bears or areas important for grizzly bear connectivity between ecosystems. Targeted use of domestic sheep or goats for weed treatment would be allowed with proper mitigation (Revised Plan, Chapter 2. Permitted Livestock Grazing, Standards). Inside the grizzly bear recovery zone/primary conservation area, domestic sheep or goats used for weed control would be removed if conflict with grizzly bears occurs, with no adverse actions for bears unless additional circumstances warrant removal of the bear(s) (FW-STD-GRAZ-03 and 04).



## Past Conditions

**Concern:** Comments claimed the analysis for grizzly bears ignored cumulative effects of past conditions dating back to European settlement of the Greater Yellowstone Area, current conditions on private lands, expected human population growth, and increased recreation demand.

**Response:** The revised plan is a programmatic document that does not directly authorize any action, rather, it establishes the sideboards for allowable activities throughout the life of the plan, estimated at approximately 15 years from signing. Therefore, the plan has no direct effects, but indirect effects of implementing the plan may have cumulative effects with other, unrelated actions. As noted in the environmental impact statement, the grizzly bear was listed as threatened in 1975 (Chapter 3. Grizzly Bear, Introduction), which implies past effects on the species, and the affected environment section also reflects impact of past human impacts on the species. The land management plan assessment, which established conditions and trends of resources used in developing plan components and facilitating effects analyses (FSH 1909.12, section 10.2), considered conditions prior to, and associated with European settlement of North America (Assessment, Wildlife, Grizzly Bear, Trends and Drivers). Effects of conditions on private lands, human population growth, and increased recreation demand were addressed in the final environmental impact statement (Chapter 3. Grizzly Bear, Affected Environment, Effects of Revised Plan Alternatives, Effects from Designated Areas and Plan Land Allocations).

## Protection

**Concern:** Comment stated that grizzly bears require the strongest and most protective measures possible to survive, and presented a number of concerns based on this basic premise. Specific issues related to this concern are outlined below in items a through i.

**Response:** The grizzly bear is federally listed under the Endangered Species Act as threatened, and the Custer Gallatin National Forest anticipated a high level of public interest in how the species would be addressed under the revised plan. As stated in the environmental impact statement (Chapter 3. Wildlife Diversity, Regulatory Framework), a variety of Federal laws, regulations, and policies affect wildlife and habitat management on National Forest System lands. The National Forest Management Act of 1976 (as amended) mandates that the Secretary (of Agriculture) shall promulgate regulations, under the principles of the Multiple-Use Sustained-Yield Act of 1960, to provide for a diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives, including coordination of outdoor recreation, range, timber, watershed, wildlife and fish, watersheds, and wilderness. The 2012 Planning Rule is based upon, and determined to be consistent with, this act.

The Code of Federal Regulations (section 219.9) adopts a complementary ecosystem- and species-specific approach to maintaining the diversity of plant and animal communities and the persistence of native species in the plan area. The plan must include components, including standards or guidelines, to maintain or restore the ecological integrity and diversity of ecosystems and habitat types throughout the plan area (section 219.9(a)). The national forest must demonstrate that plan components provide the ecological conditions necessary to contribute to the recovery of federally listed threatened and endangered species (section 219.9(b)).

The Endangered Species Act of 1973 (as amended) Section 7(a) requires that Federal agencies seek to conserve threatened species, and to ensure that the actions authorized, funded, or carried out by them

are not likely to jeopardize the continued existence of any threatened species or result in the destruction or adverse modification of habitat determined by the Secretary (of the Interior) to be critical for threatened species. There is no critical habitat designated for grizzly bears. The U.S. Fish and Wildlife Service proposed to designate critical habitat for grizzly bears in 1976, but the proposal was never finalized (Biological Assessment – Grizzly Bear: Habitat requirements and life history).

The regulatory framework established for forest planning clearly demonstrates the importance of wildlife and habitat resources on Federal lands, and mandates a high standard for consideration of federally listed species in coordination with other land uses. However, none of the applicable laws, regulations, or policies require that every possible measure be taken to optimize habitat conditions for threatened species at the expense of all other legitimate land uses. In fact, the laws are quite clear that threatened species must be managed in coordination with other uses.

Specific concerns cited supporting the position that grizzly bears require the strongest possible protections are listed below:

***a. Wilderness or recommended wilderness area allocation***

**Concern:** Comment stated only designated wilderness or recommended wilderness areas contain sufficient land use restrictions to allow grizzly bears to survive or expand. Commenters who expressed this concern advocated for selecting alternative D, many of whom noted the particular importance of the Hyalite-Porcupine-Buffalo Horn Wilderness Study Area for grizzly bears. Some said none of the alternatives go far enough to protect grizzly bears, requesting more wilderness restrictions.

**Response:** Plan components specific to managing grizzly bears would be much the same under all alternatives for providing secure habitat, limiting livestock grazing practices, and restricting new roads and permanent developments inside the grizzly bear recovery zone (Environmental Impact Statement, Chapter 3. Grizzly Bear, Effects of the Revised Plan Alternatives). Outside the recovery zone, alternative D is indeed the most restrictive in terms of land uses that would be dictated by land management plan allocation, since alternative D has the most recommended wilderness of any of the alternatives. However, as noted in the final environmental impact statement, restrictions in recommended wilderness can also limit management flexibility for habitat improvement projects, such as efforts to maintain or restore whitebark pine. The other revised alternatives include combinations of recommended wilderness and backcountry areas, which would also add plan restrictions in areas outside of the grizzly bear recovery zone (Environmental Impact Statement, Chapter 3. Grizzly Bear. Management Direction Under Revised Plan Alternatives). Over 44 percent of occupied grizzly bear habitat on National Forest System lands outside the recovery zone is in designated wilderness, which does not differ by alternative (Environmental Impact Statement, Chapter 3. Grizzly Bear, Affected Environment). The Forest Service considered a variety of land use allocations in areas occupied by grizzly bears, including the Hyalite-Porcupine-Buffalo Horn Study Area. All revised alternatives would add land management plan allocations of recommended wilderness or backcountry areas within and outside the recovery zone, that when combined with designated wilderness, would provide varying levels of habitat security for grizzly bears over the life of the plan (Environmental Impact Statement, Chapter 3. Grizzly Bear – Effects of the Revised Plan Alternatives).

***b. Current plans are adequate or too restrictive.***

**Concern:** While the majority of comments favored stronger protections for grizzly bears relative to existing plans, some said existing plans (alternative A) are adequate. Other comments stated that existing plan direction has been too restrictive on land uses, resulting in grizzly bear expansion that is unsafe for national forest recreationists, as well as leading to unacceptable grizzly bear conflicts on private land.

**Response:** The 2012 Planning Rule requires land management plans to provide the ecological conditions necessary to contribute to the recovery of federally listed threatened and endangered species (36 CFR 219.9(b)). All alternatives (including alternative A) would contribute to the recovery of grizzly bears by adopting recommendations from the Conservation Strategy for Grizzly Bears in the Greater Yellowstone Ecosystem. Grizzly bear plan components adopted from the conservation strategy would apply to a consistent geographic boundary, regardless of the status of the species, or the number of bears present on the Custer Gallatin National Forest. Alternative F strikes a balance to meet the requirements of the 2012 Planning Rule to contribute to the recovery of grizzly bears, while also providing for a wide range of human uses on the same landscape (Environmental Impact Statement, Chapter 3. Grizzly Bear, Conclusion).

**c. Recovery zone boundary is inadequate**

**Concern:** Comment stated the recovery zone boundary is inadequate and needs to be extended to include all areas grizzly bears currently occupy. Alternatively, all plan components applied within the grizzly bear recovery zone or primary conservation area must be applied outside the recovery zone in all areas grizzly bears occupy.

**Response:** Plan components must be within agency authority (FSH 1909.12, section 22.1). The Grizzly Bear Recovery Zone is designated by the U.S. Fish and Wildlife Service, and beyond the authority of the Forest Service to expand. Under all alternatives, most plan components specific to grizzly bears apply only within the grizzly bear recovery zone (or primary conservation area, which is the same geographic boundary). While the Forest Service has the authority to apply direction adopted from the Grizzly Bear Conservation Strategy to areas outside the grizzly bear recovery zone or primary conservation area, none of the alternatives incorporated this option. Commenters tended to key in on phrases such as “the revised plan alternatives contain no plan components *specific to grizzly bears* (emphasis added) that would restrict land management actions outside the recovery zone” (Environmental Impact Statement, Chapter 3. Grizzly Bear. Management Direction Under Revised Plan Alternatives). Commenters found this statement to be problematic. However, the 2012 Planning Rule requires that land management plans be integrated, and states that the plan must contain components, including standards or guidelines for integrated resource management to provide for ecosystem services and multiple uses in the plan area (36 CFR 219.10(a)). Habitat considerations for grizzly bears are addressed in an integrated fashion in the revised plan, with complementary coarse-filter and fine-filter components, for vegetation management, wildlife habitat in general, permitted livestock grazing, land management plan allocations, and other resource areas that provide management restrictions both within and outside of the grizzly bear recovery zone that would benefit grizzly bears. The environmental impact statement concludes that the entire spectrum of land management plan direction, including plan components specific to grizzly bears as well as general management direction, to be implemented in an integrated manner, would continue to contribute to the recovery of grizzly bears (Chapter 3. Grizzly Bear – Conclusion).

**d. Grizzly Bear Conservation Strategy direction inadequate**

**Concern:** Comment implied that incorporating direction from the Grizzly Bear Conservation Strategy would be inadequate to protect grizzly bears, because the conservation strategy and the most recent U.S. Fish and Wildlife Service delisting of the Greater Yellowstone Ecosystem grizzly bear population were overturned in a recent court decision.

**Response:** The environmental impact statement provides the rationale for incorporating direction from the Grizzly Bear Conservation Strategy, explaining that this strategy is based upon the best available scientific information for managing grizzly bears and their habitats in the Greater Yellowstone Ecosystem (Chapter 3. Grizzly Bear, Introduction). The 2018 District Court decision vacating the rule to delist the Yellowstone grizzly bear population refers to the 2011 Ninth Circuit Court of Appeals decision, which validated that the conservation strategy, when incorporated into legally binding land management plan direction, provides adequate regulatory mechanisms to maintain a recovered population of grizzly bears. This information was added to the final environmental impact statement (Chapter 3. Grizzly Bear, Effects of the Revised Plan Alternatives). See also response to Wildlife Grizzly Bear Science Basis.

***e. Incorporate Grizzly Bear Conservation Strategy direction***

**Concern:** Comment stated direction adopted from the Grizzly Bear Conservation Strategy must be explicitly stated in the revised plan, and not simply incorporated by reference.

**Response:** Management direction adopted from the Conservation Strategy for Grizzly Bears in the Greater Yellowstone Ecosystem, was explicitly written into revised plan components (Revised Plan, Wildlife, Grizzly Bear, Standards, Guidelines and Suitability). The intent is for the revised plan to be consistent with the conservation strategy, which is a dynamic document. If substantive changes are made to the conservation strategy, a land management plan amendment would be required to change the plan to reflect such changes in the future.

***f. Exceptions to grizzly bear plan components***

**Concern:** Comment stated exceptions to grizzly bear plan components for management purposes will result in unacceptable take of grizzly bears.

**Response:** Exceptions to habitat standards for grizzly bears are written into the conservation strategy as “Application Rules” that, if followed, will meet the intent of the strategy to conserve grizzly bears. Plan components mirror the conservation strategy by allowing for changes to secure habitat so long as reductions below baseline levels are replaced, temporary reductions in secure habitat on a limited basis for project implementation, consolidation of dispersed sites into new developed sites, and other various allowances. As explained in the environmental impact statement, such allowances would result in minor changes that would require mitigation, be temporary in nature, or serve to concentrate human uses, which may have negative impacts on individual bears, but effects would be limited in scope relative to the large landscapes used by grizzly bears. Whether such allowances would result in “take” and whether such take would be unacceptable are matters decided by law, and are to be determined by the U.S. Fish and Wildlife Service in consultation under the Endangered Species Act.

***g. Lack of standards prompt management actions.***

**Concern:** Comment stated the plan lacks habitat standards that would trigger or prompt management actions.

**Response:** Plan components can neither make commitments to act, nor compel management actions (FSH 1909.12, sections 22.1, 22.13, 22.14), therefore, plan components cannot contain thresholds that would trigger or prompt management actions as requested by commenters.

#### ***h. Inadequate grizzly bear habitat plan components***

**Concern:** Comment stated revised plan components to maintain habitat for grizzly bears are inadequate. The plan should include standards for road and trail density as well as standards limiting surface occupancy for mineral development.

**Response:** The revised plan contains standards to maintain secure habitat for grizzly bears (FW-STD-WLGB 01-03). The primary factor affecting secure habitat for grizzly bears is proximity to motorized access routes. Route densities are correlated to secure habitat in that areas of higher route densities have lower proportions of secure habitat. Constructing a new motorized route or reopening a previously closed motorized route would typically affect secure habitat, unless the new or reopened route is within 500 meters of an existing open route on both sides. Such an event would be rare, and would not likely have notable effects on road densities of concern for grizzly bears. Therefore, plan components to maintain secure habitat are adequate, and additional standards for motorized route density would have little added benefit for grizzly bears.

Further, authors cited by commenters to support the need for road density standards found that roads open to public use have the most impact on grizzly bear survival, and such roads are restricted by a number of plan components besides those adopted specifically for grizzly bears, as well as require review for consistency with travel management plans. Finally, the revised plan would retain monitoring items for road and trail densities (Revised Plan, Chapter 4. Monitoring Program, Grizzly Bear) as a useful index for evaluating habitat conditions within the grizzly bear recovery zone or primary conservation area (Biological Assessment, Grizzly Bears, Effects of the Revised Plan, Secure habitat). The revised plan is not undertaking an availability analysis for mineral or energy activities. No surface occupancy stipulations for leasable minerals are more appropriately determined in a site-specific analysis at the leasing decision stage. Grizzly bear plan components restrict new site developments inside the grizzly bear recovery zone or primary conservation area (FW-STD-WLGB-04, 05).

#### ***i. Inadequate monitoring requirements***

**Concern:** Comment stated monitoring requirements are inadequate, particularly for recreation impacts on grizzly bears, and fail to identify appropriate management responses.

**Response:** The revised plan includes monitoring items for grizzly bears, including MON-WL-03, to track the number, location, and resolution of wildlife-human conflicts related to improper storage of food attractants, and also to track the number and locations of outreach contacts through the Bear Aware program. Additional monitoring items (MON-WL-10 and 11) are included to track changes in secure habitat within and outside of the grizzly bear recovery zone, open and total motorized route densities inside the recovery zone, number, and capacity of developed sites inside the recovery zone, and acreage of livestock allotments open, vacant, or closed inside the recovery zone (Revised Plan, Chapter 4, Monitoring Program). These items will help Custer Gallatin managers track where and how often grizzly

bear-human conflicts are occurring, examine possible causes for conflicts, and evaluate how management trends may have contributed to increasing or decreasing trends in conflicts.

#### Recreation Impacts

**Concern:** Many commenters expressed concern for impacts of recreation on grizzly bears. While some indicated that plan components for grizzly bears adequately address recreation impacts, and a few indicated that revised plan components for grizzly bears are too restrictive on recreation, many said none of the alternatives go far enough to protect bears from recreation impacts including:

##### ***a. Bear-human conflicts***

**Concern:** Comment was generally supportive of plan components for food storage as a way to reduce conflicts, but many said components were inadequate to address increasing recreation demands and associated potential for increasing conflicts as both the grizzly bear and human populations increase and overlap.

**Response:** The revised plan includes a standard to apply a special order requiring proper storage of food and attractants, to reduce conflicts between wildlife (including grizzly bears) and humans. This plan component would ensure that proper attractant storage protocols are followed, not only in areas where grizzly bears currently occur, but also in areas important for connectivity between grizzly bear ecosystems as well. Land management plans guide and constrain future Forest Service project and activity decision-making, not actions of the public (FSH 1909.12, section 22.1). Revised plan components for grizzly bears limit Forest Service actions such as road building and construction of new developed sites (FW-STD-WLGB-01 through 05), which can influence recreation use through availability of access and amenities.

##### ***b. Impacts from mountain bikes and unregulated all-terrain vehicle use***

**Concern:** Comment stated impacts from mountain bikes and unregulated all-terrain vehicle use were not adequately addressed in the draft environmental impact statement, and additional restrictions or maximum recommended wilderness are the only ways to adequately protect bears from impacts associated with motorized and mechanized travel.

**Response:** Impacts from mountain bikes were not specifically addressed in the draft environmental impact statement. Plan components were added (Revised Plan, Chapter 2. Wildlife, Suitability; Backcountry Areas, Suitability) to address mountain bike use in certain areas, and the effects analysis was supplemented in the final environmental impact statement to address potential impacts (Environmental Impact Statement, Chapter 3. Grizzly Bear, Effects of the Revised Plan Alternatives, and Effects of Land Use Allocations). All motorized transport on the Custer Gallatin National Forest is regulated through travel management plans. However, commenters questioned compliance with existing regulations, so additional discussion of this issue was added to the final environmental impact statement (Chapter 3. Grizzly Bear, Affected Environment).

##### ***c. Grizzly bear developed sites plan components***

**Concern:** Comment stated new grizzly bear plan components for developed sites alluded to in the draft environmental impact statement could have adverse effects to grizzly bears and no net increase should be allowed.

**Response:** Grizzly bear plan components for developed sites changed between draft and final environmental impact statement, because the intent of the plan is to adopt direction from the Conservation Strategy for Grizzly Bears in the Greater Yellowstone Ecosystem. As noted in the draft environmental impact statement, the (2016) edition of the Conservation Strategy proposed a multi-agency review of baseline data for developed sites to identify potential solutions for increased visitor use and associated demand. The ensuing interagency review occurred concurrently with Custer Gallatin land management plan development, but no firm proposals for changing conservation strategy recommendations were available when the draft plan and draft environmental impact statement were published. To provide plan consistency with the conservation strategy, the preferred alternative developed sites plan components reflect pending changes to the Greater Yellowstone Ecosystem conservation strategy for grizzly bears (Revised plan, Chapter 2. Grizzly Bear, Developed Sites). The environmental impact statement disclosed that such changes may have minor impacts on individual bears, yet concluded that the proposed changes adopted in alternative F would contribute to grizzly bear recovery by concentrating human use in areas where grizzly bears have become accustomed to such conditions, while accommodating increased demand for visitor facilities to help regulate unmanaged dispersed use (Environmental Impact Statement, Chapter 3. Grizzly Bear, Effects of the Revised Plan Alternatives, Developed Sites).

**d. Over-snow use impacts**

**Concern:** Comment stated plan components are inadequate to address potential impacts to grizzly bears from over-snow use, and effects analysis failed to disclose potential impacts. Most comments specified snowmobile use in grizzly bear denning habitat as the main concern, but a few cited impacts from winter logging as well.

**Response:** The environmental impact statement addressed potential conflicts between snowmobile use and grizzly bear den sites, and the final environmental impact statement was updated with more current information (Chapter 3. Grizzly Bear, Effects from Land Use Allocations). As per the Grizzly Bear Conservation Strategy, the revised plan indicates that where otherwise allowed (for example outside of wilderness areas), over-snow use is suitable in grizzly bear habitat, unless a conflict occurs with grizzly bears at or near a den site, or new research identifies a previously unknown threat (Revised Plan, Chapter 2. Grizzly Bear, Suitability).

**e. Ski areas**

**Concern:** Comment stated ski areas and associated development result in habitat fragmentation that could impact grizzly bears and additional plan components are needed to address this impact.

**Response:** Effects of existing ski resorts on grizzly bears were not specifically addressed in the draft environmental impact statement, since no evidence has been presented that existing resorts have had adverse effects on grizzly bears. However, information was added in the final environmental impact statement to address this concern (Chapter 3. Grizzly Bear, Effects from Recreation).

**f. Special use permits**

**Concern:** Comment stated special use permits should have mandatory requirements to minimize adverse effects to grizzly bears.

**Response:** Plan components should not merely repeat agency policies (FSH 1909.12, section 22.1). Mandatory clauses in special use permits are already addressed by Forest Service policy.

#### Relocation Sites

**Concern:** Comment, notably Montana Fish, Wildlife, and Parks, supported the revised plan objective to identify relocation sites for grizzly bears. Other comment expressed confusion about the purpose of this objective, and still others stated the objective was too low, or should specifically require identification of grizzly bear relocation sites outside of the recovery zone/primary conservation area. Finally, comment was opposed to relocation of “problem” grizzly bears as a management tool, based on public safety concerns.

**Response:** The draft plan included an objective to identify suitable relocation sites for grizzly bears (Draft Plan, Chapter 2. Grizzly Bear, Objectives). This objective was supported by State wildlife managers, likely because the Forest Service has worked cooperatively with Montana Fish, Wildlife, and Parks on this issue for many years. However, the objective appeared to cause confusion among other commenters as to the purpose for the objective, which was not explained in the draft environmental impact statement. This objective was changed to a goal in the revised plan (FW-GO-WLGB-02), to emphasize the cooperative nature of the process for identifying suitable relocation sites for grizzly bears, and the purpose was explained in the final environmental impact statement (Chapter 3. Grizzly Bear, Effects of the Revised Plan Alternatives).

#### Roads Clarification

**Concern:** Commenter was concerned that the draft environmental impact statement analysis for grizzly bears indicated no new roads could be constructed in recommended wilderness areas. This commenter indicated their understanding is that, for locatable minerals, road construction is permissible in recommended wilderness until such time as Congress designates the area as wilderness and the area is subsequently withdrawn from mineral entry.

**Response:** The environmental impact statement contains an analysis for grizzly bears that addresses what types of management actions would be precluded in recommended wilderness areas (Chapter 3, Grizzly Bear, Effects from Plan Land Allocations), and notes that, even where mineral access is guaranteed by law, grizzly bear plan components would require mitigation for effects from new access related to mineral development inside the recovery zone (Chapter 3, Grizzly Bear, Effects from Energy and Minerals Management). See also C/R 528 Minerals Analysis.

#### Science Basis

**Concern:** Comment questioned or challenged the scientific basis for grizzly bear plan components, and requested disclosure of scientific information upon which certain plan components or effects analyses were based.

**Response:** The revised plan formally adopts habitat standards from the Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Ecosystem (Yellowstone Ecosystem Subcommittee 2016). This strategy was finalized in 2003, updated in 2007, and again in 2016. The conservation strategy was developed by an interagency team consisting of representatives from State and Federal wildlife and land management agencies, who brought a wealth of knowledge and experience to the table, and developed the conservation strategy using this combined expertise, as well as drawing upon the best available



scientific research and literature relative to grizzly bear management (Revised plan, Chapter 2. Grizzly Bear, Introduction; Environmental Impact Statement, Chapter 3. Grizzly Bear, Introduction).

As disclosed in the environmental impact statement, the wildlife effects analyses were based on an extensive review of the best scientific information available for purposes of documenting species' status, habitat relationships, potential threats, and response to management activities (Environmental Impact Statement, Chapter 3. Wildlife, Information Sources). Scientific information used in the analysis was referenced in the environmental impact statement, and included in a bibliography.

A considerable number of comments questioning or challenging the scientific basis for plan components or effects analysis were clearly critical of delisting the grizzly bear, and seemed to conflate the delisting process with the revised plan, as evidenced by frequent references to quotes, graphs, or publications that do not appear in any of the Custer Gallatin planning documents. These comments are unrelated to the decision being made. Plan components must be within agency authority (FSH 1909.12, section 22.1). The Forest Service does not have authority to delist a federally listed species.

Many of the comments critical of the science used in the revised plan failed to provide examples of other published work to consider, did not indicate how a particular critique was relevant to the plan components or associated effects analysis, or did not provide recommendations on how either the plan components or effects analyses could be improved. Much of the literature presented by commenters as best available scientific information was consistent with analyses presented in the environmental impact statement, while other citations supported comments that were not specific to the sufficiency of proposed plan components.

#### Secure Habitat

**Concern:** Comment claimed that the definition of "secure" habitat adopted by the plan is unsubstantiated by any referenced scientific research, and that the minimum patch size is far too small and should be 720 acres.

**Response:** The environmental impact statement cited a number of peer-reviewed scientific publications supporting the definition of secure habitat adopted from the grizzly bear conservation strategy (Environmental Impact Statement, Chapter 3. Grizzly Bear, Affected Environment). A key part of the secure habitat definition is distance from motorized access routes, which is based upon research regarding grizzly bear avoidance of roads in the Greater Yellowstone Ecosystem. A citation for this work has been added in the final environmental impact statement. The 10-acre minimum patch size for secure habitat is a reasonably sized area that is useable by an individual grizzly bear, and represents the minimum size area that would be protected by plan components for secure habitat. Had the minimum patch size for secure habitat been much larger, say for example 720 acres as suggested by the commenter, it would mean that any patches up to 720 acres of habitat otherwise "secure" for bears based upon distance from motorized routes, could be eliminated by road-building with no apparent effect on bears and in compliance with plan components to maintain secure habitat. Therefore, the smaller patch size is more conservative in terms of limiting new road construction. This explanation has been added to the final environmental impact statement. The environmental impact statement refers to a computer model used to calculate secure habitat, and discloses that, like all models, it is based upon a set of assumptions, and outputs are only as accurate as the data fed into the model (Environmental Impact Statement, Chapter 3. Grizzly Bear, Affected Environment).

### Native American Involvement

**Concern:** Comment suggested that Native American Indians should have more input to the management of grizzly bears, because Native Americans were here first, have a spiritual connection to grizzly bears, and have better management ideas than most Eurasian/Caucasian people in the United States.

**Response:** Plan components must be within agency authority (FSH 1909.12, section 22.1). The Forest Service does not have authority to mandate Tribal input or involvement in grizzly bear habitat management on the Custer Gallatin. However, the revised plan contains a number of goals (FW-GO-WL-01 through 05; FW-GO-WLGB-01) that encourage Forest Service cooperation and collaboration with Tribes and other stakeholders to achieve recovery of listed species, provide for habitat connectivity across jurisdictions, acquire lands where available, conduct research, disseminate information and address issues of habitat connectivity with the express purpose of achieving successful dispersal of grizzly bears between ecosystems.

### Where Plan Components Apply

**Concern:** Commenters were unclear about where the grizzly bear plan components apply and asked for clarification and better maps showing the grizzly bear recovery zone, primary conservation area, bear management subunits, and bear analysis units.

**Response:** Clarification was provided in the Revised Plan (Ch. 2. Grizzly Bear, Introduction) and maps are included (Plan appendix B).

### Wildlife – Lynx

#### Adequacy of Northern Rockies Lynx Management Direction

**Concern:** Comment suggested that continuing to rely only on guidance from the Lynx Conservation Assessment and Strategy and the Northern Rockies Lynx Management Direction is insufficient to provide adequate protection for the lynx and its habitat. Comment requested the revised plan also add specific objectives, standards, or guidelines.

**Response:** The Lynx Conservation Assessment and Strategy provides conservation measures that are meant to synthesize and interpret evolving scientific information, and as such was used as a reference in the environmental impact statement (Chapter 3. Canada Lynx, Introduction, Affected Environment, Effects of the Revised Plan Alternatives). The Northern Rockies Lynx Management Direction was incorporated into the revised plan in its entirety (FW-STD-WLLX-01). The 2012 Planning Rule calls for integrated plan content, meaning the land management plan must contain components, including standards or guidelines, to provide for ecosystem services and multiple uses in the plan area (36 CFR 219.10(a); FSH 1909.12, section 22). Plan components developed for ecosystem integrity and ecosystem diversity are expected to provide for ecological conditions necessary to contribute to the recovery of federally listed threatened and endangered species (FSH 1909.12 section 23.13). The revised plan includes coarse-filter components, including desired conditions, standards, and guidelines for riparian management zones, vegetation management, fire and fuels management, wildlife management, livestock grazing, energy and minerals exploration and development, infrastructure management, and recreation management. These coarse-filter components, combined with fine-filter plan components adopted from the Northern Rockies Lynx Management Direction, provide the ecological conditions necessary to contribute to lynx recovery.

The environmental impact statement was modified to provide more integrated analysis of the incorporated Northern Rockies Lynx Management Direction components combined with other coarse and fine-filter components found throughout the revised plan. Finally, the environmental impact statement notes that the U.S. Fish and Wildlife Service recently (2017a) reviewed effects of implementing the Northern Rockies Lynx Management Direction on both lynx and designated critical habitat for lynx, and issued biological opinions that concluded the Northern Rockies Lynx Management Direction is not likely to jeopardize the continued existence of the Canada lynx, and is not likely to result in the destruction or adverse modification of designated Canada lynx critical habitat.

#### Climate Change

**Concern:** Comments stated that the analysis didn't consider the impacts of climate change on lynx habitat and their prey base.

**Response:** The environmental impact statement addresses climate change as one of the primary human-caused drivers influencing lynx habitat, including impacts on prey species (Chapter 3. Canada Lynx, Affected Environment; Designated Critical Habitat - Element B; and Key Stressors). The Biological Assessment contains a more detailed analysis of climate change impact on Canada lynx and designated critical habitat for lynx.

#### Connectivity

**Concern:** Comments stated that the analysis didn't demonstrate that plan direction would protect connectivity between lynx analysis units.

**Response:** In addition to coarse-filter plan components for wildlife habitat connectivity (FW-DC-WL-05, 06; FW-GO-WL-02, 03; FW-GDL-WL-01-05; FW-DC-WTR-10), the revised plan formally adopts all components of the Northern Rockies Lynx Management Direction (FW-STD-WLLX-01), including objectives, standards, and guidelines (NRLMD ALL O1, ALL S1 and ALL G1) to maintain or restore lynx habitat connectivity within and between lynx analysis units. The environmental impact statement concluded the collective components would result in more affirmative management for lynx habitat, including habitat connectivity. The Biological Assessment contains a more detailed analysis of potential effects from habitat fragmentation, with a similar conclusion.

#### Critical Habitat

**Concern:** Comments suggested that analysis of impacts to lynx critical habitat were insufficient.

**Response:** Effects to lynx and lynx habitat, including designated critical habitat, were addressed in the environmental impact statement (Chapter 3. Lynx, Effects of the Revised Plan Alternatives). More detailed analyses of effects to designated critical habitat for lynx were included in the Biological Assessment for the revised plan. The determination of whether the revised plan may result in the destruction or adverse modification of designated critical habitat is within the jurisdiction of the U.S. Fish and Wildlife Service.

#### Habitat Burning

**Concern:** Concern was expressed that the revised plan does not contain adequate components to address prescribed burning of lynx habitat.

**Response:** The revised plan adopts components from the Northern Rockies Lynx Management Direction (FW-STD-WLLX-01). This direction limits impacts from all vegetation management projects, including prescribed burning, such that when combined with other natural and human-caused disturbance factors, effects from prescribed fire may not convert more than 30 percent of potential lynx habitat to an early stand initiation stage (Northern Rockies Lynx Management Direction Standard VEG S1). Additionally, any reductions in snowshoe hare habitat due to prescribed fires and other vegetation management projects, may occur only in in wildland-urban interface areas for the purpose of hazardous fuel reduction. Such projects may affect no more than 6 percent, cumulatively, of the potential lynx habitat on the Custer Gallatin National Forest (Northern Rockies Lynx Management Direction Standard VEG 6). The concern that these components are not adequate is conjectural and not supported by science.

Incorporate the Northern Rockies Lynx Management Direction

**Concern:** Comment requested that rather than referencing Northern Rockies Lynx Management Direction, it be clearly stated within the revised plan.

**Response:** The introduction to the Canada Lynx section of the plan was modified to clarify that the Custer Gallatin National Forest Land Management Plan incorporates the Northern Rockies Lynx Management Direction in its entirety. This direction was further emphasized by adding a standard (FW-STD-WLLX-01) that the Northern Rockies Lynx Management Direction contained in plan appendix G shall be applied.

Management Area

**Concern:** Comment stated lynx critical habitat should be designated as a management area.

**Response:** The land management plan must indicate which plan components apply unit-wide, which apply to specific parcels of land, and which apply to land of specific character. Plans may use management areas or geographic areas, or both to apply plan components to specific mapped parcels of land. Some plan components apply to land of specific character, and this is explained in the wording of the plan component itself (FSH 1909.12, section 22.2). Critical habitat designation is the jurisdiction of the U.S. Fish and Wildlife Service under authority of the Secretary of the Interior (16 U.S.C., section 1533, Endangered Species Act Section 4). Plan components that apply specifically to lynx critical habitat (FW-STD-WLLX-02) contain sufficient explanation in the component.

Monitoring

**Concern:** Comment stated that there is a lack of sufficient monitoring information to provide adequate proxies of lynx populations, and requested additional lynx monitoring requirements in the revised plan.

**Response:** The revised plan monitoring program (chapter 4 of the plan) addresses the most critical components for informed management of the Custer Gallatin's resources. The responsible official has discretion to set the scope, scale, and priorities for plan monitoring within the financial and technical capabilities of the administrative unit (FSH 1909.12, section 32.12). See also response to Monitoring General. The 2012 Planning Rule calls for integrated plan content (FSH 1909.12 section 22). In addition to monitoring requirements for lynx, the plan includes several monitoring items (MON-VEGF 01-03) that reflect habitat conditions for lynx.

## Motorized Transport

**Concern:** Comment stated that insufficient analysis and plan direction is included about motorized over-snow transport relative to Canada lynx habitat. Comment requested more detailed analysis of potential effects from future management actions, such as road building, road plowing, or snow grooming on lynx. Comment recommended including plan guidance similar to Flathead NF FW-GDL-REC-01: To provide ecological conditions to support Canada lynx on National Forest System lands at a forestwide scale, there should be no net increase in miles of designated routes for motorized over-snow vehicle use, groomed routes, or areas where motorized over-snow vehicle use is identified as suitable. [...] See Flathead Forest Plan, Chapter 2, page 61.

**Response:** A land management plan provides programmatic direction. Potential impacts from future projects implemented under the revised plan could vary based upon a wide assortment of site-specific environmental variables. A programmatic analysis does not estimate the potential effects of future projects, because the actual location, scope, and scale of future projects are not yet determined. However, the environmental impact statement was modified to provide more detailed analysis of the incorporated Northern Rockies Lynx Management Direction combined with other coarse and fine-filter components (Chapter 3. Canada Lynx, Effects of Revised Plan Alternatives). The revised plan adopts direction from the Northern Rockies Lynx Management Direction that designated over-the-snow routes or designated play areas should not expand outside existing areas of consistent snow compaction, unless designation serves to consolidate use and improve lynx habitat (Northern Rockies Lynx Management Direction Guideline HU G11).

## Old Growth

**Concern:** Comment stated that the Custer Gallatin National Forest is not in compliance with old-growth species viability standards, which causes it to be out of compliance with lynx denning requirements.

**Response:** The environmental impact statement addresses structural characteristics of lynx denning habitat, and specifically addresses the science referenced in the comment (Chapter 3. Canada Lynx, Affected Environment).

## Trapping

**Concern:** Comment stated that the analysis inadequately considers cumulative effects of trapping on lynx from the road and trail networks in the Custer Gallatin National Forest.

**Response:** The environmental impact statement noted that lynx are vulnerable to trapping and can be inadvertently caught in traps legally set for other furbearers (Chapter 3. Canada Lynx, Key Stressors). The environmental impact statement also noted that forest roads and trails may have an indirect effect in providing winter access routes for fur trappers. However, since the trapping season for lynx was officially closed, there have been no reports of lynx incidentally caught in traps on the Custer Gallatin National Forest (Chapter 3. Canada Lynx, Effects from Infrastructure Management).

## Wildlife – Prairie Dog

### Environmental Impact Statement Analysis

**Concern:** Comment disagreed with parts of the analysis for effects from livestock grazing. Comments indicated the draft environmental impact statement implies prairie dog control programs are currently

being used on the Custer Gallatin, and requested additional information as to when control will be implemented, including lethal control.

**Response:** The revised plan does not approve site-specific actions, so specifics as the implementation of lethal control are not available. Specific project-level analysis would need to include a discussion of livestock use of the area and impacts along with monitoring requirements of prairie dog town occupancy and distribution.

#### Plan Components

**Concern:** Commenters requested additions or changes to plan components to strengthen protections for both white-tailed and black-tailed prairie dogs. These comments focused on issues such as recreational shooting, poisoning, road construction, energy development, and plague management. Other comment requested more proactive plan components to reduce the risk of prairie dog expansion from National Forest System lands onto adjacent non-Federal lands.

**Response:** The 2012 Planning Rule requires species-specific plan components for at-risk species (which includes endangered, threatened, proposed, candidate, and species of conservation concern) only if ecosystem components would not provide protection for those species. Neither black-tailed, nor white-tailed prairie dogs, are federally recognized as endangered, threatened, proposed, or candidate species under the Endangered Species Act. The white-tailed prairie dog has been identified as a species of conservation concern for the Custer Gallatin National Forest. The revised plan recognizes the unique ecological contributions of both species (FW-DC-WLPD-01), and acknowledges the concerns of adjacent landowners (FW-DC-WLPD-02). Although the 2012 Planning Rule and associated directives do not require species-specific plan components in all cases, the revised Custer Gallatin plan includes additional plan components to protect both species (FW-STD-WLPD-01, 02; FW-GDL-WLPD-01, 02). These measures would not allow the issuance of permits for the use of toxicants as lethal control agents to reduce white-tailed prairie dogs on National Forest System lands (FW-STD-WLPD-01). Revised plan components with construction buffers around existing prairie dog colonies were based on direction in the existing Custer National Forest Plan, and the buffer distance of 100 feet has been sufficient to maintain prairie dog persistence on National Forest System lands. The environmental impact statement explains that reduction in size of the single white-tailed prairie dog colony has been due to development outside the national forest boundary (Environmental Impact Statement, Chapter 3, White-tailed Prairie Dog, Affected Environment). The environmental impact statement also noted the U.S. Fish and Wildlife Service found in a recent status review (2017b) that white-tailed prairie dog populations are in moderate to high overall conditions across the species' range, with trends that are generally stable (Chapter. 3, White-tailed Prairie Dog, Introduction).

Plan components must be in accordance with agency authorities, and are not commitments to act or final decisions approving or mandating projects or activities (FSH 1909.12, section 22.1). Shooting of nongame species falls under State authorities and the revised plan does not restrict recreational shooting of prairie dogs, which is consistent with State regulations and conservation plans for these species. The environmental impact statement noted that the small size and isolated location of the white-tailed prairie dog colony is unlikely to attract recreational shooting, based upon local knowledge as well as past and present public use trends for a particular area. The environmental impact statement found that impacts from recreational shooting as well as road construction and energy development may be limited by plan components restricting proximity of new roads and trails to prairie dog colonies

(Chapter 3, White-tailed Prairie Dog, Environmental Consequences). Guidelines place constraints on future projects and activities that allow for departure from terms only if the purpose of the guideline is met (36 CFR; 219.15(d)(3)). For these reasons, suggestions for mandatory shooting restrictions, plague mitigation programs, and changing guidelines to standards were not adopted in the revised plan.

#### Populations

**Concern:** Comment requested a desired condition for prairie dog population viability and additional analysis of how specific ecosystem plan components contribute to maintaining viability.

**Response:** The revised plan contains a desired condition for habitat that allows for prairie dog colony expansion (FW-DC-WLPD-01). Under the 2012 Planning Rule, viable population is defined as “a population of a species that continues to persist over the long term with sufficient distribution to be resilient and adaptable to stressors and likely future environments (36 CFR 219.19).” The Regional Forester identified the white-tailed prairie dog as a species of conservation concern for the Custer Gallatin National Forest, due to concern about the species' capability to persist over the long term in the plan area (36 CFR 219.9(c)). If the responsible official determines that it is beyond the authority of the Forest Service or not within the inherent capability of the plan area to maintain or restore the ecological conditions to maintain persistence of a species of conservation concern in the plan area, then the plan must include components to restore ecological conditions within the plan area to contribute to maintaining long-term persistence within the species' range (36 CFR 219.9(b)(2)).

As indicated in the environmental impact statement, the white-tailed prairie dog population on the Custer Gallatin is small, but has remained persistent over time. Due to the small size of the population and limited habitat on the Custer Gallatin for expansion, white-tailed prairie dogs are vulnerable to stressors beyond the authority of the Forest Service to manage (Environmental Impact Statement, Chapter 3. White-tailed Prairie Dog, Conclusion). Revised plan components provide proactive measures to manage conditions within the authority of the Forest Service to maintain the existing population of white-tailed prairie dogs, and allow for colony expansion, by prohibiting use of toxicants, and limiting placement of new infrastructure near the existing prairie dog town, as well as a goal to coordinate management of prairie dog towns and habitat (FW-STD-WLPD-01 and 02; FW-GO-WLPD-01).

#### State Role

**Concern:** Comment questioned how State policy influenced Forest Service decision making for prairie dogs, and whether the revised plan would adopt or defer to South Dakota's Prairie dog policy.

**Response:** The revised plan does not adopt or defer to State plans, but rather contains a goal to engage with State agencies through coordinated management to achieve mutual conservation goals (FW-GO-WLPD-01). A complementary goal (FW-GO-WL-02) would provide an effective and responsible pathway for managing wildlife populations and habitats thorough close coordination with other Federal, State, and local agencies; Tribes; and adjacent landowners.

#### Wildlife – Wolverine

##### Adequate Protection

**Concern:** Comment stated that the revised plan does not provide adequate protection for wolverine, and provided suggestions for additional plan components. Suggestions largely focused on additional

protections in certain areas, protection of maternal habitat, and reducing the potential impacts of fur trapping and winter recreation.

**Response:** Although wolverines are habitat generalists in some respects, the best available scientific information indicates a very strong association between wolverines and cold temperatures, persistent snow conditions, and relatively high elevations across the landscape. These conditions provide cooler temperatures in both summer and winter, along with deep snow that persists well into spring, which appear to be key habitat components for wolverines. Snow is seemingly crucial to wolverine maternal habitat, in that the vast majority of known reproductive den sites worldwide are associated with deep snow conditions that provide thermal insulation as well as protection from predators for wolverine kits. Remote, high-elevation habitats present an ecological niche in which wolverines can avoid competition for resources with other predators (Environmental Impact Statement, Chapter 3. Wolverine, Affected Environment).

Wolverines on the Custer Gallatin show most consistent use at elevations of at least 8,530 feet and tend to avoid areas below 7,050 feet in elevation. Although wolverines move to slightly lower elevations in winter, they still tend to stay above 8,040 feet and may range up to 10,000 feet elevation in winter. This elevation band is well above the areas that typically provide winter range for most big game species, where large concentrations of elk and other ungulates provide abundant scavenging opportunities for wolverines. Wolverine have apparently adapted to a trade-off between highly productive environments and low predation risk, with limited competition from other predators (Environmental Impact Statement, Chapter 3. Wolverine, Affected Environment).

The areas most important to wolverines for reproduction and survival, are strongly associated with persistent snowpack. These areas were referred to as "maternal habitat" and "primary habitat" in the environmental impact statement. Primary habitat includes maternal habitat, but expands farther, to include those places suitable for long-term survival use by resident male and female wolverines. Seventy percent of maternal wolverine habitat on National Forest System lands within Custer Gallatin National Forest boundaries is in designated wilderness, with an additional 25 percent in inventoried roadless areas, for a total of 95 percent of maternal habitat in some form of protected area designated by statute or regulation. Primary wolverine habitat, which includes maternal habitat, is also well-protected with existing land use designations, with 57 percent in wilderness, and an additional 32 percent in inventoried roadless areas, for a total of 89 percent of primary wolverine habitat in areas with inherent land use restrictions (Environmental Impact Statement, Chapter 3. Wolverine, Affected Environment).

The revised plan provides restrictions on land management activities in designated areas such as wilderness, wilderness study, and inventoried roadless areas, consistent with the statutes and regulations under which these areas were designated. The proportion of wolverine habitat within designated areas would not change unless Congress acts to make changes. The revised plan sets long-term land use allocations such as recommended wilderness, backcountry areas, and key linkage areas, which frequently overlap with existing designated areas such as wilderness study and inventoried roadless areas. Land use allocations implemented under the revised plan contain management restrictions that are consistent with existing designations, but also add restrictions in some cases, such as limiting motorized and/or mechanized transport, permanent developments, and types and duration of mechanical methods of vegetation management that might otherwise be allowed in existing designations of wilderness study area and inventoried roadless areas (Environmental Impact Statement, Chapter 3. Wolverine, Effects from Plan Land Allocations).



Based on comments received, the final environmental impact statement expanded the effects analysis to include more information about timber harvest impacts on wolverines. Partly due to land use restrictions, but also due to large proportions of wolverine habitat occurring above timberline or in extremely rough and inaccessible topography, only 2 percent of maternal habitat and 7 percent of primary habitat (including maternal) is within the area suitable for timber production under the revised plan. Areas of maternal and/or primary wolverine habitat within the suitable timber base, could be affected by habitat alterations and disturbance from logging operations, but these effects would be tempered by maximum size limits imposed on regeneration harvest units (Environmental Impact Statement, Chapter 3. Wolverine, Effects from Timber Management).

As explained in the environmental impact statement (Chapter 3. Wolverine, Affected Environment), wolverines in the lower 48 states exist as a metapopulation, which is a network of subpopulations occupying isolated patches of suitable habitat, separated by sometimes vast expanses of unsuitable habitat, and their persistence in such naturally patchy habitat is no doubt dependent upon dispersal of individuals between habitat islands to facilitate gene flow between subpopulations. Genetic structuring among wolverine subpopulations supports a theory that higher elevations and associated snow cover is important for wolverine dispersal as well, indicating that successful dispersals may be linked to paths within areas of persistent snow cover. Though they may prefer to move through more suitable habitat, and tend to minimize travel through low-elevation areas, wolverines are capable of long-distance movements, including travel through human developments and otherwise altered habitat. Alternative F (preferred) includes connected corridors of designated and recommended wilderness, backcountry, and key linkage areas to promote wolverine dispersal between subpopulations (Environmental Impact Statement, Chapter 3. Wolverine, Effects of Revised Alternatives).

Given the strong association between wolverine habitat and snow cover, the environmental impact statement recognized winter recreation as a key stressor for wolverines. It should be noted that land management plans guide and constrain future Forest Service project and activity decision-making, not the public (FSH 1909.12, section 22.1). While plan components can influence the types of public use that may occur, there is little influence on levels of public use, other than through limitations on access to certain areas. As noted previously, large proportions of wolverine primary and maternal habitats are located within designated wilderness areas, where motorized over-snow use is not suitable. Although non-motorized winter recreation occurs in designated wilderness areas, these areas provide a high degree of protection from winter recreation impacts, since people simply cannot cover as much ground as quickly by non-motorized means as they can by motorized means. The revised plan would add permanent restrictions on motorized transport in recommended wilderness, whereas types of recreation transport can vary in other low development areas such as backcountry and key linkage areas. The winter recreation opportunity spectrum for the revised plan indicates that over 85 percent of wolverine maternal habitat and 78 percent of total primary habitat, would be in areas where motorized over-snow use is prohibited in winter. The combination of designated areas and land management plan allocations where motorized over-snow use would not be suitable in winter provides large blocks of maternal and primary wolverine habitat that would not be subject to disturbance and snow compaction impacts caused by motorized winter transport. The best available scientific information, including that cited in public comments, indicates that winter recreation is a key stressor for wolverines, that wolverines react more strongly to motorized and dispersed recreation than to non-motorized and trail-associated use, and that reproductive females show stronger negative responses than male wolverines to winter recreation use. All of these factors were considered in developing the revised plan and

disclosed in analyses (Environmental Impact Statement, Chapter 3. Wolverine, Effects from Recreation Management).

The environmental impact statement acknowledged past impacts to wolverine populations associated with unregulated fur trapping and predator control, but noted that legal fur trapping for wolverines was halted in 2012 (Chapter 3, Wolverine, Affected Environment). The environmental impact statement disclosed that winter access to National Forest System lands facilitates fur trapping for other species, and noted that as a dietary generalist with a winter foraging strategy of scavenging animal carcasses, wolverines may be attracted to, and vulnerable to unintentional capture in, traps legally set for other fur-bearers. Since the trapping season for wolverines was closed in 2012, there has been one record of incidental trapping of a wolverine on the Custer Gallatin that resulted in a wolverine mortality. The environmental impact statement concluded that, based on low incidents of unintended wolverine capture in traps set for other species, legal fur trapping on the Custer Gallatin would have negligible effects on the wolverine population in the plan area (Chapter 3. Wolverine, Effects Common to All Alternatives).

Due to the strong relationship between persistent snow and wolverine habitat quality, the environmental impact statement addressed climate change impacts for this species. Research indicates that a pattern of reduced spring snowpack in wolverine habitat has been in place since at least the 1950s, but there is little information as to whether, or how this pattern has affected wolverine habitat on the Custer Gallatin. Continuing impacts across the species' range could result from loss of snowpack for reproductive den sites, warmer temperatures affecting the wolverine's capacity for thermoregulation, lack of snow and cold for preserving food caches, and loss of habitat connectivity for dispersal and associated impacts to genetic diversity. Models have predicted a variety of climate change impacts to wolverine habitat, including potential shifts in wolverine distribution and connectivity by the end of the 21st century. However, at least one model has identified the Greater Yellowstone Region, including much of the Custer Gallatin, as an area likely to sustain persistent snow cover in coming decades (Chapter 3. Wolverine, Affected Environment). National Forest System lands provide vegetation conditions that help mitigate greenhouse gas influence on climate change. Under the revised plan, land management actions that affect vegetation composition and function would occur at a very small-scale relative to the land base that supports natural ecosystem processes. Therefore, land management actions are unlikely to have a notable impact on climate change. Nevertheless, the revised plan emphasizes resilience in desired conditions for multiple resources, and includes standards and guidelines as proactive measures to improve ecosystem resilience relative to predicted changing climates (Environmental Impact Statement, Chapter 3. Wolverine, Effects Common to All Alternatives).

In summary, concerns that the amount of protection afforded by land management plan allocations and associated land use restrictions are inadequate for any of the plan alternatives considered, except possibly alternative D, are conjectural in nature and not supported by the science cited in comments, since none of the science cited, and none of the science of which the Custer Gallatin planning team is aware, presents absolute thresholds for management actions above which wolverine persistence would be jeopardized, or below which wolverine persistence would be assured. The environmental impact statement reasonably concluded that the revised plan would provide ecological conditions that would conserve habitat, and contribute to the long-term persistence of wolverines, through maintenance of habitat connectivity and protections that limit human disturbance in maternal and primary habitats. The revised plan provides for ecological conditions that will support wolverine persistence on the Custer

Gallatin, while still meeting the multiple-use mandates of the laws, regulations, and policy that establish the regulatory framework for plan revision (Environmental Impact Statement, Chapter 3. Wolverine, Conclusion).

#### Best Available Scientific Information

**Concern:** Comment stated that the revised plan does not use best available scientific information for wolverine, and provided additional literature to consider.

**Response:** All topics indicated by commenters as important, such as wolverine's metapopulation structure, low reproductive rates, low population density, preference for remote habitats, tendency to occupy high-elevation areas, association with persistent snowpack, responses to vegetation management and recreation impacts, effects of trapping, and avoidance of roads were addressed in the environmental impact statement (Chapter 3. Wolverine, Affected Environment). Commenters did not indicate how science cited in the draft environmental impact statement was misapplied, or demonstrate that new citations provided contained information that is contrary to information presented in the planning documents.

#### Environmental Impact Statement Analysis

**Concern:** Comment stated that the EIS analysis was inadequate, and did not demonstrate how the plan would improve ecological conditions. Comment requested additional detail in the EIS analysis and clarification of why the effects of alternatives B, C, and D were expected to be the same for wolverine.

**Response:** The 2012 Planning Rule requirements for ecological sustainability mandate that the plan must contain components, including standards or guidelines, to maintain or restore the ecological integrity of ecosystems (section 219.8). There is no requirement to demonstrate the plan will improve ecological conditions. Desired conditions may be the same as existing conditions, so efforts to manage for the desired conditions would focus on maintaining those conditions (FSH 1909.12, section 22.11). The environmental impact statement demonstrates that coarse- and fine-filter plan components will meet the requirements to maintain or restore ecological integrity of wolverine habitat, within the Forest Service authority and inherent capability of the plan area (Environmental Impact Statement, Chapter 3. Wolverine, Conclusion).

Differences in effects to wolverines and their habitat were disclosed between the alternatives, based largely upon variations in the amount and juxtaposition of land management plan allocations such as recommended wilderness, backcountry, and recreation emphasis areas (Environmental Impact Statement, Chapter 3. Wolverine, Effects from Plan Land Allocations). Although commenters seek additional detail on the effects of the various alternatives, such detail is not readily available in a programmatic document. Plan components are not commitments to act or final decisions approving projects and activities (FSH 1909.12, section 22.1). The effects analysis was appropriate for a programmatic level of planning in demonstrating relative comparisons between alternatives.

#### Monitoring

**Concern:** Comment indicated that persistent snow cover has nothing to do with vegetation treatments that could affect wolverines over the planning period, and indicated that the revised plan must include a monitoring component that examines the impact of management strategies on wolverine to comply with National Forest Management Act requirements.

**Response:** The environmental impact statement demonstrates, based upon the best available scientific information, that persistent snowpack is the key ecological characteristic that drives wolverine distribution, reproduction, survival, and dispersal, and that forest management activities are unlikely to have notable impacts on wolverines (Chapter 3. Wolverine, Affected Environment). The commenter's concern is conjectural and not supported by science. The plan monitoring item for wolverine (MON-WL-13) is consistent with the primary threat identified for the species, and will provide indicators of change over time for the key ecological characteristic identified for the species. In addition, the monitoring plan includes an item for general wildlife (MON-WL-01) to measure vegetation characteristics over time (as outlined in monitoring items MON-VEGF-01 and MON-VEGNF-01) as indicators of whether wildlife habitats are maintained within, or moving toward stated desired conditions to provide the natural range of variation to which native species have evolved. These collective measures are adequate to meet the monitoring requirements of the National Forest Management Act as established in the 2012 Planning Rule. An additional monitoring item was added (MON-WL-13) to reflect information to be gained from a Multispecies Mesocarnivore Monitoring Program developed for multiple regions of the Forest Service. This program will provide information on species distribution, abundance, and potential reproduction that would add to the habitat monitoring component to help evaluate effectiveness of plan components (Environmental Impact Statement, Chapter 3. Wolverine, Cumulative Effects).

#### Seasonal Restrictions

**Concern:** Montana Fish, Wildlife, and Parks recommended adding a guideline that management actions in maternal habitat for wolverines should avoid disturbance during the wolverine reproductive season.

**Response:** The Forest Service considered such a guideline, and purposely made the guideline more specific. By definition, wolverine maternal habitat is located in very remote, high-elevation, harsh environments, where access is limited, and snow depths preclude many types of access during the wolverine reproductive season. The types of management actions the Forest Service would be most likely to authorize in such conditions are focused on winter recreation (for example, special use permits for ski areas, outfitting and guiding, or creating new designated routes for skiing, snowmobiling, and fat-tire biking). The only other types of activity the Forest Service is likely to authorize in such areas involves monitoring and research, for example to study wolverines in reproductive habitat, establish snow monitoring stations, or study snow conditions for avalanche safety purposes. The Custer Gallatin did not want to preclude the ability for management actions that would add to our knowledge base regarding wolverine reproductive habitat needs, other wildlife-specific research, public safety, or other measures that would have limited impacts and could serve to benefit the species. Therefore, the guideline specific to placing limits on management actions that would facilitate additional winter recreation uses was intentional.

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